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The births and deaths of business establishments in the United States 3

The results of BLS research on various methods for counting births and deaths of establishments and businesses will allow better measurement of U.S. entrepreneurship

Akbar Sadeghi

Expenditure patterns of young single adults: two recent generations compared 19

Differences in spending patterns for young, never-married adults in 2004–05 and their counterparts in 1984–85 may reflect differences in demographics

Geoffrey Paulin

Business Processes and Business Functions: a new way of looking at employment 51

A new BLS classification system used in conjunction with the Agency's Mass Layoff Statistics program yields fresh information

Sharon P. Brown

Service-providing occupations, offshoring, and the labor market 71

A BLS analysis identifies 160 service-providing occupations and ranks their susceptibility to offshoring

Roger J. Moncarz, Michael G. Wolf, and Benjamin Wright

Departments

Labor month in review 2
Book reviews 87
Current labor statistics 89
Index to volume 131 165

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The December *Review*

Our yearend issue for 2008 contains a rich variety of articles that summarize, in each case, years of research intended to shed light on how businesses come and go, how they operate, and which of their activities might most likely be shifted overseas.

We begin this month with a focus on a topic of perennial interest for observers of "job creation" and "job destruction," namely, the measurement of business "births" and "deaths" for entire firms or individual business establishments. Akbar Sadeghi describes the culmination of more than 2 years of research on the development of methods and concepts that are designed to illuminate aspects of business formation and survival. The dynamism of the United States economy is legendary, and data from the Bureau of Labor Statistics Business Employment Dynamics program have served to flesh out an empirical portrait of precisely how job gains and losses relate to business births and deaths. The alternative definitions and methods described in the article provide another step forward in our understanding of this vitally important subject, a topic all the more relevant given current events in the Nation's—and, indeed, the world's—labor markets.

How do young adults spend their money? And how does this affect their economic status? Geoffrey Paulin examines data from the Consumer Expenditure Survey for this important demographic group (single, never-married persons aged 21 to 29 years), who typically are facing the challenges of starting careers, establishing initial financial footholds, and determining what kinds of purchases are essential at this stage in their lives. He deepens his analysis by comparing spending patterns for this target group in recent years with their counterparts in the mid-1980s, and ponders just which group might be considered better or worse off economically.

In an attempt to shed more light on how workplaces and industries are changing, a classification system has been developed that describes basic business processes of firms and the business functions that are associated with those processes. As Sharon P. Brown describes, this system is now being used in the BLS Mass Layoff Statistics (MLS) program. The system is derived from existing literature on business processes, models of firms' activities, current research on outsourcing, the results of a feasibility study conducted by the program, and the program's ongoing collection of relevant information. In this article, mass layoff events are examined in light of changes in specific business functions, such as human resources management.

In a somewhat similar vein, Roger J. Moncarz, Michael G. Wolf, and Benjamin Wright summarize efforts that have been underway for a number of years to identify service-providing occupations that might be susceptible to "offshoring." They describe a system designed to identify characteristics that make an occupation vulnerable, and then they review past and projected patterns of employment and wages for 160 such jobs.

Recession and involuntary part-time work

A committee of economists affiliated with the National Bureau of Economic Research recently declared that the U.S. economy entered into a recession in December 2007. Various national labor market measures clearly support this conclusion. The unemployment rate, for instance, rose from 4.9 percent to 7.2 percent during the year ending in December 2008, and nonfarm payroll employment declined by 2.6 million.

Some labor market measures weakened even before the onset of the "official" recession, a phenomenon that is not atypical. The aforementioned jobless rate began edging up in mid-2007, and the share of the working-age population that is employed began trending down from its most recent peak 2 years ago. Another important indicator of labor market difficulty—the number of persons working part time for economic reasons—began to signal in about mid-2006 that the business cycle might be heading for a downturn. As a recent BLS report notes, it is not uncommon for this indicator of unfavorable business conditions to rise during periods of slackening demand for labor. Sometimes referred to as involuntary workers, persons working part time for economic reasons want full-time jobs but currently are unable to find full-time work or have had their hours cut back. The recent rise in involuntary part-time employment thus far has been due mainly to the latter circumstance. The rise has occurred mostly among workers aged 25 years and older. Workers employed in certain industries, particularly construction, food services, and retail trade, have borne the brunt of the increase.

The report discussing these and other findings derived from Current Population Survey data can be found at **www.bls.gov/opub/ils/pdf/opbils71.pdf** □

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The births and deaths of business establishments in the United States

Bureau of Labor Statistics economists have tested various methods for defining and counting births and deaths of establishments and businesses; the results of their research will allow BLS to better measure entrepreneurship in the United States

Akbar Sadeghi

The role of entrepreneurs in the American economy is legendary. One of the unique characteristics of the U.S. economic system is the freedom to start a business relatively easily and quickly. Indeed, one of the engines of growth is the employment and wages generated by new businesses. It is also an economic reality that businesses close frequently. The interplay of business births and deaths is not fully understood with the existing range of economic measures available from U.S. statistical agencies.

The story of entrepreneurship also entails a neverending search for new and imaginative ways to combine the factors of production into new methods, processes, technologies, products, or services. These efforts lead to the growth of new businesses, the decline of less productive ones, and the reallocation of resources from less profitable businesses and establishments to more profitable ones. This process is often referred to as "creative destruction," a concept popularized by the economist Joseph Schumpeter.[1]

This article describes more than 2 years of research and development of concepts and methods. These findings lead towards a greater understanding of the role and dynamics of business formations and business deaths, of business survival, and of the changing contribution of American entrepreneurs. This work is expected to lead to the publication of new data series with quarterly estimates of business births and deaths under the BLS Business Employment Dynamics (BED) program, an outgrowth of the Quarterly Census of Employment and Wages (QCEW) program. In this article, the terms "births" and "deaths" refer to the births and deaths of entire firms or individual establishments. When the word "business" is used in the context of this article, it refers to both establishments and firms. However, establishment births and deaths are the article's main focus.

The BED statistics are based on measurement of "gross job flows." Data development and economic analysis based on job flows are a new approach in labor market analysis that came about primarily through access to the microdata of U.S. business establishments.[2] Over the past decade, researchers utilized data sources such as the QCEW and the Census Bureau's longitudinal database for the manufacturing sector to create a rich body of literature on this subject.[3] Gross job flows are estimated by simply aggregating the net changes in employment at the establishment level. Gross job gains are the sum of all net gains in expanding and opening establishments. Gross job losses, similarly, are the sum of all net losses in contracting and closing establishments. The net change in employment is the difference between gross job gains and gross job losses. Gross job gains and gross job losses are indica-

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tive of job churn, and they reflect adjustments made by businesses in response to changes in economic events and conditions.

For the purposes of BED statistics, openings are defined as those establishments that had positive employment for the first time in the third month of the current quarter with no link to the previous quarter, or had positive employment in the current quarter and zero or no employment in the previous quarter.[4] "Zero employment" means that an employment level of zero was reported, whereas "no employment" means that there were not any employment numbers reported at all. In this article, the term "zero employment" is used to mean either zero employment or no employment. According to the BLS definition of openings, openings include both new startups (births) and reopenings of the existing seasonal establishments that reported zero employment in the previous quarter. Closings are defined in an analogous manner. Closings are establishments that reported positive employment in the third month of the previous quarter and zero employment in the current quarter. Closings include establishments that go out of business permanently (deaths), as well as seasonal businesses that shut down temporarily.

The concepts of establishment birth and establishment death—both of which exclude seasonal businesses—are highly significant for understanding the job market and the business cycle. Birth data provide a measure of entrepreneurial activities and gauge new entries and reallocation of resources towards growing areas. Births are entirely different from reopenings of existing businesses, which are included in current BED data on openings. Similarly, business death data measure failing enterprises and identify sectors from which resources are being shifted away. That again is different from the temporary plant shutdowns included in BED closings data. This article provides preliminary tabulations of business births and deaths and offers a methodology based on an analysis of the proposed definitions of birth and death. In what follows, first a brief overview of the Business Employment Dynamics concept, definitions and methodology is presented, followed by an analysis of the data on births and deaths that are based on the preferred method of estimation. Finally, alternative definitions of birth and death are discussed using birth and death estimates from the third quarter of 1994 through the first quarter of 2007.

What are Business Employment Dynamics?

The BED program publishes quarterly statistics on gross job gains and gross job losses. These statistics are derived from establishment-level microrecords of the QCEW program. The QCEW program's estimates are based on mandatory quarterly reports on employment and wages submitted by all employers subject to unemployment insurance laws. The quarterly reports are only the starting point. The incoming UI data are reviewed and edited, industry codes are assigned and routinely updated, geographical codes are assigned and updated, employment and wage data are scrutinized, respondents are contacted to validate significant changes in employment, predecessors and successors are identified, and corrections are made on the basis of new information. This value-added process turns raw, unedited administrative data into high-quality, reliable, and consistent economic statistics. The resulting QCEW statistics are the most accurate, timely, and frequent in the Federal statistical system at the local level. Each year, more than 850,000 records of newly born establishments are captured, coded and researched for predecessor and successor relationships. In the fourth quarter of 2007, the QCEW program reported an employment level of 137.0 million in 9.1 million establishments for the total U.S. private and public sectors.

The data gathered in the QCEW program provide a virtual census of employees on nonfarm payrolls, covering 98 percent of such employees. In addition to being an accurate and detailed source of employment statistics, QCEW serves as the sampling frame for numerous BLS surveys, as a benchmark for BLS's critical Current Employment Statistics and Occupational Employment Statistics surveys, and as an input to the Bureau of Economic Analysis' National Income and Product Accounts.

The QCEW records are matched across quarters to create a longitudinal history for each establishment. Records are linked by their unique identifiers, including State codes, unemployment insurance numbers, and reporting unit numbers. The linkage method is designed in such a way as to create a history for continuous records and identify entries and exits, while avoiding spurious births and deaths that could be reported in the event of any changes of ownership, mergers, acquisitions, spinoffs, or other corporate restructuring.

The longitudinal database created from the linked records is used to construct BED data, including employment levels and counts of establishments at opening, expanding, closing, and contracting businesses. Employment figures can also be aggregated by an employer's Employer Identification Number to measure BED data at the firm level. During the tabulation process, the employment reported in the third month of each consecutive quarter is used to measure the over-the-quarter employment change. The

sum of employment at the opening establishments and the change in employment of the expanding establishments is gross job gains. Similarly, the sum of the prior-quarter employment at the establishments that closed in the current quarter and the change in employment of the contracting establishments is gross job losses. The net employment growth for all firms can be measured in one of two ways: as the difference between total employment in the current and previous quarters or as the difference between gross job gains and gross job losses in the current quarter.

Business births

Although the concept of business births seems self-explanatory, in practice, measuring business births and deaths raises a number of definitional issues that have to be resolved. One issue is related to timing—that is, when a birth actually occurs. New businesses go through different phases. A new business often starts with an idea in the mind of an entrepreneur, then emerges in a home office setting with only the founder or founders as employees, and finally reaches the point at which it hires additional labor. One important question is whether births should be identified and measured at the point at which employees are hired or sometime prior to that. In a similar vein, another question is whether the "employment" concept or the "employee" concept should be the basis for identifying and measuring births. If employment is the basis, then self-employed people should be counted when measuring births. EUROSTAT, the statistical arm of the European Union, recommends this approach and thus includes entrepreneurs who have not hired any additional employees in their estimation of births. By contrast, the Organization for Economic Cooperation and Development uses only enterprises with hired employees as the basis for birth counts.

In some European countries, in response to a certain public policy, a large number of self-employed unincorporated enterprises regularly convert to formal corporations and become employers with one employee. This conversion distorts birth data that are based on the concept of having no employment in one period and having one or more employees in the next period. For that reason, the Organization for Economic Cooperation and Development initially recommended a two-employee threshold as another birth concept and referred to it as "economic birth." It was eventually decided that the threshold would be an establishment with one employee, and this concept was incorporated into the final version of the Manual on Business Demography Statistics.[5]

Another methodological issue in defining births is the distinction between births and entries. Births are defined as the creation of a combination of new factors of production such as organization, fixed assets, employment, and so on. Entries, by contrast, include, in addition to births, events such as mergers and takeovers as well as reactivation, relocation and industrial reclassification of existing businesses. Birth estimates can change as the result of the inclusion or exclusion of any of these events that change the demography of businesses.

In the United States, the Census Bureau's Statistics of U.S. Businesses publishes annual series with data similar to the BED quarterly data from a longitudinal database called Business Information Tracking System.[6] However, the Census Bureau's definitions of terms related to births and deaths differ from BLS definitions. Census annual estimates of births exclude self-employment. Statistics of U.S. Businesses defines births as "establishments that have zero employment in the first quarter of the initial year and positive employment in the first quarter of the subsequent year."[7] When births are estimated from March to March, this definition is similar to BED's definition of openings. According to the Census Bureau, entries are equal to new births plus reentries of temporarily inactive establishments. However, an establishment that reopens a few months into the year and then shuts down again before the end of the year would not be counted as a reentry.

Deaths are defined as "establishments that have positive employment in the first quarter of the initial year and zero employment in the first quarter of the subsequent year."[8] This definition is equivalent to BED's annual closings estimates. Exits are deaths plus temporary exits. An establishment that closes a few months into the year and then opens again before the end of the year would not be counted as a temporary exit. Thus, the Census definitions of entries and exits—like BED's definitions of openings and closings that are based on annual data—eliminate most, but not all, temporary openings and closings. Some establishments that are considered births or deaths according to Statistics of U.S. Businesses could be seasonal businesses that happened to have zero employment in the March of the reference year.[9]

James R. Spletzer estimated the contribution of births and deaths to economic growth by using microdata on all establishments in the State of West Virginia.[10] He defined net employment growth as the difference between total jobs created by births and expansions and total jobs destroyed by deaths and contractions. Births were defined as occurring during the first quarter of positive employment,

and deaths were defined as occurring during the last quarter of positive employment. Spletzer showed the contrast between those definitions of birth and death and an alternative definition in which births and deaths were designated as the first appearance and disappearance of records in the longitudinal database. The source of the difference was the inclusion of the establishments that reported zero employment at some point in their life cycle. In his analysis, Spletzer showed how alternative definitions of terms can aid in understanding the establishment's life cycle and its hazard function—defined as the likelihood of failure for an establishment over a given length of time.

The counts of births and deaths in this article are derived from the BED longitudinally linked database. Self-employed entities are not in the scope of BED data. In addition, establishments with zero employment are excluded from the counts of openings, and records are considered to be continuous in the events of mergers, acquisitions, and changes of ownership, as well as in the events of breakout and consolidation of multiworksite establishments. In addition, industrial reclassification of businesses and relocation of establishments within the States have no impact on the number of openings and closings. However, the reactivation of business units, the length of time between deactivation and reactivation, and the "unit of analysis" (firm or establishment) all have measurable effects on birth and death estimates.

This article defines births as those records that had positive employment in the third month of a quarter and zero employment in the third month of the previous four quarters. This definition includes all records with positive employment that appear in the BED database for the first time—as well as those records that were inactive for longer than five quarters—but excludes seasonal businesses that reappeared with positive employment within the last five quarters. The article defines a death as a unit that reported zero employment in the third month of a quarter and did not report positive employment in the third months of the next four quarters. This definition is symmetric to the birth definition.

Entrepreneurial birth

Births can be estimated at the *establishment* (plant) level or at the *firm* level. An establishment represents an economic unit that produces goods and services, usually at a single location, and engages in only one or predominantly one activity. A firm, on the other hand, may consist of several establishments. When an establishment opens for business for the first time, it is counted as an establishment birth, a State-level firm birth, and a national-level firm birth. If the firm in question opens another establishment, this will be counted as another establishment birth and as a firm-level expansion. If that establishment is in another State, it also will be a counted as a State-level firm birth.

National firm-level births are more indicative of entrepreneurship than establishment-level births. Births at the firm level are referred to as entrepreneurial births; they measure strictly new business creation and the spread of entrepreneurship and innovative activities. Firm-level births were estimated at BLS by aggregating establishment birth records using the corporate parent's Employer Identification Number (EIN). The aggregated birth records were merged with the previous quarter's EIN records, and new EINs were looked for in birth records. EINs are generally the same across all units in multiunit businesses. The aggregation was done at the State and national level, and two sets of estimates for firm-level births were estimated. These different measures of business entries are shown in charts 1 and 2. Some facts stand out from changes revealed in these charts:

1. All measures of births follow the same pattern of change over time, which covers periods of expansion, recession, and recovery during the business cycle.
2. The number of jobs created by openings and births has trended downward since the first quarter of 1998.
3. The number of birth units generally follows an upward trend. The latest upsurge started from September 2003, a month during the quarter in which the net change in employment turned positive for the first time since the official end of the 2001 recession.

Establishment births

There were 201,681 establishment births in the fourth quarter of 2007, creating 858,997 jobs. (See table 1.) Seasonally adjusted, the number of establishment births per quarter exhibits an upward trend, whereas employment created by births is on a declining path. (See the smoothed lines in chart 3.) These trends mean a reduction in the average size of new startup businesses. Why is the average size of the new businesses shrinking? One possible explanation is the spread of new technologies and the ensuing rise in productivity that help all firms in general and new startup enterprises in particular. Changes in the average size of births are plotted against changes in the multifactor productivity[11] index in chart 4. The chart shows that the declining average number of employees in new businesses corresponds with the rising level of productivity. It seems that, on the basis of the limited number of observations

Chart 1. Number of openings and births, seasonally adjusted, third quarter 1994 to fourth quarter 2007

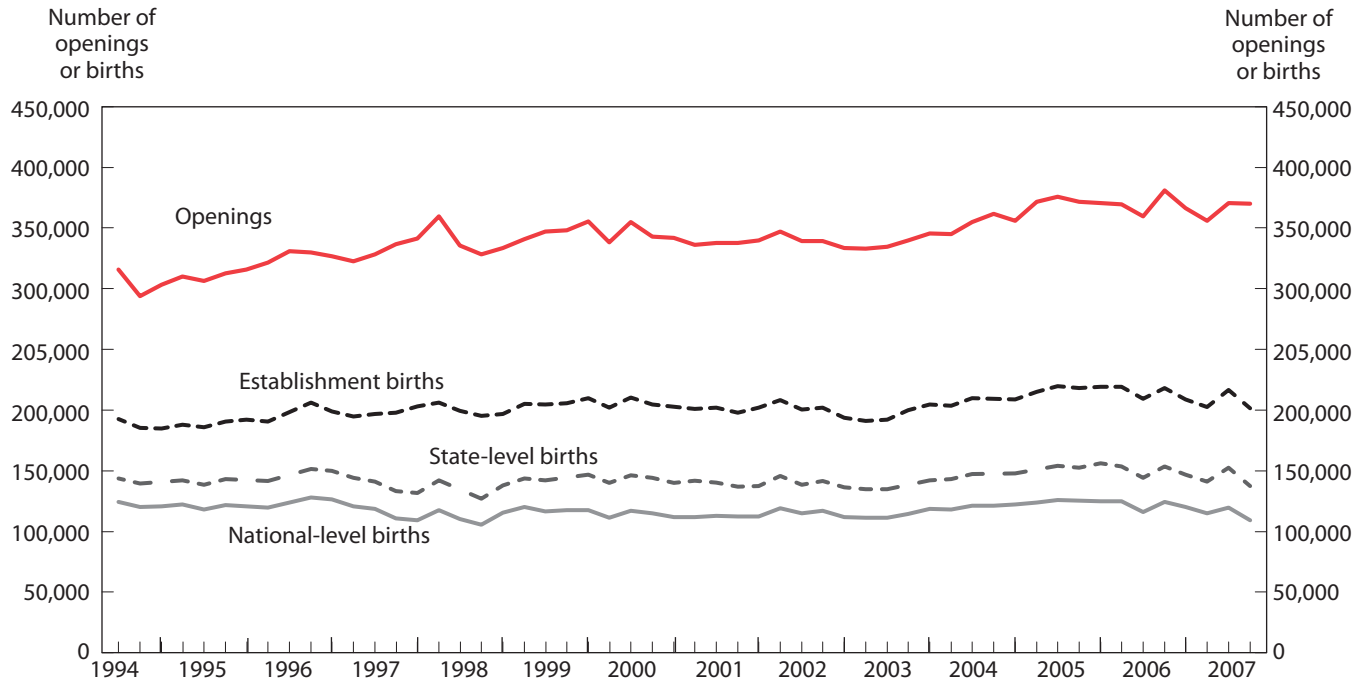


Chart 2. Jobs gained from births, seasonally adjusted, third quarter 1994 to fourth quarter 2007

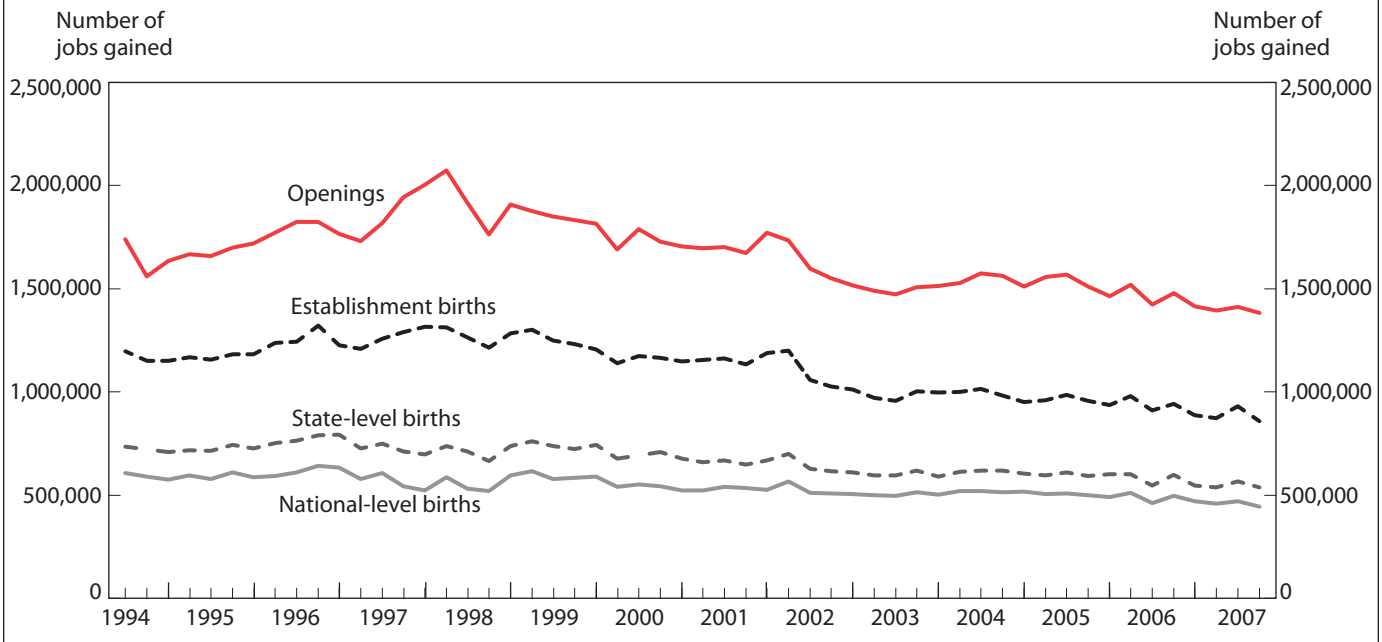
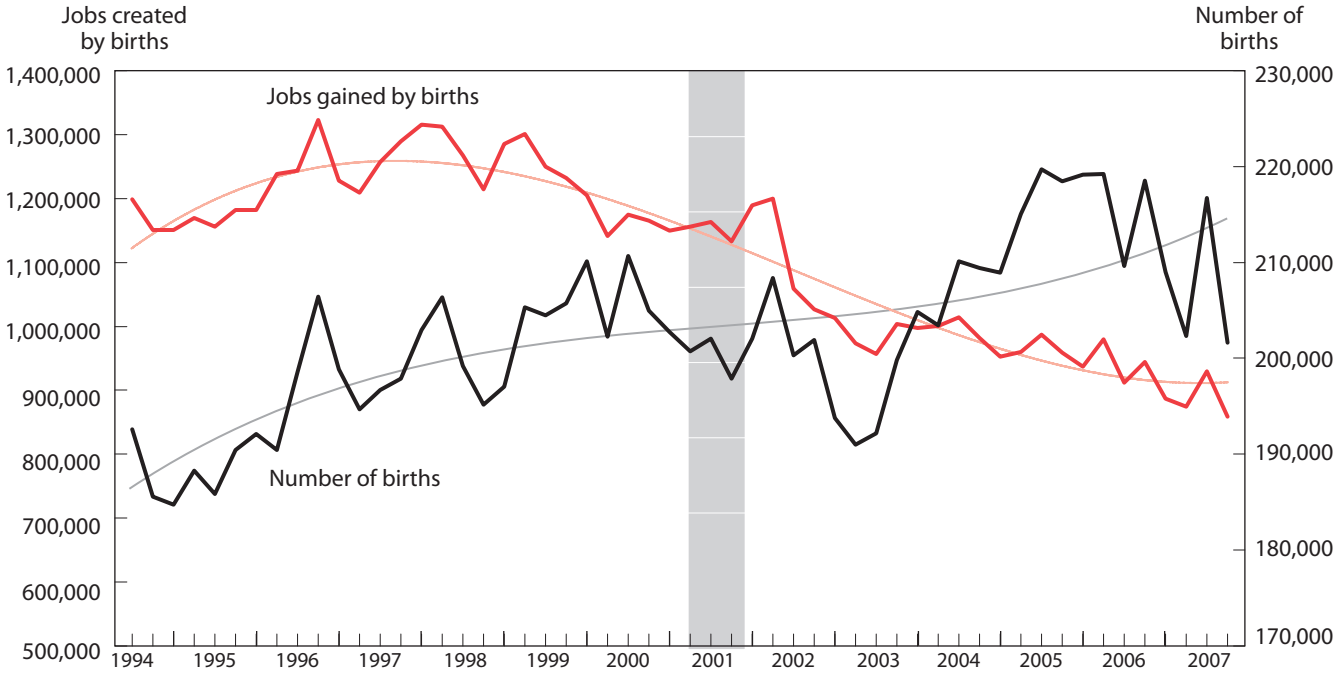


Table 1. Number of establishment births and deaths, jobs gains from births, and job losses from deaths, seasonally adjusted, 1993–2007

Year	3 months ended	Number of establishment births				Employment			
		Births		Deaths		Job gains from births		Job losses from deaths	
		Level	Rate	Level	Rate	Level	Rate	Level	Rate
1993	September	–	–	146,411	2.66	–	–	887,415	0.97
	December	–	–	148,902	2.69	–	–	898,689	.98
1994	March	–	–	157,530	2.84	–	–	953,006	1.03
	June	–	–	161,695	2.90	–	–	964,117	1.03
	September	192,580	3.42	155,801	2.77	1,199,410	1.27	884,245	.94
	December	185,558	3.28	165,343	2.93	1,150,765	1.21	942,883	.99
1995	March	184,744	3.25	155,566	2.74	1,151,405	1.20	895,313	.93
	June	188,245	3.29	161,963	2.83	1,169,741	1.21	963,485	1.00
	September	185,859	3.24	166,564	2.90	1,156,421	1.19	994,861	1.02
	December	190,420	3.31	167,050	2.90	1,182,439	1.21	983,584	1.01
1996	March	192,102	3.32	168,674	2.92	1,182,672	1.21	982,355	1.00
	June	190,472	3.28	166,979	2.87	1,239,144	1.26	967,071	.98
	September	198,566	3.40	167,051	2.86	1,243,886	1.25	1,045,258	1.05
	December	206,418	3.51	169,248	2.88	1,323,667	1.32	1,004,193	1.00
1997	March	198,820	3.36	171,722	2.90	1,228,142	1.22	1,037,562	1.03
	June	194,659	3.27	173,518	2.92	1,209,175	1.19	1,009,363	.99
	September	196,694	3.29	167,718	2.81	1,257,988	1.23	1,047,536	1.02
	December	197,906	3.30	184,346	3.08	1,290,281	1.25	1,180,490	1.15
1998	March	202,928	3.38	175,861	2.93	1,316,315	1.27	1,168,365	1.13
	June	206,380	3.41	168,237	2.78	1,312,843	1.26	1,239,501	1.19
	September	199,195	3.27	176,625	2.90	1,268,314	1.21	1,127,450	1.07
	December	195,142	3.19	181,148	2.96	1,215,041	1.15	1,101,217	1.04
1999	March	197,055	3.21	184,257	3.00	1,285,636	1.21	1,217,866	1.14
	June	205,357	3.34	187,169	3.05	1,301,813	1.22	1,140,865	1.07
	September	204,504	3.32	185,483	3.01	1,250,538	1.16	1,148,680	1.07
	December	205,743	3.32	182,615	2.95	1,232,524	1.14	1,127,319	1.04
2000	March	210,098	3.38	185,137	2.98	1,205,869	1.10	1,090,395	1.00
	June	202,284	3.24	184,026	2.94	1,141,189	1.04	1,085,967	.99
	September	210,676	3.36	196,283	3.13	1,175,121	1.07	1,180,896	1.07
	December	204,953	3.26	194,205	3.09	1,166,088	1.06	1,136,799	1.03
2001	March	202,741	3.22	201,817	3.20	1,149,759	1.04	1,269,763	1.15
	June	200,776	3.19	204,769	3.25	1,155,720	1.05	1,259,261	1.14
	September	202,060	3.20	207,180	3.29	1,163,121	1.07	1,237,982	1.13
	December	197,852	3.14	198,283	3.14	1,132,764	1.05	1,159,995	1.07
2002	March	202,060	3.20	189,753	3.00	1,190,106	1.11	1,105,820	1.03
	June	208,377	3.28	188,363	2.97	1,200,356	1.12	1,108,409	1.03
	September	200,293	3.14	186,557	2.93	1,059,187	.99	1,034,932	.96
	December	201,901	3.16	189,178	2.96	1,026,783	.96	1,033,221	.96
2003	March	193,753	3.02	187,785	2.93	1,013,214	.95	1,012,640	.95
	June	191,023	2.98	185,890	2.90	973,700	.91	980,155	.92
	September	192,148	2.98	177,140	2.75	956,377	.90	878,156	.82
	December	199,808	3.09	179,594	2.78	1,004,104	.94	923,778	.86
2004	March	204,878	3.15	182,352	2.81	997,670	.93	919,539	.86
	June	203,491	3.12	182,682	2.80	1,000,340	.93	927,623	.86
	September	210,149	3.20	182,726	2.79	1,014,373	.94	941,722	.87
	December	209,405	3.18	177,150	2.69	982,072	.90	895,674	.82
2005	March	208,937	3.15	186,540	2.81	952,530	.87	862,440	.79
	June	215,103	3.23	178,830	2.68	959,813	.87	857,063	.78
	September	219,708	3.27	183,897	2.74	987,041	.89	868,819	.79
	December	218,471	3.23	187,124	2.77	958,623	.86	850,541	.76
2006	March	219,153	3.22	185,119	2.72	937,312	.84	745,088	.67
	June	219,221	3.20	195,405	2.86	979,419	.87	874,661	.78
	September	209,631	3.05	198,054	2.88	911,717	.81	834,542	.74
	December	218,537	3.17	195,428	2.83	944,562	.84	824,354	.73
2007	March	209,034	3.02	–	–	886,801	.78	–	–
	June	202,337	2.91	–	–	873,919	.77	–	–
	September	216,741	3.11	–	–	930,235	.82	–	–
	December	201,681	2.89	–	–	858,997	.75	–	–

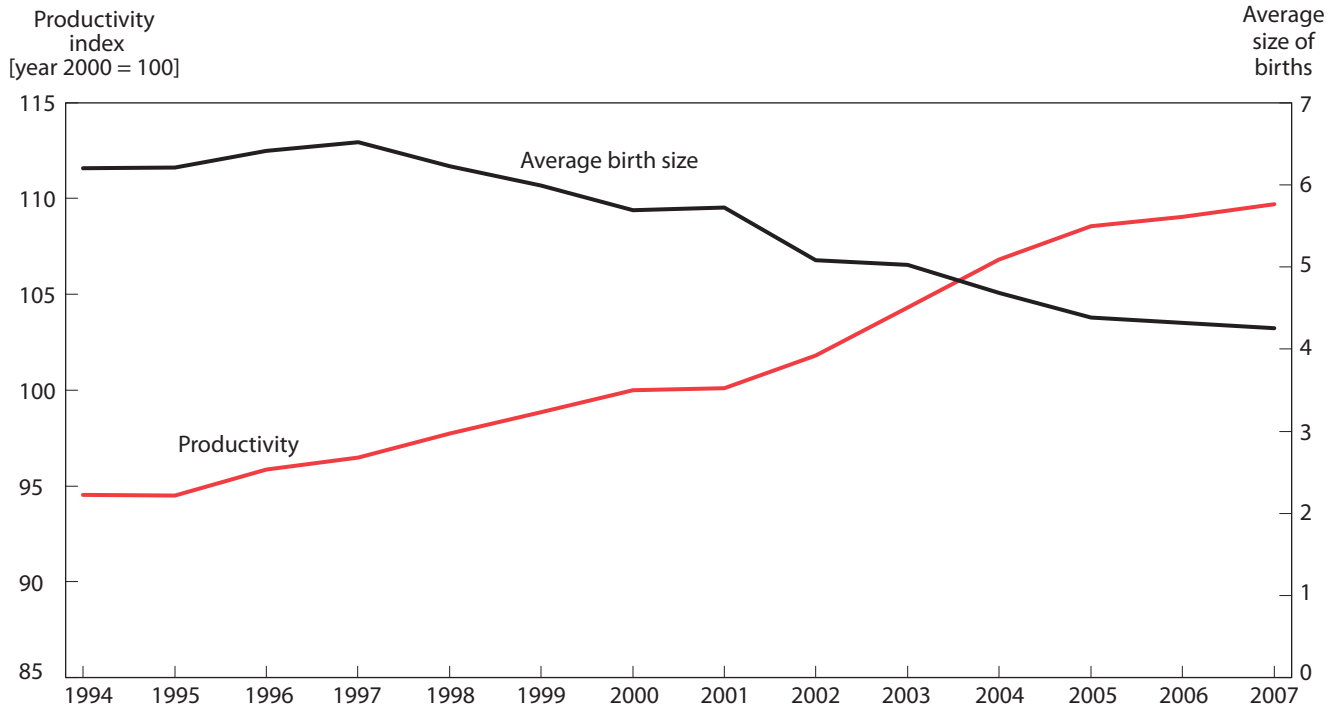
NOTE: Dash indicates datum not available.

Chart 3. Number of births and jobs created by births, seasonally adjusted, third quarter 1994 to third quarter 2007



NOTE: Shaded bar denotes National Bureau of Economic Research (NBER)-designated recession (March 2001–November 2001).

Chart 4. Average size of births and multifactor productivity, seasonally adjusted, 1994–2007



NOTE: Size of birth is determined by the number of hired employees present at the time of a birth.

for the birth data, there is a correlation between the rise in productivity and the decline in the average size of establishment births. However, a larger number of observations and a more detailed analysis may be needed to provide a conclusive view of the relation between these two factors.

It is commonly recommended that data on business births be used in measuring and comparing entrepreneurial activities. But the number of births trends differently than the total jobs gained by the births: the number of births has risen, and the number of jobs gained has declined. If rising productivity or any other factor causes startup businesses to have a smaller initial size and lower total employment in the quarter in which they debut, the use of employment created by births as a measure of economic impact may not show the true effects of births and entrepreneurship. Because some newly born businesses will expand and become major contributors to gross job gains in subsequent quarters, the number of births may be even more significant than their initial contributions to total employment in measuring the trends of entrepreneurship and innovative activities.

As newly born businesses mature and become continuous units in employment data series, they continue to contribute to total employment—either positively or negatively, depending on the direction of their employment changes. BLS hopes to group establishments into units called cohorts, which are clusters of establishments that were born in the same period. The cohorts that survive will have a long-term impact on the job market following their initial appearance. Because of the dynamic effect of the births, one should observe changes in the number of births in a particular period in order to estimate the births' impact in the future. If a favorable economic condition leads to a surge in the number of births for a period—a "baby-boom event"—the impact will be echoed in the job market with varying intensity in the future periods. As shown in chart 3, the upward slope of the trend line for the number of births began to flatten in the end of the 1990s, thus preceding the eventual economic slowdown that began in the first quarter of 2001. An upward swing in the number of births also resumed earlier than the actual recovery of the job market that began in September 2003.

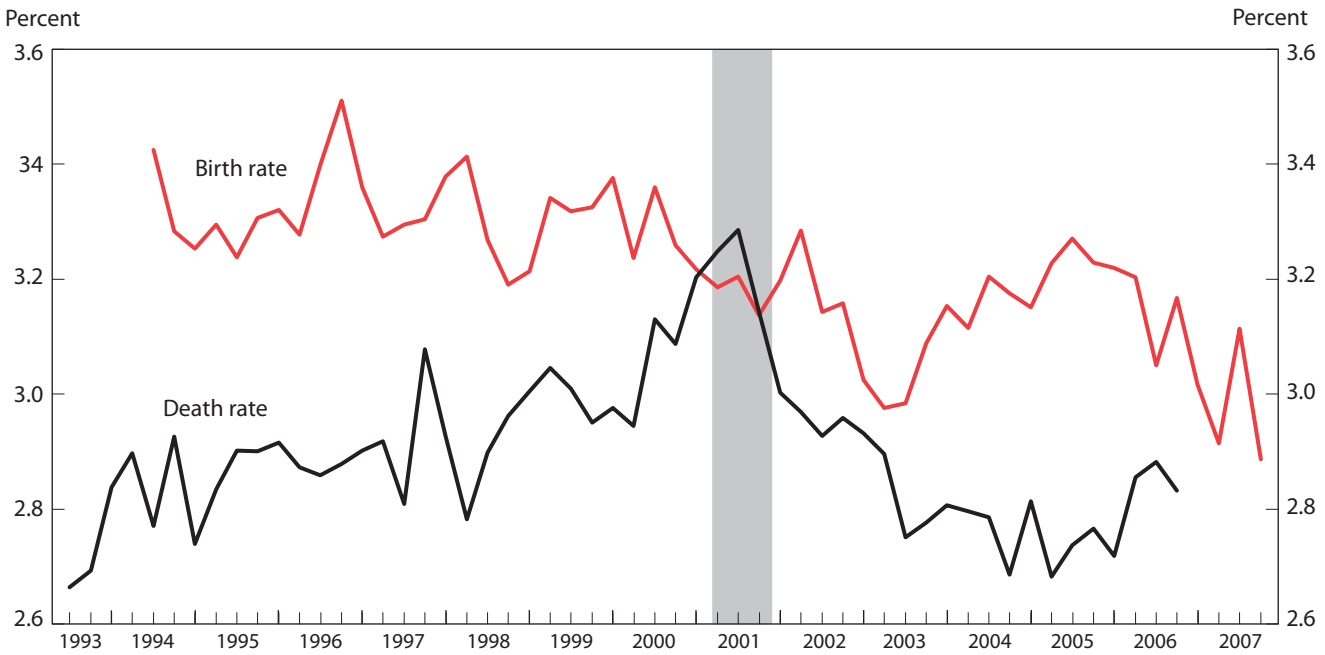
Birth and death rates

The birth rate as a percent of total active establishments was 2.9 percent for the fourth quarter of 2007, and jobs created by births accounted for .8 percent of total employment.[12] The overall birth rate as well as the birth rates by major industry sector trended downward from the third quarter of 1994 through the fourth quarter of 2007. (See chart 5.) The average quarterly birth rate for this timespan was 3.2 percent of total active establishments, .3 percent higher than the rate for the last quarter of the period. Employment resulting from births was 1.1 percent of total employment—a rather significant contribution. In the fourth quarter of 2007, jobs created by births were 11 percent of total gross job gains. This 11-percent contribution (achieved in the first quarter of operation), along with the potential to grow and become major contributors to the future expansions, make newly born businesses an important part of the data to follow and analyze. When the net of birth and death employment data is considered, the contribution of birth and death to job creation appears even more dramatic. The net of jobs created by births and jobs lost by deaths accounted for one quarter of the net job growth of 520,000 that occurred during the fourth quarter of 2006.

During the fourth quarter of 2006—the latest quarter for which establishment death data are available—195,428 establishments went permanently out of business, losing 824,354 jobs. The death rate for this quarter was 2.8 percent, and employment loss from deaths accounted for 0.7 percent of total employment. The average death rate for the 1994–2006 period was 2.9 percent of total active establishments. During the same period, average quarterly gross job losses caused by deaths were equal to 1.0 percent of total employment. Birth rates always exceeded death rates from 1994 to 2006 except for the last three quarters of 2001, the same three quarters during which the 2001 recession officially occurred. The gap between birth and death rates narrowed as the economy approached the recession period, and widened as the economy recovered. (See chart 5.) Because it takes a full year to determine whether a closure is temporary or permanent, the death data in chart 5 have a four-quarter lag. BLS will continue to publish death data with such a lag and revise closings as appropriate.

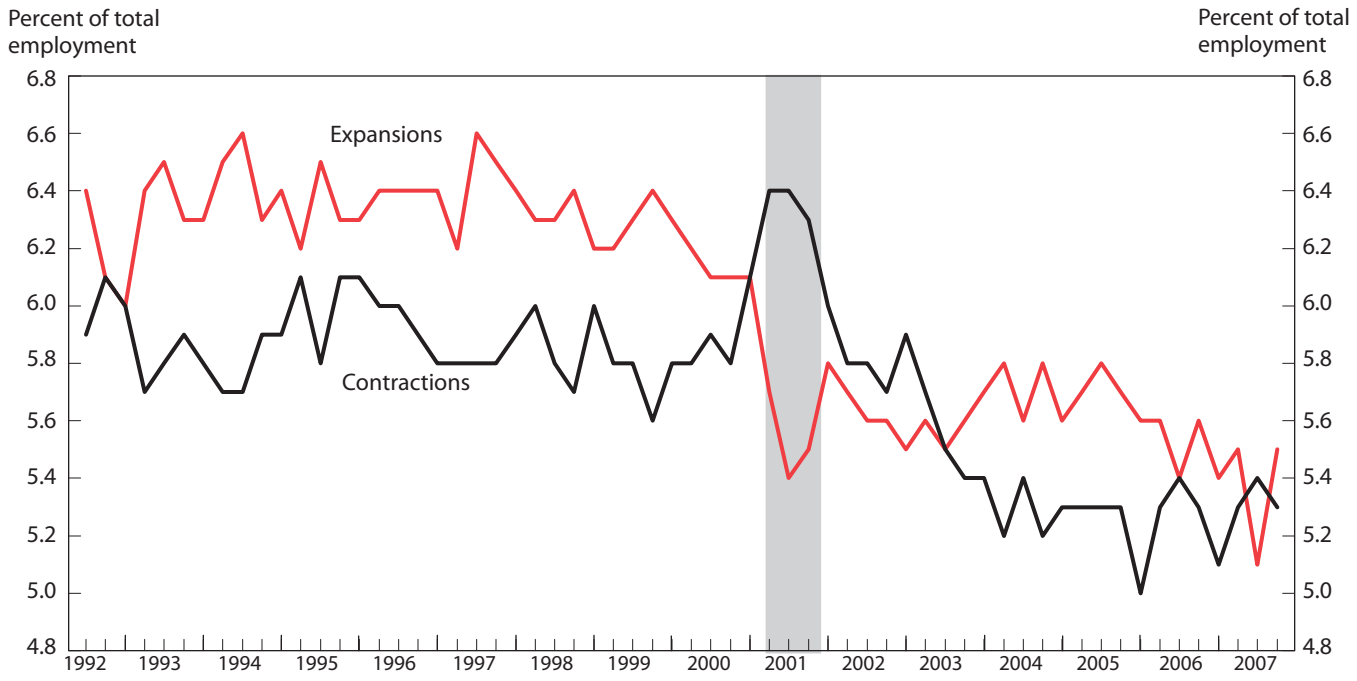
Birth and death rates exhibit a diverse pattern of change compared with rates of expansions and contractions. The contraction and expansion rates remained flat throughout the 1990s, with the expansion rate exceeding the contraction rate. The contraction rate surpassed the expansion rate near the onset of the 2001 recession and remained higher until September 2003, constituting a span of eight quarters. (See chart 6.) In contrast, the birth rate began a downward trend and the death rate began a rise in the second quarter of 1998, and the death rate exceeded the birth rate for only three recessionary quarters in 2001. The

Chart 5. Total private sector: birth rate from third quarter 1993 to fourth quarter 2007, and death rate from third quarter 1993 to fourth quarter 2006, all data seasonally adjusted



NOTE: Shaded bar denotes National Bureau of Economic Research (NBER)-designated recession (March 2001–November 2001). A birth must be preceded by four quarters of zero or no employment, and a death must be followed by four quarters of zero or no employment. Therefore, there are no birth data availble for the first year in the chart, and there are no death data available for the last year in the chart.

Chart 6. Expansions and contractions as a percent of total employment, seasonally adjusted, third quarter 1992 to fourth quarter 2007



NOTE: Shaded bar denotes National Bureau of Economic Research (NBER)-designated recession (March 2001–November 2001).

birth rate fell to the lowest level in September 2003 and then began to increase quickly, nearing the prerecession level in December 2004 and exceeding it in June 2005. Since the fourth quarter of 2005, the birth rate seems to have started a new downward trend.

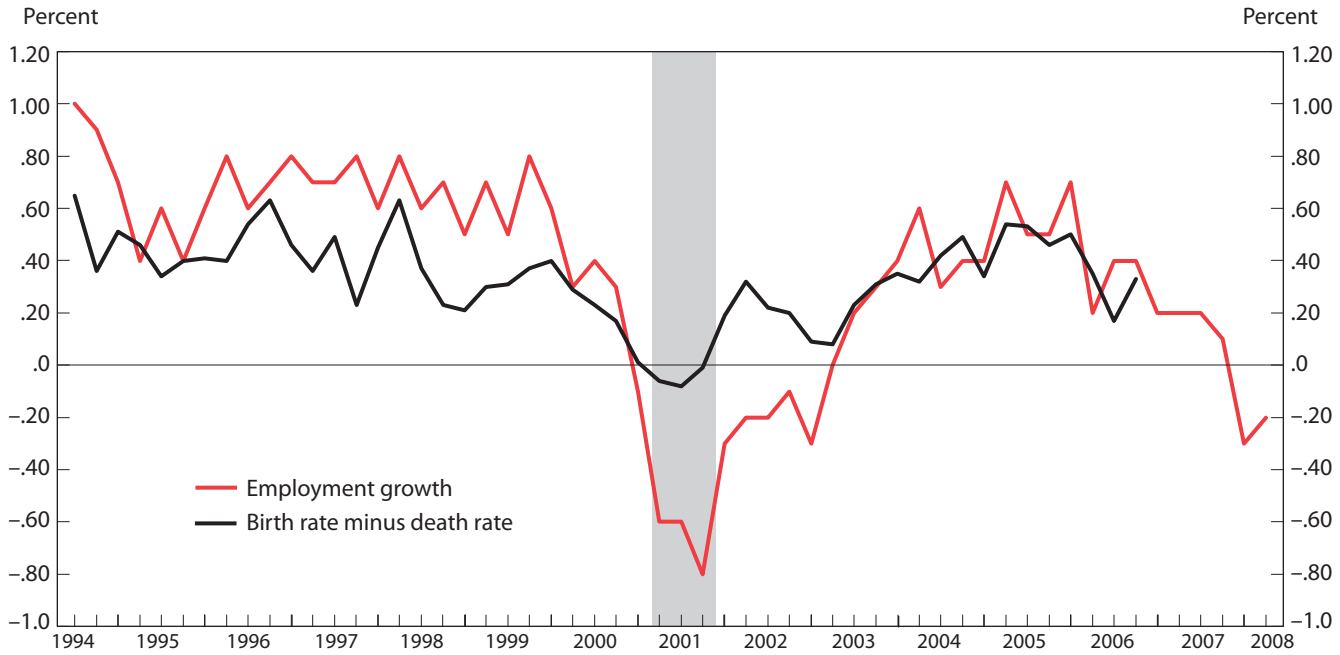
As of the fourth quarter of 2007—the most recent quarter for which relevant data are available—gross job gains from expansions had not hit the peak they had reached before the 2001 recession. The death rate fell from a high of 3.3 percent in the midst of the recession and reached an all-time low of 2.7 percent in the fourth quarter of 2004. The difference between birth and death rates indicates the rate by which the total inventory of business establishments grows. This net of birth and death rates excludes the quarterly changes in the total number of active establishments caused by temporary openings and closings of seasonal businesses. That rate is shown along with the net change in total employment in chart 7.

The sharp drop in net job growth in the middle of the 2001 recession occurred at the same time as a brief decline in the total number of active establishments. The net birth rate experienced a slight downward trend prior to the start of the recession, hit a trough in the second quarter of 2001, and has been on the rise since the official end of the recession in the fourth quarter of 2001. The net gains in total employment reached a positive level 2 years later in September 2003. The net addition to the total employers may also be seen through the gap between the birth rate and the death rate in chart 5. The gap narrowed as the economy approached the recession and widened as the economy expanded into full recovery. It appears that the trajectories of the rates of establishment births and deaths can provide additional information on the present state of the economy and help predict what may happen in future phases of the business cycle.

Entrepreneurship rate

The United States is often viewed as one of the most hospitable environment for starting businesses, but a more precise measure of entrepreneurship is needed in order to make local and international comparisons. For this purpose, one can define the concept of "entrepreneurship rate" as the number of business births per 1,000 persons in the labor force. The ratio of births to population has been used in a number of studies as a measure of entrepreneurial ac-

Chart 7. Employment growth, seasonally adjusted, third quarter 1994 to second quarter 2008; and establishment growth, seasonally adjusted, third quarter 1994 to fourth quarter 2006



NOTE: Shaded bar denotes National Bureau of Economic Research (NBER)-designated recession (March 2001–November 2001). Death rates are calculated after a lag that is longer than the period necessary for employment growth to be calculated. This causes an absense of establishment growth data for 2007 and early 2008.

tivities for regional or international comparisons.[13] Labor force data were used to estimate this measure, taking into account births at both the firm level and the establishment level. The number of firm-level births per 1,000 persons in the labor force was 0.78 in the first quarter of 2007, up from a low of 0.75 in June 2003 but down from a high of 0.94 in the fourth quarter of 1996.

At the establishment level, the birth rate per 1,000 persons in the labor force was 1.37 in the fourth quarter of 2007, down from a high of 1.52 in the fourth quarter of 1996. The gap between the two measures reveals the share of new establishments born under the ownership of the existing firms. The birth rate per 1,000 persons in the labor force does not include "nonemployer" business entities. Nonemployers are basically self-employed people who are not included in the BED database. The birth rate per 1,000 persons in the labor force, therefore, measures entrepreneurship at the stage where startup businesses begin to hire employees. The entrepreneurship rate is an extremely valuable byproduct of birth and death data. It can not only show and compare the level and change of entrepreneurial activities across countries and regions, but can also measure the effectiveness of policies as well as the role of the number of high-paying jobs in accelerating or decelerating entrepreneurial initiatives.

Birth and death rates by industry

Birth and death rates also have been estimated and analyzed by eight selected industries: manufacturing, retail trade, information, accommodation and food, financial services, health services, education services, and construction. Birth rates have been on a downward trend across all industries. However, rates differ by industry and change at varying paces over time. Because of such variability, the ranking of industries in terms of birth and death rates changes over time. For example, the birth rate in the information sector was the highest among all industries because of the rapid development and expansion of technology in the 1990s. The rate surged from 4.0 percent in 1994 to 5.7 percent in 2000. That rate has since decreased to 2.7 percent in the fourth quarter of 2007. The birth rate in the information sector is now third highest, ranking after construction and education services. The death rate in this sector also rose—from 3.0 percent in 1994 to 5.7 percent in the third quarter of 2001. The death rate in the information sector has been declining since its peak in 2001, but it still ranks the highest among all industries' death rates.

In manufacturing, the birth rate has fallen, and it ranks the lowest among all selected industries' birth rates. The death rate in this sector was trending upward until the end of the 2001 recession. Since then, the death rate in manufacturing has been declining, and it currently ranks the second lowest among all selected industries' death rates. Birth rates in particular sectors generally reflect the economic conditions in the sector in question. The current downturn in the construction and financial services sector is reflected in the sharp declines in birth rates in these two sectors that occurred in the first quarter of 2007.

Other definitions of birth and death

The specific definitions of birth and death chosen by BLS were the result of careful study. Economists defined five proposed measures of birth and three proposed measures of death for which they calculated time series of data from the third quarter of 1994 through the first quarter of 2007 for births, and from the third quarter of 1993 to the first quarter of 2006 for deaths. They followed two approaches. One approach is based on the first appearance of a business unit in the QCEW longitudinal database of establishments with positive employment in the third month of the quarter; the other approach is based on examining the history of each record, and this approach identifies births as records with positive employment in the current quarter preceded by zero employment in the previous four or five quarters.

Whereas the former method created one measure of birth, the latter method generated two measures, one based on analyzing employment from the third month of a quarter, and the other based on analyzing employment from all months of the quarter. The estimates generated by the second approach varied depending on the length of time during which the birth records had zero employment before reporting positive employment. To measure the effect of time, records were linked from six consecutive quarters and births were calculated on the basis of comparisons of employment from four and five consecutive third-months (henceforth, "third-month" refers to the third month of a quarter) and from 12 and 15 consecutive months; four additional measures of birth were created using these methods. The numbers of quarters that were included in the calculations were arbitrary; the primary objective in reaching back various numbers of quarters or months was to determine the amounts by which different lengths of time would change the resulting number of births. For the quarterly data, this period should exceed four quarters in order to exclude the effect of exit and reentry of seasonal businesses. Five possible definitions of

births are summarized as follows:

- Definition 1: births are new records that appeared for the first time in the QCEW longitudinal database and have positive employment in the third month of the quarter.
- Definition 2: births are records with positive employment in the third month of a quarter and zero employment in the third months of the previous four quarters. (This is BLS's preferred definition.)
- Definition 3: births are records with positive employment in the third month of a quarter and zero employment in the third months of the previous five quarters.
- Definition 4: births are records with positive employment in the third month of a quarter and zero employment in all months of the previous four quarters.
- Definition 5: births are records with positive employment in the third month of a quarter and zero employment in all months of the last five quarters.

A death occurs when a business with positive employment reports zero employment or does not report at all for a length of time. The questions under consideration when defining deaths are similar to those under consideration when defining births as establishments with positive employment preceded by zero employment. One must decide whether employment in the third month of the quarter or employment in all 3 months of the quarter should be used, and one must also decide how many quarters or months of zero employment need to follow the positive employment in order for a death to occur. Three measures of death were calculated. Each measure is based on a particular period with zero employment following a month with positive employment reported. The relevant periods are the following:

1.four consecutive quarters in which there is zero employment in the third month,

2. five consecutive quarters in which there is zero employment in the third month, and

3.twelve consecutive months of zero employment.

The relevant length of time is the period of inactivity that is allowed before a business unit is declared dead. In the case of quarterly data, this should be at least four quarters in order to exclude seasonal businesses that have been shut down temporarily. To be symmetric, it would be preferable for the relevant timespan to be equal to the timespan applied in defining births. For these reasons, BLS's preferred meausure of death is the first one: four consecutive quarters—following a month with zero employement reported—in which there is zero employment in the third month.

Evaluation of proposed methods

To evaluate the merits of the five possible definitions of birth, one needs to examine three questions that define the differences among them. The first is whether to define a birth on the basis of the initial appearance of a record in the QCEW longitudinal database with positive third-month employment, or to define a birth on the basis of positive employment reported by a business after four or five consecutive third-months, or 12 or 15 consecutive months, of zero employment. (New records have the status of "no employment" in the previous periods.) The former definition comprises new businesses registered with positive employment for the first time, whereas the latter includes not only births but also businesses that have been inactive for more than 1 year but reported positive employment again in the current quarter. (Establishments that are reactivated within a year are considered seasonal and are counted as openings in the BED data).

Which of these two concepts is more suitable in defining a business birth? Establishment births based on the first appearance in the registry are more intuitive and logically consistent with the notion of birth as a new entity coming to life. Such a measure, however, may not be consistent with the openings in existing BED statistics and could underestimate the number of births. For example, if a business enters into the BED database for the first time with zero third-month employment, even if it has positive employment in the first and second month of the quarter, this unit will not be counted as an opening or birth. In the subsequent quarters, when the unit reports positive third-month employment, it will be counted as an opening, but not as a birth. Therefore, such a birth will never get a chance to be counted in a method based on the first appearance in the QCEW database. The sharp difference between estimates using this method and estimates using other methods indicates that using this method would underestimate the number of births.

The second question that defines the differences among the methods of counting births is the following: in the zero-to-positive employment approach, what month of employment should be used—the third month? or all months of the quarter? The third-month approach is less restrictive, and it generates the highest estimates of births

in comparison with the all-months estimates. The third-month approach is consistent with other BED data in which employment numbers from the third month of the quarter are used as the basis for job gains and job losses estimates

The third question is: how many months of zero employment need to be present before the emergence of positive employment in a record qualifies as a birth? There is no objective criterion used in selecting the length of the period of zero employment when defining a birth by the zero-to-positive-employment approach. The longer the period is, the more likely the method is to exclude reactivated businesses and to generate proper births. In data that were discussed earlier in this article, openings with third-month positive employment and zero employment in the previous four quarters were the records that were identified as births.

All methods compared

In a time series from the third quarter of 1994 through the first quarter of 2007, under five proposed definitions, chart 8 shows the number of private sector births and chart 9 shows jobs created by births. As can be seen, the pattern of change over time is similar for all definitions; in other words, the lines on each graph, although separate, move up and down almost in sync with the other lines on the same graph. Definition one, which measures birth on the basis of the first appearance of a record with positive third-month employment, generates the lowest number of births and displays a slightly different pattern of change from the other methods. Definition two has the least restriction and generates the largest number of births and employment. Definitions four and five, which define births as 12 and 15 months, respectively, of consecutive zero employment followed by positive employment, are almost identical.

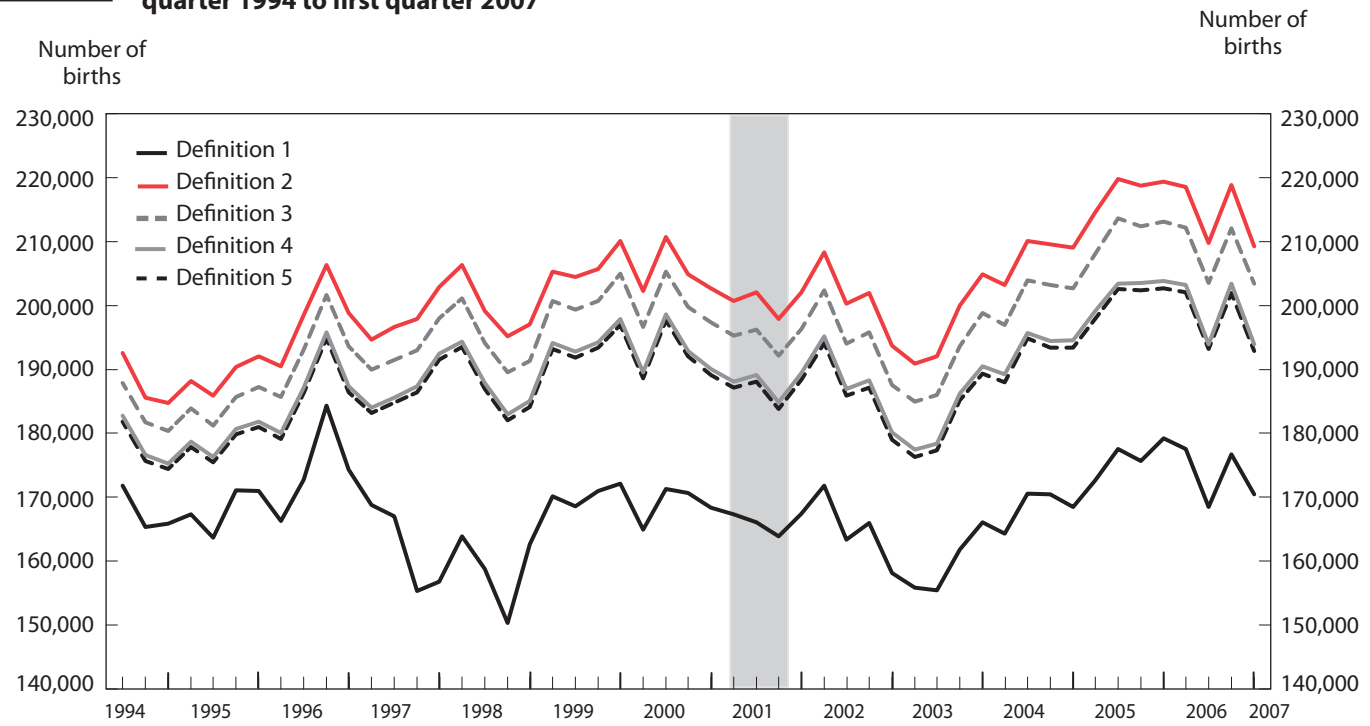
Chart 10 and chart 11 show the number of establishment deaths and the number of job losses resulting from deaths—according to all three methods for estimating deaths—from the third quarter of 1993 through the first quarter of 2006. As is the case with births, the methods of estimation exhibit few differences and display the same general pattern of change over time. The number of deaths and employment losses from deaths is the highest when following the definition defined by positive employment in the third month of a quarter followed by zero employment during the third month of the four following quarters. Extending the length of time for zero employment to five quarters or observing 12 consecutive months of zero employment following reported positive employment does not generate significant changes.

For births, definition one is rejected because it excludes a significant number of new records that appear initially with zero employment. Although definitions two, three, four, and five all generally exhibit the same trend and pattern of change with few differences, it is definition two that is selected because it is consistent with the basic BED concepts and methodology. For establishment deaths, definition one is selected. (Definition one is based on at least four quarters zero employment after the last positive employment reported.) This definition of death is somewhat unique among worldwide measures. Because the QCEW contains monthly employment, one can more easily and quickly separate seasonal closings from more permanent closings. Economists using other data sources may have to wait 2 or more years before being confident that closings are permanent. As a result, use of the QCEW-based BED measure of death will result in the most current and frequently published figures available.

These chosen measures of births and deaths have the advantage of 1. being consistent with other BED data in that they use third-month employment as a defining factor, 2. being symmetrical in dealing with both births and deaths: four quarters of zero employment before a given quarter defines birth, and four quarters of zero employment after a given quarter defines death, and 3. making births a subset of openings, which makes them consistent with the existing published BED data. The analysis of data presented earlier in this article was based on birth and death estimates derived from these selected definitions.

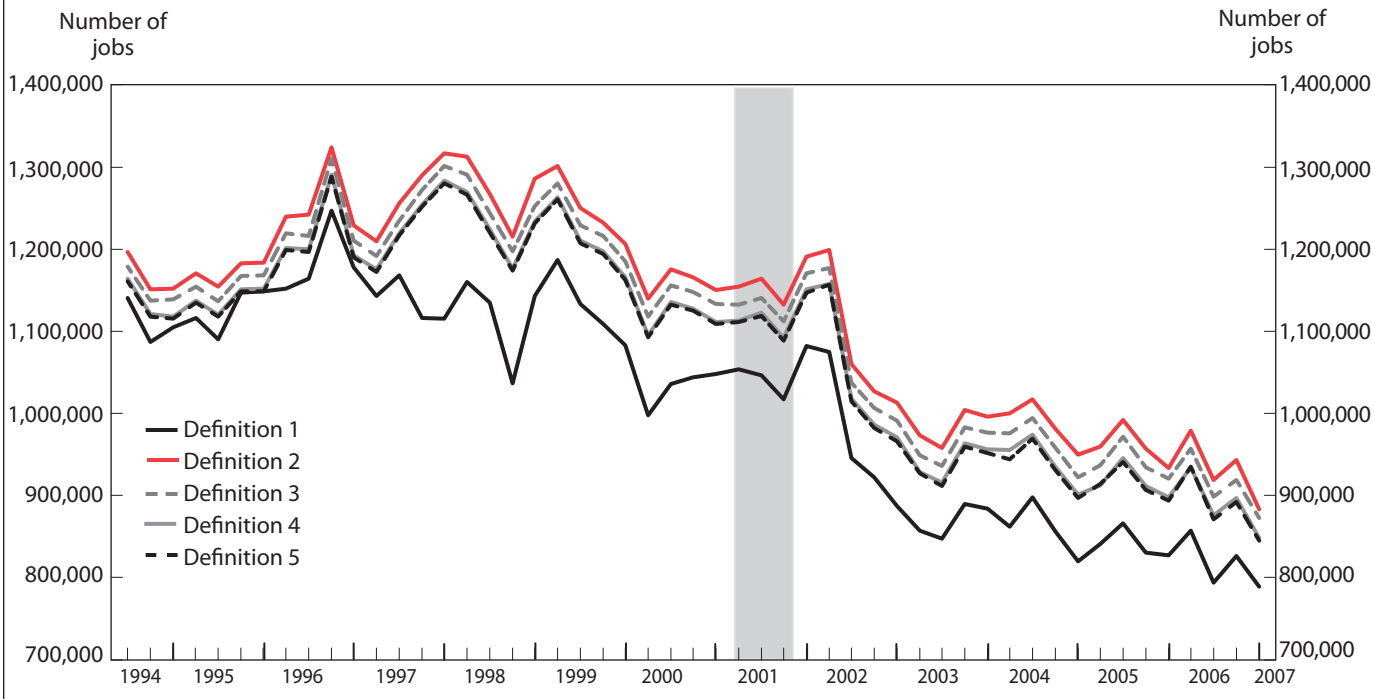
IN THIS ARTICLE BUSINESS BIRTHS AND DEATHS were measured using the QCEW longitudinal database. Alternative definitions were estimated and results were compared over time. The results showed small differences in the magnitude of births measured by alternative methods, but no significant differences in their patterns of change over time. The estimation of births on the basis of positive employment in the third month of a quarter and zero employment in the four previous quarters was selected as the preferred method. The same approach was employed in defining establishment deaths. Deaths are records with positive employment in the third month of a quarter followed by four consecutive quarters with zero employment during the third month. Entrepreneurial births were defined by measuring births at the firm level and excluding newly born units of multiestablishment businesses from total births.

Chart 8. Number of establishment births, by proposed definition of births, seasonally adjusted, third quarter 1994 to first quarter 2007



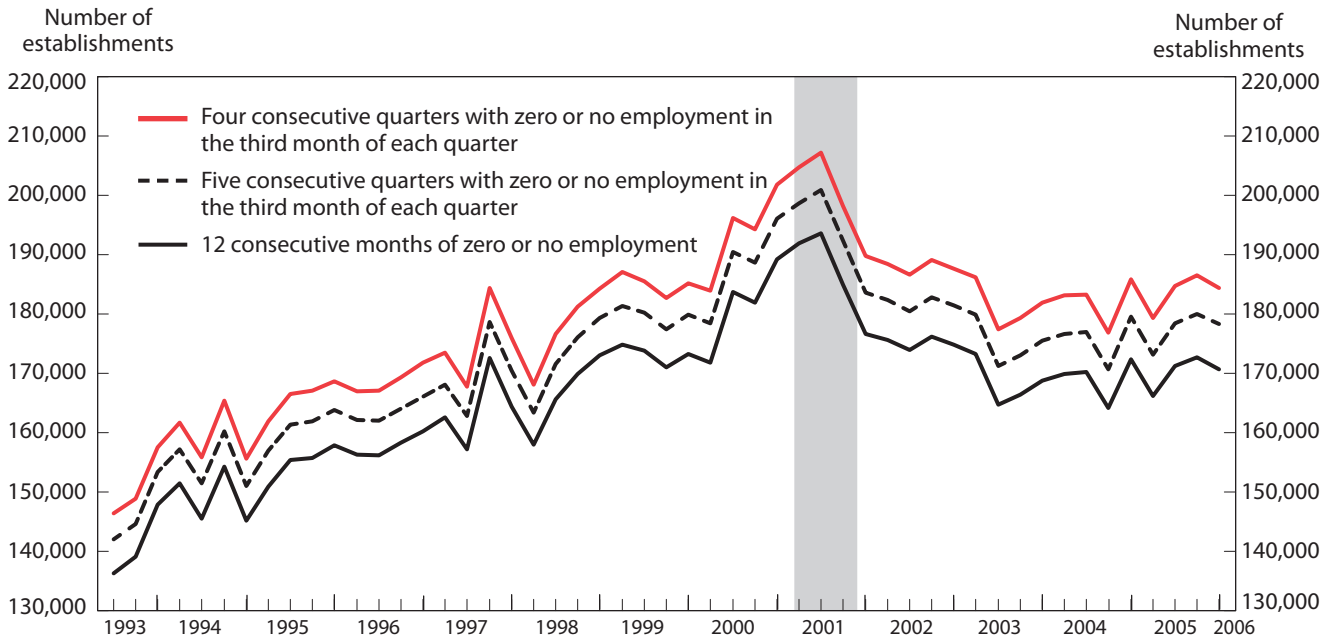
NOTE: Shaded bar denotes National Bureau of Economic Research (NBER)-designated recession (March 2001–November 2001).

Chart 9. Job gains from establishment births, by proposed definition of births, seasonally adjusted, third quarter 1994 to first quarter 2007



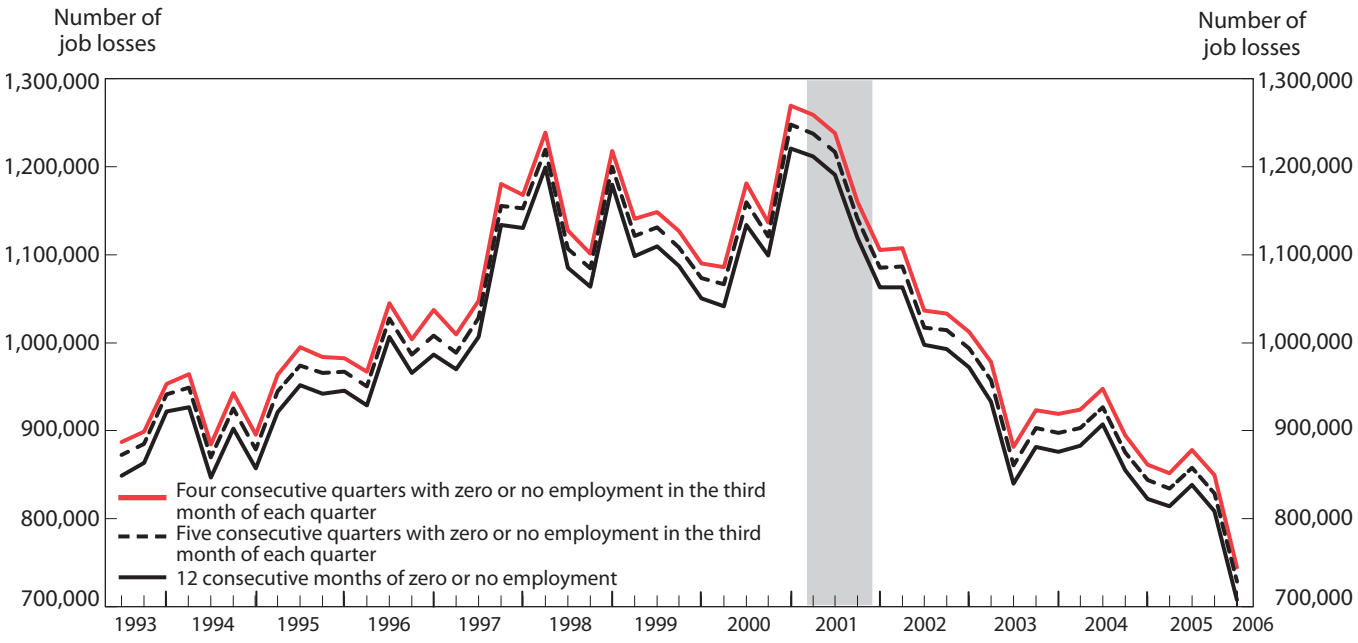
NOTE: Shaded bar denotes National Bureau of Economic Research (NBER)-designated recession (March 2001–November 2001).

Chart 10. Number of establishment deaths, by three different measures of death, seasonally adjusted, third quarter 1993 to first quarter 2006



NOTE: Shaded bar denotes National Bureau of Economic Research (NBER)-designated recession (March 2001–November 2001).

Chart 11. Job losses from establishment deaths, by three different measures of death, seasonally adjusted, third quarter 1993 to first quarter 2006



NOTE: Shaded bar denotes National Bureau of Economic Research (NBER)-designated recession (March 2001–November 2001).

The birth data exhibited an upward trend in the number of births, a declining trend in the total number of jobs created by births, and a downward trend in the average size of births. A decreasing average size of births was found to be likely associated with rising productivity in the U.S. economy. The number of births per 1,000 persons in the labor force has been on the rise since September 2003, following a declining trend that started in the late 1990s.

This research and analysis effort at BLS may result in routine publication of birth and death estimates. These major additions to the BED data series should prove to be useful in assessing aspects of the underlying health of the U.S. economy and in comparing U.S. employment dynamics with those of other countries. □

Notes

[1] J.A. Schumpeter, Capitalism, Socialism, and Democracy (New York, Harper, 1975 [originally published in 1942]), pp. 82–85.

[2] For more details on gross job flows, see: Steven J. Davis, John C. Haltiwanger, and Scott Schuh, *Job Creation and Job Destruction*, (Cambridge, Mass., MIT Press, 1996). See also John M. Abowd, John Haltiwanger, and Julia Lane, "Integrated Longitudinal Employer-Employee Data for the United States," *American Economic Review Papers and Proceedings,* May 2004, pp. 224–29. See also Timothy R. Pivetz, Michael A. Searson, and James R. Spletzer, "Measuring job and establishment flows with BLS longitudinal microdata," *Monthly Labor Review*, April 2001, pp. 13–20.

[3] See Timothy Dunne, Mark J. Roberts, and Larry Samuelson, "Patterns of Firm Entry and Exit in U.S. Manufacturing Industries," *Rand Journal of Economics*, Winter 1988, pp. 495–515; Timothy Dunne, Mark J. Roberts, and Larry Samuelson, "Plant Turnover and Gross Employment Flows in the U.S. Manufacturing Sector," Journal of Labor Economics, January 1989, pp. 48–71; Steven J. Davis and others, *Job Creation and Job Destruction*; James R. Spletzer, "The Contribution of Establishment Births and Deaths to Employment Growth," *Journal of Business and Economic Statistics,* January 2000, pp. 113–126; Christopher L. Foote, "Trend Employment Growth and the Bunching of Job Creation and Destruction," *Quarterly Journal of Economics,* August 1988, pp. 809–834. For a comprehensive review of employment dynamics, see Richard L. Clayton and James R. Spletzer, "Business Employment Dynamics," National Bureau of Economic Research, forthcoming. The survival of business establishments has been discussed in Amy E. Knapp and Merissa C. Piazza, "Business Employment Dynamics data: survival and longevity, II," *Monthly Labor Review*, September 2007, pp. 3–10.

[4] For a complete description and analysis of Business Employment Dynamics data series, see James R. Spletzer, R. Jason Faberman, Akbar Sadeghi, David M. Talan, and Richard L. Clayton, "Business Employment Dynamics: new data on gross job gains and losses," *Monthly Labor Review,* April 2004, pp. 29–42.

[5] See Nadim Ahmad, "A Proposed Framework for Business Demography Statistics," Organization for Economic Cooperation and Development, Statistics Directorate STD/DOC(2006)3, October 2006. Many of the methodological and measurement differences regarding birth, death and other concepts related to business demography statistics have been discussed and resolved in a joint effort by the Organization for Economic Cooperation and Development and EUROSTAT in a recently published handbook entitled "EUROSTAT-OECD Manual on Business Demography Statistics," on the Internet at **www.oecd.org/document/34/0,3343,en_2649_34233_39913698_1_1_1_1,00.html** (visited Dec. 15, 2008).

[6] Business Dynamics Statistics is another Census Bureau Program, and it is similar to Statistics of U.S. Businesses. See **www.ces.census.gov/index.php/bds/bds_overview** (visited Dec. 15, 2008).

[7] See **www.census.gov/csd/susb/defterm.html** (visited Dec. 15, 2008).

[8] *Ibid*.

[9] For more information on Statistics of U.S. Businesses, see Ron S. Jarmin and Javier Miranda, "The Longitudinal Business Database, on the Internet at **www.ces.census.gov/index.php/ces/cespapers?detail_key=101647** (visited Dec. 15, 2008); to open the document, click on "View Paper." See also Catherine Armington, *Development of Business Data: Tracking Firm Counts, Growth, and Turnover by Size of Firms*, SBA Office of Advocacy, Small Business Research Summary No. 245.

[10] James R. Spletzer, "The Contribution of Establishment Births and Deaths to Employment Growth," *Journal of Business and Economic Statistics,* January 2000, pp. 113–26.

[11] For the private business and private nonfarm business sectors, BLS defines the growth rate of multifactor productivity as "the growth rate of output less the growth rate of combined inputs of combined labor and capital." See **www.bls.gov/bls/glossary.htm#M** (visited Dec. 15, 2008).

[12] Birth and death rates are defined as the number of births or deaths divided by total active establishments, and active establishments are the counts of establishments with positive employment in the third month of the current quarter. To be consistent with the BED program's methodology, the number of establishments in the current quarter is averaged with the number of establishments in the previous quarter, and the resulting figure is used as the denominator in calculating the rates.

[13] See Business demography in Europe: Results for 10 Member States and Norway, Eurostat, 2004, available online at **http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-DV-04-001/EN/KS-DV-04-001-EN.PDF**. See also S. Michael Camp, *The Innovation-Entrepreneurship NEXUS* (Powell, Ohio, Advanced Research Technologies, LLC, 2005), available online at **www.sba.gov/advo/research/rs256tot.pdf** (visited Dec. 15, 2008).

Expenditure patterns of young single adults: two recent generations compared

Differences in spending patterns for young, never-married adults in 2004–05 and their counterparts in 1984–85 may reflect differences in demographics; however, whether the changes indicate an increase or decrease in economic status remains unclear

Geoffrey Paulin

For many Americans, the age of 21 is a major point of demarcation in one's life cycle. This age marks the start of full legal adulthood—that is, the age at which the young person is no longer considered a minor and can freely engage in all legal activities, such as renting or purchasing a home. By age 21, many Americans have completed their formal education, and many more will do so during their twenties.[1] In addition, numerous individuals in this age group are starting on their first jobs leading to a career, and consequently, they face many new challenges. Achieving and maintaining financial independence can be difficult and has long-term ramifications for young adults and others in society. After all, income and spending patterns established in youth will affect one's ability not only to save for the purchase of a home, provide for a family—including future children's education—and live well in retirement, but also to contribute toward programs such as Social Security for current retirees. Clearly, then, understanding the economic status of young single adults is important for society as a whole, especially when substantial structural changes in the economy occur, as they have during the last generation.

Indeed, the changes that have taken place may lead to outcomes that differ from what has happened in the past. On the one hand, there has been a persistent belief, based on experience, that the current generation of Americans will be better off economically than the previous generation. On the other hand, since the 1990s, much literature has suggested that that belief may not be true anymore.[2] This article examines expenditure and income patterns for single, never-married young adults (persons aged 21 to 29 years) who were interviewed in 2004–05 and compares the patterns with those exhibited by single young adults 20 years earlier. The aim of the comparison is to assess the economic status of the two groups of singles in each period.

Before starting the analysis, it is important to keep in mind that many factors describe one's economic status and none by itself can provide a complete answer to the question "Who was better off when?" Each measure has its own inherent strengths and limitations that must be considered before attempting to draw conclusions.

The data

The main source of data used in this article is the Interview Survey, a component of the Consumer Expenditure Survey (CE). The CE is the most detailed source of expenditure information collected directly from households by the Federal Government. In addition, data on income and other demographics are collected. Collected periodically throughout most of the 20th century, consistent data

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from the Interview Survey are available for analysis on a quarterly basis from 1984 onward.

Participants in the Interview Survey are visited once every 3 months for five consecutive quarters. In each of these interviews, respondents are asked to report expenditures that occurred during the weeks prior to the interview. For the initial interview, the relevant period is 1 month. For the second through fifth interviews, the relevant period is 3 months. Expenditures reported in the first interview are used only for bounding purposes—that is, to ensure that respondents do not report expenditures for any item(s) in any subsequent interview(s) that they have already reported in the current interview. Only data from the second through fifth interviews are used in publication of the CE data and in the analyses conducted in this study.

The Interview Survey is conducted on an ongoing basis, with different respondents participating in different interviews during the same timeframe. That is, in any particular month, some participants are interviewed for the first time, some for the fifth. When the fifth interview is completed, the participants are dropped from the sample and replaced by new ones. In this way, about 20 percent of the sample consists of new participants each quarter. In addition, if the interviewer visits the address and finds that the original participant no longer lives there, the interviewer attempts to continue the process with the new residents at the address. For example, if the original participant completed the third interview, the interviewer asks the new participant for certain demographic and other information, but otherwise continues to ask questions normally asked in the fourth interview. In any case, each quarter of data is considered to be an independent sample, even though information from the same participants is collected in more than one quarter.[3]

Finally, participants in the survey are selected from the total U.S. civilian noninstitutional population. Participants may live in urban or rural areas and in structures such as houses, condominiums, apartments, and group quarters (for example, college dormitories). However, military personnel living on base, residents of nursing homes, and those in prisons are not included in the sample.[4]

Terms and definitions

Consumer units. The basic unit of analysis in the CE is the *consumer unit*, defined as members of a household related by blood, marriage, adoption, or some other legal arrangement; a single person living alone or sharing a household with others and who is financially independent; or two or more persons living together who share responsibility for at least 2 out of 3 major types of expenses—food, housing, and other expenses. Note that a *household* and a consumer unit are not always the same thing. A household is the physical dwelling in which a person or family resides, and it may contain many consumer units. For example, two roommates sharing an apartment may purchase their own food, pay their own half of the rent, and otherwise provide for their own expenses. They then share the same household, but are separate consumer units.

Expenditures and outlays. Technically, this article examines *outlays*, which are similar, but not identical, to *expenditures*. Both expenditures and outlays consist of the transaction costs, including taxes, of goods and services. They also include spending for gifts for persons outside the consumer unit, but exclude business purchases. However, expenditures include the full cost of each purchase, even though full payment may not have been made at the date of purchase.[5] Outlays include periodic credit or installment payments for major items already acquired, such as automobiles.[6] For example, if a consumer purchases a new automobile during the 3 months prior to the interview (that is, the "reference period"), the full cost of which is $30,000, then, under the definition of "expenditure," the consumer is taken to have spent $30,000 during the reference period. However, if the consumer financed the purchase with a loan and made payments of $500 each month of the reference period, then, under the definition of "outlays," the consumer is taken to have spent $1,500 during the reference period, plus any additional amount spent on a downpayment or a similar fee.[7] In addition, for homeowners, mortgage principal payments, if any, are excluded from the expenditure computation; for outlays, principal payments are included.[8]

Although expenditures are useful to analyze in many contexts, outlays are used in the analysis that follows because they provide a better view of monetary flows for young consumers, who presumably have less in savings or investments on which to rely for purchases and who therefore may depend on loans for financing more than do older consumers.[9]

Adjustment for expenditures for food at home. Prior to 1988, respondents to the Interview Survey were asked to report usual monthly expenditures for food at home during the reference period. Starting in 1988, respondents were asked to report usual *weekly* expenditures instead. Due to this change in the questionnaire, expenditures for food at home are not directly comparable over time. This incomparabil-

ity is evidenced by a large increase in the average for these expenditures for young single adults from 1987 to 1988 (almost 45 percent), which is inconsistent with all other year-to-year changes in these expenditures from 1984 to 2005. Therefore, prior to any analysis, 1984–85 data on food at home are adjusted to account for this change to the extent possible. Outlays that include food at home as a component, either directly (for example, total food outlays) or indirectly (for example, outlays for all other items, which are computed by subtracting several expenditures from total outlays), are recomputed with the use of the adjusted expenditures for food at home. (Details concerning the change in the questionnaire and the computation of the adjustment factor are given in "Adjusting expenditures for food at home," in the appendix, pp. 40–43.)

Group of interest: young single adults. In this article, the main analysis is performed using data from young, single, never-married adults aged 21 to 29 years who constitute their own consumer units.[10] The group is limited to single-member consumer units in order to facilitate comparisons across time. For example, if all consumer units that include at least one 21- to 29-year-old are compared, changes in patterns may be due solely to changes in the composition of these units: if there are more (or fewer) married couples, single parents, or other non-single-member units in the later period, expenditure patterns for the group as a whole will appear to differ, even if there has been no change when only married couples, single parents, or other non-single-member units are compared. In addition, the sample is limited to never-married singles because singles who were previously married may have very different expenditure or other patterns based on differences in their life experiences or differences in income resulting from their unions. These patterns may even include expenditures for a child who lives in a consumer unit different from that of the previously married parent. Therefore, to remove the potential influence of these factors on the analysis, only never-married singles are included, wherever possible.

Quarterly outlays or annualized outlays? In the Interview Survey, data for expenditures and outlays are collected quarterly in most cases. That is, respondents are usually asked to report values for expenditures or outlays that occurred during the 3 months prior to the interview. For convenience, the data for expenditures and outlays presented in this article are annualized prior to analysis. That is, quarterly values are multiplied by 4. However, the annualized values do not represent calendar-year spending. For example, respondents interviewed in January 1984 reported outlays that occurred between October and December 1983. Similarly, respondents interviewed in February 1984 reported outlays that occurred between November 1983 and January 1984, thus crossing years. Also, multiplying an individual's quarterly outlays by 4 may not accurately represent what that individual actually spent during the 12-month period of interest. However, on average, this approach provides a reasonable estimate of outlays for a 12-month period.

Real dollars or nominal dollars? In performing economic comparisons across time, it is essential to control for changes in prices, because changing prices affect purchasing power. That is, if a person spent $1 for apples yesterday, but $2 today, then the person did not buy more apples today if the price of apples doubled since yesterday. Price indexes are often used to convert *nominal* (that is, reported) dollars into *real* (that is, price-adjusted) dollars, either by converting yesterday's expenditures into today's dollars or by converting today's expenditures into yesterday's dollars. (For more information on this topic, see "Real or nominal expenditures?" in the appendix, pp. 39–40.)

Sample or population? In conducting the CE, it is impossible to interview every consumer unit in the United States (*the population*). Therefore, a representative group is interviewed. The members of this group constitute the *sample*. To obtain population estimates, each consumer unit in the sample is weighted by the number of consumer units it represents. In 1984–85, there were 2,359 consumer units of interest sampled; as shown in table 1, together they are estimated to represent nearly 4.9 million consumer units in the population. In 2004–05, there were 2,158 consumer units of interest sampled, representing about 4.6 million consumer units in the population.[11]

Statistical significance. Because data compared across groups come from samples of each group, rather than entire populations, it is important to consider the probability that differences in outcomes are the result of actual differences in the population and not due to chance. Depending on the type of sampling performed, different formulas are available to compute the *statistical significance* of the outcome—that is, the probability that the difference was due to chance alone, rather than being a real difference in outcomes. In the analysis that follows, when results are described as "statistically significant," the outcome is not likely to have been due to chance alone. (Tests used to measure statistical significance are described in "Measuring statistical significance: types and computations of *t*-statistics," in the appendix, pp. 43–44.)

Table 1. Demographic characteristics of never-married young adults (aged 21 to 29 years), 1984–85 and 2004–05

[In percent]

Characteristic	1984–85	2004–05
Estimated population (rounded)	4,854,000	4,610,000
Percent distribution		
Educational status:		
Highest level attained:		
High school diploma or less	26.2	17.8
College experience	73.8	82.2
Attended college	[1]40.1	[2]45.3
Graduated college	[3]33.7	[4]36.9
Currently enrolled in college:		
Full time	25.6	35.7
Part time	7.0	7.4
Not at all	64.7	53.4
Not eligible[5]	2.7	3.5
Housing tenure:		
Homeowner	8.0	15.8
Renter	92.0	84.2
Race and ethnic origin:		
Hispanic	3.5	7.1
Non-Hispanic	96.5	92.9
Black	8.3	10.1
White and other	88.2	82.8
Men	57.6	59.3
Women	42.4	40.7
Size of dwelling:		
Homeowners		
Rooms, other than bathrooms	5.0	5.3
Bedrooms	2.4	2.5
Bathrooms	1.2	1.5
Half baths	.2	.2
Renters:		
Rooms, other than bathrooms	4.1	4.2
Bedrooms	1.8	2.1
Bathrooms	1.2	1.3
Half baths	.1	.1

[1] Includes those who report attending or completing 1 to 3 years of college and those who report attending, but not completing, 4 years of college.

[2] Includes those who report some college, but no degree, and those who report receiving an associate's degree (occupational/vocational or academic).

[3] Includes those who report completing 4 years of college or attending graduate school.

[4] Includes those who report receiving a bachelor's degree, master's degree, professional school degree, or doctoral degree.

[5] Did not garaduate high school.

Limitations of the data

A complete description of economic well-being includes measures that are not available in the data analyzed. For example, the CE does not collect information about expectations of the future. Presumably, the anticipation of a particular event or outcome in the future influences expenditure patterns in the present. For example, if one expects to make a major purchase (for instance, a home or a car) soon, one may save more in the present than someone who does not expect to do so for some time; or, as discussed subsequently, the more one expects to earn in the future as the result of obtaining a college degree, the more one is willing to pay for it. As another example, rapid changes in technology, such as those which occurred during the period under study, presumably have ramifications for economic well-being that are impossible to measure by examining expenditures alone.[12]

In addition, a consideration of assets and liabilities is excluded from this analysis. Although the CE collects information on assets and liabilities, the information is not detailed enough for purposes of analysis. For example, some information about levels of debt and to whom it is owed is collected; however, information about many sources of debt, including school loans, is not collected separately from information about other debt.[13] Furthermore, the CE data on assets and liabilities are not considered as reliable as expenditure data, due to nonresponse.[14] Finally, unlike expenditure data, which are collected during each interview, data on assets and liabilities are collected only during the fifth interview. Therefore, not all consumer units that are interviewed have an opportunity to provide information about assets and liabilities.[15] Despite these data limitations, young singles presumably make expenditure decisions with the preceding factors in mind. Consequently, those factors are implicitly included in the analysis that follows.

Demographic analysis

Before comparing groups, it is important to understand their basic demographic characteristics. Changes in demographics, such as educational attainment, may explain differences in economic attainment. For example, a higher percentage attending college may indicate a better trained workforce whose members are more able to enter professional or skilled careers. At the same time, changes in demographics may be associated with changes in tastes and preferences that would change expenditure patterns.

Population share. The data indicate that, despite growth in the U.S. civilian noninstitutional population, the number of young adults (of any marital status, living alone or with others) in that population has decreased over time.

For example, the number of consumer units in the U.S. population increased from more than 90.5 million in 1984–85 to more than 116.6 million in 2004–05. At the same time, the approximate number of 21- to 29-year-olds who lived in consumer units of any size decreased from 37.5 million in 1984–85 to 34.3 million in 2004–05. As a result, the number of consumer units reporting at least one member between the ages of 21 and 29 fell from nearly 27.7 million (almost 31 percent) to 25.7 million (22 percent).

Nevertheless, despite the overall decrease in the number of young adults over this time span, the estimated number of young *single* (never-married) adults increased from about 17.2 million to 20.3 million. In addition, the number of consumer units that included at least one young single increased from 14.5 million to 16.7 million, and the values increased dramatically for consumer units with at least one young adult of *any* marital status. For example, in 1984–85, more than half (53 percent) of these consumer units included at least one young *single* adult, with an average of 0.6 per consumer unit. In 2004–05, nearly two-thirds (65 percent) included at least one young single adult, with an average of nearly 0.8 per consumer unit.

Presumably, these findings indicate that although, due to demographic shifts, there were fewer young adults in the population, they were marrying later in life in 2004–05 than they were in 1984–85.[16] If so, whether this trend indicates an improvement or a deterioration in that age group's economic status is not clear. On the one hand, the decision to wait may reflect the desire to complete a degree or establish a career before undertaking such an important commitment as marriage. On the other hand, it may be that young persons still want to marry early, but find it too difficult financially. At any rate, as evidenced by this discussion, the trend toward later marriage again underscores the importance of narrowing the subject of study to young singles. Attempting to include marriage, and even children, into the analysis introduces comparisons that are too complex to complete meaningfully.

Education. According to table 1, in 2004–05 young singles reported higher levels of educational attainment than they did in 1984–85.[17] From the earlier survey period to the later one, the percentage reporting a high school diploma or less dropped substantially (from 26 percent to 18 percent), while the percentage reporting at least some college experience increased notably (from 74 percent to 82 percent).[18] In addition, those enrolled in college full time increased their share from a little more than 1 in 4 (26 percent) to well over 1 in 3 (36 percent).[19]

Higher education is usually considered to be a benefit, leading to higher pay for professional or skilled workers. This is especially true as changes in technology and communications during the intervening years have created jobs, such as computer technicians and administrators, that may require at least some college education for a job-seeker to qualify for employment. However, at the same time, the Consumer Price Index (CPI), which measures changes in prices for goods and services that urban U.S. consumers purchase, shows that the cost of college tuition and fees more than quadrupled—rising 365.3 percent—from January 1984 to December 2005.[20] This increase is in contrast to one of 93.1 percent—less than double—for *all* goods and services over the same period. Thus, young singles in the later period may have been receiving education in larger numbers, but they were facing considerably higher prices than their historical counterparts. In order to benefit from their education, at least in a purely financial way, expected wages and salaries or other income would have to rise substantially to compensate for the increased cost of education.

Housing status. In recent years, there has been much discussion regarding students moving back into their parents' homes after college, rather than into their own dwellings. Many reasons for this development have been posited, and some would suggest that it is due to a decrease in economic well-being—for example, because nowadays students are unable to afford housing on their own. However, others suggest that moving back with parents is a benefit to young adults, as it allows them to forego rent and spend savings therefrom on consumer goods.[21] It could also be that young adults who choose to live with parents do so in order to save for a downpayment on a nicer home than they could have afforded if they had to pay housing expenses while saving.

Whatever the case, the CE data do not support this conclusion. To demonstrate, the sample is expanded to include all consumer units consisting of *at least* one never-married adult aged 21 to 29 years. Expanding the sample to take these individuals into account ensures that young singles who live with their parents, as well as those who live with others but who do not pay rent or are otherwise not financially independent, are included in the analysis. In this new sample, 35 percent of young singles were reported to be the child of the reference person[22] in 2004–05, compared with 48 percent in 1984–85. In addition, the percentage reporting that they were the reference person increased from 39 percent in 1984–85 to 43 percent in 2004–05.[23]

Another key factor in considering well-being is that, despite a sharp increase in home prices in many U.S. cities in recent years, young single adults in 2004–05 were more likely to own their homes than they were in 1984–85. The percentage of young single homeowners doubled from 8 percent to 16 percent during that time. Usually, homeownership is considered to indicate higher economic status than renting. Owning a home provides the purchaser with not only living quarters, but a valuable asset against which to borrow in case of emergency. Of course, if young adults in the later period were buying homes with riskier, more exotic mortgages that were not available in the earlier period, that could have led to worse outcomes than renting. However, the answer to that question is beyond the scope of the CE data.

Economic analysis

Macroeconomic factors. One indicator of economic conditions is the real value of *gross domestic product* (*GDP*). GDP measures the value of all goods and services produced in an economy.[24] According to this measure, both groups look like they were about equally well off. Each group lived and worked during a period of economic growth. Real GDP expanded both from 1983 to 1985 (by 11.6 percent) and from 2003 to 2005 (by 6.8 percent).[25] Interestingly, the two groups also grew up in similar historical contexts as far as economic growth is concerned. In this regard, real GDP grew at an average annual rate of about 3.3 percent from 1964–65 to 1984–85 and 3.0 percent from 1984–85 to 2004–05,[26] while the population grew at an average annual rate of about 1 percent over each of the two periods.[27] Therefore, each group experienced periods in which real GDP grew faster than population growth, indicating that there were more goods and services per person available to be consumed or otherwise used in the economy.

Though important, the GDP values reflect changes for the economy as a whole—not necessarily for the group of interest. Therefore, other macroeconomic indicators also are useful to examine. One of these is the *unemployment rate*. This measure describes the ratio of persons actively seeking work, but unable to find it, to all persons in the labor force, which includes the former group as well as those who currently hold jobs.[28] Although the available measures are not precise or specific to the group in question, there are historical data readily available to describe outcomes.[29] Using such data enables rates for young (never-married) singles to be computed for those aged 20 to 24 years. Data also are available for adults aged 25 to 29 years, but no data are available for never-married persons in that age group.

Both sets of data show a decline of nearly 2 percentage points in unemployment rates for young adults in each age group. Although they experienced higher rates of unemployment than the general population (all adults aged 20 years and older) did in each period (about 6.5 percent in 1984–85 and 4.7 percent in 2004–05), the decline in rates for young adults indicates that they were better off in the later period than the earlier one.[30] The following tabulation shows unemployment rates for young singles and for all young adults for 1984–85 and 2004–05:

	Young singles only (20 to 24 years)		*All young adults aged 25 to 29 years*	
Category	*1984–85*	*2004–05*	*1984–85*	*2004–05*
Total.....	11.7	9.6	7.8	6.0
Men.....	12.8	10.6	7.6	5.8
Women	10.2	8.3	8.0	6.2

In addition to these unemployment figures, certain related macroeconomic factors may have affected economic well-being differently for young adults in the two periods. If so, these factors also support the hypothesis that young adults were better off in the second period. For example, the first group experienced several serious economic recessions from the mid-1970s to the early 1980s that were marked by historically high levels of unemployment. By contrast, there were only two recessions from 1984–85 to 2004–05 (in 1990–91 and 2001), each with peak unemployment rates lower than in the earlier downturns.[31] Although 1984–85 and 2004–05 were each periods of growth in real GDP, the differences in economic outcomes in the preceding years may have affected the abilities of the young adults to secure jobs or savings prior to the years of study or may have affected the finances of those on whom they would normally rely for support, such as parents or other family members.[32] These experiences also may have affected the group's expectations about the future and therefore affected its members' planning.

Microeconomic factors: measures using outlays. In defining the economic status of a particular group, many persons would probably immediately think of income as the appropriate measure. However, outlays are used in this article, for both theoretical and practical reasons.

From a theoretical viewpoint, total outlays reflect not only income received today (that is, current income), but expectations of future income. For example, an applicant seeking a student loan almost certainly knows that his or

her current savings and income are inadequate to cover tuition, but has the expectation that future earnings (enhanced by the degree sought) will more than repay the loan. The sum of current income and expected future income is known as *permanent income*; the idea that consumers spend money on the basis of their permanent income levels is known as the "permanent-income hypothesis."[33] Because outlays are hypothesized to be based on permanent income, they are used as a proxy thereof in this analysis.

Among the practical reasons for using outlays rather than (current) income with CE data is that, prior to 2004, income before taxes was published only for "complete income reporters." In general, complete reporters were those for whom at least one member of the consumer unit (usually the reference person) reported a value for a major source of income, such as wages and salaries. However, even complete income reporters did not necessarily provide a full accounting of income from all sources. For example, the respondent might have provided a value for wage and salary income, but not known or refused to provide the value for interest income. Relying on complete reporters only, then, reduced available information in two ways: Not all respondents were complete reporters, and not all complete reporters provided full income information for analysis. Using total outlays as a proxy for permanent income solves both problems, because values for outlays are either reported or, where appropriate, estimated by various methods.[34]

Using outlays to assess economic status. Perhaps the first answer to come to mind to the question, "Which group is economically better off?" is the answer to another question: "Which group has more income?" As has already been demonstrated, even answering this question is not as straightforward as it might seem. A simple comparison of permanent incomes would make it seem as if the young adults in 2004–05 were better off than those in 1984–85: total annualized outlays for the average young single adult studied rose from $13,145 to $22,744 over the period between the two surveys, an increase of 73 percent! However, in the United States, total annualized outlays probably would be observed to increase during *any* 20-year period since World War II, simply because of inflation, which is defined as a rise in prices for goods and services when other factors (such as size and quality) remain essentially constant. Given this situation, it is more accurate to compare *real* outlays (those adjusted for price change with the use of the CPI for all goods and services) than *nominal* outlays (unadjusted figures, as cited earlier). The 2-year average of the annual CPI for all goods and services rose nearly 82 percent from its base in 1984–85 (105.8) to its value in 2004–05 (192.1). That means that the $13,145 spent in 1984–85 would purchase about the same amount of goods and services as would $23,867 in 2004–05. By this measure, young adults in 2004–05 were *worse* off than their earlier counterparts, experiencing a decrease of almost 5 percent ($23,867, compared with $22,744) in their real outlays. However, caution must be used in interpreting this finding, because the difference in means is not statistically significant.

Of course, the preceding finding relies on certain assumptions, namely, that the same goods and services are purchased in each year by each group, that qualities remain unchanged, and so forth. Even so, by this measure, young adults in the later period appear to be worse off than they were in the earlier period. But perhaps the same is true of all other consumers. If so, is the decrease in purchasing power experienced by young singles larger, smaller, or about the same as that experienced by others? In other words, how are young adults faring compared with the rest of the population?

Comparing the changes in real total outlays from 1984–85 to 2004–05 for young singles with those of other single, never-married adults who also were surveyed during those periods is one way to attempt to answer this question. Before proceeding, however, it is useful to remove outlays for food at home from both groups, because of the change in questionnaire occurring in 1988. As noted earlier, young, single, never-married adults exhibit a large change (almost 45 percent) in food-at-home expenditures from 1987 to 1988 that is inconsistent with annual changes in these expenditures for this group in other years. Other single, never-married adults exhibit a similarly large (more than 38 percent) and inconsistent change in these expenditures. However, the factors required to adjust their expenditures are almost certainly different from those required for young single adults. Performing this adjustment would therefore add one more element of uncertainty to the comparison: if differences are found in the rates of change of total outlays for these groups, how much will be due to actual differences in expenditure patterns and how much to qualitative differences in the estimated factor for adjustment of food-at-home expenditures for each group? Therefore, for simplicity, outlays less food at home are compared.

For young singles, real total outlays less food at home fell 3.8 percent over time, from $21,613 in 1984–85 to $20,795 in 2004–05. For other singles, real total outlays less food at home increased 6.1 percent over the same

period, from $24,415 to $25,906. Although this finding appears to indicate that young singles are falling behind in permanent income while others are gaining, it is not conclusive. First, neither change is statistically significant, indicating that the differences in means observed for each group across time may be due to chance alone. Second, the increase in outlays for other singles may be due to changing demographics within this group. For example, the proportion of singles aged 35 to 54 years increased from 39 percent in 1984–85 to 56 percent in 2004–05. In each year during the period examined, never-married adults in both age groups had the highest levels of average total outlays. Therefore, even if average real total outlays for singles aged 35 to 54 years have not changed over time, the fact that there are more members of that group in the sample will increase the mean for the entire sample of other singles.

Using shares to measure outcomes

Another useful tool for comparing the economic well-being of different groups is derived from a finding known as *Engel's proposition*. In 1857, Prussian economist Ernst Engel reported that, as income increases, the share of total expenditures allocated to food decreases.[35] The assumption in the analysis presented in this article is that the smaller the share of total expenditures a consumer allocates to expenditures for basic needs such as food, the larger is the share available to allocate to other items. Therefore, understanding the allocation of shares of total outlays provides insight into the economic well-being of the groups studied. (For more information on analyzing shares, including caveats associated with this type of analysis, see "Analyzing shares," in the appendix, pp. 38–39.) Table 2 shows shares of total outlays that young adults allocated to selected goods and services in 1984–85 and 2004–05.

Several findings are of note. First, the share of outlays allocated to food has declined over time—by more than 2 percentage points, in fact. Taken alone, this may indicate an increase in economic well-being. However, food outlays can be decomposed into two parts: outlays for food at home (for example, food purchased at grocery stores) and outlays for food away from home (for instance, food purchased at restaurants). Analyzing these components separately is useful, because they represent two different types of spending. Because of the convenience, change in ambience, and typically higher cost associated with meals at restaurants, these meals are considered to be a treat for many consumers; therefore, it is reasonable to suppose that an increased share for food away from home indicates an increase in well-being, while an increased share for food at home indicates a decrease in well-being. Over the period examined, the shares for food at home *and* for food away from home both decreased. Each of these changes is statistically significant, as are many of the other changes in share shown in the table. However, the directions of the changes in the components of food spending are contradictory, one indicating an increase, and the other a decrease, in economic well-being. Resolving this apparently paradoxical outcome is the topic of the next section. (See also "Analyzing shares," in the appendix, pp. 38–39, especially p. 39.)

Other measures using outlays

Although analyzing shares of outlays provides an easy, intuitive way to compare economic statuses, it has its limitations. In historical comparisons, one major limitation is, once again, price change. When outlays within a certain period are compared, it is usually assumed that all groups face roughly the same prices. However, across different periods, prices for some goods and services may have risen, perhaps rapidly, while others stayed the same or even dropped. When prices are not changing at a uniform rate, the shares can be affected in ways that do not accurately reflect the underlying idea of analysis using a framework based on Engel's proposition. (See "Analyzing shares," in the appendix, pp. 38–39.) Therefore, comparing real (price-adjusted), rather than nominal (contemporaneous), outlays for specific items is a useful way of seeing whether a decrease in share is due to less consumption or a change in prices.

The CPI for food at home rose more than 81 percent from 1984–85 (103.6) to 2004–05 (188.0). Therefore, the real-dollar expenditure for food at home in 1984–85 was about $2,252, which is more than the $1,950 spent in 2004–05. Similarly, the CPI for food away from home rose about 79 percent from 1984–85 (106.3) to 2004–05 (190.5). Therefore, the real-dollar expenditure for food away from home in 1984–85 was about $1,437, which is more than the $1,073 spent in 2004–05. In each case, the real-dollar expenditure in 1984–85 is statistically significantly different from the value observed in 2004–05. Consequently, these findings are consistent with the Engel analysis, which indicates a higher economic well-being in the second period than in the first due to a decrease in expenditures for food at home, but a lower economic well-being in the second period due to a decrease in expenditures for food away from home.

Further analysis reveals another interesting finding: Although the percentage of respondents reporting expenditures for food at home remained unchanged (almost 97

Table 2. Average annualized outlays and shares, young single adults, 1984–85 and 2004–05

Outlay category	Average annualized outlay			Share (percent)		
	1984–85		2004–05			
	Nominal dollars	Real 2004–05 dollars	Nominal/ real dollars	1984–85	2004–05	*t*-statistic
Total outlays[1]	$13,145	$23,866	$22,744	100.0	100.0	…
Food, total less trips[1]	2,043	3,710	3,022	15.5	13.3	[2]–4.49
Food at home, less trips[1]	1,241	2,254	1,950	9.4	8.6	[2]–2.55
Food away from home, less trips	802	1,456	1,073	6.1	4.7	[2]–4.75
Shelter and utilities	3,113	5,652	7,249	23.7	31.9	[2]9.88
Owned dwellings	353	641	1,326	2.7	5.8	[2]4.53
Rented dwellings	2,039	3,702	4,602	15.5	20.2	[2]5.99
Utilities	722	1,312	1,322	5.5	5.8	1.21
Apparel and services	821	1,490	757	6.2	3.3	[2]–8.84
Transportation	2,320	4,213	3,494	17.7	15.4	[2]–2.44
Cars and trucks (new)	606	1,100	457	4.6	2.0	[2]–4.74
Cars and trucks (used)	462	840	853	3.5	3.7	.32
Other vehicles	31	57	33	.2	.1	–1.10
Gasoline and motor oil	583	280	969	4.4	4.3	–.86
Maintenance and repair	304	1,058	398	2.3	1.7	[2]–2.37
Vehicle insurance	211	552	487	1.6	2.1	[2]3.40
Public transportation	49	383	76	.4	.3	–.62
Vehicle rental	74	89	223	.6	1.0	[2]3.10
Health care	256	466	478	2.0	2.1	.55
Entertainment	703	1,277	1,129	5.4	5.0	–.79
Travel and trips	631	1,146	668	4.8	2.9	[2]–5.47
Education	558	1,012	1,760	4.2	7.7	[2]2.55
All other outlays[1]	2,699	4,900	4,186	20.5	18.4	[2]–2.45

[1] Item or subcomponent computed with the use of adjusted values for food at home in 1984–85; see "Adjusting expenditures for food at home," in the appendix, pp. 40–43.

[2] Indicates statistically significant difference in shares when periods are compared.

NOTE: To convert to real 2004–05 dollars, nominal 1984–85 dollars are multiplied by 192.1 (the average CPI for 2004–05) and divided by 105.8 (the average CPI for 1984–85). Components may not add to aggregate values

percent in each period), the percentage reporting expenditures for food away from home fell nearly 5 percentage points (from 90.8 percent to 86.3 percent). This finding supports a diminution in economic well-being, given the smaller percentage of young singles who report expenditures for food away from home.

However supportive, by themselves these numbers do not conclusively indicate that the second group was worse off than the first. For example, an increased variety of frozen and prepared foods in the second period may mean that consumers can enjoy, at home, the convenience of food away from home at lower, grocery store prices. In addition, the consumer can make one trip to the grocery store each week and purchase all meals at once, rather than visiting a fast-food establishment every day, thus saving time. If all this is true, then the decreased share for food away from home may indicate an *increase* in well-being. Yet, if it is true, it is inconsistent with the fact that real expenditures for food at home fell between the two periods; that is, given that the price index for food at home rose between the two periods, purchasing more food at home and less food away from home should lead to *higher*, not lower, real-dollar expenditures for food at home in the second period. Still, this outcome is not implausible. The price index for food at home is based on what *all* consumers purchase, and not solely on what young singles purchase. If young singles are purchasing more food at home, and the prices of the foods they tend to purchase have increased less than the prices of other types of food at home, then the preceding findings are consistent with the hypothesis described here (that is, that young singles are substituting lower priced foods from grocery or other stores for food

from restaurants). In fact, the CPI for frozen and freeze-dried prepared foods increased less than 48 percent (from 103.8 to 153.2) from January 1984 to December 2005, substantially less than the 81-percent increase in prices already reported for food at home in general.[36] However, to investigate this hypothesis fully requires both further investigation into price increases for specific foods and an examination of data from the CE's Diary component, or Diary Survey, which, unlike the Interview Survey, is designed to collect detailed information on food expenditures. Such an investigation, while interesting for future work, is beyond the scope of this study.

Regardless, expenditures on other goods and services also are useful to examine. First, consider the case of shelter and utilities.[37] The share allocated to these outlays has increased substantially, from less than one-fourth to nearly one-third of total outlays. Again, it is possible that housing attributes account for this change. Now, if outlays for shelter and utilities have risen because young singles are purchasing or renting larger homes, the change in share may be due to an increase in their well-being. However, evidence to suggest such purchases is limited. For example, only the increase in number of bathrooms (see table 1) is statistically significant for both owners and renters. The changes in the numbers of bedrooms and half baths for renters, while statistically significant, are not necessarily economically significant. (For example, the number of bedrooms for those who rent increased from about 1.8 to about 2.1.) Neither homeowners nor renters experienced a statistically significant change in "rooms, other than bathrooms." Although other factors, not measured in the CE, also affect these outlays—for example, the quality of the neighborhood in which the housing exists—the substantial change in these shares, coupled with the considerable increase in housing prices noted in recent years, may be evidence of a diminution of well-being for this group, or at least that the increase in well-being from slightly larger dwellings is more than offset by the increase in outlays. However, these data do not tell the full story. The numbers of rooms, bedrooms, bathrooms, and half baths are all described for the *consumer unit*, yet many of the consumer units sampled actually reside in the same *household*. It is quite possible that numbers of rooms per consumer unit have not changed, but that the number of households in which these consumer units reside has changed; if the number has increased, it could indicate an increase in well-being. To illustrate, consider two young singles sharing a one-bedroom apartment (that is, two separate consumer units sharing one household). Suppose that each roommate is interviewed and reports that the apartment has one bedroom. Then the data would show two separate consumer units, each with one bedroom. Now suppose that one roommate moves into a new apartment, also containing one bedroom. Then, assuming that each of the former roommates still lives alone, the data still show two separate consumer units with one bedroom. Yet, if they prefer to live alone, the constant number of rooms per consumer unit would not reflect the hypothetical increase in their well-being. Fortunately, the data provide information that allows the analyst to distinguish these two cases. That is, it is possible to count the number of consumer units per household to see whether two roommates are sharing one household with one bedroom or two young singles live alone in separate households, each of which contains one bedroom. Analyzed in this way, the results tell a different story: first, in 1984–85, more than one-third (nearly 36 percent) of the young singles studied lived in a household with at least one other person;[38] then, in 2004–05, less than one-fourth (under 23 percent) did. (See table 3.)

Of course, some caution must be used in interpreting these numbers. The data are not edited for consistency, for example. Therefore, it is possible that, due to differences in the way respondents interpret their situations (for instance, one housemate reports the second bedroom, which is being used as a den, as a room other than a bedroom, while the other reports it as a second bedroom), data entry error, or another reason, different numbers of rooms or bedrooms are reported for the same household within or across interviews. Also, some of the information is missing due to nonresponse or some other reason. But assuming that these factors are random each year, the data obtained provide useful information to help measure changes in numbers of rooms available to young single adults. Analyzed in this way, the data show that, regardless of household composition—at least, whether one or more than one person lives in the household—the number of rooms per capita has increased over time. Although the increases are small, they are statistically significant in most cases. Especially because more young singles are the sole occupants of their households, it is more difficult to argue that the increased expenditures for housing noted at the consumer-unit level clearly indicate a diminution of well-being. Those who are the sole occupants of their households may value privacy enough to pay the extra dollars, and if they can afford to do so in larger numbers in the later period than in the earlier period, then they are arguably better off in the later period, or at least any diminution in well-being due to higher housing prices is offset at least partially by an increase in privacy or in the

Table 3. Housing attributes of young singles, households including at least one young single person, 1984–85 and 2004–05

Characteristic	Household includes only young single person			Household includes at least one other person		
	1984–85	2004–05	*t*-statistic[1]	1984–85	2004–05	*t*-statistic[1]
Sample size	1,252	1,401	…	701	410	…
Percent of households with at least one young single person	64.1	77.4	8.91	35.9	22.6	–8.91
Percent owners	10.5	21.1	7.42	([2])	([2])	...
Per capita number of: [3]						
Rooms, other than bedrooms	3.7	3.9	4.62	2.0	2.0	1.68
Bedrooms	1.4	1.7	8.31	.9	1.1	5.99
Bathrooms	1.1	1.2	10.96	.5	.6	4.64
Half baths	.1	.1	3.44	([4])	.1	1.60

[1] Based on test of proportions, where percentages are compared, and difference in means, where number of rooms are compared. (See "Measuring statistical significance: types and computations of *t*-statistics," in the appendix, pp. 43–44 (especially p. 44), for details.)

[2] Results are not computed for multiple-member households. The problem is that, within the household, there can be a mix of owners and renters. For example, the homeowner may rent a room or part of the house to at least one young single person. In addition, in this case the consumer unit that owns the home may be of any composition. That is, the owner may be a young, single person, as defined throughout this study, or may be of a different age or marital status.

[3] These households include at least one young single person as defined in this study who constitutes a unique consumer unit within the household. However, the remaining members may constitute any number of consumer units from one to the number of other members of the household. For example, if a husband and wife with two children rent a room to a young single, the household size is five, but the number of consumer units is two. In this case, the per-capita number of rooms is still computed to be the number of rooms in the household divided by the household size, whether or not the renter has full use of other rooms in the house.

[4] Less than .05.

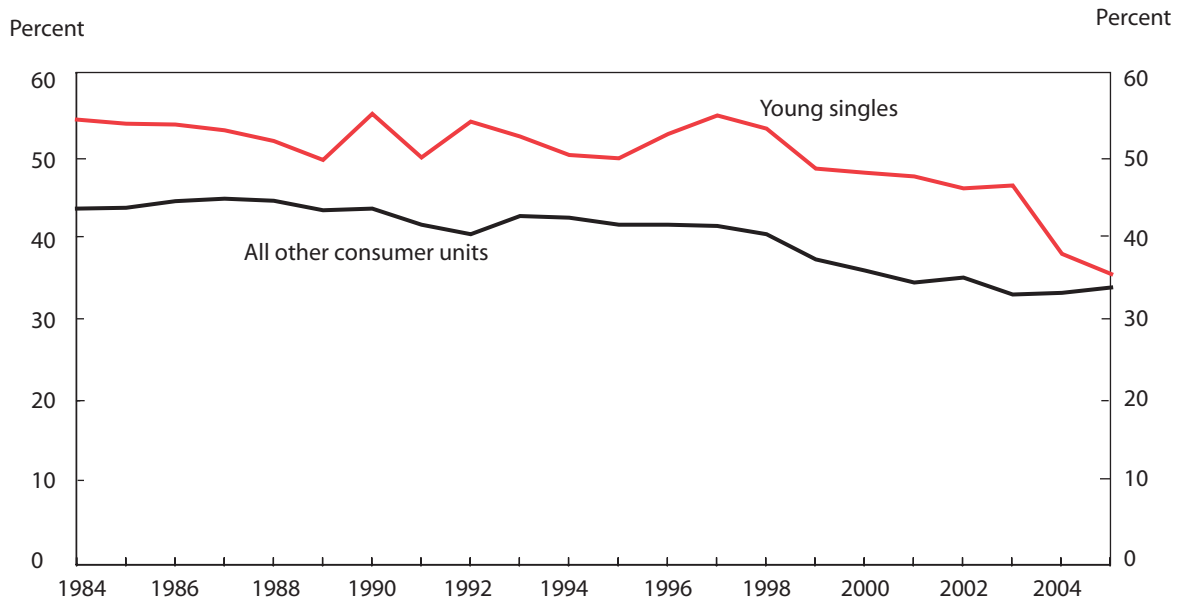
NOTE: Values presented are for the sample and are not weighted to reflect the population. Weights computed in the survey are designed for use with consumer units, not households.

number of bedrooms and bathrooms per capita.

In contrast to housing expenditures, which are necessary for at least a minimal level of economic well-being, travel expenditures are purely discretionary for most consumers. Therefore, an increase in the frequency of purchasing goods or services related to travel or in dollars allocated toward trips presumably indicates an increase in economic well-being. However, for young singles, the share of total outlays allocated to travel has fallen substantially, from 5 percent to 3 percent. At the same time, the percentage of respondents reporting travel expenditures has decreased sharply, from more than half (53 percent) to more than one-third (35 percent). The percentage reporting many of the components of travel expenditures (such as food, lodging, transportation, and entertainment on trips) also has declined. Therefore, the drop in share is not the result of decreased prices, nor is it likely that members of this group are making different lodging arrangements than before (for example, staying with friends or relatives instead of in hotels). Young singles simply appear to be traveling less. However, they are not unique in this regard: The percentage reporting travel expenditures (including the components previously described) has decreased for all other consumer units as well during the period examined. (See chart 1.) Accordingly, rather than decreased prices, *increased* prices may play a role.[39] In addition, these changes in travel expenditures may be explicable by changes in technology. For example, the percentage reporting travel expenditures decreased as e-mail, cellular telephones, and instant messaging became more available. Therefore, consumers in general (and young singles specifically) may be substituting new forms of communication for travel, which would indicate an increase in their economic well-being. That is, young singles in the later period enjoy choices not available to those in the earlier period.[40] However, there is still no perfect substitute for the personal visit. From this perspective, the availability of new technology mitigates the decrease in well-being resulting from less frequent travel, whatever its cause (for example, increased prices), but does not necessarily negate (or outweigh) the decrease entirely.

Of particular interest is the change in shares for educational expenses, which nearly doubled over the period examined. This change is challenging to interpret. The proportion of young single adults enrolled in college full time rose sharply—from just above one-fourth (26 percent) to more than one-third (36 percent); the proportion of part-time students remained unchanged at about

Chart 1. Percent reporting expenditures for travel, 1984–2005



7 percent, while the proportion not enrolled (including those not eligible) declined almost 11 percentage points. (See table 1.) However, those reporting educational expenditures actually dropped slightly—from 26 percent to 24 percent. Of course, not all of the expenditures included in the CE definition of educational expenditures are for college tuition; however, the tuition expenditure accounts for a substantial portion.[41] Although many of these students may be receiving scholarships, participating in deferred payment plans, or working for payment of tuition instead of working for other pay, or may be children of parents who pay their tuition directly to the school, it is likely that those who do make payments were paying much more for their education in 2004–05 than those who did in 1984–85, even after adjustment for general price changes. In support of this claim, recall the increase in college tuition and fees described earlier. The fact that more young adults are attending college either because of a greater opportunity to do so or because of the changing nature of the general economy probably reflects an improvement in economic well-being. However, the fact that the price of going to college has escalated so much means that the expected gains from a college education would have to rise substantially for current students to "break even" with their older counterparts.[42]

Demographic differences among young singles

So far, the analyses presented have focused on young single adults as a group. However, as noted earlier, there are demographic differences within this segment of the population that either may account for changes in the group overall or may be obscured when the group is examined as a whole. For example, an increase in total outlays may be observed because one group has "caught up" to another or because both subgroups have experienced an increase in total outlays but one group has experienced a larger increase than the other. To examine these outcomes, total outlays for selected demographic groups within the young singles sample are compared.

Table 4 shows that, consistent with the larger population of young single adults, no subgroup tested experienced a statistically significant change (increase or decrease) in real total outlays. However, within each subgroup, substantial differences appear in each period observed. For example, total outlays for single men substantially exceed total outlays for single women in each period. Although the gap is larger in 1984–85 (18.5 percent) than in 2004–05 (12.6 percent), the decrease is due to a decrease in total outlays for men, rather than an increase in outlays for women. Nevertheless, the decrease is not statistically significant and

Table 4. Real total outlays, by demographic group, 1984–85 and 2004–05

Demographic characteristic	Real total outlays, 1984–85	Standard error	Real total outlays, 2004–05	Standard error	Percent change in real total outlays	*t*-statistic (change in mean of real total outlays)
All young single adults	$23,866	663.03	$22,744	531.85	–4.7	–1.32
Men	25,585	844.92	23,838	722.68	–6.8	–1.57
Women	21,536	717.51	21,151	637.39	–1.8	–.40
Non-Hispanic:						
White	24,122	557.19	22,977	638.19	–4.7	–1.35
Black	23,416	1,975.59	21,644	1,456.91	–7.6	–.72
Hispanic	18,508	4,047.05	21,585	1,400.21	16.6	.72
High school or less	21,617	1,126.33	19,316	877.42	–10.6	–1.61
Some college	21,283	808.08	19,846	765.83	–6.8	–1.29
College graduate	28,685	1,209.18	27,962	848.94	–2.5	–.49

therefore reveals nothing about the change in relative well-being between young single men and women in this study.

Similarly, Hispanics appear to have the smallest total outlays, on average, in each period, but regardless of the interval studied, the difference in average total outlays is not statistically significant when Hispanics are compared with either group of non-Hispanics. The results—both within 1984–85 and across the time span examined—are more difficult to interpret, though, because of the relatively large variance of total outlays for Hispanics in the earlier period. At the same time, for non-Hispanics, the gap in real total outlays between Whites and Blacks nearly doubled from 1984–85 ($706) to 2004–05 ($1,333). In this case, both groups experienced decreases in average real total outlays, but the decrease for young Black singles ($1,772) was larger than the decrease for young White singles ($1,145). Nonetheless, neither the difference within, nor the difference across, periods was statistically significant for either of these groups.

By contrast, there are clear differences by education level: Those with a college degree have significantly—in both economic and statistical terms—higher total outlays in each period than those who have not earned a college degree. However, there are no statistically significant differences between the two groups of non-college graduates (that is, those with a high school diploma or less and those who attended, but did not graduate from, college).

Regression analysis. In the previous analysis, total outlays are compared for selected subgroups of young single adults, such as men and women. However, such comparisons are limited in usefulness, because it is not clear whether the total difference in real total outlays, if any, is explained simply by dividing the group into parts for comparison or whether other characteristics within the subgroup differ and it is the differences in these other characteristics that explain the differences in total outlays. For example, single men report larger real total outlays in each year than single women. But is the difference in a person's sex the reason for the difference in outlays, or are single men different from single women in other ways, such as educational attainment or working status, that also may explain differences in real total outlays? And if the latter is true, then to what extent, if any, does a person's sex explain differences in real total outlays? To investigate these issues, regression analysis is used to identify how specific characteristics are related to total outlays, *ceteris paribus* ("all else equal"—that is, when all other characteristics are held constant).

The specific method used in this analysis is called *two-stage least squares*. In the first stage, income data from selected young singles are regressed on independent variables and the results obtained are used to predict income for all young singles in the sample during each period. Then, in the second stage, this new variable is used as an independent variable to estimate total outlays. Reasons for using the two-stage least squares method, as well as a detailed description of the procedure—especially the first stage—are given in "Regression technique: omitted-variable bias and two-stage least squares," in the appendix, pp. 44–49.

Independent variables and control group. Regression analysis allows the researcher to identify whether differences in real total outlays still are expected to be observed when men and women of the same educational attainment,

working status, age, income, and other characteristics are compared. Generally, one set of variables is selected to represent the characteristics of a "typical" member of the group under study, and all others are compared with that "individual." This reference group is often called the *control group*. In the case of binary outcomes (for instance, male or female), the characteristic describing the larger portion of the population is usually selected as the control group characteristic. When more than two outcomes are possible (as in, say, region of residence), the characteristic representing the largest segment of the population is selected. For example, in 1984–85, 17 percent of the sample resided in the Northeast, 25 percent resided in the Midwest, 27 percent resided in the South, and 32 percent resided in the West. Similar percentages hold for the 2004–05 sample. (See table 5.) Therefore, residence in the West is chosen as a characteristic for the control group.

In addition to being regressed against region of residence, total outlays are regressed against several other characteristics, including age (21 to 24 years or 25 to 29 years); educational attainment (high school or less; some college; college graduate, with or without attending graduate school); student status (working and enrolled full time or part time; or not working, but either currently enrolled or reported "going to school" as the reason for not working during the past year); sex; ethnicity and race (Hispanic; Black, not Hispanic; or White and other, not Hispanic); working status (full time, full year; part time, full year; full time, part year; part time, part year; or not working during the past year for reason other than "going to school"); occupational status (self-employed; or working for a wage or a salary in a position as a manager or professional, technical worker or salesperson, service worker, construction worker, or operator); housing tenure (homeowner or renter); degree of urbanization of area of residence (urban or rural area); number of automobiles owned; number of

Table 5. Characteristics of young single adults, unweighted, as used in regressions

[In percent]

Characteristic	1984–85	2004–05
Age:		
21 to 24 years	51.3	54.4
25 to 29 years	48.7	45.6
Educational attainment:		
High school diploma or less	26.7	18.2
Attended college	39.5	46.2
College graduate	33.8	35.6
College enrollment status:		
Not in school	67.6	56.0
In school		
Full time and working	20.8	29.0
Part time and working	7.8	7.4
Not working	3.8	7.6
Sex:		
Male	56.3	58.2
Female	43.7	41.8
Race and ethnicity:		
White, not Hispanic	88.9	82.6
Black, not Hispanic	7.7	9.8
Hispanic	3.3	7.6
Working status:		
Full time,[1] full year[2]	51.7	49.4
Part time, full year	7.6	10.4
Full time, part year	23.9	16.5
Part time, part year	11.6	14.8
Not working, not in school	1.4	1.3
Occupational status:		
Self-employed	3.0	1.9
Occupational status—Continued:		
Working for wage or salary		
Technical or sales position	34.5	47.6
Manager or professional	27.7	21.0
Service worker	14.7	12.8
Construction worker	6.2	5.1
Operator or laborer	12.4	10.1
Housing tenure:		
Renter	91.9	85.0
Homeowner	8.1	15.0
Region of residence:		
Northeast	16.6	15.4
Midwest	24.5	28.1
South	27.3	27.9
West	31.6	28.6
Degree of urbanization:		
Urban	95.5	96.8
Rural	4.5	3.2
Sources of income received:		
Interest, dividends, rental or other property income	37.1	21.9
Unemployment and workers' compensation, veterans' benefits	6.0	1.8
Public assistance, supplemental security income, food stamps	6.4	1.7
Regular contributions of support	9.9	13.8
Other income	3.8	6.5
Average number of vehicles:		
Automobiles and trucks	.8	.6
Other vehicles	.3	.3

[1] At least 35 hours per week worked.

[2] At least 50 weeks per year worked.

other vehicles owned; and predicted current income.[43] Also, a binary variable indicating that the young adult was interviewed in 2004–05 is included. This last variable is interacted with (that is, multiplied by) the other variables ("main effect" variables) just listed, in order to ascertain whether the relationship between characteristics and total outlays has changed over time. The control group consists of persons interviewed in 1984–85 who were 21 to 24 years old; had attended college, but were not college graduates; were working full time, full year in a technical or sales position and were not currently enrolled in school; were renters living in urban areas of the West; and did not own any automobiles or other vehicles.[44]

Box-Cox transformation. When data are not normally distributed, they may exhibit heteroscedasticity, a condition in which the regression error is not constant and standard errors associated with parameter estimates may be biased. However, if the underlying distribution is known, it is possible to transform the variable so that it is—or at least approaches being—normally distributed. For example, if the data are lognormally distributed, then regressing the logarithm of the dependent variable on characteristics should result in unbiased ordinary least squares estimators. At each stage of the analysis, a program was run to find the appropriate Box-Cox transformation of the dependent variable. (See "Box-Cox transformations," in the appendix, p. 43, for details.) In the second stage, the parameter of transformation, λ, was found to be 1/4, indicating that the fourth root was an appropriate transformation of the data. (That is, before regressing, the square root of the square root of observation of total outlays was obtained, and it is this fourth root that is used in the regression.) In the first stage, λ was found to be 3/8.

When λ is found to be either zero or unity, the regression results have appealing attributes, in that the parameter estimates are easily interpreted. (See "Box-Cox transformations," in the appendix, p. 43.) Even so, in the regression performed, the value for λ for both total outlays and income is positive, but less than unity. Therefore, the coefficients of the independent variables do not have any intuitively appealing interpretation. However, in this study, the object is not necessarily to identify *how much* permanent income (for which total outlays is a proxy in the second stage of the regression) has changed for a particular subgroup, but rather to determine *whether* it has changed at all and, if so, *in what direction* (increased or decreased). Fortunately, the parameter estimates are easy to interpret in this way. For example, a positive, statistically significant coefficient for a main effect in the second stage indicates that, in 1984–85, the main-effect group had higher predicted total outlays than otherwise similar members of the control group. Then, to find out whether changes occurred over time, additional variables are included in which the main-effect variables are interacted with a binary variable indicating the year the interview took place. (See "Regression results," to follow.)

Weighting. Finally, the regressions are not weighted to reflect the population. The weighting structure in place when the 1984–85 data were collected had changed substantially by 2004–05.[45] Thus, separate regressions would have had to be run to obtain weighted results from 1984–85 and 2004–05. However, in that case, the standard errors of the parameter estimates would be different from what they are when the regression analysis is performed jointly in one model. Therefore, to be able to compare results, the data are pooled and the regressions for each stage are run unweighted.

Regression results. In considering changes over time in predicted real total outlays, it is useful to describe the outcome for the control group first. The key parameter estimates to consider are those for the intercept, the binary variable indicating the year the interview took place (with a value of 1 for 2004–05 and 0 for 1984–85), and the main and interaction terms for predicted transformed income. If the regression had been linear (that is, if no Box-Cox transformation had been performed), the coefficient of the intercept would represent a baseline value for outlays and the coefficient of income would describe the rate at which outlays are predicted to increase with income, a relationship known as the *marginal propensity to consume*. For example, if the coefficient of the intercept was $1,000 and the coefficient of income was 0.75, this would indicate that young single adults were predicted to spend a baseline value of $1,000, plus 75 cents of every dollar of income received. (That is, the marginal propensity to consume would be 0.75.) The coefficient of the binary variable indicating the year the interview took place would indicate whether there had been an increase (if it were positive and statistically significant) or decrease (if negative and statistically significant) over time in baseline predicted real outlays. The coefficient of the interaction term for income would indicate whether the marginal propensity to consume had increased or decreased over time (again, depending on the level of statistical significance). Although the Box-Cox transformation eliminates the possibility of directly interpreting the coefficients in this way, the actual strategy used in interpreting them is similar. In this case, the coefficients for the intercept and income are both highly significant statistically. However, neither the coefficient of the binary variable indicating the year the in-

terview took place nor the coefficient of the interaction of this binary variable with income is statistically significant. Therefore, there is no evidence to support the hypothesis that there has been a change in real total outlays over time for the control group. Nevertheless, it is interesting to note that the coefficient of the binary variable is negative, a finding that is consistent with the earlier one that real total outlays declined (by almost 5 percent) for all young singles, but that the decrease was not statistically significant.

Some of the remaining results of the regression analysis are consistent with a priori expectations. For example, in each year, real total outlays increase with the number of automobiles and other vehicles owned. Even for vehicles that are not used frequently, one would expect their owners to incur other expenses, such as insurance, maintenance, and, in many cases, loan repayments, that a nonowner would not incur. In addition, there appears to be a relationship between educational attainment and real total outlays. The coefficient of "high school diploma or less" is negative, indicating that in 1984–85 members of this group had lower real total outlays than similar members of the control group (that is, those with some college experience), while the coefficient of "college graduate" is positive, indicating that in 1984–85 members of this group had higher real total outlays than similar members of the control group. However, each of these coefficients is statistically significant only at the 90-percent confidence level. For 2004–05, both coefficients are positive, but neither is statistically significant. Had they been, the positive coefficient would indicate that the positive difference in outlays between college graduates and those who attended college but did not graduate is even larger in 2004–05 than in 1984–85. For those with no college experience, the positive coefficient, which is larger in magnitude than the negative coefficient for the main effect, would indicate that those with lower levels of education in 2004–05 now have real outlays similar to those with at least some college experience. However, because neither of these coefficients is statistically significant, they offer no clear evidence of a change over time in the relationship between real total outlays and educational attainment.

At least one other set of parameter estimates is also worth noting: first, the parameter estimate for Hispanics shows that real total outlays for that group were significantly less than those for non-Hispanics in 1984–85; second, the parameter estimate for 2004–05, while positive, is not statistically significant. Therefore, it cannot be stated with certainty that young single Hispanic adults have seen their real total outlays increase over time. At the same time, however, an F-test shows that, although negative (–0.120), the sum of the parameter estimates for the main effect and its interaction term for Hispanics is not significantly different from zero,[46] indicating that real total outlays for Hispanic young singles are not necessarily lower than those for non-Hispanics, *ceteris paribus*. In other words, there is strong support (due to statistical significance) for the hypothesis that Hispanic young adults had lower real total outlays in 1984–85 than non-Hispanics (due to the negative coefficient). The evidence is less strong in 2004–05. (The sum of the coefficients is still negative, but not statistically significant.) Nevertheless, because the coefficient of the interaction term is not statistically significant, it cannot be stated with confidence that an increase has taken place, because any evidence of increase may be due to variability in the data. Some of this variability may be due to the changing composition of the Hispanic population in the United States over time;[47] however, a definitive answer requires further investigation. At any rate, although the evidence to suggest that Hispanic young adults in the later period are better off than they were in the earlier period is not conclusive, there is no evidence that they are worse off, on the basis of these results.

Of the remaining parameter estimates, only a few are statistically significant in either period. This finding in itself is worth noting, because it means that even though there are differences when averages of real total outlays are compared for different groups, the differences are observed for reasons other than inherent differences in the groups compared. For example, as described earlier, single women have substantially smaller real total outlays, on average, than do single men in each year. This finding is difficult to explain in some ways, because single women have many characteristics that are associated with larger total outlays. For example, more young single women graduated from college in each period than did young single men (38 percent, compared with 31 percent, in 1984–85; 40 percent, compared with 34 percent, in 2004–05), and more own at least one automobile (69 percent, as opposed to 63 percent, in 1984–85; 55 percent, as opposed to 47 percent, in 2004–05). However, for those who reported values for all sources of income that they reported receiving, single women reported substantially lower incomes before taxes—about 20 percent less than men in each period. The regression results indicate that the differences observed in real total outlays for single men and for single women within each year are presumably due to these other differences in demographic characteristics, rather than to inherent differences (such as tastes or preferences) between single men and single women. In addition, the fact that few parameter estimates change in a statistically

significant way over time supports the hypothesis that, although young single adults in the later period may not be better off than those in the earlier period, they do not appear to be any worse off, at least when real total outlays are used as a measure of well-being.[48]

BOTH DEMOGRAPHIC AND SPENDING PATTERNS changed for young, never-married adults from 1984–85 to 2004–05. Whether these changes indicate an increase or decrease in economic status is unclear. By some measures, such as the rate of economic growth and unemployment rates, the more recent group is at least as well off—if not better off—than the earlier group. The more recent group also enjoys higher educational attainment and higher rates of homeownership, both of which are generally considered positive attributes.

However, other results indicate that there has been little discernible change over time. When average real total outlays for subgroups of young single adults, such as men and women, are compared, differences across groups within each period are apparent, but changes within groups across time are not generally observed. These findings are confirmed with regression analysis, which estimates changes in real total outlays over time when demographic differences are held constant. Although it may be interesting to perform Engel or some other, similar analysis on the demographic subgroups, this task is left for future work.

Finally, the evidence that young singles are worse off today is inconclusive. For example, young singles experienced a decrease in real total outlays from 1984–85 to 2004–05, while other singles experienced an increase during that time. However, neither change was statistically significant. In addition, young singles today allocate smaller shares of total outlays to food away from home and to travel, and larger shares to food at home and to housing. Each of these changes would appear to indicate a diminution in economic well-being, yet they are consistent with increased economic well-being as described earlier: the increased share for food at home may be due to the greater availability of convenience foods, allowing young singles to save time and money by "stocking up" rather than frequenting restaurants; and the housing share may have increased because more young singles are living alone, presumably by choice, and also because they are more likely to be homeowners.

Taken together, the results described in this study do not indicate that young singles were clearly better off in the second period than the first, a finding that is consistent with the belief among young adults that it is harder for them to gain economically than it was for their parents.[49] Still, the results do not provide strong evidence that young singles are *worse* off than their predecessors, as has been found in previous work.[50] Given that previous work compared young adults in the mid-1990s with those in the mid-1980s and found a decrease in economic well-being, the current results may indicate that the fortunes of young adults are improving after a period of decline. This finding suggests that future work examining trends in outlays and other measures of well-being for young adults would be useful in order to provide a fuller perspective on what changes have occurred and when they did so. In the meantime, it is valuable to continue to monitor expenditure patterns for young singles to better understand the challenges they face and how such challenges may affect them and others in the future. □

Notes

[1] According to data from the 1998 Current Population Survey (CPS), 36 percent of 21-year-olds reported graduating from high school as the highest level of education attained, while 7 percent reported completing an associate's degree or higher. Eight years later, in 2006, the CPS indicated that 28 percent of 29-year-olds reported graduating from high school as the highest level of education attained, while 41 percent reported completing an associate's degree or higher level of education. In comparison, that same year, 31 percent of 21-year-olds reported graduating from high school as the highest level of education attained, while 9 percent reported completing an associate's degree or higher level of education. (See "Table 2. Educational Attainment of the Population 15 Years and Over, by Single Years of Age, Sex, Race, and Hispanic Origin: 2006," on the Internet at **www.census.gov/population/socdemo/education/cps2006/tab02–01.xls** (visited May 20, 2008); and "Table 2. Educational Attainment of Persons 15 Years Old and Over, By Single Year of Age, Sex, Race, and Hispanic Origin: March 1998," from "Educational Attainment in the United States: March 1998 (Update)" (U.S. Census Bureau, report P20–513, issued October 1998), on the Internet at **www.census.gov/prod/3/98pubs/p20–513u.pdf** (visited May 20, 2008). Note that 2006 is the last year for which tables showing educational attainment by exact age were produced.)

[2] For an example of these changing beliefs, see Melinda Crowley, "Generation X Speaks Out on Civic Engagement and the Decennial Census: An Ethnographic Approach," *Census 2000 Ethnographic Study*, June 17, 2003, especially page 2, on the Internet at **www.census.gov/pred/www/rpts/Generation%20X%20Final%20Report.pdf** (visited Sept. 26, 2007). For an example of the changing economic status of young single adults, see Geoffrey Paulin and Brian Riordon, "Making it on their own: the baby boom meets Generation X," *Monthly Labor Review*, February 1998, pp. 10–21; on the Internet at **www.bls.gov/opub/mlr/1998/02/art2full.pdf**.

[3] For additional information, see *BLS Handbook of Methods* (Bureau of Labor Statistics, April 2007), Chapter 16, "Consumer Expenditures and Income," especially pp. 2–3; on the Internet at **www.bls.gov/opub/hom/pdf/homch16.pdf** (visited Apr. 10, 2008).

[4] *Ibid*., p. 5.

[5] See "BLS Information: Glossary," on the Internet at **www.bls.gov/bls/glossary.htm#E**, or "Consumer Expenditure Survey: Glossary," on the Internet at **www.bls.gov/cex/csxgloss.htm#expn**, both visited Jan. 30, 2007.

[6] *Ibid*. See also "2004 Consumer Expenditure Interview Survey Public Use Microdata Documentation," Oct. 18, 2006, p. 103, on the Internet at **www.bls.gov/cex/2004/cex/csxintvw.pdf** (visited Sept. 8, 2008).

[7] In addition to automobiles, major items include other vehicles used primarily for transportation (for example, trucks, vans, and motorcycles) or entertainment and recreation (such as boats and campers). For other items (for instance, apparel) that have been financed by other means (say, by credit card), the expenditures approach applies. That is, the full purchase price is recorded in the reference period during which the purchase was made, even if the balance is not paid immediately. Payments for interest accruing to the balance also are collected during each interview, but the proportion of the total interest accruing to any particular purchase (apparel in the present example) that is included in the total balance, which may also include amounts from other purchases in addition to the amount for the particular purchase, is neither collected nor estimated.

[8] This criterion applies to *all* mortgage principal payments, whether for the home of residence, a vacation home, or some other property. However, regardless of the kind of computation—of expenditures or outlays—mortgage interest, but not the full purchase price, paid for the owned home is included. Nevertheless, information on "purchase price of property (owned home)" is collected, and is included as a component of "net change in total assets" in published tables.

[9] However, actual values for assets and liabilities are not examined here. (See section titled "Limitations of the Data" for more information.)

[10] Excluded from the analysis are cases in which two or more single, never-married adults who share living quarters are either financially interdependent or sharing responsibility for major expenses (or both). By definition, these consumer units consist of at least two members who may be described either as "unrelated persons" (1984–85 and 2004–05) or "unmarried partners" (2004–05), unless they are related by blood or some legal arrangement. Such consumer units are in contrast to single, never-married persons who share living quarters, but who are financially independent and who do not share responsibility for more than one major expense. These consumer units constitute single-member consumer units within the same housing unit. (For more information, see the definition of "consumer unit" in "2004 Public Use Microdata Documentation," p. 299.)

[11] Publications of the 2005 CE data use information from consumer units that were selected for interview under a sample design different from that of consumer units selected for interview in 2004. For technical reasons, only consumer units participating from February through December 2005 were eligible to be selected for interview under the new sample design. Therefore, only information from these consumer units is used in this article when results from 2005 are described. To ensure a proper computation of population counts, the weight of each consumer unit interviewed in 2005 is multiplied by 12/11 before any additional computation is performed. The reason is that 11 months of sample are used to represent 12 months of population. This adjustment does not affect the means or variances of outlays or other characteristics that would have been obtained from the sample of interviews occurring in 2005 and that are used in this study had the adjustment not been made. However, it corrects the population counts, thereby changing the weight of the 2005 interviews in the total sample (that is, interviews occurring in 2004 and 2005) when the means and variances for the 2-year period are computed. For interviews occurring in 2004, no additional adjustment is necessary. Although the sample design used to select consumer units for interview in 2004 is different from the one used in 2005, the same design is used consistently from January through December 2004. Therefore, no adjustment to weights is necessary for consumer units interviewed anytime during that period.

[12] Paulin and Riordon, "Making it on their own," pp. 16, 18.

[13] In 2004, school loans began to be cited as an example when the respondent is asked to report the amount owed for "other credit, such as school loans, personal loans or loans from retirement plans." (See "Consumer Expenditure Survey: Section 21, Part A.1—Credit Liability—Credit Balances—Second Quarter Only" (Bureau of Labor Statistics, Nov. 20, 2005), on the Internet at **www.bls.gov/cex/capi/2004/csxsection21a1.htm** (visited Apr. 9, 2008).) Nevertheless, the proportion of the total amount owed for any of these types of credit separately is neither collected nor estimated.

[14] See "Consumer Expenditure Survey: Frequently Asked Questions (FAQ's)" (Bureau of Labor Statistics, Mar. 4, 2008), on the Internet at **www.bls.gov/cex/csxfaqs.htm#q8** (visited Mar. 25, 2008).

[15] Like asset and liability data, income data are collected less frequently than expenditure data. However, in contrast to asset and liability data, income data are collected not only during the fifth interview, but also during the second interview (or during the earliest interview, in the event that either no respondent was available in time to complete the second interview or the consumer unit originally at the address visited has been replaced by a new consumer unit). Income information from the second (or the earliest) interview is then carried forward to subsequent interviews until it is replaced with information collected during the fifth interview. However, values for assets and liabilities are considered validly blank for records pertaining to all but the fifth interview; that is, no attempt is made to carry the information backward to records pertaining to earlier interviews. Therefore, although information on income is at least potentially available for each consumer unit in the sample, regardless of which particular interview is under consideration (even for those who participate only once), information on assets and liabilities is available only for consumer units participating in the fifth interview, thus limiting its contribution to the analyses conducted herein.

[16] Indeed, the following tabulation from the U.S. Census Bureau shows that the median age at first marriage has risen by about 2 years from 1984–85 to 2004–05 for both men (25 to 27 years) and women (23 to 25 years):

Year	*Men*	*Women*
1984	25.4	23.0
1985	25.5	23.3
2004	27.4	25.3
2005	27.1	25.3

(Source: Table MS-2, "Estimated Median Age at First Marriage, by Sex: 1890 to the Present" (U.S. Census Bureau, Mar. 27, 2007), on the Internet at **www.census.gov/population/socdemo/hh-fam/ms2.xls** (visited May 21, 2008.).)

[17] In the 1984–85 data, educational attainment is described by the highest grade attended and whether or not that grade was completed. For the data from this period, college graduates are defined as those who reported completing the fourth year of college or its equivalent and those who reported attending at least 1 year of graduate school. Those who reported attending, but not completing, 4 years of college are defined as having attended college, as are those who reported attending for 1 to 3 years, even if they reported completing the final year they attended. In the 2004–05 data, educational attainment is described by degree received, including associate's degree (occupational/vocational or academic), bachelor's degree, master's degree, professional school degree, and doctoral degree. For consistency with the 1984–85 data, those who reported receiving a bachelor's degree or higher are defined as college graduates in the 2004–05 data. In addition, those who reported receiving an associate's degree, or attending college but not receiving any degree, are defined in the 2004–05 data as having attended college.

[18] Data from the CPS also show increased levels of educational attainment for young adults. In 1985, 41.4 percent of those aged 20 to 24 years and 43.7 percent of those aged 25 to 29 years had completed at least 1 year of college. In 2005, 55.3 percent of those aged 20 to 24 years and 56.8 percent of those aged 25 to 29 years had completed at least some college. Note that CPS data underwent a change in the definition of educational attainment similar to the change undergone by CE data. In 1985, data are shown by highest level of grade or year of school completed. In 2005, for those who attended college, data are shown for some college but no degree, and for degree received: associate's degree, oc-

cupational/vocational or academic degree, bachelor's degree, master's degree, professional school degree, and doctoral degree. (Sources of data are as follows: "Educational Attainment in the United States: March 1982 to 1985 (P20–415) Issued November 1987: Table 2, Years of School Completed by Persons 15 Years Old and Over, by Single Years of Age, Sex, Race, and Spanish Origin: March 1985" (U.S. Census Bureau, November 1987), on the Internet at **www.census.gov/population/socdemo/education/p20-415/tab-02.pdf** (visited May 20, 2008); Table 1, "Educational Attainment of the Population 15 Years and Over, by Age, Sex, Race, and Hispanic Origin: 2005" (U.S. Census Bureau, Oct. 26, 2006), on the Internet at **www.census.gov/population/socdemo/education/cps2005/tab01–01.xls** (visited May 20, 2008).

[19] Although not measuring an identical sample, data from the National Center for Education Statistics show that college enrollment has increased over time for students graduating from high school. In 1984, 55.2 percent of high school completers were enrolled in college in the October immediately following high school completion. By 2005, the figure had increased to 68.6 percent. Note that these data do not separate enrollment rates for full- and part-time students, nor do they take age into account—presumably, most high school completers in this group are younger than 21, and some are older than 29. Nevertheless, these data are consistent with the findings presented in table 1, namely, that college enrollment has increased for young adults over time. (Source of data is "Student Effort and Educational Progress, Table 25–1, Percentage of high school completers who were enrolled in college the October immediately following high school completion, by family income and race/ethnicity: 1972–2005" (National Center for Education Statistics, 2006), on the Internet at **nces.ed.gov/programs/coe/2007/section3/table.asp?tableID=702** (visited May 21, 2008).)

[20] Data are from tables that were created with online tools ("Create Customized Tables"), on the Internet at **www.bls.gov/cpi/home.htm** (visited Dec. 5, 2006). Data are for "All Urban Consumers (Current Series)" and are not seasonally adjusted.

[21] See "Echoboomerang—number of adult children moving back home—Statistical Data Included," *American Demographics*, June 1, 2001, on the Internet at **www.findarticles.com/p/articles/mi_m4021/is_2001_June_1/ai_76579415** (visited July 17, 2007).

[22] The reference person is the first person mentioned when the respondent in the survey is asked to identify the person who is responsible for owning or renting the home.

[23] Data from the U.S. Census Bureau are consistent with these findings. Specifically, one Census Bureau table shows separately the percentages of men and women 18 to 24 years old, presumably of any marital status, who are classified as "child of householder" in various years. For women aged 18 to 24 years, there is not much change between 1984 (47 percent) and 2005 (46 percent). However, men in that age group exhibit a decline from 62 percent to 53 percent. The reason for this decline is not clear. One possibility is that young men used to live at home during their college years and then moved out after graduation, whereas now they move to campus for their college years and return home after graduation. Whatever the cause, a thorough investigation is beyond the scope of this article. (Source: Table CH-1, "Young Adults Living At Home: 1960 to Present" (U.S. Census Bureau, Mar. 27, 2007), on the Internet at **www.census.gov/population/socdemo/hh-fam/ad1.xls** (visited May 21, 2008).)

[24] See the Bureau of Economic Analysis (BEA) glossary at **bea.gov/bea/glossary/glossary.cfm?key_word=GDP&letter=G#GDP** (visited Jan. 30, 2007).

[25] Growth rates for real GDP were derived from data listed in the Excel file titled "Current-dollar and 'real' GDP" (Bureau of Economic Analysis, Oct. 31, 2007), on the Internet at **bea.gov/national/index.htm#gdp** (visited Nov. 8, 2007).

[26] *Ibid*.

[27] Percentages are derived from *Statistical Abstract of the United States: 2007*, 126th ed. (U.S. Census Bureau, 2006), table 2, "Population: 1960 to 2005."

[28] For definitions of the unemployment rate and the labor force, visit **www.bls.gov/bls/glossary.htm** (visited Jan. 30, 2007).

[29] These data are from computations that were made with annual data obtained with the use of online tools ("Create Customized Tables") that were found on the Internet at **www.bls.gov/cps/home.htm** (visited Jan. 30, 2007).

[30] These statistics exclude marginally attached workers—those who are available and willing to work and who have sought employment in the past 12 months, but not during the past 4 weeks. (For a precise definition of *marginally attached workers*, visit the Web site **www.bls.gov/bls/glossary.htm#M** (visited Nov. 6, 2007).) The statistics also exclude discouraged workers, a subset of marginally attached workers—namely, those who have looked for work in the past 12 months, but are not currently looking because they believe that there are no jobs available for which they qualify. (For a precise definition of discouraged workers, visit the Web site **www.bls.gov/bls/glossary.htm#D** (visited Nov. 6, 2007).) However, no data on either marginally attached or discouraged workers were found for any age group prior to 1994 when the BLS Web site (**www.bls.gov/cps/home.htm**) was last visited (Nov. 6, 2007).

[31] In 1975, the annual unemployment rate for the entire civilian noninstitutional population (that is, a population not limited to young single adults) peaked at 8.5 percent, the highest annual unemployment rate between 1970 and 1979. In 1982, the annual unemployment rate reached 9.7 percent. By contrast, in 1990–91 annual unemployment rose to only 6.8 percent (in 1991), and it was 4.7 percent in 2001. These figures were obtained with online tools ("Create Customized Tables"), on the Internet at **www.bls.gov/cps/home.htm** (visited July 17, 2007).

[32] This is especially true for the group in the earlier period. Many of those aged 21 to 29 years in 1984 would have been members of the labor force in 1981. In July 1981, the seasonally adjusted civilian unemployment rate fell to its lowest point for that year: 7.2 percent. One year later, it reached 9.8 percent. In November and December 1982, it peaked at 10.8 percent. The rate did not return to its 1981 minimum until almost 3 years later, in June 1984. (See "Most Requested Statistics: Labor Force Statistics from the Current Population Survey: Unemployment Rate—Civilian Labor Force—LNS14000000," on the Internet at **data.bls.gov/cgi-bin/surveymost?ln** (Bureau of Labor Statistics, no date) (visited Nov. 29, 2007).) Although the actual rates are different for 20- to 24-year-olds and 25- to 29-year-olds during these periods, the patterns they follow are similar to those for the labor force as a whole. (See "Labor Force Statistics from the Current Population Survey" (Bureau of Labor Statistics, no date), on the Internet at **data.bls.gov/PDQ/outside.jsp?survey=ln** (visited Nov. 29, 2007), accessible by using "One-screen data search" for the database named "Labor Force Statistics including the National Unemployment Rate (Current Population Survey—CPS)" at **www.bls.gov/cps/home.htm#data** (visited Sept. 18, 2008). Seasonally adjusted rates for the 25- to 29-year-old group are not available at this link, but unadjusted rates are.) For many of the younger members of this group (that is, the 20- to 24-year-olds), who, as shown in the tabulation on this page, have higher unemployment rates than the older members of the group (that is, the 25- to 29-year-olds), finding a first job was presumably quite difficult; even for those older members who held jobs prior to 1981, the situation was likely precarious. Undoubtedly, many of them lost jobs due to the recession or had difficulty changing jobs if they desired to. Those who were unemployed not only lacked the ability to add to their savings from the wages or salaries they earned, but also may have had to use their savings to pay for basic goods and services, such as food and housing. By contrast, during the analogous timeframe for the second group, the unemployment rate for the entire civilian labor force was lowest in January and February 2001 (4.2 percent) and eventually peaked in June 2003 (at 6.3 percent). Although never matching the 2001 minimum during the second period, the rate declined from March 2004 (5.8 percent) through December 2005 (4.8 percent). Again, these figures support the hypothesis that young adults in the later period were economically better off than those in the earlier period both during and immediately prior to the years under study.

[33] Milton Friedman, *A Theory of the Consumption Function* (Princeton, NJ, Princeton University Press for National Bureau of Economic Research, 1957); on the Internet at **www.nber.org/books/frie57-1** (visited Aug. 6, 2008).

[34] Starting with the publication of data collected in 2004, multiple imputation began to be used to fill in blanks for income. It will be interesting to use the data obtained therefrom for future cross-generational analyses.

[35] Louis Phlips, *Applied Consumption Analysis* (Amsterdam, Elsevier Science

Publishers B.V., rev. ed., 1983; distributed in the U.S. and Canada by Elsevier Science Publishing Company, Inc., of New York, NY), p. 103.

[36] To better understand this chain of reasoning, suppose that young singles purchase only frozen and freeze-dried prepared foods in both periods, while other consumers purchase different foods. Then adjusting food-at-home expenditures for young singles will overestimate their real expenditures for food at home purchased in 1984–85. If the overestimate is large enough, it will make it appear that young singles had lower expenditures for food at home in 2004–05 than they did in 1984–85. Now, as seen from the values presented in table 2, real expenditures for food at home decrease for young singles when the CPI for all food at home is used to adjust these expenditures. But if young single consumers really did purchase only frozen and freeze-dried prepared foods in each period, then the $1,241 nominal expenditure shown in that table should be adjusted to $1,832 [1,241 × (153.2/103.8)]. Then, because $1,832 is less than the value reported in 2004–05 ($1,950), it follows that young singles actually purchased more food at home in the second period than the first, and they may have done so because they purchased less food away from home, just as the hypothesis purports.

[37] Because rent includes utilities in some cases, comparing only expenditures for rent with outlays for a mortgage does not provide an accurate comparison of basic housing costs.

[38] The other person or persons could be roommates, the landlord, or anyone else not related by blood, marriage, or some other legal arrangement and from whom the young single is financially independent. If any of these conditions is violated, the young single would no longer constitute a single-member consumer unit.

[39] The CPIs for at least three categories of goods and services directly related to travel are readily available on the Internet (**data.bls.gov/PDQ/outside.jsp?survey=cu** (visited Dec. 5, 2007), accessible by using "One-screen data search" for the database named "All Urban Consumers (Current Series) (Consumer Price Index—CPI)" at **www.bls.gov/cpi/home.htm#data** (visited Sept. 18, 2008)). In each case, the increase in the CPI for these categories is higher than the increase in the CPI for all goods and services from 1984 to 2005 (88 percent). The categories are "other lodging away from home, including hotels and motels" (157 percent); "gasoline (all types)" (99 percent); and "airline fare" (243 percent). Changes in annual indexes are compared in this case, instead of changes from January 1984 to December 2005, in order to reduce the effects of intrayear volatility. Prices for each of these travel expenditure categories presumably vary by season if not by month, so comparing values for different months across years, rather than comparing average annual values, may either mitigate or exacerbate differences in price changes computed. In addition, seasonally adjusted indexes are not available for airline fares in years prior to 1989.

[40] Evidence supporting the hypothesis that consumers substitute new forms of communication for travel is seen in the CE results. The trend line for the percentage of those reporting total travel expenditures is much steeper downward from 1997 to 2005 than it is from 1984 to 1996, a pivotal year that coincides with a period of rapid increase in usage of these technologies. For example, the U.S. Census Bureau reports that in 1997 less than three-eighths (36.6 percent) of all households owned a computer and that about half of these households (18.0 percent of all households) had Internet access. By 2003, nearly five-eighths (61.8 percent) of all households owned a computer and nearly eight-ninths of these households (54.7 percent of all households) had Internet access. (See Jennifer Cheeseman Day, Alex Janus, and Jessica Davis, "Computer and Internet Use in the United States: 2003," *Current Population Reports*, P23–208, October 2005, pp. 1–14, especially p. 1, on the Internet at **www.census.gov/population/www/socdemo/computer.html**, item 1, CPS, October 2003, "Report" (visited Dec. 5, 2007).

[41] For all consumer units, college tuition accounted for 58 percent of educational expenditures in 1984–85 and 64 percent in 2004–05.

[42] The increase in education expenditures presumably also affects the allocation of shares for those who pay them. That is, given the same amount of funds available for spending, the person who allocates more to education has less to allocate to food, housing, and all other goods and services. However, separating out those who make these expenditures from those who do not and comparing the differences in their share allocations, both within and across various periods, is beyond the scope of this discussion.

[43] See "Regression technique: omitted-variable bias and two-stage least squares," in the appendix, pp. 44–49, for variables used to predict income and for other details about the first stage of the regression.

[44] In 1984–85, more than half—almost 59 percent—of young, single adults who were sampled reported ownership of (exactly) one automobile. However, in 2004–05, the figure dropped to 48 percent, which was equal to the percentage reporting no automobile owned. For convenience, the control group consists of those owning no automobiles. In this way, changes in the parameter estimate for number of automobiles owned need not be taken into account in describing changes in predicted real outlays over time for the control group.

[45] The weighting method used in CE publications is *balanced repeated replication*, a technique in which means and variances are estimated several times with the use of weighted half-samples. In 1984–85, only 20 replicate weights were available to compute such estimates. By 2004–05, 44 replicate weights were available.

[46] F-value = 0.74; p-value = 0.3892.

[47] For details, see Geoffrey D. Paulin, "A changing market: expenditures by Hispanic consumers, revisited," *Monthly Labor Review*, August 2003, pp. 12–35, especially pp. 12–16; on the Internet at **www.bls.gov/opub/mlr/2003/08/art2full.pdf**.

[48] As mentioned, in this study total outlays are regressed on many characteristics, including predicted income. Therefore, many variables may lack statistically significant coefficients because, given the same income, members of the groups associated with these variables have average outlays that are similar to those of the control group. However, as with single women, perhaps current income differs for the groups under study, and this difference, rather than the demographic differences of interest, influences the outcome for total outlays. In some cases, in fact, coefficients used to predict current income are statistically significant for both the main and interaction effects. For example, the coefficient for single women is negative and statistically significant in the current income regression. However, the interaction term for women and the variable indicating interviews that took place in 2004–05 is positive and statistically significant. The sum of these values (–1.718) is still negative and is statistically significantly different from zero (F-value = 12.59; p-value = 0.0004). The positive statistically significant coefficient for the interaction term indicates that women have experienced increases in predicted income over time. However, the negative statistically significant sum indicates that women are still predicted to have lower incomes than single men in the later period, at least for those who provide values for all sources of income that they reported receiving. (For the complete set of regression results used to obtain predicted income, see table A-3, in the appendix, pp. 45–46.)

[49] Crowley, "Generation X Speaks Out," p. 2; based on interviews conducted in 2000–01 of young adults born from 1968 to 1979.

[50] Paulin and Riordon, "Making it on their own," especially p. 18.

APPENDIX: Notes on methodology

Accounting for intertemporal changes

Analyzing shares. In analyzing shares, the allocations of total outlays for two different groups are compared to find out which group is better off. To understand this idea, consider two single persons, each of whom purchases the same amount of food each week for $20. Suppose the first person has the lower income and spends $100 per week on all purchases; the second person spends $200 per week. Then the share of expenditures allocated to food is 20 percent for the first person, but only 10 percent for the sec-

ond, even though the same amount of food is purchased. Even if the second person buys more, or higher quality, food for $30, the share increases only to 15 percent. In each case, the second person has a larger portion of spendable dollars left over to purchase goods and services other than food than does the first person; therefore, the second person is considered to be better off.

Although analyzing shares is particularly useful for comparing groups within the same period, there are some caveats to consider in analyzing changes in shares over time. For example, important information can be masked by price changes. To see this effect, consider a person who enjoys apples as an occasional snack and budgets $10 per month for their purchase. If the price of apples is $1 per pound, this person can afford 10 pounds per month. If the price rises to $2 per pound, the person can afford only 5 pounds per month. If no other prices change, and the person's expenditure pattern remains the same in all other respects, then the share of total outlays allocated to apple purchases remains the same each period, yet the person is enjoying fewer pounds of apples.

If, then, the change in the price of apples is known, expenditures can be adjusted, and it becomes clear that the person is purchasing fewer pounds of apples. In the current example, the price of apples has doubled. Therefore, if the person bought the apples in the first period at the price of the second period, then the expenditure in the first period would be double the value observed. (That is, 10 pounds of apples purchased at the price of the second period would cost $20, not $10.) Because the price-adjusted outlay for the first period ($20) is larger than the observed outlay for the second one ($10), it is clear that the number of pounds of apples purchased has declined in the second period. This relationship (higher price-adjusted expenditures mean a larger quantity purchased) holds even when the actual number of pounds of apples (or quantity of other goods and services) purchased is unknown, as it is for the values shown in table 2 in the text.[1]

In addition, the allocation of total outlays changes with tastes and preferences, which in turn can change over time for individuals or groups. In cases such as these, in which both kinds of change occur, changes in shares are not so easy to interpret. For example, as discussed in the text, the share for food away from home has been decreasing over time, while the share allocated to food at home has been increasing. Assuming that food away from home is preferred to food at home, this outcome reflects a decrease in well-being. However, if young adults in the second period have a higher preference for education than they did in the first period, they may forego some of the expenditures for food away from home in order to purchase education, even if the costs of education remain stable. In that case, if the increase in well-being due to purchasing more education is larger than the decrease due to purchasing less food away from home, then young adults in the second period are better off than they would be if they did not make such a tradeoff.

Finally, changes in technology and in the availability of products can influence the allocation of total outlays. As noted in the text, the availability of new types of food at home may lead to changes in purchases such that the increased share for food at home and decreased share for food away from home reflect an increase in well-being. Similarly, changes in technology or in the availability of products may lead less directly to changes in certain shares. For example, young adults in the first period may have purchased food away from home in conjunction with entertainment away from home (as when they go out for dinner and a movie). Although they still may do so in the second period, new products or services may have been developed that allow young adults to enjoy similar forms of entertainment at home (for instance, joining a movie-by-mail rental club or viewing movies over the Internet). In this case, the share for food away from home could decrease while both the share for food at home and well-being increase, because young adults in the second period could still choose to purchase the same amount of food and entertainment away from home as those in the first period did, but they also are able to choose an allocation that was not available in the first period.

Because no data on tastes, preferences, technological change, or the availability of products are collected directly in the CE, it is impossible to identify precisely how these factors change and how expenditure patterns change as a result. Nevertheless, despite these caveats, analyzing shares in a historical context is useful as long as the assumptions underlying the analysis are reasonable and explicitly stated as needed.

Real or nominal expenditures? In performing economic comparisons across time, it is essential to control for changes in prices. To demonstrate, consider a person who spends $10 for apples in the first period and $20 in the second. It may be that the person purchased twice as many pounds of apples in the second period. But it also may be that the price changed (rose or fell) and the person purchased a different amount each period. For example, if the price of apples is $1 per pound in the first period, but $4 per pound in the second, it is clear that the person bought a greater amount of apples (10 pounds) in the first period than in the second (5 pounds). Usually, expenditures can be adjusted to reflect these changes by converting nominal expenditures to real expenditures through the mechanism of a price index. After adjustment, real expenditures can be compared to provide a better idea of whether changes in expenditures are due to changes in quantities purchased or changes in prices.

Price indexes are computed by comparing changes in price for a standard market basket of goods. In this case, the basket consists only of apples. Once the basket is defined, the index is computed by dividing the price of the basket in the period of interest by the price of the basket in the base period and multiplying the result by 100.0. In the base period, the period of interest and the base period are the same. Therefore, the index in the base period is always 100.0. However, if prices are different in the period of interest, the index will take on a higher or lower value, depending on the direction of the price change. For example, if the first period is selected as the base period and the

basket is defined as consisting of 1 pound of apples, then the base-period index is computed to be ($1/$1) × 100.0 = 100.0. The index for the second period is ($4/$1) × 100, or 400.0.

Once the indexes are computed, they can be used to convert nominal expenditures to real expenditures. In the current case, suppose the analyst wants to convert the nominal value of expenditures reported in the first period to real-dollar values for comparison with expenditures occurring in the second period. In other words, the analyst wants to know how much the market basket purchased in the first period would have cost if it had been purchased in the second period. The result is obtained by dividing the price index for the second period by the price index for the first period and multiplying the result by the expenditures reported in the first period. In this example, then, the equation is (400.0/100.0) × $10 = $40. In other words, in the second period it costs $40 to purchase the same amount of apples that was purchased in the first period. Even if the quantity of apples purchased is unknown to the analyst, it is clear that the purchaser must have purchased fewer pounds of apples in the second period than in the first, because the value of real expenditures reported in the first period (that is, $40) exceeds the value of real expenditures reported in the second period (that is, $20).[2]

Note that this adjustment works because expenditures are defined as price (P) times quantity purchased (Q). Therefore, if P_1Q_1 (that is, the expenditure in the first period) differs from P_2Q_2, it is not clear whether the difference is a result of changes in P or in Q. However, adjusting first-period expenditures in the manner just described has the effect of comparing P_2Q_1 with P_2Q_2. Therefore, any difference in expenditure is due to a change in quantity.

However, the comparison is not always so precise. In this case, the analyst is literally comparing apples with apples. Suppose, however, the consumer purchases both apples and oranges. This purchase leads to a potential comparison of two different baskets of fruit. That is, suppose that the initial basket consists of 1 pound of apples and 1 pound of oranges. Suppose also that the price of apples remains unchanged, but the price of oranges rises. Then the price index for fruit will rise, because it reflects the change in the total price of a basket of fruit consisting of 1 pound of apples and 1 pound of oranges. However, in response to the price change, the consumer may choose to purchase fewer pounds of oranges and continue to purchase 1 pound of apples. Alternatively, the consumer may substitute apples for oranges (that is, purchase more than 1 pound of apples and less than 1 pound of oranges) or may indeed purchase less than 1 pound of each fruit. Only if the consumer continues to purchase 1 pound of apples and 1 pound of oranges after the price change will the index perfectly adjust nominal expenditures in the first period to values that are to be compared with those observed in the second period.[3]

Nevertheless, using the price index to convert nominal expenditures to real expenditures is important. Although the results may not provide a perfect adjustment to the first-period expenditures for comparison over time, they still provide better information for analysis than a comparison of unadjusted values. Like any tool, a price index has to be used cautiously and correctly, and the analyst has to be aware of both its uses and its limitations before drawing analytical conclusions.

Statistical procedures

Adjusting expenditures for food at home. In the Interview component, or Interview Survey, of the CE, data on expenditures for food at home are collected by means of two questions. Prior to 1988, the first question asked about monthly expenditures for food at grocery stores and the second asked about monthly expenditures for food at other stores, such as convenience stores. In 1988, each question was changed to ask about weekly expenditures for these items. From 1987 to 1988, average expenditures for food at home for young single adults rose 44.8 percent. By contrast, from 1984 to 1987 the average annual increase (2.5 percent) was similar to the average annual increase from 1988 to 2005 (1.9 percent).[4] Because the change in these expenditures in any single year other than from 1987 to 1988 ranged from –9.8 percent (from 1992 to 1993) to 8.6 percent (from 2003 to 2004), the large change from 1987 to 1988 is presumably due to the change in the two questions.

Some of the change may be due to the way in which respondents think about the questions, as well as the way in which the processing of the data changed starting in 1988. When asked to report monthly expenditures, respondents may have thought about weekly expenditures, which they then multiplied by 4 before reporting. For example, a respondent with $50 in usual weekly expenditures would have reported $200 per month. During processing, these monthly reported expenditures were multiplied by 3 to produce quarterly estimates, because there are 3 months per quarter. In this example, $600 would be the resulting quarterly expenditure estimate. However, when weekly expenditures are collected directly, they are multiplied by 13 to obtain quarterly estimates, because there are 13 weeks per quarter. Thus, the quarterly estimate would be $650, not $600. However, if the hypothesis presented here is correct, then quarterly expenditures are expected to rise about 8 percent due to the change in the questionnaire, because, essentially, reported expenditures are being increased by about one-twelfth. (That is, when monthly expenditures are multiplied by 3, only 12 weeks of expenditures compose the quarterly estimate, whereas, since 1988, an extra week is included in the composition of the quarterly estimate). Of course, even if this hypothesis is correct, expenditures for 1988 could increase by more or less than 8 percent, due to changes in prices or other exogenous factors that contribute to the natural variation in expenditures for food at home from year to year. Still, the increase of nearly 45 percent strongly reduces the credibility of the aforementioned hypothesis, especially because data on expenditures for food at home (excluding food prepared by the consumer unit on out-of-town trips) published in standard tables, which are derived from the Diary component, or Diary Survey, of the CE, do not show

such a change from 1987 to 1988.[5] Therefore, to account for the change—whatever its cause—requires an adjustment more complicated than adding 8 percent to reported expenditures in order to make expenditures in 1984–85 more comparable to those reported in 2004–05.

To start, it is important to note that in the Interview Survey, as mentioned, information on expenditures for food at home excluding food prepared on trips consists of data collected from two questions: one on food purchased from grocery stores, the other on food purchased from other stores, such as convenience stores. Both questions changed in 1988 to request usual weekly, rather than monthly, expenditures. Each question was affected by the change in the magnitude of the response to it: for those reporting expenditures at grocery stores, the expenditure increased more than one-third (37 percent); however, for those reporting expenditures at other stores, the expenditure more than doubled (rising almost 104 percent). Nevertheless, the change in the questions does not appear to have affected the *rate* of response to them: from 1986 to 1989 (that is, the last 2 years of the monthly question and the first 2 years of the weekly question), the percentage of respondents reporting purchases at grocery stores ranged from 95.9 percent (1986) to 96.8 percent (1989), while the percentage reporting purchases at other stores ranged from 40.4 percent (1988) to 42.0 percent (1987).

The next step is to estimate the values that would have been reported in 1984 and 1985 had the questions asked about usual weekly, rather than monthly, expenditures. One method is simply to adjust the 1984 and 1985 expenditures by the percent change reported from 1987 to 1988. Consider, for example, expenditures at grocery stores. As mentioned earlier, the change in the mean for young singles who report these expenditures was 37 percent. Therefore, multiplying these expenditures, as reported in 1984 and 1985, by 1.37 would increase them by the appropriate amount. However, this method is too simplistic, for when the 1987–88 change is omitted, the percent change in expenditures at grocery stores ranges from –9.8 percent (from 1992 to 1993) to 9.1 percent (from 1991 to 1992). Even excluding this period of volatility (from 1991 to 1993), the percent change ranges from –2.8 percent (from 1988 to 1989) to 7.5 percent (from 1999 to 2000). Therefore, it is difficult to say how much of the 37-percent change is due to the change in the questionnaire and how much is due to natural variation in reported expenditures. Simply multiplying expenditures reported in 1984 and 1985 by 1.37 may substantially over- or underestimate the values that would have been reported if usual weekly expenditures had been collected then.

Instead, regression is used to estimate the adjustment factor. In each regression (run separately for grocery store expenditures and other store expenditures), for those reporting expenditures in each year, the natural logarithm of the mean value of their expenditures is regressed on certain variables (described subsequently), the values of which depend on the period. The purpose of this logarithmic model is to use a formula that is well known in finance, namely, $A_t = A_0 e^{rt}$, where A_0 is the initial amount invested in an account, r is the rate of growth (for example, the interest rate) of the investment, t is the number of periods, e is a transcendental number equivalent to approximately 2.718, and A_t is the amount in the account in the final period. In the study of expenditures, r is the average annual rate of change of expenditures and can be calculated when other variables in the equation have known values. In the present case, the mean value for young singles who reported grocery store expenditures in 1984 was $A_0 \approx \$216$. In 1987, the value was $A_t \approx \$229$. Accordingly, by what rate would expenditures have to have increased each year to meet these conditions? To find out, the natural logarithm of both sides of the earlier equation is taken, or $\ln(A_t) = \ln(A_0) + rt$. From this point forward, r can be found with standard algebra, given that t is 3 (because the initial \$216 grew for 3 years after 1984—that is, from 1984 to 1985, from 1985 to 1986, and from 1986 to 1987).

Although this method describes the average annual growth rate necessary to move from the values observed in 1984 to those observed in 1987, the rate obtained may be affected by random variation in the data. That is, suppose that a drought or some other event caused prices, and therefore expenditures, to be higher than usual in 1984, but that they returned to their expected level in 1987. Then the average annual growth rate computed in this way would underestimate the actual underlying long-term growth rate, because expenditures in 1984 would have started at a higher level than expected and therefore would need to increase less swiftly each year to reach the expected 1987 level than they would have had observed values equaled expected values in both years. To estimate both the initial expected starting value and the underlying long-term growth rate, then, regression is used. Note that when the natural logarithm of expenditures is regressed on time values, the intercept of the equation estimates $\ln(A_0)$—the logarithm of the expected value of expenditures when t equals zero—and the coefficient of t is the estimated average annual growth rate for the long-term trend.

Before performing the regression, it is important to note that the change in question may have affected not only the intercept of the equation, but also the rate at which reported expenditures change over time. To find out, a single regression is run so that the coefficients of the intercept and slope for the 1984–87 equation can be compared with those for the 1988–2005 equation. The equation for the regression is

$$\ln(A_t) = c_1B_1 + c_2B_2 + r_1B_1t + r_2B_2t + u.$$

In this regression, binary variables are used for convenience in place of the traditional intercept. The first binary variable (B_1) equals unity for the years 1984 through 1987 and zero for 1988 through 2005. The second binary variable (B_2) equals zero for the initial years (1984 through 1987) and unity for the later years (1988 through 2005). Next, each year is assigned a value t for the period it represents. For 1984, t equals zero; for 2005, t equals 21. This time variable is not included separately in the

model; however, it is multiplied by each of the binary variables just described, and these interaction terms are included in the model. The coefficients c_1 and c_2 of the binary variables provide the estimated intercept for each of the periods, while the coefficients r_1 and r_2 of the interaction terms provide the estimated long-term growth rates for each model. (The final term, u, is the error term.) As expected, the difference of the coefficients of the binary variables is statistically significant, indicating that there was a change in reported values when the new question was introduced. However, the difference of the coefficients of the interaction terms is not statistically significant, as shown by an F test.[6] Therefore, the hypothesis that the question had no effect on the underlying trend is reasonable on the basis of the evidence.

With the regression results computed (see table A-1), the coefficients of the binary variables are used to calculate the adjustment factor. Note that the coefficient of the second binary variable provides an estimate of what the natural logarithm of reported expenditures would have been in 1984 had the weekly, rather than monthly, question been asked then. To find out the estimated value that actually would have been reported, this coefficient is exponentiated, yielding $212.42. Similarly, the coefficient of the first binary variable is exponentiated, yielding the estimated value ($282.01) for expenditures in 1984 in the absence of random variation that removed reported values from their underlying trend line. The ratio of these two values is about 1.3276; that is, the change in the question is estimated to have raised expenditures by about 32.8 percent. Therefore, this ratio is used as the adjustment factor for food purchased at grocery stores in 1984 and 1985. A similar analysis shows that the estimated factor for food purchased at other stores is about 1.6825. (See table A-2 for regression results.)

Once found, expenditures for each type of purchase are multiplied by their adjustment factor, and food at home expenditures in 1984–85 are computed from these adjusted values. To test the adjustment, the unadjusted change in average expenditures for food at home from 1987 to 1988 is compared with the adjusted value. As noted in the text, prior to adjustment, expenditures for food at home excluding food prepared on trips rise nearly 45 percent from 1987 to 1988. However, after the adjustment, the percent change is 5.9 percent, a value that is within the range (from –2.8 percent to 7.5 percent) for changes in observed (that is, preadjusted) values, even when observations from the most volatile period (1991 to 1993) are excluded. Perhaps more important, after adjustment, the components also demonstrate reasonable changes in the mean for those reporting from 1987 to 1988.[7] Given that this finding is reasonable, the adjustment factors are accepted. Finally, as noted in the text, other values, such as total food expenditures, total outlays, and "all other outlays" (that is, total outlays less food, shelter and utilities, and other items listed in table 2 in the text), are then computed from these adjusted values.

An alternative method to that just described is to exponentiate the intercepts as described, subtract the 1984–87 value from the 1988–2005 value, and add the resulting difference to each of the observations in the data set before computing results for food at home. Either method would result in the same mean for expenditures for food at home excluding food prepared on trips. However, in the alternative method, the variance of each component that would be computed prior to

Table A-1. Regression results for computing adjustment factors for expenditures for food purchased at grocery stores[1]

Variable	DF	Parameter estimate	Standard error	*t* value	Pr > |*t*|
Year 1984–87 (B_1)	1	5.35857	0.02370	226.06	<.0001
Time 1984–87 (B_1t)	1	0.01858	0.01267	1.47	0.1599
Year 1988–2005 (B_2)	1	5.64193	0.01742	323.87	<.0001
Time 1988–2005 (B_2t)	1	0.02360	0.00129	18.34	<.0001

Computation of factor: (exp(5.64193))/(exp(5.35857)) = 1.327583.

[1] Dependent variable: Natural logarithm of mean expenditures for food purchased at grocery stores.

Table A-2. Regression results for computing adjustment factors for expenditures for food purchased at other stores[1]

Variable	DF	Parameter estimate	Standard error	*t* value	Pr > |*t*|
Year 1984–87 (B_1)	1	4.19795	0.06290	66.74	<.0001
Time 1984–87 (B_1t)	1	–0.01903	0.03362	–0.57	0.5784
Year 1988–2005 (B_2)	1	4.71821	0.04622	102.07	<.0001
Time 1988–2005 (B_2t)	1	0.02188	0.00342	6.41	<.0001

Computation of factor: (exp(4.71821))/(exp(4.19795)) = 1.682465.

[1] Dependent variable: Natural logarithm of mean expenditures for food purchased at other stores.

the adjustment would be unchanged after the adjustment. The result would be a larger mean with the same standard error of the mean for each component, thus increasing the likelihood that differences over time for the aggregate expenditure (that is, food at home excluding food prepared on trips) would be statistically significant.

In contrast, using the percentage adjustment factor allows the variance of each component to increase in proportion to the increase in the mean of each component. That is, if the mean for food purchased at grocery stores rises by 37 percent, so will the standard error of the mean for that component. Similarly, adjusting separately each of the components of expenditures for food at home excluding food prepared on trips allows for a larger variance in the recomputed aggregate expenditure than performing the regression directly on mean expenditures for food at home excluding food prepared on trips. The reason is that some respondents report expenditures only for food at grocery stores, some report expenditures only for food at other stores, and some report both. Because the adjustment factors differ for each of the components, the percent increase in total expenditures for food at home excluding food prepared on trips will differ for each type of respondent, which in turn will increase the variance among respondents. As noted, the larger variance makes the analysis of change more conservative. That is, the threshold for finding a statistically significant difference is higher when the variance is higher, and therefore the analyst can be more confident in accepting the results. This conservative approach is especially important given that the data have undergone adjustments which are themselves based on estimates rather than reported values.

Box-Cox transformations. Expenditure data are not often normally distributed, a situation that can cause bias in regression results.[8] However, expenditure data can be transformed so that they are *approximately* normally distributed. One method that has been used is the Box-Cox transformation.[9] Perhaps the most frequently cited version is

$$Y^* = (Y^\lambda - 1)/\lambda, \qquad (1)$$

where Y^* is the transformed version of the variable, Y denotes expenditures for a specific good or service (for example, food at home or apparel), and λ is a parameter. This version of the equation is most useful in demonstrating two special cases for the value of λ:

1. If λ is equal to unity, then no transformation of the independent variable is necessary. (The net result is that Y^* equals $Y - 1$, and subtracting a constant from each observation of Y will not affect the distribution.)
2. If λ approaches zero, then Y^* is approximately equal to the natural logarithm of Y.

Although this specification is useful for deriving the value of Y^* when λ approaches zero, it does not yield an intuitive interpretation when λ takes on any other value.[10] However, in their original article, Box and Cox point out that equation (1) can be simplified to

$$Y^* = Y_\lambda.$$

This equation leads to a simple interpretation of both λ and the equation as a whole. In the current study, λ is found to be 1/4 for total outlays, indicating that the transformed variable is then simply the fourth root of Y. For income before taxes, λ is found to be 3/8, or the eighth root of the cubed income before taxes.[11]

The Box-Cox transformation is particularly useful in two special cases: when the results confirm that no transformation is required (that is, when λ, the transformation factor, equals unity) and when a logarithmic transformation is appropriate (that is, when λ equals zero). In these cases, the parameter estimates are intuitively interpretable. For example, if untransformed outlays are regressed on binary variables, the parameter estimates of those variables show how much more (or less) the group defined by the variable spends than a similar member of the control group. For example, if the coefficient of *rural* is 0.05, then rural residents spend 5 cents more, on average, than urban residents, *ceteris paribus*. If untransformed outlays are regressed on untransformed income, then the parameter estimate on income is equal to the marginal propensity to consume, which is the portion of each additional dollar that is expected to be allocated to total outlays, at least in the current study. (That is, if the parameter estimate of income is 0.05, then total outlays are predicted to increase 5 cents each time income increases by 1 dollar.) Similarly, if logarithmically transformed outlays are regressed on untransformed income and other variables, then the coefficient, if small, describes the percent change in outcome, given the group change. (As an example, if the coefficient of *rural* is 0.05, then those in a rural area spend 5 percent more than those in an urban area. If the coefficient of untransformed income is 0.05, then each dollar increase in income is predicted to lead to a 5-percent increase in total outlays.) Finally, if logarithmically transformed outlays are regressed on logarithmically transformed income, then the parameter estimate of income is an estimate of income elasticity—that is, the predicted percent change in total outlays, given a 1-percent change in income.

The obvious question raised is how the value of λ is found. Conventionally, this is done by trial and error. Several values for λ are used, and whichever yields the model with the lowest mean square error is the selected value. However, this method is extremely time consuming, especially because two variables (total outlays and predicted current income) are being transformed. In this study, λ is estimated through a maximum-likelihood procedure used by Stuart Scott and Daniel J. Rope in their 1993 study of Consumer Expenditure Survey data.[12]

Measuring statistical significance: types and computations of t-*statistics*. As noted in the text, a difference in two parameters, such as means, is considered to be statistically significant if it is not likely to be due to chance alone. A common statistic used

to measure the probability that a difference is due to chance alone (and thus is, or is not, statistically significant) is the t-*statistic*. When samples are large, a *t*-statistic greater than 1.96 in absolute value indicates that the probability that a difference in parameters is due to chance alone is less than 5 percent.

The formula for computing the *t*-statistic depends on what type of comparison is being performed. Perhaps the most common use of the *t*-statistic is for comparing means. In the text, for example, average annualized real total outlays are compared for young singles in two different periods. The samples are therefore independent and are assumed to have different variances. In this case, the formula for computing the *t*-statistic is

$$\frac{x_2 - x_1}{\sqrt{\mathrm{SE}_2^2 + \mathrm{SE}_1^2}},$$

where x_i is average annualized real total outlays in period *i* (1984–85 or 2004–05) and SE_i is the standard error of the mean in period *i*.

In table 4 in the text, average annualized real total outlays for all young singles is shown to be $23,866 in 1984–85 and $22,744 in 2004–05. The standard errors associated with these means are 663.03 and 531.85, respectively. Therefore, the *t*-statistic is computed to be

$$\frac{22,744 - 23,866}{\sqrt{531.85^2 + 663.03^2}} = -1.32.$$

Because the absolute value of the *t*-statistic (1.32) is less than the critical value (1.96), the probability that the difference in means (a decrease of $1,122) is due to sampling error or other random events is greater than 5 percent; therefore, the difference is not statistically significant at the 95-percent confidence level.

However, testing differences in means is not the only use for *t*-statistics: they also can be used to detect statistically significant differences in *proportions*. For example, table 3 in the text shows that, in 1984–85, 64 percent of all households with *at least* one young single person were households with *only* that young single person. (That is, 36 percent of these households included at least one other person, regardless of age or marital status.) In 2004–05, that proportion increased to 77 percent. The critical value to test whether these proportions reflect a change in the composition of households is still 1.96; however, the formula for computing the *t*-statistic changes to

$$\frac{p_1 - p_2}{\sqrt{p_3(1 - p_3)\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}},$$

where p_1 is the proportion of households with exactly one young single person in 1984–85 (that is, 1,252/1,953); p_2 is the proportion of households with exactly one young single person in 2004–05 (that is, 1,401/1,811); p_3 is the "pooled" proportion (that is, [1,252 + 1,401]/[1,953 + 1,811]); n_1 is the sample size in 1984–85 (that is, 1,953); and n_2 is the sample size in 2004–05 (that is, 1,811). The outcome of this test is similar to that of a chi-square test; in fact, the *t*-statistic equals the square root of the chi-square statistic computed by means of a chi-square test.

In addition, there is a special formula for comparing differences in *shares* across groups. A special formula is needed for this type of comparison because the value being measured is a ratio of two other variables that not only have their own means and standard errors, but also are not independent of each other. For example, because food at home is a component of total outlays, the covariance of mean expenditures for food at home and total outlays is expected to be positive. That is, as expenditures for food at home rise, so do total outlays, assuming that all other outlays are held constant. Accordingly, in this case, before computing the *t*-statistic, it is necessary to compute the variance of the share for each year. The formula for the variance of the share in a particular year is[13]

$$V(S) = \left(\frac{1}{n}\right)\left[\frac{F^2}{T^4}V(T) - 2\left(\frac{F}{T^3}\right)\mathrm{cov}_{F,T} + \left(\frac{1}{T^2}\right)V(F)\right],$$

where *n* is the sample size (2,359 for 1984–85 and 2,158 for 2004–05); *F* is the average expenditure for food at home; *T* is the average of total outlays (including food at home); *V*(*i*) is the sample variance of the expenditure or outlay; and $\mathrm{cov}_{F,T}$ is the covariance of food at home and total outlays.

Note that *V*(*i*) is the variance of the observations in the sample, not the variance of the mean obtained from the sample. That is, *V*(*i*) measures how the observations vary around the mean of the sample, rather than estimating how means of similarly sized samples drawn from the same population would vary around the population mean. In other words, *V*(*i*) is the square of the sample standard deviation, and $V(i)/n$ is equal to $(\mathrm{SE}_i)^2$. Therefore, the previous formula can be rewritten as

$$V(S) = \left[\frac{F^2}{T^4}(\mathrm{SE}_T)^2 - 2\left(\frac{1}{n}\right)\left(\frac{F}{T^3}\right)\mathrm{cov}_{F,T} + \left(\frac{1}{T^2}\right)(\mathrm{SE}_F)^2\right].$$

For convenience, this equation simplifies to

$$V(S) = \left(\frac{1}{T^2}\right)\left[\left(\left(\frac{F}{T}\right)\mathrm{SE}_T\right)^2 - 2\left(\frac{1}{n}\right)\left(\frac{F}{T}\right)\mathrm{cov}_{F,T} + (\mathrm{SE}_F)^2\right],$$

where *F/T* is the value of the share (that is, the ratio of the averages) undergoing testing.

Because *V*(*S*) equals the squared standard error of the share (and not the squared standard deviation of the share), the formula for the *t*-statistic is now

$$\frac{S_2 - S_1}{\sqrt{V(S_2) + V(S_1)}},$$

where $S_i = F_i/T_i$. Once again, the critical value in this case is 1.96.

Regression technique: omitted-variable bias and two-stage least squares. Income data in household surveys are subject to nonresponse. That is, a person may not know or may not report the value of a particular source of income received, even when the income is reported as having been received. Starting with the publication of the 2004 data, the CE has used multiple imputa-

tion to fill in missing values. However, prior to that time, other methods were used to adjust for nonresponse.[14] Starting with the publication of the 1972–73 survey results, consumer units were classified as either "complete" or "incomplete" reporters of income. In general, complete reporters provided a value for at least one major source of income, such as wages and salaries, self-employment, or Social Security. However, even complete income reporters did not always provide a full accounting of income from all sources.

Using income information just from complete income reporters is problematic. First, the fact that some of the respondents provide only partial information (for example, the respondent may report a value for wages and salaries, but may not know the value of interest income, which also is reported as having been

Table A-3. First-stage parameter estimates: finding transformed predicted income before taxes

Variable	Degrees of freedom	Estimate	Standard error	*t*-value	Pr > |*t*|
Intercept	1	44.83685	0.69138	64.85	<.0001
Age (21 to 24 years):					
25 to 29 years	1	4.07534	.42637	9.56	<.0001
Educational attainment (attended college):					
High school diploma or less	1	–.38170	.55591	–.69	.4924
College graduate	1	2.25042	.50513	4.46	<.0001
College enrollment status (not enrolled):					
Full time and working	1	–6.78360	.61463	–11.04	<.0001
Part time and working	1	–.89302	.72419	–1.23	.2176
Not working	1	–20.27647	1.32363	–15.32	<.0001
Female	1	–3.07555	.40355	–7.62	<.0001
Race and ethnicity (White, not Hispanic):					
Black, not Hispanic	1	–.51585	.74119	–.70	.4865
Hispanic	1	–2.85858	1.03030	–2.77	.0056
Working status (full time, full year):					
Part time, full year	1	–8.81356	.75273	–11.71	<.0001
Full time, part year	1	–8.72973	.52654	–16.58	<.0001
Part time, part year	1	–14.43290	.72592	–19.88	<.0001
Occupational status (wage or salary worker, technical or sales position):					
Self-employed	1	–.11224	1.18164	–.09	.9243
Working for wage or salary:					
Manager or professional	1	.76609	.50680	1.51	.1307
Service worker	1	–1.53400	.62622	– 2.45	.0144
Construction worker	1	–.20153	.85395	–.24	.8134
Operator or laborer	1	–1.49054	.69148	–2.16	.0312
Not working, not a student	1	–23.74494	1.89464	–12.53	<.0001
Housing tenure (renter):					
Homeowner	1	3.68873	.73446	5.02	<.0001
Region of residence (West):					
Northeast	1	.11371	.61719	.18	.8538
Midwest	1	–1.32749	.52756	–2.52	.0119
South	1	1.08596	.50654	2.14	.0321
Degree of urbanization (urban):					
Rural	1	–3.09185	.96167	–3.22	.0013
Income sources received:					
Interest, dividends, rental or other property income	1	3.14055	.41046	7.65	<.0001
Unemployment and workers' compensation, veterans' benefits	1	11.50882	3.13601	3.67	.0002
Public assistance, supplemental security income, food stamps	1	–8.16817	3.07402	–2.66	.0079

Table A-3. Continued—First-stage parameter estimates: finding transformed predicted income before taxes

Variable	Degrees of freedom	Estimate	Standard error	*t*-value	Pr > |*t*|
Regular contributions of support	1	3.32100	.73093	4.54	<.0001
Other income	1	5.13518	1.01332	5.07	<.0001
Interviewed in 2004–05	1	1.13994	1.04037	1.10	.2733
Interaction terms (main effect × interviewed in 2004–05):					
Age, 2004–05 (21 to 24 years)					
25 to 29 years	1	–.19642	.67560	–.29	.7713
Educational attainment, 2004–05 (attended college):					
High school diploma or less	1	–2.73833	.91664	–2.99	.0028
College graduate	1	–.12090	.79648	–.15	.8794
College enrollment status, 2004–05 (not enrolled):					
Full time and working	1	–.90283	.93243	–.97	.3330
Part time and working	1	–.32735	1.10748	–.30	.7676
Not working	1	–6.69818	1.85069	–3.62	.0003
Female, interviewed in 2004–05	1	1.35791	.63030	2.15	.0313
Race and ethnicity, 2004–05 (White, not Hispanic):					
Black, not Hispanic	1	–.93589	1.09759	–.85	.3939
Hispanic	1	.78776	1.33284	.59	.5545
Working status, 2004–05 (full time, full year):					
Part time, full year	1	–.02673	1.14194	–.02	.9813
Full time, part year	1	1.21578	.86423	1.41	.1596
Part time, part year	1	.33444	1.08504	.31	.7579
Occupational status, 2004–05 (wage or salary worker, technical or sales position):					
Self-employed	1	–4.30790	2.81172	–1.53	.1256
Working for wage or salary:					
Manager or professional	1	.58195	.82064	.71	.4783
Service worker	1	–1.73644	.97061	–1.79	.0737
Construction worker	1	–.65803	1.39112	–.47	.6362
Operator or laborer	1	.25725	1.05960	.24	.8082
Not working, not a student	1	4.15742	2.89671	1.44	.1513
Housing tenure, 2004–05 (renter):					
Homeowner	1	.17637	.98356	.18	.8577
Region of residence, 2004–05 (West):					
Northeast	1	2.77112	.97875	2.83	.0047
Midwest	1	.53115	.79069	.67	.5018
South	1	–1.63887	.79176	–2.07	.0385
Degree of urbanization, 2004–05 (urban):					
Rural	1	–1.13222	1.60083	–.71	.4794
Income sources received, 2004–05:					
Interest, dividends, rental or other property income	1	–.94547	.71348	–1.33	.1852
Unemployment and workers' compensation, veterans' benefits	1	–8.36648	3.51013	–2.38	.0172
Public assistance, supplemental security income, food stamps	1	4.23402	3.53861	1.20	.2316
Regular contributions of support	1	–.05836	1.05079	–.06	.9557
Other income	1	–2.56298	1.39317	–1.84	.0659

Table A-4. Second-stage parameter estimates: finding transformed predicted annualized total outlays

Variable	Degrees of freedom	Estimate	Standard error	*t*-value	Pr > |*t*|
Intercept	1	8.03039	0.67458	11.90	<.0001
Age (21 to 24 years):					
25 to 29 years	1	–.05596	.09249	–.61	.5452
Educational attainment (attended college):					
High school diploma or less	1	–.15892	.09373	–1.70	.0901
College graduate	1	.17416	.09081	1.92	.0552
College enrollment status (not enrolled):					
Full time and working	1	.02253	.13350	.17	.8660
Part time and working	1	.07269	.12338	.59	.5558
Not working	1	.55379	.32756	1.69	.0910
Female	1	–.08919	.08189	–1.09	.2762
Race and ethnicity (white, not Hispanic):					
Black, not Hispanic	1	–.04084	.12436	–.33	.7427
Hispanic	1	–.47492	.18687	–2.54	.0111
Working status, (full time, full year):					
Part time, full year	1	.19196	.18302	1.05	.2943
Full time, part year	1	.13654	.14258	.96	.3383
Part time, part year	1	.08636	.22704	.38	.7037
Occupational status (wage or salary worker, technical or sales position):					
Self-employed	1	.23083	.19580	1.18	.2385
Working for wage or salary:					
Manager or professional	1	.19952	.08676	2.30	.0215
Service worker	1	–.22049	.10636	–2.07	.0382
Construction worker	1	–.23205	.14730	–1.58	.1153
Operator or laborer	1	–.38350	.11559	–3.32	.0009
Not working, not a student	1	–.21648	.42960	–.50	.6144
Housing tenure (renter):					
Homeowner	1	.23613	.13128	1.80	.0721
Region of residence (West):					
Northeast	1	–.02154	.09927	–.22	.8282
Midwest	1	–.24903	.09034	–2.76	.0059
South	1	–.10234	.08784	–1.17	.2441
Degree of urbanization (urban):					
Rural	1	–.11064	.16816	–.66	.5106
Vehicles owned:					
Cars and trucks	1	.57731	.05330	10.83	<.0001
Other vehicles	1	.35879	.04844	7.41	<.0001
Predicted real income, transformed	1	.08654	.01415	6.12	<.0001
Interviewed in 2004–05	1	–.72480	1.17356	–.62	.5369
Interaction terms (main effect interviewed in 2004–05):					
Age, 2004–05 (21 to 24 years):					
25 to 29 years	1	.24306	.14090	1.73	.0846
Educational attainment, 2004–05 (attended college):					
High school diploma or less	1	.23101	.15896	1.45	.1462
College graduate	1	.20538	.13662	1.50	.1328

Table A-4. Continued—Second-stage parameter estimates: finding transformed predicted annualized total outlays

Variable	Degrees of freedom	Estimate	Standard error	*t*-value	Pr > |*t*|
College enrollment status, 2004–05 (not enrolled):					
Full time, and working	1	.37666	.22153	1.70	.0891
Part time, and working	1	.41639	.18367	2.27	.0234
Not working	1	1.06220	.63370	1.68	.0938
Female, interviewed in 2004–05	1	.10382	.11524	.90	.3677
Race and ethnicity, 2004–05 (White, not Hispanic):					
Black, not Hispanic	1	.11724	.17705	.66	.5079
Hispanic	1	.35454	.23336	1.52	.1288
Working status, 2004–05 (full time, full year):					
Part time, full year	1	.01636	.28468	.06	.9542
Full time, part year	1	.15451	.22681	.68	.4958
Part time, part year	1	.38287	.37219	1.03	.3037
Occupational status, 2004–05 (wage or salary worker, technical or sales position):					
Self-employed	1	.04207	.32763	.13	.8978
Working for wage or salary:					
Manager or professional	1	–.25852	.13482	–1.92	.0552
Service worker	1	.25946	.16759	1.55	.1216
Construction worker	1	.00431	.22150	.02	.9845
Operator or laborer	1	.04722	.17196	.27	.7836
Not working, not a student	1	–.11896	.65656	–.18	.8562
Housing tenure, 2004–05 (renter):					
Homeowner	1	–.12362	.18322	-.67	.4999
Region of residence, 2004–05 (West):					
Northeast	1	–.43526	.15845	–2.75	.0060
Midwest	1	–.09593	.12878	–.74	.4564
South	1	–.14080	.12736	–1.11	.2690
Degree of urbanization, 2004–05 (urban):					
Rural	1	–.33694	.26937	–1.25	.2110
Vehicles owned, 2004–05:					
Cars and trucks	1	–.12515	.07936	–1.58	.1149
Other vehicles	1	.23272	.07823	2.97	.0029
Predicted real income, transformed, 2004–05	1	.00825	.02477	.33	.7392

received) introduces measurement error into the regression. Even if the sample is reduced just to respondents who reported values for each source of income that they reported as having been received (call them "nonmissing" income reporters for the purposes of this discussion), mean income and parameter estimates obtained from this sample are biased, unless the reduced sample is a random subset of the population.[15] Unfortunately, the assumption that the reduced sample is drawn randomly from the population is not realistic either generally or for young single adults, the group under study in this article. For example, in 2004–05, 31 percent of all young singles in the sample were missing values for at least one source of income, but only 28 percent of single men were, compared with 35 percent of single women.[16]

In most of the analysis presented in this text, total outlays are used as a proxy for permanent income. However, in this section, the purpose is to estimate total outlays while controlling for demographic differences, so that demographic subgroups can be compared. Clearly, current income (measured in the CE by income before taxes) is expected to be an important predictor of permanent income. Therefore, leaving it out of the right-hand side of the regression equation would cause omitted-variable bias. Yet, as noted, including an estimate of current income that is subject to nonresponse also will cause bias in regression parameters. The parameter estimate for income will be biased upward[17] and, especially given that income is correlated with other right-hand-side variables, may bias their parameter estimates in ways that are undeterminable a priori. Consequently, to solve this problem, a two-stage least squares procedure is performed. In the first stage, a regression is run using Box-Cox transformed observations only from nonmissing income reporters who re-

port no losses for income from any source.[18] The parameter estimates from this regression are then used to predict transformed current income for all young single adults, whether or not they reported a value. This predicted value is then utilized as an instrumental variable in the second stage of the regression. That is, total outlays are regressed on predicted current income and other characteristics in order to ascertain whether there is evidence to suggest that subgroups of young single adults have experienced an increase or a decrease in economic well-being as measured through predicted permanent income.

Most of the independent variables used to predict current income are the same as those used to predict total outlays. However, some variables are excluded from this model, while others are included. The numbers of automobiles and other vehicles are excluded from the income model because their importance in predicting income is not apparent a priori. Instead, added to the model are several variables describing the type of income received, such as income from investment sources (interest, dividends, rental income, other property income, or pensions and annuities). Most of these categories are taken from those published in standard CE tables, but there are some modifications. The category "Social Security, private and government retirement" is not included in the table. Instead, its components are moved to other categories. Social Security, for example, is moved to "public assistance, supplemental security income, and food stamps" because young adults are not eligible for Social Security, except in cases of disability or survivors' benefits. The component for pensions and annuities is included with interest, dividends, and rental and other property income to form "investment income," because it is likely that anyone in this age group who correctly reports having received that type of income is receiving income from investment in an annuity, rather than pension income. Finally, these categories include only money income, so meals and rent as pay are excluded from "other" income.

Table A-3 shows the regression results utilized to predict current income, which is the variable used in the second stage of the two-stage least squares procedure. Table A-4 shows the results of the second-stage analysis, in which real total outlays are predicted.

Notes to the appendix

[1] In general, the Consumer Expenditure Survey (CE) collects information on expenditures made, but not on amounts or quantities purchased. For example, a person may report having spent $20 for movie tickets in the past 3 months, but data on whether that person went to the movies twice and spent $10 each time or went 10 times to a discount movie theater are not collected.

[2] Note that similar comparisons can be made even when neither period of interest is the base year for the index. For example, suppose that the analyst wants to compare expenditures that took place before the base year with those in the second period. Suppose also that the price index for the pre-base-year period in question is 80.0 and the expenditures for that period are $3. To convert these expenditures to second-period values, the analyst once again multiplies the expenditures from the pre-base-year period by the ratio of the second-period index to the index for the pre-base-year period (that is, [400.0/80.0] × $3 = $15). The result shows that real expenditures in the pre-base-year period are less than the value of expenditures reported in the second period. Therefore, the purchaser must have purchased more pounds of apples in the second period than in the pre-base-year period, even though the price of apples has increased.

[3] These comments pertain to the Laspeyres index, upon which the Consumer Price Index (CPI) is based. (See BLS *Handbook of Methods* (Bureau of Labor Statistics, June 2007), Chapter 17, "The Consumer Price Index," especially p. 3, on the Internet at **www.bls.gov/opub/hom/pdf/homch17.pdf** (visited Mar. 25, 2008).) Although other price indexes exist that attempt to adjust for these kinds of substitutions, a complete discussion is beyond the scope of this article.

[4] The food-at-home figure is computed by comparing the value in the final year of interest with the value in the first year of interest and computing the percentage by which expenditures would have to increase each year to reach the value in the final year. The formula is described subsequently in this section of the appendix.

[5] For all consumer units, average annual expenditures reported in the Diary Survey for food at home excluding food prepared by the consumer unit on out-of-town trips increased by 1.8 percent from 1987 to 1988; at the same time, these expenditures increased by 16.2 percent according to results from the Interview Survey.

[6] F statistic = 0.16; p-value = 0.6977.

[7] The adjusted mean for grocery store expenditures rises a modest 3.4 percent during this period. The mean for expenditures at other stores rises 21.1 percent from 1987 to 1988 after adjustment, but this percent change is not out of line with figures for other years. The largest percent change, from 1995 to 1996, is 28.0 percent.

[8] Stuart Scott and Daniel J. Rope, "Distributions and Transformations for Family Expenditures," *Proceedings of the Section on Social Statistics* (Alexandria, VA, American Statistical Association, 1993), pp. 741–46.

[9] George E. P. Box and David R. Cox, "An Analysis of Transformations," *Journal of the Royal Statistical Society,* Series B, 1964, pp. 211–43, especially p. 214.

[10] Even if λ is identical to unity, it is hard to imagine why Y would be transformed to $Y - 1$.

[11] This is the same value that Paulin and Sweet found for wage and salary income, also using the Scott and Rope technique. (See Geoffrey D. Paulin and Elizabeth M. Sweet, "Modeling Income in the U.S. Consumer Expenditure Survey," *Journal of Official Statistics*, December 1996, pp. 403–19, especially p. 410.)

[12] Scott and Rope, "Distributions and Transformations."

[13] Adapted from SAS online manual, Chapter 10, "The MIANALYZE Procedure," p. 216, on the Internet at **support.sas.com/rnd/app/papers/mianalyzev802.pdf** (visited Nov. 6, 2007); and J. L. Schafer, *Analysis of Incomplete Multivariate Data* (London, Chapman & Hall, 1997), p. 196.

[14] For a brief description of methods used prior to 1972–73, see Geoffrey D. Paulin and David L. Ferraro, "Imputing income in the Consumer Expenditure Survey," *Monthly Labor Review*, December 1994, pp. 23–31, especially pp. 23–24; on the Internet at **www.bls.gov/opub/mlr/1994/12/art3full.pdf**.

[15] *Ibid.*; page 31 gives an example of how nonrandom nonresponse affects the mean for income.

[16] Interestingly, in 1984–85, there was greater similarity in reporting: 13 percent of young singles (12 percent of men and 15 percent of women) were missing at least one income value. Nonetheless, the p-value for the chi-square statistic of the (unweighted) sample is 0.065, indicating that the results are statistically significant at the 10-percent level.

[17] This claim is based on the assumption that most missing income is positive; therefore, total outlays for a consumer unit with missing income will correspond to a smaller income than the consumer unit actually receives. For some sources, such as self-employment or rental income, it is possible to report a loss. If the amount is missing, however, then the reported income associated with total outlays will be larger than the income the consumer unit actually received. However, losses are reported infrequently, so the assumption that missing incomes are positive is expected to hold in most cases.

[18] Losses can occur for self-employment and property sources of income. However, the Box-Cox transformation does not accept losses in those cases, because the value for λ (3/8) is an even number. The even root (for example, the square root, or the eighth root elevated to the third power in this case) does not exist for negative numbers. Although, for total income before taxes, losses of components of income can be offset by other values (for instance, a $500 loss is offset by a $2,000 wage or salary), income losses even in these cases are infrequent, will serve mainly to increase the variance of predicted income, and may bias the parameters used to predict income. Because the purpose of the regression is to obtain reasonable predicted values for use in the second stage, rather than to provide precise measures of relationships between outlays and actual income, it is reasonable to use the most typical cases (that is, those without losses) as observations for the first-stage regression.

Business Processes and Business Functions: a new way of looking at employment

A new BLS classification system used in conjunction with the Agency's Mass Layoff Statistics program yields fresh information on business processes and functions affected by mass layoff events

Sharon P. Brown

When employers decide to add or eliminate jobs, they are sometimes guided by larger choices to add or eliminate entire classes of activity—business functions—within the company. What may appear to be incremental hiring may in fact be the gradual buildup of a new business function, such as an in-house information technology development department. Or, instead, a mass layoff may stem from a decision to outsource a specific business function, such as human resources management, logistics, janitorial maintenance, or even manufacturing. Deciding which business functions to source to outside vendors and which to perform in-house is a critical part of corporate strategy, as companies seek to become more efficient and competitive or address changes in demand for outputs or supply of inputs.

In an attempt to shed more light on how workplaces and industries are changing, a classification system has been developed that describes basic business processes of the firm and the business functions that are associated with them. This system is now being used in the Mass Layoff Statistics (MLS) program to identify the functions and processes involved in job losses from extended mass layoffs. The system, which is now providing new information on the nature of this type of change in establishments and industries, can be applied equally to other measures of employment, including the current employment structure of a firm, organizational expansions and job growth, and the geographic location of outsourced work. Called Business Processes and Business Functions, the system is based on an approach that is a synthesis derived from existing literature, models of firms' activities, current research on outsourcing and offshoring, the results of a feasibility study of business functions conducted by the BLS MLS program, and the ongoing collection of the relevant information throughout the Nation by the program.

Movement of work statistics

Restructuring and outsourcing of business functions has long been part of the U.S. economic landscape. Companies continually identify strategies to cut costs, become more efficient, expand, and gain access to new markets, among other motivations. As the horizons for moving work have expanded, the offshoring of jobs has become an option that is available to a growing number of employers. Offshoring is often thought to affect only, or at least mainly, manufacturing jobs and production functions. In the early 2000s, however, job losses in information technology and related areas emerged as an important indicator of ongoing change in industries. By 2004, stories on the offshoring of these business functions and the resultant

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job losses in the United States had become a regular topic of debate in the popular media.[1]

As greater attention was placed on a firm's decision to outsource activities, stories also continued about corporate reorganizations and restructurings. These actions were occurring essentially for the same reasons that firms outsource and also involved processes and functions within the company. Companies were consolidating activities, eliminating layers of management, outsourcing some functions, and expanding others internally, to become more efficient and competitive and thereby improve the corporate bottom line.

In order to quantify the anecdotal information on offshoring and outsourcing, the BLS focused on the MLS program, in which monthly and quarterly statistics are collected on plant closings and mass layoffs involving at least 50 workers from businesses employing 50 or more.[2] A set of questions on the movement of work was added to the MLS employer interview to obtain the following data:

- *Job loss associated with outsourcing*. The movement of work to a different company when that work was formerly conducted in-house by employees paid directly by the outsourcing company. The different company can be located inside or outside of the United States. The work may occur at a geographic location different from that of the outsourcing company, or it may remain on-site.

- *Job loss associated with offshoring*. The movement of work from within the United States to a location outside of the Nation. Offshoring can occur either within the same company, when it involves the movement of work to a different location of that company outside of the United States, or to a different company altogether (called *offshoring/outsourcing*).

Statistics on outsourcing and offshoring have been collected by the MLS program since 2004. Job losses associated with the movement of work outside of the United States and that took place for reasons other than seasonal or vacation-related reasons averaged about 2.3 percent of all private nonfarm separations identified by the MLS program over the period 2004–07. Contrary to expectations, job losses associated with the movement of work were not concentrated in industries directly connected to computer and electronic products or information. Also, the majority of this layoff activity was associated with domestic relocation of work, mostly within the company.

If media reporting on offshoring correctly identified an emerging economic phenomenon, one implication of the MLS statistics on offshoring job losses was that the action involved an activity or function *not* directly associated with the industry designation of the firm. That is, information technology jobs were being moved out of the country, but from firms with other industry designations. An additional impetus for studying business functions came from the high level of activity in domestic relocations. The single most reported reason for these relocations was reorganization within the company. Despite the details collected on the layoff, the employer interview questions did not reveal what was behind these actions and what, in fact, was the affected part of the company.

The traditional classification schemes for identifying industries (the North American Industrial Classification System, or NAICS) and for defining occupations (the Standard Occupational Classification system) are not reflective of the full range of activities of the firm. The industry classification approach is based on the primary activity of the establishment, as measured by the largest number of jobs performing that activity; other important direct and support activities that operate within the firm are not explicitly recognized. Hence, any change in employment is associated with the industry code determined by the main activity, even if the change in activity has nothing to do with it. Looking at the occupational classification reveals that the problem is that the system defines the firm's workers, but lacks a direct tie to the firm's internal organization and decisionmaking. Thus, both industry and occupation provide a limited picture of the dynamic nature of industrial organization and economic change.

As it became clear that companies were using internal organizational schemes in analyzing and implementing employment change that could—and did—involve any part of the corporate structure, a new classification system reflecting these components was needed in order to better understand the nature of changes in employment.

Describing a firm's activities

Although Federal statistical programs have not collected statistics on business processes or functions, such data have been used in economic studies and, in recent years, have been mentioned in the popular press in stories on globalization, offshoring, and firm restructuring. Academic economists have described a firm's activities theoretically and used the concept of business organization in firm and industry studies. Among such approaches is Michael Porter's *value chain*, which divides a company's technologically and economically distinct activities that it performs to do business into primary activities and support activities.[3] Similarly, George

Yip has described the impact of global competition and technological improvements on the organization of firm activities and industries, and Timothy Sturgeon and Gary Gereffi, coorganizers of the Global Value Chains Initiative, have contributed to the discussion by identifying and distinguishing between core business processes and support activities, using an approach based on the classification scheme developed for the MLS program.[4]

Many offshoring studies and news accounts focused on activities such as software development and data processing, and relocations of call centers and customer services. One such report, prepared by Ursula Huws and Simone Dahlmann, described the following seven functions in which patterns of global outsourcing exist in the European Union: software development; data processing; sales; customer services; creative and content-generating functions, including research, development, and design; financial functions; and management, human resources, and training functions.[5] These functions could not be viewed solely as industries or occupations, because they can, and do, operate within any establishment, irrespective of its industry classification, and they involve a range of occupations. Not only were studies and news accounts discussing offshoring in terms of business functions, but new companies were being created to provide these outsourced functions to employers.

Business Processes and Business Functions

In order to provide a standard classification approach for use in the MLS program, a set of eight business processes was identified that defines the full range of activities a firm engages in to conduct its business. Within these processes are business functions that describe in greater detail the specific activity that a firm performs in order to produce its product, provide its service, or otherwise achieve its objective. The processes begin with the procurement of inputs and end with those services provided after the sale of the good or service. The eight processes are grouped into core business processes and support business processes. Core business processes relate most directly to the basic business of the firm, with operations representing the key industry activity of the company. Support business processes facilitate core business processes.

Core business processes. Following are the five core business processes characterizing any firm:

- *Procurement, logistics, and distribution*. Those activities associated with obtaining and storing inputs, and storing and transporting finished products to customers.
- *Operations*. Those activities which transform inputs into final outputs, either goods or services.
- *Product or service development*. Activities associated with bringing a new, improved, or redesigned product or service to market. Among these activities are research, marketing analysis, design, and engineering.
- *Marketing, sales, and customer accounts*. Activities aimed at informing existing or potential buyers. These activities include promotion, advertising, telemarketing, selling, and retail management.
- *Customer and aftersales services*. Support services provided to customers after they purchase the good or service. Such activities include training, help-desk services, call-center services, and customer support for guarantees and warranties.

Support business processes. Three support business processes characterize a firm:

- *General management and firm infrastructure.* Corporate governance (legal, finance, planning, and public and government relations), accounting, building services, management, and administrative support.
- *Human resource management.* Activities associated with recruiting, hiring, training, compensating, and dismissing personnel.
- *Technology and process development.* Activities related to maintenance, automation, design or redesign of equipment, hardware, software, procedures, and technical knowledge.

The classification approach used in the MLS program differs slightly from the major models of a firm's activities defined by Porter, on the one hand, and Sturgeon and Gereffi, on the other. The MLS approach identifies *product or service development* as a core business process, whereas Porter includes it under support activities. Also, the MLS scheme includes *procurement* as a core business function, along with *logistics* and *distribution*. By contrast, in Porter's value chain, *procurement* is a separate support activity. As regards the Sturgeon-Gereffi model, *customer and aftersales service* is categorized as a support activity, whereas the BLS

scheme includes it as a core business process. Perhaps the most significant difference in the BLS and Sturgeon-Gereffi conceptual frameworks is the inclusion in the latter, but not the former, of *strategic management* as a core business process.[6] Although Sturgeon and Gereffi's categorization is undoubtedly correct, its relevance to the collection of job losses associated with mass layoffs and plant closings is questionable. Those individuals making up strategic management in a firm would most likely *not* be unemployed and, therefore, filing for unemployment insurance in the event of a layoff or closing—a necessary action for identification by the MLS program. Thus, although *strategic management* is a core business process for the company, it was not identified as a core business process in the BLS MLS approach.[7]

Exhibit 1 describes the full Business Processes and Business Functions system—including strategic management—with examples within each category. The functions are gathered from literature and from recent experience in collecting business functions in the MLS program and are not meant to be definitive or all inclusive. The term "business function" is distinct from both "industry" and "occupation" as a descriptor of the firm. For example, the business functions listed under the process *procurement, logistics, and distribution* include such activities as *buying, loading*, and *transporting*. These activities are not analogous to industry designations or occupations: within a function, there can be a number of different occupations and a range of skill levels.

To properly classify a business function by the higher level process, it is essential to consider the industry of the employer. Business functions that are performed in order to directly transform inputs into final outputs are classified under the business process *operations*, which, in most cases, corresponds to the production process that is the basis for the establishment's NAICS classification or the activity most directly associated with it. The specific business function (*producing goods of a certain type* or *providing services of a certain type*) depends on whether the establishment is classified as a goods-producing or service-producing establishment in NAICS. Examples of other business functions that are considered *operations* are the *direct supervision* of the activity, *fabricating*, and *assembling*.

It is important to note that a business function which falls into *operations* in one industry can be classified as a different business process in another industry. For example, let *accounting services* be the reported business function in an accounting firm. Then, in this case, the business process for the function is *operations*, because that activity directly relates to the service provided by the company. If, however, the function *accounting services* were reported by a manufacturing company, it would not be considered *operations*, but would be classified under *general management and firm infrastructure*.

MLS feasibility study: business function collection

In advance of the development of the formal structure of the Business Processes and Business Functions system, the BLS conducted a feasibility study of business functions through the MLS program. The program collects important information on extended mass layoffs at large establishments through an interview with the affected employers. The interview includes 15 questions that address the nature of the layoff. For the feasibility study, an open-ended question about the business functions involved in the layoff or closing was added to the employer interview. Among the questions to be answered by this test were the following:

- Would an appropriate individual be found to respond to the business function question?
- Would that person understand the question and the concept of a business function?
- Would the responses be pertinent to business functions?

Ten States participated in the feasibility test as part of their regular MLS employer interview, asking the business function question for all layoff events identified in the State in September and October of 2006. Like regular MLS interviews, the test interviews were conducted by telephone and the employers were not given a copy of the interview questions with response options. Data on business functions involved in layoffs were collected through an open-ended question.

The sequence of the questions used in the interview was viewed as very important in ensuring that the discussion of the layoff event would lead to the concept of "business function." That is, the layoff or closing was verified, the economic reason for the layoff was provided, and the industry of the establishment was verified, leading to the question about business functions involved in the layoff. The interview questions and objectives leading to the business function question are shown in exhibit 2. (The full set of questions for the employer interview is presented in exhibit 3.)

Summary of major findings. The 10 participating States collected business function responses related to 154 extended mass layoff events reported for September and October 2006. In all, 237 business functions were reported.

Exhibit 1. Classification of business processes with selected business functions

Core business processes

Strategic management. Those activities carried out at the highest managerial levels. Included are the formation, implementation, and evaluation of cross-functional decisions that enable the organization to achieve long-term objectives. Among such operations are the following:

Coordinating activities
Setting product strategy
Identifying new investments, acquistions, and divestments

Procurement, logistics, and distribution. Those activities associated with obtaining and storing inputs and with storing and transporting finished products to customers:

Buying
Distributing
Loading
Packing
Shipping
Receiving
Transporting
Warehousing

Operations. Those activities which transform inputs into final outputs, either goods or services. In most cases, business functions categorized as operations will equate with the industry code of the establishment or the activity most directly associated with that code. The specific function—the production of a good or the provision of a service—will relate to the specific industry. Operations activities are as follows:

Assembling products
Producing goods
Providing services
Fabricating components
Managing production
Managing services
Conducting quality assurance or quality control

Product or service development. Activities such as the following, associated with bringing a new, improved, or redesigned product or service to market (many of these activities are research, marketing analysis, design, and engineering activities):

Developing business plans
Analyzing markets
Designing products or services
Developing products or services
Researching products or services
Testing

Marketing, sales, and customer accounts. Activities aimed at informing existing or potential buyers (many of these activities are promotion, advertising, telemarketing, selling, and retail management activities):

Advertising
Managing accounts
Billing
Branding or managing products
Collecting payments
Marketing
Conducting market research
Coordinating media relations
Merchandizing
Processing orders
Selling
Telemarketing

Customer and aftersales service. Activities, including training, help desks, call centers, and customer support for guarantees and warranties, that provide support services to customers after purchase of the good or service:

Offering call center services
Providing customer relations
Providing customer service or support
Installing products
Maintaining and repairing products
Providing technical support
Providing warranty support

Support business processes

General management and firm infrastructure. Corporate governance (legal, finance, planning, and public and government relations), accounting, building services, management, and administrative support activities:

Accounting
Providing administrative support
Providing cafeteria services
Providing clerical support
Managing contracts
Managing fraud
Providing general management
Managing government relations
Providing housekeeping services
Providing investor relations

Exhibit 1. Continued—Classification of business processes with selected business functions

Managing documents	Providing legal and regulatory support
Providing facility or maintenance services	Planning
Managing finances	Maintaining security

Human resources management. Activities associated with recruiting, hiring, training, compensating, and dismissing personnel:

Providing employee assistance	Hiring and firing personnel
Managing human resources	Recruiting
Offering labor relations services	Training
Managing payroll and compensation	

Technology and process development. Activities related to maintenance, automation, design or redesign of equipment, hardware, software, procedures, and technical knowledge:

Developing computer systems	Providing Internet services
Maintaining or repairing computer systems	Designing processes
Managing data	Developing and testing software
Processing data	Providing software and information technology services
Engineering	

The function most reported fell under the business process *operations*. This result was expected for the MLS program, because the program focuses on relatively large layoffs (50 or more workers) at relatively large firms (employing 50 or more), and the firm has the largest number of its workers involved in operations.

The new question on business functions worked well. The States reported little difficulty in finding a knowledgeable respondent. Relatively few respondents had difficulty answering the question, thus supporting the assumption that the concept of a business function had meaning and applicability for them. Most employers provided the names of one or more business functions in their immediate response to the question. The study did identify areas where clarification and guidance were needed. For example, it was necessary to ensure that information on *all* business functions involved in the layoff, and not just the main function, was collected. Also, during the test, probes were developed for use when the employer responded with occupations instead of business functions.

On the basis of the feasibility study results, the collection of data on business functions in the MLS program in all States began with mass layoffs and closings reported for the first quarter of 2007.

Functions and processes in the MLS program

Since the January 2007 implementation of the system, State analysts have collected data on business functions involved in extended mass layoffs (those lasting more than 30 days) as part of the employer interview, and since June 2007, they have coded those functions to higher level business processes. Analysis of the performance of the system over the first year indicates no significant issues on the part of either the employers interviewed or the data collectors. (See table 1.)

Asking employers about business functions has not adversely affected either the interview or the response rate. In 2007, a total of 14,046 employers were contacted because administrative data on unemployment insurance claims indicated that a layoff occurred. Extended layoffs and closings were identified for 5,364 private employers in nonfarm industries. Employers refused to participate in an interview in well below 5 percent of events. "Do not know" responses to the business function question remained low, indicating that the correct person is being reached for the interview and that most respondents in fact think in terms of business functions. The number of employers that the interviewer was unable to contact was relatively high and likely reflects total closure of the establishment by the time contact was made.

In order to preclude the analysts' influencing results by having them interpret the business functions cited by employers, responses are reported as stated. This approach results in variations in the words used to identify the business function. (As an example, the following terms were among those reported to describe construction activities: construction, constructing, road construction, construc-

Exhibit 2. **Selected Mass Layoff Statistics survey employer interview questions leading to business functions involved in the layoff event**

Wording of question	Objective of question
1. **Based on our unemployment insurance claims records, we believe that you may have had a (layoff/reduction in staff) during (month). Is that true?** ☐ Yes ☐ Valid No (Probe: Do you know why these unemployment claims were filed against your company? Enter explanation. End interview.) ☐ Don't know (Ask for another contact) ☐ Refusal	To determine whether a layoff occurred at the establishment or worksite. (An example of a "valid no" is the filing of 50 or more initial claims throughout the State, but not all of them at the same worksite.)
2. a. **When did that layoff begin?** _____ b. **When did you stop laying off workers?** _____	For data-editing purposes, to obtain the dates that the employer started and stopped laying off workers in this event.
3. **Were workers laid off for more than 30 days?** ☐ Yes ☐ No	To establish whether the layoff meets the criterion of permanency—that is, an extended event. If so, then the analyst proceeds to ask further questions. If not, the interview ends.
4. **About how many workers were laid off for more than 30 days?** (Probe: If there is a big gap between the number of initial claims and the number of separations) *Number:* _____ ☐ Don't Know/INA[1]	To ascertain the number of workers affected (that is, separated). If the number is less than 50, then the event is out of the scope of the survey.
5. **What was the primary reason for the job cutbacks?** ☐ Don't Know/INA[1] *Primary:* _____ *Secondary:* _____	To obtain the primary economic reason(s) for the layoff and, if possible, any secondary reason(s).
6. **What kind of business is conducted at the worksite that experienced the layoffs?** (Probe: What product do you manufacture or what service do you provide at that location?) *Industry:* _____ ☐ Don't Know/INA[1]	To verify the NAICS code of the worksite.
7. **Regarding the workers who were laid off, what was their main role or function within the company? For example, were they in manufacturing, sales, personnel, computer support, or something else?** (Probe: In addition to [function mentioned], were any of the employees affected by the layoff involved in other activities of the firm, such as clerical support, warehousing, or sales?) *Main:* _____ *Other:* _____	To ascertain the business functions involved in the layoff, including the main function.

[1] INA = "is not available."

Exhibit 3. Employer Interview script

Employer Name:
UI Account No.:
Address:
Layoff Event ID#:
Layoff Quarter:
Trigger Week:
Contact Name/Phone Number:

O.M.B. No. 1220-0090
Approval Expires
Jan 31, 2009

Cover these points in your introduction:
- Introduce yourself, and the office you are calling from.
- Explain why you are calling.
- Summarize key points of confidentiality pledge. If asked, give 1220–0141 as the OMB clearance number.
- Explain that this data collection is voluntary, and it will only take a few minutes

Question about the layoff

1. **Based on our unemployment insurance claims records, we believe that you may have had a (layoff/reduction in staff) during (month). Is that true?**
   - ☐ Yes
   - ☐ Valid No → (Probe: Do you know why these unemployment claims were filed against your company? Enter explanation. End interview.)
   - ☐ Don't know → (Ask for another contact)
   - ☐ Refusal

2. **a. When did that layoff begin?** _____
   b. When did you stop laying off workers? _____

3. **Were workers laid off for more than 30 days?**
   - ☐ Yes
   - ☐ No

4. **About how many workers were laid off for more than 30 days?** (Probe: If there is a big gap between the number of initial claims and the number of separations)
   Number: _____
   - ☐ Don't Know/INA[1]

5. **What was the primary reason for the job cutbacks?**
   - ☐ Don't Know/INA[1]

   Primary: _____
   Secondary: _____

6. **What kind of business is conducted at the worksite that experienced the layoffs?** (Probe: What product do you manufacture or what service do you provide at that location?)
   Industry: _____
   - ☐ Don't Know/INA[1]

7. **Regarding the workers who were laid off, what was their main role or function within the company? For example, were they in manufacturing, sales, personnel, computer support, or something else?** (Probe: In addition to [function mentioned], were any of the employees affected by the layoff involved in other activities of the firm, such as clerical support, warehousing, or sales?)
   Main: _____
   Other: _____

8. **In which county is the worksite located?**
   County: _____
   - ☐ Layoffs occurred at more than one worksite and county

9. **Just prior to the layoff, what was the total number of employees at this worksite, counting both hourly and salaried workers (an estimate is okay)?**
   Number:
   - ☐ Don't Know/INA[1]

See footnote at end of exhibit.

Exhibit 3. **Continued—Employer Interview script**

10. During the cutbacks/layoff, has your worksite remained completely open, partially open, or has it shut down completely?

- ☐ Open, no change in operating status
- ☐ Open, divisions stopped or shifts cut
- ☐ Partial closure of single-unit establishment
- ☐ Closed, entire worksite(s)
- ☐ Closed, entire establishment
- ☐ Long-term work completed offsite
- ☐ Don't know/INA

11. Will there be a recall of workers, and, if so, what percent will return to work?

- ☐ Yes, enter percent: _____ (and check box)
  - ☐ 100%
  - ☐ 50–99%
  - ☐ Up to 50%
  - ☐ Don't know
- ☐ No → Skip to Question 13
- ☐ Don't know (ask for another contact) → 13

12. What is the anticipated return date for those who were separated?

Date: _____ (and enter range)

- ☐ Less than 90 days
- ☐ 90–180 days
- ☐ 181–270 days
- ☐ 271–364 days
- ☐ 365 or more days
- ☐ Don't know/ INA[1]

Questions about Movement of Work

Do not ask Questions 13–14, if:

- Reason for layoff was seasonal or vacation
- Layoff was temporary (30 days or less)

13. a. Did this layoff include moving work from this worksite to a different geographic location within your company?

- ☐ Yes → Ask 13b
- ☐ No → Go to 14a
- ☐ Don't know → Go to 14a

b. Is the other location inside or outside the U.S.?

- ☐ Don't know/INA[1]
- ☐ Inside U. S. → In what State(s)?

_____

- ☐ Outside U.S. → In which country(ies)?

_____

c. Of the total number of workers laid off, how many were laid off because your company moved work to this new location? (an estimate is okay)

Don't know/INA[1]

Number inside U.S. _____

Enter State(s) & No: _____

Number outside U.S. _____

Enter Country(ies) & No: _____

14. a. Did this layoff include moving work that was conducted in-house by your employees to a different company, through contractual arrangement?

- ☐ Yes → Ask 14b
- ☐ No → Go to 15
- ☐ Don't know → Go to 15

b. Is that company located inside or outside of the U.S.?

Don't know/INA[1]
Inside U. S. → In what State(s)?

_____

Outside U.S. → In which country(ies)?

_____

c. Of the total number of workers laid off, how many were laid off because your company moved work to a different company? (an estimate is okay)

Don't know/INA[1]

Number inside U.S. _____

Enter State(s) & No: _____

Number outside U.S. _____

Enter Country(ies) & No: _____

15. Thank you very much. Let me be sure I have all of your information correct just in case I need to get back to you at a later date. Can you tell me your name, job title, and phone number?

Name: _____

Job Title: _____

Direct telephone number: _____

See footnote at end of exhibit.

Exhibit 3. **Continued—Employer Interview script**

Summary Information

Layoff Status (check one)

- ☐ *Temporary*: Layoff less than 31 days
- ☐ *Permanent/Extended*: Layoff included at least 50 separations and lasted more than 30 days
- ☐ *Closure*: One or more worksites closed or entire establishment closed
- ☐ *No Layoff*: Employer indicates that there was no layoff or that separations were either voluntary (e.g., quits, retirements, transfers to other locations in company) or involuntary (e.g., firings due to employee misconduct, failure to perform duties).

Additional Contact Persons

Name: _____

Job Title: _____

Direct telephone number:

Name:

Job Title:

Direct telephone number:

Name:

Job Title:

Direct telephone number:

Employer Contact Status (check one)

- ☐ Contact completed
- ☐ Contact incomplete
- ☐ Refused to provide any information

Comments:

[1] INA = "is not available."

tion activity, construction activities.) In the first quarter, 487 terms were used to report 1,862 business functions. Twenty-eight of those terms were used 10 or more times, accounting for 1,113 business functions, 60 percent of the total reported. (See table 2.)

Guidance was provided to analysts in an attempt to standardize terms for a number of functions and eliminate overly detailed functions. For the second through fourth quarters, about three-quarters of the business functions reported were associated with terms used 10 or more times.

The standardization effort focused on business functions that frequently appear in a firm, such as administrative support, clerical support, construction activities, general management, food services, and lodging services. Exhibit 4 lists some standardized nomenclature for reported business functions. In some instances, the functions reported (for example, dishwashers and electricians) were overly detailed, approximating occupations. In industries such as construction, the activities reported were closely aligned to the industry. In providing guidance to the analysts conducting the employer interview, an attempt was made to standardize the level of detail and the reported activity where appropriate.

Table 1. Total mass layoff events, selected measures, 2007, by quarter

Action	First quarter	Second quarter	Third quarter	Fourth quarter
Total potential mass layoff events	3,139	3,289	3,025	4,593
Total private nonfarm extended layoff events	1,110	1,421	1,019	1,814
Events with business function responses	977	1,297	884	1,587
Does not know	9	6	15	51
Refused (entire event)	49	49	43	54
Unable to contact	75	69	77	122

Exhibit 5 displays the business functions reported in extended layoff events for the third and fourth quarters of 2007 (as reported in early 2008), loosely grouped by business process and without regard to the industry of the establishment experiencing the layoff. As an example, functions that involve the provision of services are grouped together. From the business process perspective, and as previously described, it is important to recognize that any one of the listed business functions can represent either *operations* of the establishment (if the function directly represents the industry code) or a non-*operations* process. For example, the 30 business functions reported in the third quarter as *accounting services* may represent *operations* from accounting firms or *general management and firm infrastructure* if the accounting functions were associated with firms from other industries.

Fifty-five business functions are identified in the exhibit, based on functions specifically cited by employers and those which could easily be associated with the stated function. Out of 1,666 functions reported in the third quarter, 1,528 were grouped into these standard functions. For the 2,325 business functions reported in the fourth quarter, 2,075 were so categorized. Taking into account those instances in which the employer did not know the affected function, analysts were able to assign more than 90 percent of the reported functions to these standard functions each quarter.

About 25 percent of the 1,666 functions reported in the third quarter were associated with the production of goods and with construction activities. The provision of services accounted for nearly the same proportion of functions. Of interest during this quarter were reports of functions likely associated with the housing and mortgage downturn—that is, those involving *real estate, lending (including mortgage), financial, and banking services*. Also in this quarter were layoffs associated with *educational services*, as schools closed for the summer. Functions considered under the *procurement, logistics, and distribution* process accounted for about 12 percent of reported activity, with some of those grouped as *transporting* also reflecting school closings. In the fourth quarter, 28 percent of the 2,325 functions that were reported involved extended layoffs associated with *construction* functions, reflecting the seasonal slowdown in that activity. *Landscaping services* functions also were related to the time of year.

Identifying the business process

Business process identification involves categorizing the specific business function into one of the eight processes previously described and used in the MLS program. The first step is determining whether the business function is part of *operations* for the establishment. This key categorization hinges on the relationship of the function to the industry of the establishment. As previously described, in most cases, when a business function is identified as part of *operations,* it is because it corresponds to the production process that is the basis for the establishment's NAICS classification or to the activity most directly associated with that classification. The specific business function depends on whether the establishment is classified as a goods-producing or service-producing establishment in NAICS. (Other business functions, such as the direct management of the specific services or production, also are classified under *operations*.)

A business function that is classified under *operations* for one establishment can be correctly classified as a different business process for another establishment, depending on the industry of the establishment. The business function *warehousing* provides an example: if the job loss associated with this business function occurred in an establishment identified as a warehouse, then the process involved would fall under *operations*; however, if the function was reported by a manufacturing establishment, then the process involved was *procurement, logistics, and distribution*.

It is important to recognize that the MLS-identified establishment and its industry designation are from QCEW data used to administer the unemployment insurance program in a particular State. Industry classification is based on the majority (or plurality) of the work the firm reports that it performs in that State. In the case of firms with multiple establishments in the State, all locations will

Table 2. Business function terms and responses, 2007

Quarter	Unique business function terms		Business function terms with 10 or more responses	
	Number	Total business functions	Number	Total business functions
First	487	1,862	28	1,113
Second	302	2,350	33	1,815
Third	218	1,666	30	1,307
Fourth	288	2,445	35	1,977

NOTE: Table excludes responses of "don't know" and "is not available" to the business function question.

reflect the activity of the majority of employment in the State.

If the establishment identified by the MLS program as having a layoff event is part of a larger corporate entity located outside of the State and with an industry designation different from that of the establishment, then the business processes determined from the business functions that take place at the worksite will not relate to that larger corporate entity. An example is retail outlets of a manufacturing company. If the State has only the retail stores, and not the parent manufacturing firm, then layoffs at those stores involving the business function *selling* would be identified as *operations*, because the industry is retail sales. However, relating the business function to the industry of the larger corporate entity located in another State would place the function under the business process *marketing, sales, and customer accounts*. Thus, the MLS program may categorize an inflated number of business functions as *operations*, because the industry identification of the establishment may reflect neither the firm's position in the corporate structure nor corporate actions.

2007 analysis of MLS business processes

In 2007, the MLS program reported on 5,364 extended mass layoff events involving the separation of 966,526 workers.[8] During this period, the collection of data on business functions involved in layoffs was implemented, as was the coding of these functions to higher level business processes. As previously noted, the early collection was important not only for providing the initial, nationwide data on this activity, but also for identifying areas in which guidance was needed and automation would improve both collection and analysis. The discussion that follows focuses primarily on business processes because of refinements that were made to business functions in the early stages of data collection in 2007.

In 2007, employers reported a total of 8,323 business functions involved in 5,364 layoff events. When multiple business functions were cited in responses, the employer was asked to identify the main business function, on the basis of the largest number of jobs lost. The business functions were assigned to 6,679 business processes. (See table 3.) A single business process can reflect multiple business functions involved in a layoff. Over the year, 67 percent of mass layoff events involved only one process, but that proportion may reflect collection issues that arose in the first quarter and may change as interviewers become more familiar with the concepts and situations that apply. Almost 21 percent of events involved between 2 and 5 business processes. On average, the typical layoff involved 1.4 business processes.

Core business processes dominated in the reporting of layoff activity. *Operations* accounted for the majority of processes involved in layoffs: sixty-seven percent of all processes reported, and 94 percent of the main process reported, reflected one or more business functions categorized as *operations.* This is not an unusual finding for a program that looks at relatively large layoff events. Also, significant shares of mass layoffs are due to seasonal reasons and contract completions, activities typically associated with business functions that would be categorized as *operations* for the affected firms.

In layoffs involving more than one business process, there was a greater likelihood that some business functions other than *operations* that were involved in the layoff would be categorized as support processes rather than core processes. Excluding the main business process associated with the layoff, over the year, 58 percent of business processes other than the main one of the layoff were support processes, with 41 percent involved with *general management and firm infrastructure* and 10 percent with *human*

Exhibit 4. Examples of standardized business functions for similar activities and levels of detail

Construction services	Food services	Lodging services
Bricklaying	Banquet and catering services	Bellman services
Carpentry	Bussing tables	Concierge
Concrete pouring/ finishing	Cashier services	Front desk, check in/out
Demolition	Dining room service	Guest services
Ditch digging	Dishwashing	
Electrical	Hosting	**Entertainment services**
Flagging	Restaurant operations	Christmas events staff
General labor	Room service	Gambling services
Ironwork	Waiting tables/serving	Guides
Painting		Music production
Pipefitting	**Clerical support**	Sports production
Plumbing	Answering phones	
Road construction	Clerical services	**Facility maintenance services**
Roofing	Filing	Building maintenance
Welding	Front-office clerical	Facility services
	Scheduling	Groundskeeping
	Typing	Janitorial services

resource management. Core processes other than *operations* also played significant roles as secondary processes in layoffs. Nineteen percent of secondary business processes were identified as *procurement, logistics, and distribution*, followed by *customer and aftersales* service (9 percent) and *marketing, sales, and account management* (9 percent).

Open and closed status. During the January-December period, nearly 72 percent of the 4,745 layoff events reported no change in the worksite status, while 5 percent of the events involved full closure of the employer (without regard to recall expectations). Partial closures (for example, closures of worksites, divisions, or shifts) accounted for 22 percent of the events.

When the worksite status was not affected by the layoff, the distribution of main business processes involved was virtually identical to the total layoff distribution, with *operations* dominating. When worksites closed, the representation of support processes and of core processes other than *operations* rose significantly.

Industry distribution of extended layoffs. During 2007, manufacturing industries accounted for 25 percent of private nonfarm layoff events and separations. The largest concentrations were in transportation equipment and food manufacturing, followed by computer and electrical products. As regards nonmanufacturing sectors, 25 percent of all events were from construction, involving 16 percent of all separations over the period. Other significant contributors to layoff activity included the retail trade and transportation and warehousing.

Among manufacturing industries, *operations* was reported to be the main business process for 95 percent of layoff events, about the same percentage as in all industries. However, these industries had a greater-than-average representation of secondary processes involved in the layoff. They also reported higher proportions of processes identified as *procurement, logistics, and distribution* and *product development*, as well as *human resource management* and *technology and process development*, than the proportion for all reported layoff events. (See tables 4 and 5.)

Both wholesale and retail trade reported lower proportions of events with *operations* as the main business process, but higher proportions with *marketing, sales, and account management*. The wholesale and retail sectors also reported high representations of secondary business processes, especially in *procurement*, *logistics, and distribution* and in *marketing, sales, and account management*.

As with most events, layoffs in the transportation and warehousing sector involved *operations* as the main business process. This sector had relatively higher representations of secondary support processes involved with *general management and firm infrastructure* and with *human resource management*.

In finance and insurance, the proportion of events in which *operations* was identified as the main business process was only slightly below that of all layoffs. With regard

Exhibit 5. Number of business functions reported in extended mass layoffs, third and fourth quarters, 2007

Business function	Quarter		Business function	Quarter	
	Third	Fourth[1]		Third	Fourth[1]
Total	1,666	2,325			
Construction activities	175	660	Buying	7	5
Producing goods	244	332	Distributing	11	26
			Loading	12	7
Accounting services	30	24	Logistics	2	5
Banking services	6	1	Packing	9	12
Cafeteria services	4	2	Receiving	2	6
Conference services	12	14	Shipping	28	20
Contracted services	11	13	Transporting	84	67
Educational services	41	9	Warehousing	44	49
Engineering services	20	18			
Entertainment services	22	30	Administrative support	61	65
Facility maintenance services	22	25	Business management	10	6
Financial services	17	18	Clerical support	80	66
Food services	41	46	Management	86	84
Health care services	11	6	Planning	3	0
Housekeeping services	6	15			
Landscaping services	0	48	Human resources	55	36
Lending services	25	10	Payroll/compensation	4	7
Lodging services	5	19			
Maintenance/repair services	41	43	Account management	8	11
Providing services	8	13	Call center	3	7
Real estate services	58	29	Customer service	43	39
Social services	14	0	Installing	11	6
Software and IT services	18	18	Marketing	16	19
			Merchandising	0	3
Assembly	8	8	Processing orders	3	10
Fabricating	2	5	Selling	61	79
Quality control/assurance	12	8	Telemarketing	1	5
First-line supervision	20	11			
Development/design of products/services	6	5	Business process responses	20	16
Research products/services	5	3	No response	23	246
Testing	0	2	Unassigned functions	95	210

[1] Data are based on information received through March 2008.

to secondary processes involved in the layoff, of all industry groups, the finance and insurance sector had higher-than-average reporting of *marketing, sales, and account management* (along with wholesale trade and arts, entertainment, and recreation) and *customer and aftersales service*.

Economic reasons for layoff. Among the seven categories of economic reasons for a layoff, seasonal reasons accounted for 35 percent of the 5,364 layoff events and 364,225 separations over 2007. Business demand reasons followed, with 35 percent of events and 248,055 affected workers. Job losses associated with financial issues (bankruptcy, cost control or cost cutting, or financial difficulty) accounted for nearly 9 percent of events and 102,362 separations. Organizational changes (business ownership change and reorganization or restructuring) were cited in more than 7 percent of events, involving 124,175 workers. Reorganization or restructuring accounted for the majority of these events, but business ownership change involved the majority of the separations.

Although the average layoff event involved 1.4 business processes, layoffs associated with organizational changes and financial reasons reported 2 or more processes involved. Layoffs due to these reasons were more

Table 3. Total, main, and secondary business processes involved in extended mass layoffs, 2007

Business processes in Mass Layoff Statistics layoff events	Total	Main	Secondary
Total business processes identified	6,679	4,745	1,934
Core processes	5,437	4,619	818
Procurement, logistics, and distribution	442	67	375
Operations	4,487	4,442	45
Product development	61	17	44
Marketing, sales, and account management	230	59	171
Customer and aftersales service	217	34	183
Support processes	1,242	126	1,116
General management and firm infrastructure	886	90	796
Human resources management	229	26	203
Technology and process development	127	10	117

likely to report secondary support processes affected. In fact, other than the small number of events associated with disaster and safety, the highest proportions of *human resource management* as secondary support processes were associated with organizational changes and financial reasons. Business ownership changes were less likely to involve *operations* as the main process and more likely to involve a secondary support process, particularly *human resource management*. (See tables 6 and 7.)

Movement of work. Movement of work accounted for 8 percent of the 3,484 extended mass layoff events (excluding those which took place for reasons other than seasonal or vacation-related reasons) and 8 percent of the associated separations. Of the 4,745 extended layoff events for which business functions were provided, 264 involved the movement of work; these 264 events involved the movement of work to other U.S. locations or to locations outside of the United States, and the movement occurred either within the same company or to other companies. A large majority (88 percent) of these actions involved moving work within the company, and most (71 percent) were domestic relocations.

When layoffs were associated with the domestic relocation of work, *operations* was cited as the main business process in 87 percent of events, compared with 94 percent when work left the United States. Secondary business processes involved when work was geographically relocated were heavily weighted toward support processes. For relocations within the United States, *general management and firm infrastructure* accounted for 41 percent of secondary processes reported in domestic relocations, followed by *procurement, logistics, and distribution* (19 percent) and *human resource management* (16 percent). Proportions for out-of-country moves were similar.

Operations was the main business process cited when work moved within the company (91 percent of events) and when work was moved to another company (84 percent of events). Secondary business processes were concentrated in support processes for both internal company moves and moves to another company and were generally similar.

THE CLASSIFICATION APPROACH of the BLS Business Processes and Business Functions system is a viable way of describing the establishment and its employment. The development and use of standardized business functions points to the greater potential of analyzing economic events at this detailed level. Despite the limitations imposed by the first year of data collection, the Business Processes and Business Functions system applied to extended mass layoffs provides interesting and timely insights into firms' decisions and how they are reflected in plant-closing and mass layoff data. □

Table 4. Percentage of main and secondary business processes affected in extended mass layoff events, by industry, core processes, 2007

Industry	Total business processes	Core processes					
		Total	Procurement, logistics, and distribution	Operations	Product development	Marketing, sales, and account management	Customer and aftersales service
Total, main	4,745	97.3	1.4	93.6	0.4	1.2	0.7
Accommodation and food services	264	95.8	.4	94.7	.0	.0	.8
Administrative and waste services	297	94.9	.3	91.9	.0	1.7	1.0
Arts, entertainment, and recreation	135	93.3	.0	88.1	.7	.7	3.7
Construction	1,296	99.5	.0	99.3	.1	.2	.0
Educational services	24	79.2	.0	75.0	.0	.0	4.2
Finance and insurance	271	94.5	.0	87.8	.0	5.2	1.5
Health care and social assistance	241	97.9	.4	95.9	.0	.4	1.2
Information	60	85.0	.0	71.7	5.0	5.0	3.3
Management of companies and enterprises	25	84.0	24.0	40.0	.0	12.0	8.0
Manufacturing	1,225	98.5	1.9	95.0	1.0	.3	.3
Mining	37	100.0	.0	100.0	.0	.0	.0
Other services, except public administration	84	97.6	2.4	95.2	.0	.0	.0
Professional and technical services	138	92 .8	1.4	87.7	.0	2.2	1.4
Real estate and rental and leasing	17	100.0	.0	88.2	.0	11.8	.0
Retail trade	235	95.7	5.1	81.7	.0	7.7	1.3
Transportation and warehousing	304	98.4	4.3	93.4	.0	.0	.7
Utilities	9	88.9	.0	88.9	.0	.0	.0
Wholesale trade	80	98.8	7.5	86.3	.0	3.8	1.3
Unclassified	3	100.0	.0	100.0	.0	.0	.0
Total, secondary	1,934	42.3	19.4	2.3	2.3	8.8	9.5
Accommodation and food services	81	25.9	3.7	3.7	.0	8.6	9.9
Administrative and waste services	48	37.5	14.6	2.1	.0	6.3	14.6
Arts, entertainment, and recreation	58	56.9	8.6	8.6	1.7	22.4	15.5
Construction	83	47.0	24.1	1.2	1.2	12.0	8.4
Educational services	10	10.0	.0	.0	.0	10.0	.0
Finance and insurance	232	38.4	1.3	1.3	.0	17.2	18.5
Health care and social assistance	128	32.0	28.1	1.6	.0	.8	1.6
Information	36	36.1	5.6	.0	5.6	13.9	11.1
Management of companies and enterprises	20	40.0	15.0	10.0	.0	15.0	.0
Manufacturing	809	42.2	24.8	2.0	4.4	5.6	5.3
Mining	11	18.2	18.2	.0	.0	.0	.0
Other services, except public administration	41	48.8	43.9	2.4	.0	2.4	.0
Professional and technical services	60	36.7	11.7	3.3	.0	10.0	11.7
Real estate and rental and leasing	5	40.0	.0	.0	20.0	.0	20.0
Retail trade	183	62.8	25.7	2.7	1.1	10.4	23.0
Transportation and warehousing	62	27.4	8.1	3.2	.0	4.8	11.3
Utilities	1	100.0	.0	100.0	.0	.0	.0
Wholesale trade	62	53.2	24.2	1.6	1.6	21.0	4.8
Unclassified	4	50.0	25.0	.0	.0	25.0	.0

Table 5. Percentage of main and secondary business processes affected in extended mass layoff events, by industry, support processes, 2007

Industry	Total business processes	Support processes			
		Total	General management and firm infrastructure	Human resources management	Technology and process development
Total, main	4,745	2.7	1.9	0.5	0.2
Accommodation and food services	264	4.2	3.8	.4	.0
Administrative and waste services	297	5.1	2.7	2.4	.0
Arts, entertainment, and recreation	135	6.7	6.7	.0	.0
Construction	1,296	.5	.4	.0	.1
Educational services	24	20.8	20.8	.0	.0
Finance and insurance	271	5.5	4.8	.4	.4
Health care and social assistance	241	2.1	.8	.4	.8
Information	60	15.0	.0	13.3	1.7
Management of companies and enterprises	25	16.0	16.0	.0	.0
Manufacturing	1,225	1.5	1.1	.2	.2
Mining	37	.0	.0	.0	.0
Other services, except public administration	84	2.4	2.4	.0	.0
Professional and technical services	138	7.2	4.3	2.9	.0
Real estate and rental and leasing	17	.0	.0	.0	.0
Retail trade	235	4.3	3.8	.0	.4
Transportation and warehousing	304	1.6	1.0	.7	.0
Utilities	9	11.1	.0	.0	11.1
Wholesale trade	80	1.3	.0	.0	1.3
Unclassified	3	.0	.0	.0	.0
Total, secondary	1,934	57.7	41.2	10.5	6.0
Accommodation and food services	81	74.1	65.4	7.4	1.2
Administrative and waste services	48	62.5	45.8	10.4	6.3
Arts, entertainment, and recreation	58	43.1	41.4	1.7	.0
Construction	83	53.0	42.2	6.0	4.8
Educational services	10	90.0	30.0	30.0	30.0
Finance and insurance	232	61.6	46.6	8.2	6.9
Health care and social assistance	128	68.0	58.6	7.8	1.6
Information	36	63.9	47.2	11.1	5.6
Management of companies and enterprises	20	60.0	45.0	5.0	10.0
Manufacturing	809	57.8	36.5	13.0	8.4
Mining	11	81.8	36.4	18.2	27.3
Other services, except public administration	41	51.2	48.8	2.4	.0
Professional and technical services	60	63.3	46.7	10.0	6.7
Real estate and rental and leasing	5	60.0	60.0	.0	.0
Retail trade	183	37.2	26.8	7.7	2.7
Transportation and warehousing	62	72.6	48.4	22.6	1.6
Utilities	1	.0	.0	.0	.0
Wholesale trade	62	46.8	30.6	11.3	4.8
Unclassified	4	50.0	50 .0	.0	.0

Table 6. Percentage of main and secondary business processes affected in extended mass layoff events, by reason for layoff, core processes, 2007

Reason	Total business processes	Core processes					
		Total	Procurement, logistics, and distribution	Operations	Product development	Marketing, sales, and account management	Customer and aftersales service
Total, main	4,745	97.3	1.4	93.6	0.4	1.2	0.7
Business demand	1,842	97.9	.9	94.9	.5	1.0	.7
Contract cancellation	70	100.0	2.9	91.4	.0	.0	5.7
Contract completion	882	98.2	.1	97.4	.6	.0	.1
Domestic competition	15	93.3	.0	93.3	.0	.0	.0
Excess inventory or saturated market	36	100.0	.0	100.0	.0	.0	.0
Import competition	71	100.0	.0	100.0	.0	.0	.0
Slack work, insufficient demand, or nonseasonal business slowdown	768	97.3	1.8	91.7	.5	2.3	.9
Organizational changes	386	91.7	2.8	81.1	1.0	4.9	1.8
Business ownership change	96	87.5	3.1	77.1	2.1	4.2	1.0
Reorganization or restructuring of company	290	93.1	2.8	82.4	.7	5.2	2.1
Financial issues	444	96.6	1.8	90.5	.5	2.5	1.4
Bankruptcy	64	96.9	1.6	92.2	.0	1.6	1.6
Cost control, cost cutting, or increased profitability	170	94.7	3.5	84.1	1.2	2.9	2.9
Financial difficulty	210	98.1	.5	95.2	.0	2.4	.0
Production specific	82	93.9	2.4	87.8	.0	1.2	2.4
Disaster or safety related	32	100.0	3.1	96.9	.0	.0	.0
Seasonal	1,861	98.1	1.5	95.7	.1	.5	.4
Other or miscellaneous	98	100.0	1.0	96.9	1.0	1.0	.0
Total, secondary	1,934	42.3	19.4	2.3	2.3	8.8	9.5
Business demand	498	42.0	19.5	3.2	4.4	7.6	7.2
Contract cancellation	43	39.5	9.3	4.7	2.3	11.6	11.6
Contract completion	59	30.5	13.6	6.8	1.7	3.4	5.1
Domestic competition	13	46.2	30.8	.0	7.7	.0	7.7
Excess inventory or saturated market	30	53.3	30.0	.0	6.7	13.3	3.3
Import competition	108	39.8	25.9	.0	7.4	3.7	2.8
Slack work, insufficient demand, or nonseasonal business slowdown	245	44.5	18.0	4.1	3.7	9.4	9.4
Organizational changes	382	35.3	12.0	1.6	1.8	9.7	10.2
Business ownership change	91	34.1	9.9	2.2	.0	15.4	6.6
Reorganization or restructuring of company	291	35.7	12.7	1.4	2.4	7.9	11.3
Financial issues	504	38.1	15.1	.8	2.0	10.1	10.1
Bankruptcy	104	39.4	11.5	1.9	1.0	12.5	12.5
Cost control, cost cutting, or increased profitability	175	41.1	22.3	1.1	4.0	5.1	8.6
Financial difficulty	225	35.1	11.1	.0	.9	12.9	10.2
Production specific	35	40.0	17.1	5.7	8.6	2.9	5.7
Disaster or safety related	10	50.0	30.0	.0	.0	10.0	10.0
Seasonal	438	55.0	31.5	3.7	.2	8.2	11.4
Other or miscellaneous	67	32.8	13.4	1.5	1.5	10.4	6.0

Table 7. Percentage of main and secondary business processes affected in extended mass layoff events, by reason for layoff, secondary processes, 2007

Reason	Total business processes	Support processes			
		Total	General management and firm infrastructure	Human resources management	Technology and process development
Total, main	4,745	2.7	1.9	0.5	0.2
Business demand	1,842	2.1	1.2	.7	.2
Contract cancellation	70	.0	.0	.0	.0
Contract completion	882	1.8	1.1	.6	.1
Domestic competition	15	6.7	.0	6.7	.0
Excess inventory or saturated market	36	.0	.0	.0	.0
Import competition	71	.0	.0	.0	.0
Slack work, insufficient demand, or nonseasonal business slowdown	768	2.7	1.7	.8	.3
Organizational changes	386	8.3	6.7	.3	1.3
Business ownership change	96	12.5	10.4	.0	2.1
Reorganization or restructuring of company	290	6.9	5.5	.3	1.0
Financial issues	444	3.4	3.2	.2	.0
Bankruptcy	64	3.1	3.1	.0	.0
Cost control, cost cutting, or increased profitability	170	5.3	4.7	.6	.0
Financial difficulty	210	1.9	1.9	.0	.0
Production specific	82	6.1	.0	4.9	1.2
Disaster or safety related	32	.0	.0	.0	.0
Seasonal	1,861	1.9	1.5	.4	.1
Other or miscellaneous	98	.0	.0	.0	.0
Total, secondary	1,934	57.7	41.2	10.5	6.0
Business demand	498	58.0	42.2	8.8	7.0
Contract cancellation	43	60.5	39.5	14.0	7.0
Contract completion	59	69.5	52.5	6.8	10.2
Domestic competition	13	53.8	23.1	7.7	23.1
Excess inventory or saturated market	30	46.7	40.0	6.7	.0
Import competition	108	60.2	36.1	15.7	8.3
Slack work, insufficient demand, or nonseasonal business slowdown	245	55.5	44.1	5.7	5.7
Organizational changes	382	64.7	40.1	15.4	9.2
Business ownership change	91	65.9	42.9	16.5	6.6
Reorganization or restructuring of company	291	64.3	39.2	15.1	10.0
Financial issues	504	61.9	41.9	12.7	7.3
Bankruptcy	104	60.6	41.3	13.5	5.8
Cost control, cost cutting, or increased profitability	175	58.9	41.7	10.3	6.9
Financial difficulty	225	64.9	42.2	14.2	8.4
Production specific	35	60.0	51.4	5.7	2.9
Disaster or safety related	10	50.0	30.0	20.0	.0
Seasonal	438	45.0	39.0	5.0	.9
Other or miscellaneous	67	67.2	44.8	14.9	7.5

Notes

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[1] See, for example, Leslie Haggin Geary, "Offshoring backlash rising," *CNN Money*, Jan. 12, 2004, on the Internet at **money.cnn.com/2004/01/09/pf/q_antioffshore**.

[2] Sharon P. Brown and Lewis B. Siegel, "Mass layoff data indicate outsourcing and offshoring work," *Monthly Labor Review*, August 2005, pp. 3–10.

[3] Michael Porter, *On Competition* (Boston, Harvard Business School Publishing, 2008), p. 77.

[4] George S. Yip, *Total Global Strategy II: Updated for the Internet and Service Era* (Upper Saddle River, NJ, Prentice Hall, 2003); and Timothy J. Sturgeon and Gary Gereffi, "The Challenge of Global Value Chains: Why Integrative Trade Requires New Thinking and New Data," paper prepared for Industry Canada and presented at the Global Value Chains Workshop, Ottawa, Ontario, Canada, Sept. 27, 2007.

[5] Ursula Huws and Simone Dahlmann, *Outsourcing of ICT and related services in the EU: A status report* (Luxembourg, European Foundation for the Improvement of Living and Working Conditions, 2004).

[6] Sturgeon and Gereffi, "The Challenge of Global Value Chains," p. 24, define *strategic management* as "activities that support the setting of product strategy (i.e., deciding what 'new product development' works on), choosing when and where to make new investments and acquisitions, or sales of parts of the business, and choosing the business partners (e.g., suppliers and service providers)."

[7] The MLS system does specify that the direct management of an *operations* business function is also classified under *operations*, as the twin functions *managing production* and *managing services*. *General management* functions are classified under the process *general management and firm infrastructure*.

[8] See the BLS MLS Web site **www.bls.gov/mls** for the "Extended Mass Layoffs" news release for the fourth quarter of 2007.

Service-providing occupations, offshoring, and the labor market

A BLS analysis identifies 160 service-providing occupations that are susceptible to offshoring; these occupations are diverse in their job functions, associated educational attainment, and wages

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The Bureau of Labor Statistics (BLS) researches trends affecting the labor market as part of its Employment Projections Program. Although the BLS examines all factors affecting employment in industries and occupations, it pays particular attention to new or emerging topics. One such topic is the offshoring of service-providing occupations.[1] In recent years, special efforts have been made to identify the occupations that may be susceptible to offshoring and to account for offshoring in occupational employment projections. This article, representing the culmination of those efforts, identifies 160 occupations considered susceptible to offshoring and reports trends in historical and projected data for those occupations.

For most of recorded history, the majority of goods and services were produced and consumed locally. Developments in transportation—most notably, the locomotive and steamship and, later, the airplane and truck—made the large-scale remote production of goods practical. The result was a rapid increase in the trade of goods, causing manufacturers to face competition from abroad. Recent advances in telecommunications—in particular, the Internet—have enabled information to travel around the globe nearly instantaneously. Consequently, many services that previously needed to be performed domestically now theoretically can be performed anywhere in the world. The movement of work that results from this development, generally termed "offshoring," has the potential to affect U.S. employment, but the nature and scale of its impact remain unclear.

As is common with new phenomena, the terminology used to describe offshoring is not always consistent. It is, therefore, beneficial to clearly define the issue. A report by the National Academy of Public Administration defines offshoring as "U.S. firms shifting service and manufacturing activities abroad to unaffiliated firms or their own affiliates."[2] That definition is consistent with the concept of offshoring identified in the analysis which follows. However, for several reasons, this analysis focuses only on the offshoring of services. First, the offshoring of manufacturing establishments has been occurring for a much longer period and is relatively clearly understood. Second, the factors that lead services to be susceptible to offshoring are different from those affecting manufacturing. Third, few data sources exist that provide insight into the occupations that are affected by services offshoring. These three reasons combined support an independent analysis of the offshoring of services.

It is important to note that this article addresses only the movement of work from the United States to other countries; occupations that may be affected by flows in the other direction—a movement known as "in-shoring"—are not identified. In general, occupations that are susceptible to being offshored are not necessarily the same as those which may be affected by in-shoring.

Current measures of services offshoring are limited by a dearth of relevant data. Perhaps the most useful indicator is the international trade data from the Bureau of Economic Analysis (BEA). Over the last two decades, these data show a large increase in international trade in both goods and services. In 1986, goods exports were $229.2 billion, while goods imports were $401.8 billion. By 2006, quantities had more than quadrupled, to $928.7 billion and $1.65 trillion, respectively. In 1986, service exports were $128.9 billion, while service imports were $110.7 billion. By 2006, service exports had nearly tripled, to $386.3 billion, while service imports more than doubled, reaching $283.7 billion.[3] It is noteworthy that, although the U.S. economy has been running an overall trade deficit for decades, there has been a consistent surplus in international services trade.

Measures of the value of international trade, however, cannot be used to gauge the scope of offshoring. An increasing surplus in services trade, for example, does not necessarily indicate a change in the level of offshoring in service occupations. In addition, the value of services trade usually is difficult to measure. This situation stems from the fact that goods, as opposed to services, are easier to measure and dominated international trade when the data collection systems were established.[4] In addition, goods are typically traded through a port of entry and are tracked relatively easily. Services, by contrast, are traded through diverse channels, many of which are difficult to observe.

A number of organizations, including Forrester Research, McKinsey Global Institute, Deloitte and Touche, and Goldman Sachs, have published studies trying to quantify the effects of offshoring on U.S. employment. Most of these studies predict that millions of jobs could be offshored over the coming years. Academic economists also have published studies estimating that millions of U.S. jobs are susceptible to offshoring.[5] All of these studies acknowledge the dearth of actionable data on the topic and are based on subjective assumptions.

The manner in which offshoring will affect U.S. employment is unclear. On the one hand, offshoring has the potential to reduce total U.S. employment if jobs are relocated to other nations. On the other hand, services exports may create new jobs within the United States and therefore raise total employment.[6] In addition, individual occupations are not likely to experience these effects uniformly, because some occupations are more susceptible to offshoring than others and some may face additional barriers to offshoring. If individuals lose their jobs in vulnerable occupations, they may need to obtain retraining before moving into another occupation. As a result, it is important to identify which occupations may be affected by offshoring.

Several studies have addressed services offshoring from an occupational perspective. Common among them is an attempt to identify the characteristics that make an occupation susceptible to offshoring. Ashok Bardhan and Cynthia Kroll, among the first to do so, concluded that offshorable occupations have "no face-to-face customer servicing requirement," "high information content," a "work process" that is "telecommutable and Internet enabled," a "high wage differential" with a "similar occupation" in the offshore destination, "low setup barriers," and a "low social networking requirement."[7] On the basis of these characteristics, and using the Standard Occupational Classification (SOC) system,[8] those authors identified 49 occupations as susceptible. The majority of these occupations fall into three SOC occupational groups: office and administrative support occupations, business and financial operations occupations, and computer and mathematical occupations. Bardhan and Kroll used data from the BLS Occupational Employment Statistics (OES) survey to estimate that these 49 occupations accounted for 14 million jobs, or 11 percent of total employment, in 2001. The authors limited their list to occupations that the business literature indicated were already being offshored at the time of their analysis, which may explain why the number of occupations identified in Bardhan and Kroll's study is lower than the number identified herein.

In an attempt to determine which jobs are able to be offshored, and the number of jobs that could be offshored, Alan Blinder created an occupational ranking system.[9] He stated that services which can be transmitted electronically with no reduction in quality can be offshored and all other services cannot. Most occupations, however, provide some services that can be transmitted electronically and some that must be delivered in person. Consequently, some occupations are more offshorable than others, creating an offshorability spectrum. Blinder's system, based on information from the Occupational Information Network (O*NET),[10] in addition to his own judgment, assigned each occupation a position in this spectrum. He then used the results to estimate that about 291 occupations are offshorable. Blinder based his occupational classifications on

the SOC system, but divided several occupations, resulting in additional occupations not included in the SOC system. He used data from the OES survey to estimate that these 291 occupations accounted for about 38 million jobs, or 29 percent of total employment, in 2004.

Blinder's analysis, however, is not directly comparable to the one presented here, because he included about 9 million jobs from production occupations and construction and extraction occupations, two SOC groups that are not considered service-providing groups. In addition, Blinder included residual occupations in his analysis. With the production occupations, construction and extraction occupations, and residual occupations removed to make the two analyses comparable, Blinder would find 152 occupations susceptible to offshoring; about 3 in 4 occupations that appear in his offshorability spectrum would appear here as well, with most of the disagreements occurring among occupations with lower susceptibilities to offshoring.

J. Bradford Jensen and Lori G. Kletzer responded to the previous subjective studies by creating an objective ranking system based on data on occupational characteristics developed by O*NET.[11] According to their analysis, the characteristics that increase susceptibility to offshoring are "getting information," "processing information," "analyzing data or information," "documenting/recording information," and "interacting with computers." The characteristics that decrease susceptibility are "assisting or caring for others," "performing or working directly with the public," "establishing or maintaining interpersonal relationships," "making decisions and solving problems," "thinking creatively," and "inspecting equipment, structures, or material."[12] O*NET attempts to quantify, through numeric ratings, the significance that each characteristic plays in each occupation. Using these ratings, Jensen and Kletzer assigned a score to each occupation and ranked occupations on the basis of that score. They then used the rankings to gauge how susceptible an occupation is to being offshored, thereby creating an offshorability spectrum of 457 SOC occupations.[13] There are some similarities between their spectrum and the list of occupations presented herein, with 131 of the occupations on the latter list appearing in the top half of Jensen and Kletzer's spectrum. There also are some large discrepancies, however, with several of the occupations with the highest levels of susceptibility on the list presented here appearing in the bottom half of Jensen and Kletzer's list.

The BLS Employment Projections Program has been studying the offshoring of service-providing occupations for the past decade, employing more than 20 economists who study occupations to make 10-year employment projections. Because offshoring is a factor that may affect future employment levels, BLS economists have researched the topic heavily and collectively have amassed a base of knowledge that covers the vast majority of occupations in the U.S. economy.[14] The study described in this article uses that knowledge to analyze the issue of offshoring.

The BLS offshoring scoring system

The BLS offshoring scoring system identifies characteristics that make an occupation susceptible to being offshored and ranks occupations by level of susceptibility. The system covers the 515 service-providing occupations listed in the SOC manual.[15] (See table 1.)

Many of these occupations, however, have no possibility of being susceptible to offshoring, rendering a detailed analysis of them unnecessary. The first step of the analysis, therefore, was to identify the occupations that had insurmountable barriers to offshoring. Most of these occupations either require face-to-face interaction with customers or require the work to be performed in a fixed location. (As examples, physical therapists and barbers belong in the first category, security guards and landscaping workers in the second.) Other occupations that were excluded due to insurmountable barriers were ones that perform intrinsically governmental functions, such as judges and correctional officers. After all occupations that were considered not at all susceptible were removed, the remaining 160 occupations were deemed susceptible to offshoring and were analyzed more closely. (See tables A–1 and A–2 for a full list of these occupations.)

BLS economists answered a series of questions regarding the characteristics of these 160 occupations. The questions were designed to measure each of the four characteristics that make an occupation susceptible to offshoring: inputs and outputs that can travel easily across long distances, such as electronically over the Internet; work that requires little interaction with other types of workers; work that requires little knowledge of the social or cultural idiosyncrasies of the target market; and work that is routine in nature. (See exhibit 1.) For each occupation, all four questions were answered by the economist who specializes in that occupation.

In order for an occupation to be offshored, the services that the worker provides must be able to travel across international borders. The more efficiently this can be done, the easier and more beneficial offshoring becomes. Work in which the main product is information or digital com-

Table 1. Service-providing occupational groups

SOC code	Occupational group	Number of occupations	Offshorable occupations	Highest ranked occupations	Middle-ranked occupations	Lowest ranked occupations
	All service-providing occupations	515	160	33	94	33
11–0000	Management occupations	31	14	0	2	12
13–0000	Business and financial operations occupations	27	21	4	12	5
15–29	Professional and related occupations	204	84	11	60	13
15–0000	Computer and mathematical occupations	14	14	2	11	1
17–0000	Architecture and engineering occupations	32	26	3	17	6
19–0000	Life, physical, and social science occupations	38	23	2	17	4
21–0000	Community and social services occupations	13	0	0	0	0
23–0000	Legal occupations	8	4	2	2	0
25–0000	Education, training, and library occupations	22	1	0	1	0
27–0000	Arts, design, entertainment, sports, and media occupations	36	12	0	10	2
29–0000	Health care practitioners and technical occupations	41	4	2	2	0
31–39	Service occupations	88	2	1	1	0
31–0000	Health care support occupations	14	1	1	0	0
33–0000	Protective service occupations	19	1	0	1	0
35–0000	Food preparation and serving related occupations	16	0	0	0	0
37–0000	Building and grounds cleaning and maintenance occupations	8	0	0	0	0
39–0000	Personal care and service occupations	31	0	0	0	0
41–0000	Sales and related occupations	20	10	2	5	3
43–0000	Office and administrative support occupations	52	27	15	12	0
49–0000	Installation, maintenance, and repair occupations	49	2	0	2	0
53–0000	Transportation and material moving occupations	44	0	0	0	0

NOTE: Occupational groups exclude residual occupations not included in the analysis.

munication can be offshored more readily than work that may occasionally involve face-to-face communication or products that are not as easily transportable. (Mathematicians and telemarketers are examples of the first category, while sales representatives are an example of the second.)

High levels of interaction across an organization's departments can make an occupation difficult to offshore. Logistical problems can arise when such interaction takes place over long distances or across time zones, reducing the benefits of offshoring. General operations managers, for example, must maintain contact with all branches of an organization. Computer programmers, by contrast, can perform their duties with little to no interaction with those in other parts of an organization.

If the duties of an occupation require familiarity with the cultural or social idiosyncrasies of the target market—the kind of knowledge that can be obtained only by living in that market—performing those duties from abroad would be difficult. Marketing managers, for example, must understand the tastes of the population to whom they market their products. Tax preparers, however, need only know tax laws and a client's financial information, both of which can be obtained from places across the globe.

Work that can be routinized or handled by following a script is more susceptible to offshoring because the outputs, as well as the processes by which they should be completed, are easier to define. With such occupations, it is easier for companies to gauge whether the work is being completed, and less management oversight is needed. By contrast, work that is more creative is more difficult to monitor, making companies less likely to have it performed from remote locations. Nuclear engineers, for example, engage in detailed research and development, whereas insurance underwriters generally follow a set of instructions and are not part of an organization's creative functions.

The offshoring scoring system accounts for the degree to which each of the foregoing four characteristics influences an occupation. BLS economists were able to indicate whether each characteristic applied to an occupation to a very low degree, to a low degree, to a high degree, or to a very high degree. By not being limited to a simple binary response, the economists were better able to classify occupations that have a range of duties or specialties, some of which may be more susceptible to offshoring than others. The disadvantage of multiple options, of course, is the risk of inconsistency; to limit this risk, all scoring was reviewed by a team of

Exhibit 1. Offshoring susceptibility questions, 2006–16

1. To what degree can the inputs and outputs of the occupation be transmitted electronically, or otherwise be easily and cheaply transported?	Very low degree (1 point)	Low degree (2 points)	High degree (3 points)	Very high degree (4 points)
2. To what degree do the duties of this occupation require interaction with other types of workers?	Very low degree (4)	Low degree (3)	High degree (2)	Very high degree (1)
3. To what degree is knowledge of social and cultural idiosyncrasies, or other local knowledge, needed to carry out the tasks of this occupation?	Very low degree (4)	Low degree (3)	High degree (2)	Very high degree (1)
4. To what degree can the work of the occupation be routinized or handled by following a script?	Very low degree (1)	Low degree (2)	High degree (3)	Very high degree (4)

economists who had not done the original scoring, in order to ensure that different analysts applied the same standards.

After the questions were answered for all 160 occupations, the responses were used to generate a score for each occupation. Each question was worth a maximum of 4 points and a minimum of 1, with a 4 representing the greatest susceptibility to offshoring. As a result, the highest susceptibility score that an occupation could receive was 16, the lowest, 4. The scores were used to rank the occupations by susceptibility to offshoring.

On the basis of the distribution of the susceptibility scores, the 160 occupations were divided into three groups in order to compare occupations with similar degrees of susceptibility. Those with scores of 13–16 were grouped as the occupations with the highest susceptibility to offshoring, while those with scores of 4–7 were grouped as the occupations with the lowest susceptibility. Thirty-three occupations fell into the highest group, and another 33 fell into the lowest, with the remaining 94 falling into the middle group. (See tables A–1 and A–2.)

It is important to note that the questions posed in the scoring system are based strictly on an occupation's characteristics; thus, the rankings they generate are only a measure of the degree to which the duties of these occupations can be performed from a remote location. They indicate nothing about the likelihood, scale, or any other measure of offshoring. Occupations that exhibit similar levels of susceptibility do not necessarily have the same risk of being offshored.

For example, tax preparers and physicists are 2 occupations that score among the top 33 on the basis of occupational characteristics, but other factors significantly limit the extent to which these occupations actually may be moved offshore. Electronic documents and electronic filing allow tax preparers to be located almost anywhere in the world, but these developments, along with new software, also allow individuals to do their own taxes more easily. This factor may reduce the demand for these workers, as well as the likelihood that they will be moved offshore. Physicists, by contrast, face other restrictions to offshoring, including the fact that many physicists are employed by, or receive significant funding from, the Federal Government—funding that would not be available to them overseas.

The offshoring analysis system was initially created to account for an emerging trend in a systematic manner. After the development of the 2006–16 employment projections, the project was expanded to address a broader range of goals. In addition to improving the accuracy of the projections, it was determined that the results would be used to contribute to the publicly available information on offshoring, a topic of concern for many individuals, groups, and organizations. The occupational rankings can provide further insight into the topic, one that is still largely misunderstood and difficult to measure. In addition, detailed data are presented here on individual occupations, as well as on the offshorable occupations as a whole. Offshoring is only one of many factors that can affect occupations. No attempt should be made to attribute growth rates in an occupation, or differences between occupations, to offshoring.

Data

Occupational employment and wage data for the 2001–07 period come from the OES survey, which collects data on 801 detailed SOC occupations, including all of the 160 service-providing occupations analyzed in this article. An establishment-based instrument, the OES survey provides estimates on employment and wages for wage and salary workers in nonfarm establishments, but does not provide estimates for self-employed workers.

The OES data presented in this study span the years 2001–07, starting with the first year of data available on the 2000 SOC system.[16] Although 2007 data are available for all occupations, changes in survey methodology since 2001 do not allow for historical comparisons for 19 occupations. Therefore, rates of change for employment and wages in these occupations were not included in this analysis.

The analysis also presents several other data series from the Employment Projections Program, including the 2006–16 employment projection for each of the occupations deemed susceptible to offshoring. In addition, educational attainment data are presented to provide further demographic information. In an effort to reflect current educational needs, the analysis examines the educational attainment of younger workers—the percentage of 25- to 44-year-olds working in the occupation who have a high school diploma or less, some college or an associate's degree, or a college diploma (a bachelor's degree) or higher.[17]

Tables 2 and 3 present summary figures for these data series, and tables A–1 and A–2 contain detailed data on each of the 160 susceptible occupations. In addition, for comparison purposes, data also are presented on all service-providing occupations aggregated together. (See table 1.) Note that, although comparison against a benchmark provides some context for the data on offshorable occupations, differences should not be ascribed to offshoring; many other factors also are in play that will cause differences between sets of occupations.

Overall results

The offshorable occupations are quite diverse in their job functions, educational attainment, and wages. More than half of the 160 offshorable occupations are classified as professional and related occupations, a classification that includes a variety of professional and technical occupations. Particularly noteworthy is that almost every computer and mathematical science occupation has some degree of susceptibility to offshoring. One of the reasons that, for example, computer specialists are susceptible to being offshored is the ease with which computer programs and services can be transmitted electronically. There are also 27 office and administrative support occupations on the list. Fourteen managerial occupations appear on the list as well, although most of them are classified as occupations least susceptible to being offshored.

Table 2. Average annual percent change in employment and earnings of susceptible occupational categories, 2001–07

Susceptible occupational categories	Number of occupations	Average annual percent change in employment	Average annual percent change in earnings
All service-providing occupations	515	1.3	3.1
All offshorable occupations	160	1.5	3.6
Highest ranked occupations	33	.4	2.8
Middle ranked occupations	94	2.2	3.7
Lowest ranked occupations	33	1.8	3.4

SOURCE: Occupational Employment Statistics (OES). Table excludes data for occupations in SOC 11–0000 (management occupations) and for five additional occupations for which 2001 data are not available.

As a group, these 160 occupations accounted for about 30 million jobs in 2007, more than one-fifth of total employment. (See table 3.) The occupations grew at an average annual rate of 1.5 percent from 2001 to 2007, faster than the 1.3-percent rate for all service-providing occupations. Furthermore, the 160 offshorable occupations are projected to continue to grow faster than all service-providing occupations from 2006 to 2016, at an average annual rate of 1.2 percent, compared with 1.1 percent for the latter occupations. Wages in the offshorable occupations grew by 3.6 percent per year from 2001 to 2007, also faster than the 3.1-percent annual growth for all service-providing occupations. The 2007 mean annual wages of $61,473 in the offshorable occupations were significantly higher than the 2007 mean wages of $41,610 for all service-providing occupations. Fifty-four percent of the workers in the offshorable occupations possessed a bachelor's or higher degree, and more than 80 percent had at least some college education. These numbers, again, are higher than those for all service-providing occupations, in which 37 percent of workers had a bachelor's or higher degree and another 31 percent had some college education.

Highest ranked. The 33 occupations most susceptible to offshoring accounted for 9.5 million jobs in 2007. (See table 3.) The characteristics of these occupations reflect a wide range of skills and education. Fifteen are office and

administrative support occupations, with relatively low education or training requirements. Another 11 are professional and related occupations, which generally possess higher educational requirements. No management occupations are found in this group.

Wage and salary employment of the occupations most susceptible to offshoring grew slowly, just 0.4 percent per year from 2001 to 2007. (See table 2.) This rate of growth was significantly lower than the 1.3 percent exhibited by all service-providing occupations over the period. As a group, these 33 occupations are projected to grow by 1.1 percent per year from 2006 to 2016, equivalent to the projection for all service-providing occupations. (See table 3.) Individually, 20 of the 33 occupations most susceptible to offshoring are expected to experience employment growth, while 13 are expected to decline.

Mean annual wages for the most susceptible occupations were $38,201 in 2007, compared with $41,610 for all service-providing occupations. Wages for the most susceptible occupations grew more slowly (2.8 percent per year) than wages for all service-providing occupations (3.1 percent). The educational attainment of workers in the most susceptible group also was relatively low, with about 30 percent holding a bachelor's or higher degree, compared with 37 percent for all service-providing occupations.

Middle ranked. The 94 occupations that scored in the middle range of the offshoring analysis accounted for 14.3 million jobs in 2007. (See table 3.) The makeup of these occupations reflects the wide range of service-providing occupations that are susceptible to offshoring, but is weighted toward the more highly skilled occupations. Sixty-two of these occupations are professional and related occupations, and 12 are management, business, and financial occupations. Among the professional and related occupations are sizable numbers of architecture and engineering occupations; life, physical, and social science occupations; and computer and mathematical science occupations. Other occupational groups that are well represented include arts, design, entertainment, sports, and media occupations, as well as office and administrative support occupations.

Wage and salary employment in the middle-ranked occupations grew by 2.2 percent per year from 2001 to 2007, much faster than the 1.3-percent growth rate for all service-providing occupations. (See table 2.) The middle-ranked occupations are projected to grow by 1.3 percent per year over the 2006–16 period, compared with 1.1 percent for all service-providing occupations. Ninety of the middle-ranked occupations are projected to grow, while 4 are projected to decline.

Average annual wages for the middle-ranked occupations in 2007 were much higher ($62,564) than those for all service-providing occupations ($41,610). Wage growth from 2001 to 2007 averaged 3.7 percent per year, faster than the 3.1-percent growth rate for all service-providing occupations. The educational attainment of workers in the middle-ranked occupations also was higher, with 61.7 percent holding a bachelor's or higher degree, compared with 37 percent for all service-providing occupations; only 12.9 percent of workers in the middle group had no more than a high school diploma, as opposed to 32.0 percent of all service-providing workers.

Lowest ranked. The 33 occupations in the least susceptible group accounted for 6.5 million jobs in 2007. (See table 3.) This group consists largely of highly skilled occupations, 30 of which are professional and related occupations or management, business, and financial operations

Table 3. Employment, projected employment change, educational attainment, and earnings of susceptible occupational categories

Susceptible occupational categories	Number of occupations	Employment, 2007 (in thousands)	Average annual percent change in employment, projected 2006–16	Percent distribution by educational attainment			Mean annual wages, 2007
				High school	Some college	College	
All service-providing occupations	515	117,052	1.1	32.0	31.0	37.0	$41,610
All offshorable occupations	160	30,310	1.2	16.6	29.3	54.0	61,473
Highest ranked occupations	33	9,476	1.1	27.2	42.4	30.4	38,201
Middle-ranked occupations	94	14,306	1.3	12.9	25.4	61.7	62,564
Lowest ranked occupations	33	6,527	1.1	14.0	24.9	61.1	92,868

SOURCES: Projected employment change, 2006–16: BLS National Employment Matrix; employment and mean annual wages, 2007: BLS Occupational Employment Statistics, percent distribution by educational attainment: authors' calculation from American Community Survey Public Use Microdata.

occupations. Management occupations are heavily represented, accounting for 12 of the 33 in the group. No office and administrative support occupations are included.

Employment of the lowest ranked occupations grew by 1.8 percent per year from 2001 to 2007, faster than the 1.3-percent rate for all service-providing occupations. Employment of the lowest-ranked occupations is projected to grow by 1.1 percent per year from 2006 to 2016, the same rate as that projected for all service-providing occupations. Growth is expected in all but one of these occupations—wholesale and retail buyers, except farm products—which is projected to decline by a negligible amount.

Average annual wages for the least susceptible group in 2007 were $92,868, compared with $41,610 for all service-providing occupations. In addition, the wages for each of the 33 occupations in the least susceptible group were above the average for all service-providing occupations. Wage growth in the group averaged 3.4 percent per year from 2001 to 2007, faster than the 3.1-percent growth rate for all service-providing occupations. Educational attainment of the workers in the least susceptible occupations was high, with 61.1 percent of workers holding a bachelor's or higher degree.

Education groupings. Another method of analyzing the susceptible occupations is to group them by educational attainment and observe the differences among the groups. During the projections process, analysts assign an education or training category to each occupation.[18] Occupations classified as bachelor's degree or higher were placed into one group, while occupations classified as associate's degree or less were placed into another.[19] Ninety-seven offshorable occupations, accounting for 15.2 million jobs in 2007, were classified as bachelor's degree or higher, with the remaining 63 offshorable occupations accounting for 15.1 million jobs in 2007. (See table 4.) For comparison purposes, all service-providing occupations also were placed into corresponding education groups.

Over the 2001–07 period, offshorable occupations in the bachelor's-degree-or-higher group grew by 3.0 percent per year, faster than the 2.5-percent growth rate for all bachelor's-degree-or-higher service-providing occupations. (See table 4.) In contrast, offshorable occupations in the associate's-degree-or-less group grew by 0.5 percent per year, slower than the 1.1-percent growth rate for all associate's-degree-or-less service-providing occupations. Offshorable occupations in the bachelor's-degree-or-higher group are projected to grow slightly faster than service-providing occupations in that same group—1.5 percent, compared with 1.4 percent—and offshorable occupations in the associate's-degree-or-less group are projected to grow slightly more slowly than service-providing occupations in that group—0.9 percent, compared with 1.0 percent. Wages in the bachelor's-degree-or-higher offshorable occupations grew by 3.5 percent per year from 2001 to 2007, compared with 3.4 percent for all bachelor's-degree-or-higher service-providing occupations. Wages for the associate's-degree-or-less offshorable occupations grew by 2.9 percent per year over the same period, compared with 2.6 percent for all associate's-degree-or-less service-providing occupations.

THE PHENOMENON OF OFFSHORING, together with its potential effects on the U.S. labor market, has generated much attention. This article does not quantify those effects, but instead attempts to determine the occupations that may be affected by offshoring. The article finds that

Table 4. Average annual change in employment and wages and projected employment growth, by education group

Education group	Number of occupations	Employment, 2007 (thousands)	Percent change in employment, 2001–07	Average annual percent change in wages, 2001–07	Average annual percent change in employment, projected 2006–16
High education, all service-providing occupations	108	27,337	2.5	3.4	1.4
High education, offshorable occupations	97	15,192	3.0	3.5	1.5
Low education, all service-providing occupations	302	89,715	1.1	2.6	1.0
Low education, offshorable occupations	63	15,118	.5	2.9	.9

NOTE: High education: bachelor's degree or higher; low education: associate's degree or less.

SOURCES: Projected employment change, 2006–16: BLS National Employment Matrix; 2007 employment, and percent change in employment and wages, 2001–07: BLS Occupational Employment Statistics.

160 occupations are susceptible to offshoring and presents considerable data on those occupations. Although the effects of offshoring cannot be measured, it is noteworthy that the offshorable occupations grew slightly faster than all service-providing occupations from 2001 to 2007 and are projected to grow slightly faster than all service-providing occupations from 2006 to 2016. In addition, the offshorable occupations are quite diverse in their job functions, educational attainment, and wages. These findings warrant further research and analysis, but the dearth of additional relevant data, from either the BLS or other sources, makes most conclusions speculative at this point. As a result, the analysis undertaken here attempts only to add to the discourse on offshoring by compiling a list of susceptible occupations, as well as presenting data, both historical and projected, on those occupations. □

Notes

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[1] In this article, *service-providing occupations* refers to occupations in Standard Occupational Classification (SOC) major groups 11 through 43, 49, and 53. It does not denote the SOC intermediate aggregation service occupations, which cover only major groups 31 through 39. (See table 1.)

[2] *Offshoring: An Elusive Phenomenon*, report for the U.S. Congress and the Bureau of Economic Analysis (National Academy of Public Administration, January 2006).

[3] Bureau of Economic Analysis, National Income and Product Accounts Table, "Table 4.6.2, Real Exports and Imports of Goods and Services by Type of Product, Chained Dollars."

[4] *Why We Can't Measure the Economic Effects of Services Offshoring: The Data Gaps and How to Fill Them,* Services Offshoring Working Group final report (Cambridge, MA, Massachusetts Institute of Technology, Industrial Performance Center, Sept. 10, 2006).

[5] See, for example, Alan Blinder, *How Many U.S. Jobs Might Be Offshorable*? Princeton University CEPS Working Paper No. 142 (Princeton, NJ, Princeton University Press, March 2007); and Ashok Bardhan and Cynthia Kroll, T*he New Wave of Outsourcing*, Fisher Center for Real Estate and Urban Economics Research Report Series No. 1103, October 2003, on the Internet at **ssrn.com/abstract=985741**.

[6] For a discussion of the uncertainty of the effect of offshoring on unemployment, see Jagdish Bhagwati, Arvind Panagariya, and T. N. Srinivasan, "The Muddles over Outsourcing," *Journal of Economic Perspectives*, fall 2004, pp. 93–114.

[7] Bardhan and Kroll, *The New Wave*, p. 4.

[8] See *Standard Occupational Classification Manual: 2000* (Bureau of Labor Statistics, 2000).

[9] Blinder, *How Many U.S. Jobs*?

[10] The Occupational Information Network is an occupational information resource developed by the Employment and Training Administration of the U.S. Department of Labor.

[11] J. Bradford Jensen and Lori G. Kletzer, "Measuring Tradable Services and the Task Content of Offshorable Service Jobs," paper prepared for the National Bureau of Economic Research Conference on Research in Income and Wealth, titled "Labor in the New Economy," Nov. 16–17, 2007, Washington, DC.

[12] *Ibid*., p. 9.

[13] Jensen and Kletzer's analysis covers SOC major groups 11 through 43.

[14] See "Accounting for Offshoring in Occupational Employment Projections," *Occupational Projections and Training Data, 2006–07*, Bulletin 2602 (Bureau of Labor Statistics, February 2006).

[15] Within SOC groups 11 through 43, 49, and 53, all residual occupations were removed before analysis due to the difficulty of accurately defining the job duties of those occupations. In addition, in keeping with the format of the National Employment Matrix—which displays BLS estimates of current and projected employment by detailed industry and detailed occupation—summary occupations were used for postsecondary teachers and for physicians and surgeons. It is unlikely that the various specialties within these occupations differ in the degree to which offshoring affects them.

[16] Figures for 1999 and 2000 are available, but are considered less reliable due to OES methodology. Because data on the survey's full sample of 1.2 million establishments are collected over a period of 3 years—approximately 200,000 establishments every 6 months—the initial 2 years of data do not represent a full sample. The OES survey first adopted the SOC in 1999 and completed its first full sample in 2001.

[17] Full descriptions of all of these data sources are available in *Employment Projections: Occupational Projections and Training Data* (Bureau of Labor Statistics, 2008–09), on the Internet at **www.bls.gov/emp/optd/home.htm**.

[18] Eleven education or training categories are used, ranging from short-term on-the-job training to first professional degree. These categories reflect the most significant source of education or training for each occupation, but certainly not the only source.

[19] In order to prevent the groupings of occupations from being too small, the susceptibility rankings were ignored for this part of the analysis.

APPENDIX: Employment, wages, and education in offshorable occupations

Table A–1. Data on offshorable occupations: employment and wage variables

SOC code	Occupation title	Susceptibility score	Average annual percent change in employment, 2001–07	Employment, 2007 (thousands)	Average annual percent change in employment, projected 2006–16	Mean annual wages, 2007
	Highest ranked occupations					
15–1021	Computer programmers	16	–3.9	395	–0.4	$72,010
29–2052	Pharmacy technicians	16	6.5	302	2.8	27,560
41–2022	Parts salespersons	16	–1.0	230	–.2	30,540
43–2021	Telephone operators	16	–13.6	24	–4.9	32,690
43–3021	Billing and posting clerks and machine operators	16	1.2	515	.4	31,080
43–9011	Computer operators	16	–6.7	117	–2.8	36,080
43–9021	Data entry keyers	16	–5.6	287	–.5	26,350
43–9022	Word processors and typists	16	–7.9	139	–1.2	31,580
13–2082	Tax preparers	15	.7	62	–.9	34,890
31–9094	Medical transcriptionists	15	–1.3	87	1.3	32,120
41–9041	Telemarketers	15	–3.5	354	–1.0	24,430
43–3051	Payroll and timekeeping clerks	15	1.1	202	.3	34,500
43–9081	Proofreaders and copy markers	15	–7.6	16	.6	30,930
13–2041	Credit analysts	14	1.0	71	.2	62,820
13–2053	Insurance underwriters	14	1.1	99	.6	60,120
17–3013	Mechanical drafters	14	1.2	74	.5	46,690
29–1051	Pharmacists	14	2.1	253	2.0	98,960
43–2011	Switchboard operators, including answering service	14	–5.7	160	–.9	24,460
43–3011	Bill and account collectors	14	1.0	410	2.1	31,630
43–4021	Correspondence clerks	14	–12.3	16	1.1	30,600
13–2051	Financial analysts	13	6.4	228	3.0	81,700
15–1041	Computer support specialists	13	1.1	526	1.2	45,300
17–3011	Architectural and civil drafters	13	2.0	111	.6	45,280
17–3012	Electrical and electronics drafters	13	–3.2	32	.4	51,710
19–1021	Biochemists and biophysicists	13	3.2	19	1.5	85,290
19–2012	Physicists	13	4.3	14	.7	99,900
23–2011	Paralegals and legal assistants	13	4.7	241	2.0	47,600
23–2093	Title examiners, abstracters, and searchers	13	6.5	62	–.1	41,140
43–3031	Bookkeeping, accounting, and auditing clerks	13	1.5	1,859	1.2	32,780
43–3061	Procurement clerks	13	.5	77	–.2	34,570
43–4041	Credit authorizers, checkers, and clerks	13	–2.5	67	–.9	31,200
43–4051	Customer service representatives	13	2.6	2,193	2.2	31,040
43–9041	Insurance claims and policy processing clerks	13	–1.7	233	–.1	33,780
	Middle-ranked occupations					
13–1081	Logisticians	12	–	90	1.6	66,240
15–1061	Database administrators	12	1.8	116	2.5	70,260
15–2031	Operations research analysts	12	.4	59	1.0	71,640
17–2011	Aerospace engineers	12	2.4	86	1.0	92,700
17–2061	Computer hardware engineers	12	2.7	79	.5	94,270
17–2121	Marine engineers and naval architects	12	5.3	7	1.0	78,200
19–1022	Microbiologists	12	–1.0	15	1.1	66,430
19–2031	Chemists	12	–1.0	80	.9	68,520
19–3093	Historians	12	10.2	4	.8	54,630
27–4032	Film and video editors	12	4.0	17	1.2	61,180
41–3041	Travel agents	12	–4.3	86	.1	32,190
43–4011	Brokerage clerks	12	–2.5	71	1.8	39,990
43–4111	Interviewers, except eligibility and loan	12	4.8	227	.9	28,190
43–4141	New-accounts clerks	12	–1.9	89	–1.8	30,450
43–4181	Reservation and transportation ticket agents and travel clerks	12	–1.5	167	.1	31,080
49–2091	Avionics technicians	12	.0	16	.8	48,240
49–3011	Aircraft mechanics and service technicians	12	–2.1	119	1.0	49,670
13–1021	Purchasing agents and buyers, farm products	11	–5.0	13	–.9	53,980
13–2061	Financial examiners	11	.6	26	1.0	73,550

See footnotes at end of table.

Table A–1. Continued—Data on offshorable occupations: employment and wage variables

SOC code	Occupational title	Susceptibility score	Average annual percent change in employment, 2001–07	Employment, 2007 (thousands)	Average annual percent change in employment, projected 2006–16	Mean annual wages, 2007
	Middle-ranked occupations (continued)					
15–2021	Mathematicians	11	.4	3	1.0	90,930
15–2091	Mathematical technicians	11	–7.5	1	.8	48,490
17–2041	Chemical engineers	11	–1.6	29	.8	84,240
17–2071	Electrical engineers	11	–.3	149	.6	82,090
17–2072	Electronics engineers, except computer	11	1.4	134	.4	85,550
17–2131	Materials engineers	11	–.7	22	.4	78,840
17–2141	Mechanical engineers	11	1.4	222	.4	75,130
19–2011	Astronomers	11	9.1	2	.5	98,200
19–3011	Economists	11	–.8	13	.7	86,700
27–1014	Multimedia artists and animators	11	–.6	29	2.3	61,010
33–9021	Private detectives and investigators	11	3.0	37	1.7	42,660
43–4151	Order clerks	11	–4.6	256	–2.8	28,510
11–3061	Purchasing managers	10	–	66	.3	90,430
13–1023	Purchasing agents, except wholesale, retail, and farm products	10	3.6	282	.0	56,060
13–2011	Accountants and auditors	10	4.0	1,115	1.6	63,180
15–1011	Computer and information scientists, research	10	1.9	29	2.0	100,640
15–1031	Computer software engineers, applications	10	5.4	496	3.8	85,660
15–1071	Network and computer systems administrators	10	5.2	310	2.4	67,850
15–2011	Actuaries	10	5.3	18	2.2	95,420
17–3031	Surveying and mapping technicians	10	4.2	72	1.8	35,900
19–2021	Atmospheric and space scientists	10	4.4	9	1.0	78,960
19–3091	Anthropologists and archeologists	10	3.8	5	1.4	55,490
19–4021	Biological technicians	10	8.0	69	1.5	40,240
19–4031	Chemical technicians	10	–1.6	64	.6	42,420
19–4051	Nuclear technicians	10	2.1	6	.7	65,850
19–4061	Social science research assistants	10	–	16	1.2	38,120
23–1011	Lawyers	10	2.1	556	1.0	118,280
29–2051	Dietetic technicians	10	–2.7	25	1.4	26,680
41–3021	Insurance sales agents	10	3.0	322	1.2	58,580
43–9031	Desktop publishers	10	–2.8	29	.1	37,470
11–3041	Compensation and benefits managers	9	–	42	1.1	88,400
13–1031	Claims adjusters, examiners, and investigators	9	5.7	279	.9	55,470
13–1072	Compensation, benefits, and job analysis specialists	9	5.1	110	1.7	55,740
13–2031	Budget analysts	9	.5	62	.7	66,310
13–2052	Personal financial advisors	9	7.9	132	3.5	89,220
13–2072	Loan officers	9	8.9	357	1.1	62,610
15–1032	Computer software engineers, systems software	9	4.9	349	2.5	90,780
15–1081	Network systems and data communications analysts	9	9.4	216	4.4	70,760
17–2031	Biomedical engineers	9	14.2	15	1.9	79,610
17–2161	Nuclear engineers	9	.1	14	.7	97,130
17–3023	Electrical and electronic engineering technicians	9	–5.0	162	.4	52,470
17–3024	Electromechanical technicians	9	–15.1	16	.3	48,120
17–3027	Mechanical engineering technicians	9	–2.7	46	.6	49,290
19–2032	Materials scientists	9	2.6	10	.8	77,930
19–3021	Market research analysts	9	12.5	221	1.8	66,980
19–3022	Survey researchers	9	1.1	22	1.5	42,880
19–3094	Political scientists	9	–1.1	4	.5	90,050
23–2092	Law clerks	9	–4.2	31	–.1	40,880
27–1012	Craft artists	9	–	5	.8	30,110
27–3042	Technical writers	9	.3	47	1.8	62,780
27–3043	Writers and authors	9	1.3	44	1.2	60,120

See footnotes at end of table.

Table A–1. Continued—Data on offshorable occupations: employment and wage variables

SOC code	Occupational title	Susceptibility score	Average annual percent change in employment, 2001–07	Employment, 2007 (thousands)	Average annual percent change in employment, projected 2006–16	Mean annual wages, 2007
	Middle-ranked occupations (continued)					
41–9031	Sales engineers	9	–1.4	76	.8	86,350
43–1011	First-line supervisors/managers of office and administrative support workers	9	–.5	1,378	.6	47,620
43–4161	Human resources assistants, except payroll and timekeeping	9	–.3	162	1.1	36,000
43–5032	Dispatchers, except police, fire, and ambulance	9	1.9	190	.2	35,500
13–1071	Employment, recruitment, and placement specialists	8	1.8	194	1.7	52,710
13–2021	Appraisers and assessors of real estate	8	1.8	66	1.6	52,290
15–2041	Statisticians	8	2.9	20	.8	72,150
17–1011	Architects, except landscape and naval	8	3.9	107	1.6	73,650
17–1021	Cartographers and photogrammetrists	8	6.6	11	1.9	54,480
17–3021	Aerospace engineering and operations technicians	8	–10.7	8	1.0	56,780
19–1041	Epidemiologists	8	.0	4	1.3	63,600
19–1042	Medical scientists, except epidemiologists	8	11.1	87	1.9	74,160
25–1000	Postsecondary teachers	8	2.4	1,381	2.1	66,211
27–1013	Fine artists, including painters, sculptors, and illustrators	8	1.3	11	1.0	48,110
27–1021	Commercial and industrial designers	8	.6	35	.7	60,540
27–1022	Fashion designers	8	10.8	16	.5	71,170
27–1024	Graphic designers	8	6.7	201	.9	45,340
27–3041	Editors	8	.1	106	.2	55,020
29–1031	Dietitians and nutritionists	8	3.4	53	.8	50,030
41–4011	Sales representatives, wholesale and manufacturing, technical and scientific products	8	1.4	403	1.2	76,460
41–4012	Sales representatives, wholesale and manufacturing, except technical and scientific products	8	1.8	1,506	.8	60,190
43–4131	Loan interviewers and clerks	8	7.2	240	–.1	33,220
43–5031	Police, fire, and ambulance dispatchers	8	.9	94	1.3	34,060
43–9111	Statistical assistants	8	–4.8	19	.7	34,220
	Lowest ranked occupations					
11–3031	Financial managers	7	—	484	1.2	106,200
11–3042	Training and development managers	7	—	28	1.5	90,300
13–1073	Training and development specialists	7	1.4	203	1.7	53,040
13–1121	Meeting and convention planners	7	7.4	45	1.8	47,180
13–2071	Loan counselors	7	.2	30	.4	41,990
17–2111	Health and safety engineers, except mining safety engineers and inspectors	7	–6.2	25	.9	70,970
17–2151	Mining and geological engineers, including mining safety engineers	7	2.7	7	1.0	79,520
19–1012	Food scientists and technologists	7	—	10	1.0	62,580
19–3041	Sociologists	7	12.5	4	1.0	67,330
19–3051	Urban and regional planners	7	2.0	35	1.4	60,480
27–3091	Interpreters and translators	7	10.1	34	2.1	41,690
41–1012	First-line supervisors/managers of nonretail sales workers	7	–1.6	281	.4	78,170
41–3031	Securities, commodities, and financial services sales agents	7	–.1	268	2.2	90,470
11–1011	Chief executives	6	—	299	.2	151,370
11–1021	General and operations managers	6	—	1,655	.1	103,780
11–3011	Administrative services managers	6	—	239	1.1	76,370
11–3021	Computer and information systems managers	6	—	265	1.5	113,880

See footnotes at end of table.

Table A–1. Continued—Data on offshorable occupations: employment and wage variables

SOC code	Occupational title	Susceptibility score	Average annual percent change in employment, 2001–07	Employment, 2007 (thousands)	Average annual percent change in employment, projected 2006–16	Mean annual wages, 2007
	Lowest ranked occupations (continued)					
13–1022	Wholesale and retail buyers, except farm products	6	.1	133	.0	53,580
15–1051	Computer systems analysts	6	.6	464	2.6	75,890
17–1012	Landscape architects	6	3.3	22	1.5	62,250
17–2112	Industrial engineers	6	4.0	204	1.9	73,490
19–1011	Animal scientists	6	—	4	.9	54,290
41–3011	Advertising sales agents	6	1.8	161	1.9	52,290
11–2011	Advertising and promotions managers	5	—	36	.6	91,100
11–2021	Marketing managers	5	—	165	1.4	113,400
11–2022	Sales managers	5	—	322	1.0	106,790
11–2031	Public relations managers	5	—	47	1.6	97,170
11–9041	Engineering managers	5	—	184	.7	115,610
11–9121	Natural science managers	5	—	39	1.1	113,170
13–1111	Management analysts	5	5.4	500	2.0	80,460
17–2051	Civil engineers	5	3.1	247	1.7	75,230
27–1011	Art directors	5	7.5	32	.9	83,230
17–2081	Environmental engineers	4	.8	51	2.3	74,820

NOTE: Dash indicates data not available.

Table A–2. Data on offshorable occupations: education variables

SOC code	Occupation title	Percent distribution by educational attainment			Most significant form of postsecondary education or training
		High school	Some college	College	
	Highest ranked occupations				
15–1021	Computer programmers	5.5	21.8	72.7	Bachelor's degree
29–2052	Pharmacy technicians	27.0	57.0	16.0	Moderate-term on-the-job training
41–2022	Parts salespersons	59.0	35.1	5.9	Moderate-term on-the-job training
43–2021	Telephone operators	40.3	48.6	11.1	Short-term on-the-job training
43–3021	Billing and posting clerks and machine operators	36.1	48.5	15.4	Moderate-term on-the-job training
43–9011	Computer operators	26.8	46.4	26.8	Moderate-term on-the-job training
43–9021	Data entry keyers	35.2	47.0	17.7	Moderate-term on-the-job training
43–9022	Word processors and typists	29.0	51.9	19.1	Moderate-term on-the-job training
13–2082	Tax preparers	14.9	30.9	54.2	Moderate-term on-the-job training
31–9094	Medical transcriptionists	30.6	58.9	10.4	Postsecondary vocational award
41–9041	Telemarketers	50.1	35.7	14.2	Short-term on-the-job training
43–3051	Payroll and timekeeping clerks	32.9	49.6	17.5	Moderate-term on-the-job training
43–9081	Proofreaders and copy markers	21.5	31.3	47.2	Short-term on-the-job training
13–2041	Credit analysts	14.9	25.4	59.7	Bachelor's degree
13–2053	Insurance underwriters	15.7	31.6	52.8	Bachelor's degree
17–3013	Mechanical drafters	13.0	62.4	24.6	Postsecondary vocational award
29–1051	Pharmacists	—	2.9	97.0	First professional degree
43–2011	Switchboard operators, including answering service	39.2	50.7	10.1	Short-term on-the-job training
43–3011	Bill and account collectors	38.4	48.2	13.3	Short-term on-the-job training
43–4021	Correspondence clerks	46.8	36.7	16.4	Short-term on-the-job training
13–2051	Financial analysts	3.1	9.6	87.3	Bachelor's degree
15–1041	Computer support specialists	13.4	44.0	42.6	Associate's degree
17–3011	Architectural and civil drafters	13.0	62.4	24.6	Postsecondary vocational award
17–3012	Electrical and electronics drafters	13.0	62.4	24.6	Postsecondary vocational award
19–1021	Biochemists and biophysicists	—	5.3	94.6	Doctoral degree

See footnotes at end of table.

Table A–2. Continued—Data on offshorable occupations: education variables

SOC code	Occupation title	Percent distribution by educational attainment			Most significant form of postsecondary education or training
		High school	Some college	College	
	Highest ranked occupations (continued)				
19–2012	Physicists	—	—	95.2	Doctoral degree
23–2011	Paralegals and legal assistants	12.7	42.7	44.6	Associate's degree
23–2093	Title examiners, abstracters, and searchers	22.5	39.3	38.1	Moderate-term on-the-job training
43–3031	Bookkeeping, accounting, and auditing clerks	33.7	50.3	16.0	Moderate-term on-the-job training
43–3061	Procurement clerks	28.4	47.8	23.8	Moderate-term on-the-job training
43–4041	Credit authorizers, checkers, and clerks	35.3	36.8	27.9	Short-term on-the-job training
43–4051	Customer service representatives	33.8	44.2	22.0	Moderate-term on-the-job training
43–9041	Insurance claims and policy processing clerks	30.5	47.5	22.0	Moderate-term on-the-job training
	Middle-ranked occupations				
13–1081	Logisticians	19.2	37.9	42.9	Bachelor's degree
15–1061	Database administrators	4.6	23.9	71.5	Bachelor's degree
15–2031	Operations research analysts	6.6	22.7	70.7	Master's degree
17–2011	Aerospace engineers	3.3	9.9	86.8	Bachelor's degree
17–2061	Computer hardware engineers	7.2	22.8	70.0	Bachelor's degree
17–2121	Marine engineers and naval architects	—	18.1	78.1	Bachelor's degree
19–1022	Microbiologists	—	5.3	94.6	Doctoral degree
19–2031	Chemists	—	6.5	93.2	Bachelor's degree
19–3093	Historians	—	10.2	89.8	Master's degree
27–4032	Film and video editors	12.8	28.7	58.4	Bachelor's degree
41–3041	Travel agents	25.2	48.7	26.1	Postsecondary vocational award
43–4011	Brokerage clerks	24.4	44.6	31.0	Moderate-term on-the-job training
43–4111	Interviewers, except eligibility and loan	28.0	48.0	24.0	Short-term on-the-job training
43–4141	New-accounts clerks	36.9	35.4	27.7	Work experience in a related occupation
43–4181	Reservation and transportation ticket agents and travel clerks	28.9	42.6	28.5	Short-term on-the-job training
49–2091	Avionics technicians	30.9	64.5	—	Postsecondary vocational award
49–3011	Aircraft mechanics and service technicians	32.9	56.6	10.5	Postsecondary vocational award
13–1021	Purchasing agents and buyers, farm products	35.5	42.5	—	Long-term on-the-job training
13–2061	Financial examiners	—	15.0	76.1	Bachelor's degree
15–2021	Mathematicians	—	6.1	93.3	Doctoral degree
15–2091	Mathematical technicians	—	6.1	93.3	Master's degree
17–2041	Chemical engineers	—	5.9	91.4	Bachelor's degree
17–2071	Electrical engineers	2.9	16.5	80.5	Bachelor's degree
17–2072	Electronics engineers, except computer	2.9	16.5	80.5	Bachelor's degree
17–2131	Materials engineers	—	19.1	77.0	Bachelor's degree
17–2141	Mechanical engineers	3.5	18.3	78.2	Bachelor's degree
19–2011	Astronomers	—	—	95.2	Doctoral degree
19–3011	Economists	—	—	99.7	Master's degree
27–1014	Multimedia artists and animators	13.6	28.5	58.0	Bachelor's degree
33–9021	Private detectives and investigators	17.7	30.2	52.0	Work experience in a related occupation
43–4151	Order clerks	46.8	36.7	16.4	Short-term on-the-job training
11–3061	Purchasing managers	14.9	28.1	57.0	Bachelor's or higher degree, plus work experience
13–1023	Purchasing agents, except wholesale, retail, and farm products	21.8	35.8	42.4	Long-term on-the-job training
13–2011	Accountants and auditors	3.7	17.1	79.1	Bachelor's degree
15–1011	Computer and information scientists, research	7.0	24.6	68.4	Doctoral degree
15–1031	Computer software engineers, applications	2.2	13.0	84.8	Bachelor's degree
15–1071	Network and computer systems administrators	8.3	41.5	50.2	Bachelor's degree
15–2011	Actuaries	—	—	98.9	Bachelor's or higher degree, plus work experience
17–3031	Surveying and mapping technicians	42.2	51.0	6.8	Moderate-term on-the-job training
19–2021	Atmospheric and space scientists	—	—	85.4	Bachelor's degree
19–3091	Anthropologists and archeologists	—	10.2	89.8	Master's degree

See footnotes at end of table.

Table A–2. Continued—Data on offshorable occupations: education variables

SOC code	Occupation title	Percent distribution by educational attainment			Most significant form of postsecondary education or training
		High school	Some college	College	
	Middle-ranked occupations (continued)				
19–4021	Biological technicians	13.7	25.9	60.4	Bachelor's degree
19–4031	Chemical technicians	30.3	32.5	37.2	Associate's degree
19–4051	Nuclear technicians	19.4	34.9	45.7	Associate's degree
19–4061	Social science research assistants	19.4	34.9	45.7	Associate's degree
23–1011	Lawyers	.2	.7	99.1	First professional degree
29–2051	Dietetic technicians	27.0	57.0	16.0	Postsecondary vocational award
41–3021	Insurance sales agents	18.4	36.4	45.2	Bachelor's degree
43–9031	Desktop publishers	24.7	43.3	31.9	Postsecondary vocational award
11–3041	Compensation and benefits managers	14.8	27.8	57.5	Bachelor's or higher degree, plus work experience
13–1031	Claims adjusters, examiners, and investigators	18.3	35.1	46.7	Long-term on-the-job training
13–1072	Compensation, benefits, and job analysis specialists	14.1	30.4	55.5	Bachelor's degree
13–2031	Budget analysts	4.2	17.8	78.1	Bachelor's degree
13–2052	Personal financial advisors	4.2	15.2	80.5	Bachelor's degree
13–2072	Loan officers	16.4	34.8	48.8	Bachelor's degree
15–1032	Computer software engineers, systems software	2.2	13.0	84.8	Bachelor's degree
15–1081	Network systems and data communications analysts	8.1	34.8	57.1	Bachelor's degree
17–2031	Biomedical engineers	—	18.0	75.7	Bachelor's degree
17–2161	Nuclear engineers	3.0	14.7	82.4	Bachelor's degree
17–3023	Electrical and electronic engineering technicians	27.2	54.4	18.4	Associate's degree
17–3024	Electromechanical technicians	27.2	54.4	18.4	Associate's degree
17–3027	Mechanical engineering technicians	27.2	54.4	18.4	Associate's degree
19–2032	Materials scientists	—	6.5	93.2	Bachelor's degree
19–3021	Market research analysts	4.4	13.5	82.2	Bachelor's degree
19–3022	Survey researchers	4.4	13.5	82.2	Bachelor's degree
19–3094	Political scientists	—	10.2	89.8	Master's degree
23–2092	Law clerks	22.5	39.3	38.1	Bachelor's degree
27–1012	Craft artists	13.6	28.5	58.0	Long-term on-the-job training
27–3042	Technical writers	7.2	18.4	74.4	Bachelor's degree
27–3043	Writers and authors	3.5	12.4	84.1	Bachelor's degree
41–9031	Sales engineers	—	16.4	78.9	Bachelor's degree
43–1011	First-line supervisors/managers of office and administrative support workers	28.1	43.1	28.9	Work experience in a related occupation
43–4161	Human resources assistants, except payroll and timekeeping	25.0	46.0	29.0	Short-term on-the-job training
43–5032	Dispatchers, except police, fire, and ambulance	44.0	45.1	10.9	Moderate-term on-the-job training
13–1071	Employment, recruitment, and placement specialists	14.1	30.4	55.5	Bachelor's degree
13–2021	Appraisers and assessors of real estate	17.0	39.2	43.8	Bachelor's degree
15–2041	Statisticians	—	6.1	93.3	Master's degree
17–1011	Architects, except landscape and naval	1.6	10.1	88.3	Bachelor's degree
17–1021	Cartographers and photogrammetrists	—	17.8	81.6	Bachelor's degree
17–3021	Aerospace engineering and operations technicians	27.2	54.4	18.4	Associate's degree
19–1041	Epidemiologists	—	—	99.3	Master's degree
19–1042	Medical scientists, except epidemiologists	—	—	99.3	Doctoral degree
25–1000	Postsecondary teachers	.2	5.2	94.6	Doctoral degree
27–1013	Fine artists, including painters, sculptors, and illustrators	13.6	28.5	58.0	Long-term on-the-job training
27–1021	Commercial and industrial designers	13.9	31.4	54.6	Bachelor's degree
27–1022	Fashion designers	13.9	31.4	54.6	Associate's degree

See footnotes at end of table.

Table A–2. Continued—Data on offshorable occupations: education variables

SOC code	Occupation title	Percent distribution by educational attainment			Most significant form of postsecondary education or training
		High school	Some college	College	
	Middle-ranked occupations (continued)				
27–1024	Graphic designers	13.9	31.4	54.6	Bachelor's degree
27–3041	Editors	4.0	14.7	81.4	Bachelor's degree
29–1031	Dietitians and nutritionists	14.7	13.6	71.7	Bachelor's degree
41–4011	Sales representatives, wholesale and manufacturing, technical and scientific products	20.6	28.0	51.4	Work experience in a related occupation
41–4012	Sales representatives, wholesale and manufacturing, except technical and scientific products	20.6	28.0	51.4	Work experience in a related occupation
43–4131	Loan interviewers and clerks	31.6	44.9	23.5	Short-term on-the-job training
43–5031	Police, fire, and ambulance dispatchers	44.0	45.1	10.9	Moderate-term on-the-job training
43–9111	Statistical assistants	23.7	46.5	29.8	Moderate-term on-the-job training
	Lowest ranked occupations				
11–3031	Financial managers	12.9	27.2	59.9	Bachelor's or higher degree, plus work experience
11–3042	Training and development managers	14.8	27.8	57.5	Bachelor's or higher degree, plus work experience
13–1073	Training and development specialists	14.1	30.4	55.5	Bachelor's or higher degree, plus work experience
13–1121	Meeting and convention planners	10.6	22.0	67.4	Bachelor's degree
13–2071	Loan counselors	16.4	34.8	48.8	Bachelor's degree
17–2111	Health and safety engineers, except mining safety engineers and inspectors	7.6	18.5	73.9	Bachelor's degree
17–2151	Mining and geological engineers, including mining safety engineers	—	17.6	79.6	Bachelor's degree
19–1012	Food scientists and technologists	—	17.7	82.0	Bachelor's degree
19–3041	Sociologists	—	10.2	89.8	Master's degree
19–3051	Urban and regional planners	—	—	92.2	Master's degree
27–3091	Interpreters and translators	15.9	36.3	47.8	Long-term on-the-job training
41–1012	First-line supervisors/managers of nonretail sales workers	30.8	30.9	38.3	Work experience in a related occupation
41–3031	Securities, commodities, and financial services sales agents	10.3	23.1	66.6	Bachelor's degree
11–1011	Chief executives	13.0	21.8	65.2	Bachelor's or higher degree, plus work experience
11–1021	General and operations managers	19.6	32.5	48.0	Bachelor's or higher degree, plus work experience
11–3011	Administrative services managers	21.4	38.8	39.9	Bachelor's or higher degree, plus work experience
11–3021	Computer and information systems managers	4.6	23.0	72.5	Bachelor's or higher degree, plus work experience
13–1022	Wholesale and retail buyers, except farm products	27.8	36.2	36.0	Long-term on-the-job training
15–1051	Computer systems analysts	7.0	24.6	68.4	Bachelor's degree
17–1012	Landscape architects	1.6	10.1	88.3	Bachelor's degree
17–2112	Industrial engineers	7.6	18.5	73.9	Bachelor's degree
19–1011	Animal scientists	—	17.7	82.0	Bachelor's degree
41–3011	Advertising sales agents	14.3	30.1	55.7	Moderate-term on-the-job–training
11–2011	Advertising and promotions managers	7.1	17.5	75.5	Bachelor's or higher degree, plus work experience
11–2021	Marketing managers	9.2	22.1	68.7	Bachelor's or higher degree, plus work experience
11–2022	Sales managers	9.2	22.1	68.7	Bachelor's or higher degree, plus work experience
11–2031	Public relations managers	8.7	16.3	75.0	Bachelor's or higher degree, plus work experience
11–9041	Engineering managers	4.4	11.9	83.7	Bachelor's or higher degree, plus work experience
11–9121	Natural science managers	—	—	92.8	Bachelor's or higher degree, plus work experience
13–1111	Management analysts	6.6	15.9	77.5	Bachelor's or higher degree, plus work experience
17–2051	Civil engineers	2.7	10.0	87.3	Bachelor's degree
27–1011	Art directors	13.6	28.5	58.0	Bachelor's or higher degree, plus work experience
17–2081	Environmental engineers	—	9.9	86.4	Bachelor's degree

NOTE: Dash indicates value not significant.

All work, no play for America's workforce

The Big Squeeze: Tough times for the American worker. By Steven Greenhouse, New York, NY, Alfred A. Knopf Publishers, 2008, 303 pp., $25.95/hardback.

"Worked over and overworked" is how Steven Greenhouse, the labor and workplace correspondent for *The New York Times* since 1995, describes the current state of the American workforce. The average American worker is now putting in many more hours annually than his or her European counterpart: 135 additional hours than the typical British worker; 240 hours more than the average French worker; and 370 additional hours (more than 9 weeks) than the typical German worker. These long hours, Greenhouse feels, have led to high levels of stress and fatigue.

In addition to hours worked, Greenhouse reviews historical earnings data and finds that, since 1979, overall real earnings of America's workers have risen just 1 percent after inflation and have actually declined 5 percent for male workers. Median income recently failed to increase for the fifth year in a row after factoring in inflation—a situation which has never occurred before in a time of economic growth. In contrast, from 1979 to 2005 income for Americans in "the top fifth of the food chain" jumped 80 percent and for the top 1 percent it leaped an astronomical 228 percent. Income inequality in the United States, in the author's opinion, has not been this great since the 1920s.

To address their increasingly desperate situations, Greenhouse notes, millions of American workers have "supersized" their credit cards and/or taken second mortgages on their homes. As a result, many Americans are now spending more than they earn; in 2005, the Nation's personal savings rate dipped below zero for the first time since the Great Depression. As proof of how risky this strategy is, Greenhouse notes that housing foreclosures and personal bankruptcies more than tripled between 1979 and 2004, and the full impact of the subprime loan crisis has yet to be felt.

Greenhouse has other concerns for America's workforce as well. The availability of pension plans is declining. Just one-third of laid-off workers receive unemployment benefits, down from 50 percent a generation ago. Greenhouse cites a study that found that of 173 nations recently surveyed, the United States was one of only four countries that do not provide paid maternity leave. And, even for those workers fortunate to be covered by health insurance plans, the cost has soared by 83 percent, according to another source cited by Greenhouse.

What is the origin of the decline in the circumstances of America's workers? Greenhouse focuses on a number of crucial events that he feels tilted the playing field against workers: a surge in imports, especially steel and automobiles, which reduced the demand for labor; deregulation policies that hit long-established unionized companies the hardest; and the firing of 11,500 air traffic controllers in 1981. The Professional Air Traffic Controllers union rejected what many felt was a very generous offer that year, including an 11.4-percent 1-year pay increase. Nevertheless, the firing was unprecedented and, Greenhouse believes, set the groundwork for future labor "concessions."

Well-financed corporate raiders also played a negative role, in his opinion, by either taking over struggling companies and selling off their assets (and putting their employees out of work) or by walking away with "greenmail." He feels the loss of jobs and job security as a result of corporate downsizing has also hurt the labor movement. Globalization has been tough on America's workers as well, especially the outsourcing of America's factories and jobs. Per Greenhouse: "More than any other economic force since the Depression, it is creating havoc for blue collar workers and white collar workers alike." Finally, Greenhouse feels that tax cuts since the turn of the 21st century have been unfair and helped widen an already large gap between the working class and the very wealthy.

Greenhouse proposes a wide range of regulatory and policy changes to improve workplaces, working conditions, compensation, and retirement, as well as changes to social support programs such as Head Start. From his choice of a title through the topics he covers and the changes in economic and social policies he proposes, Greenhouse's sympathies clearly lie with America's workers and its organized labor movement. For those readers willing to accept his viewpoints—or at least be challenged by them—I recommend this book.

—James C. Titkemeyer
Office of Publications
Bureau of Labor Statistics

Nominations Sought for 2009 Julius Shiskin Award

Nominations are invited for the annual Julius Shiskin Memorial Award for Economic Statistics. The Award is given in recognition of unusually original and important contributions in the development of economic statistics or in the use of statistics in interpreting the economy. Contributions are recognized for statistical research, development of statistical tools, application of information technology techniques, use of economic statistical programs, management of statistical programs, or developing public understanding of measurement issues. The Award was established in 1980 by the Washington Statistical Society (WSS) and is now cosponsored by the WSS, the National Association for Business Economics, and the Business and Economics Statistics Section of the American Statistical Association (ASA). The 2008 award recipients were William R. Bell and Robert M. Groves. Dr. Bell was recognized for his innovative statistical research that led to improved economic statistics through important contributions to the theory and practice of seasonal adjustment, small area estimation, and time series modeling; Dr. Groves was recognized for his innovative statistical research that led to improved economic statistics through important contributions to the theory and practice of survey methods for the conduct of sample surveys of both households and establishments.

Because the program was initiated many years ago, statisticians and economists often ask, "Who was Julius Shiskin?" At the time of his death in 1978, "Julie" was the Commissioner of the Bureau of Labor Statistics (BLS) and earlier served as the Chief Statistician at the Office of Management and Budget (OMB), and the Chief Economic Statistician and Assistant Director of the Census Bureau. Throughout his career, he was known as an innovator. At Census he was instrumental in developing an electronic computer method for seasonal adjustment. In 1961, he published *Signals of Recession and Recovery,* which laid the groundwork for the calculation of monthly economic indicators, and he developed the monthly Census report *Business Conditions Digest* to disseminate them to the public. In 1969, he was appointed Chief Statistician at OMB where he developed the policies and procedures that govern the release of key economic indicators (Statistical Policy Directive Number 3), and originated a *Social Indicators* report. In 1973, he was selected to head BLS where he was instrumental in preserving the integrity and independence of the BLS labor force data and directed the most comprehensive revision in the history of the Consumer Price Index (CPI), which included a new CPI for all urban consumers.

Nominations for the 2009 award are now being accepted. Individuals and groups in the public or private sector from any country can be nominated. The award will be presented with an honorarium of $750 plus additional recognition from the sponsors. A nomination form and a list of all previous recipients are available on the ASA Website at **www.amstat.org/sections/bus_econ/shiskin.html**. For questions or more information, please contact Steven Paben, Julius Shiskin Award Committee Secretary, via e-mail at **paben.steven@bls.gov** or phone at 202–691–6147.

Completed nominations must be *received* by April 1, 2009.

Current Labor Statistics
Monthly Labor Review
December 2008

NOTE: Many of the statistics in the following pages were subsequently revised. These pages have not been updated to reflect the revisions.

To obtain BLS data that reflect all revisions, see http://www.bls.gov/data/home.htm

For the latest set of "Current Labor Statistics," see http://www.bls.gov/opub/mlr/curlabst.htm

Notes on current labor statistics 90

Comparative indicators

1. Labor market indicators 102
2. Annual and quarterly percent changes in compensation, prices, and productivity 103
3. Alternative measures of wages and compensation changes 103

Labor force data

4. Employment status of the population, seasonally adjusted 104
5. Selected employment indicators, seasonally adjusted 105
6. Selected unemployment indicators, seasonally adjusted 106
7. Duration of unemployment, seasonally adjusted 106
8. Unemployed persons by reason for unemployment, seasonally adjusted 107
9. Unemployment rates by sex and age, seasonally adjusted 107
10. Unemployment rates by State, seasonally adjusted 108
11. Employment of workers by State, seasonally adjusted 108
12. Employment of workers by industry, seasonally adjusted 109
13. Average weekly hours by industry, seasonally adjusted 112
14. Average hourly earnings by industry, seasonally adjusted 113
15. Average hourly earnings by industry 114
16. Average weekly earnings by industry 115
17. Diffusion indexes of employment change, seasonally adjusted 116
18. Job openings levels and rates, by industry and regions, seasonally adjusted 117
19. Hires levels and rates by industry and region, seasonally adjusted 117
20. Separations levels and rates by industry and region, seasonally adjusted 118
21. Quits levels and rates by industry and region, seasonally adjusted 118
22. Quarterly Census of Employment and Wages, 10 largest counties 119
23. Quarterly Census of Employment and Wages, by State 121
24. Annual data: Quarterly Census of Employment and Wages, by ownership 122
25. Annual data: Quarterly Census of Employment and Wages, establishment size and employment, by supersector 123
26. Annual data: Quarterly Census of Employment and Wages, by metropolitan area 124
27. Annual data: Employment status of the population 129
28. Annual data: Employment levels by industry 129
29. Annual data: Average hours and earnings level, by industry 130

Labor compensation and collective bargaining data

30. Employment Cost Index, compensation 131
31. Employment Cost Index, wages and salaries 133
32. Employment Cost Index, benefits, private industry 135
33. Employment Cost Index, private industry workers, by bargaining status, and region 136
34. National Compensation Survey, retirement benefits, private industry 137
35. National Compensation Survey, health insurance, private industry 140
36. National Compensation Survey, selected benefits, private industry 142
37. Work stoppages involving 1,000 workers or more 142

Price data

38. Consumer Price Index: U.S. city average, by expenditure category and commodity and service groups 143
39. Consumer Price Index: U.S. city average and local data, all items 146
40. Annual data: Consumer Price Index, all items and major groups 147
41. Producer Price Indexes by stage of processing 148
42. Producer Price Indexes for the net output of major industry groups 149
43. Annual data: Producer Price Indexes by stage of processing 150
44. U.S. export price indexes by end-use category 150
45. U.S. import price indexes by end-use category 151
46. U.S. international price indexes for selected categories of services 151

Productivity data

47. Indexes of productivity, hourly compensation, and unit costs, data seasonally adjusted 152
48. Annual indexes of multifactor productivity 153
49. Annual indexes of productivity, hourly compensation, unit costs, and prices 154
50. Annual indexes of output per hour for select industries 155

International comparisons data

51. Unemployment rates in 10 countries, seasonally adjusted 159
52. Annual data: Employment status of the civilian working-age population, 10 countries 160
53. Annual indexes of productivity and related measures, 16 economies 161

Injury and Illness data

54. Annual data: Occupational injury and illness 162
55. Fatal occupational injuries by event or exposure 164

Notes on Current Labor Statistics

This section of the *Review* presents the principal statistical series collected and calculated by the Bureau of Labor Statistics: series on labor force; employment; unemployment; labor compensation; consumer, producer, and international prices; productivity; international comparisons; and injury and illness statistics. In the notes that follow, the data in each group of tables are briefly described; key definitions are given; notes on the data are set forth; and sources of additional information are cited.

General notes

The following notes apply to several tables in this section:

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect on the data of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might prevent short-term evaluation of the statistical series. Tables containing data that have been adjusted are identified as "seasonally adjusted." (All other data are not seasonally adjusted.) Seasonal effects are estimated on the basis of current and past experiences. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years.

Seasonally adjusted data appear in tables 1–14, 17–21, 48, and 52. Seasonally adjusted labor force data in tables 1 and 4–9 and seasonally adjusted establishment survey data shown in tables 1, 12–14, and 17 are revised in the March 2007 *Review.* A brief explanation of the seasonal adjustment methodology appears in "Notes on the data."

Revisions in the productivity data in table 54 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month-to-month and quarter-to-quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All-Items CPI. Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data—such as the "real" earnings shown in table 14—are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current-dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of $3 and a current price index number of 150, where 1982 = 100, the hourly rate expressed in 1982 dollars is $2 ($3/150 x 100 = $2). The $2 (or any other resulting values) are described as "real," "constant," or "1982" dollars.

Sources of information

Data that supplement the tables in this section are published by the Bureau in a variety of sources. Definitions of each series and notes on the data are contained in later sections of these Notes describing each set of data. For detailed descriptions of each data series, see BLS *Handbook of Methods*, Bulletin 2490. Users also may wish to consult *Major Programs of the Bureau of Labor Statistics*, Report 919. News releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule appearing on the back cover of this issue.

More information about labor force, employment, and unemployment data and the household and establishment surveys underlying the data are available in the Bureau's monthly publication, *Employment and Earnings.* Historical unadjusted and seasonally adjusted data from the household survey are available on the Internet:

www.bls.gov/cps/

Historically comparable unadjusted and seasonally adjusted data from the establishment survey also are available on the Internet:

www.bls.gov/ces/

Additional information on labor force data for areas below the national level are provided in the BLS annual report, *Geographic Profile of Employment and Unemployment.*

For a comprehensive discussion of the Employment Cost Index, see *Employment Cost Indexes and Levels, 1975–95,* BLS Bulletin 2466. The most recent data from the Employee Benefits Survey appear in the following Bureau of Labor Statistics bulletins: *Employee Benefits in Medium and Large Firms; Employee Benefits in Small Private Establishments;* and *Employee Benefits in State and Local Governments*.

More detailed data on consumer and producer prices are published in the monthly periodicals, *The CPI Detailed Report* and *Producer Price Indexes*. For an overview of the 1998 revision of the CPI, see the December 1996 issue of the *Monthly Labor Review*. Additional data on international prices appear in monthly news releases.

Listings of industries for which productivity indexes are available may be found on the Internet:

www.bls.gov/lpc/

For additional information on international comparisons data, see *International Comparisons of Unemployment,* Bulletin 1979.

Detailed data on the occupational injury and illness series are published in *Occupational Injuries and Illnesses in the United States, by Industry,* a BLS annual bulletin.

Finally, the *Monthly Labor Review* carries analytical articles on annual and longer term developments in labor force, employment, and unemployment; employee compensation and collective bargaining; prices; productivity; international comparisons; and injury and illness data.

Symbols

n.e.c. = not elsewhere classified.
n.e.s. = not elsewhere specified.
p = preliminary. To increase the timeliness of some series, preliminary figures are issued based on representative but incomplete returns.
r = revised. Generally, this revision reflects the availability of later data, but also may reflect other adjustments.

Comparative Indicators

(Tables 1–3)

Comparative indicators tables provide an overview and comparison of major BLS statistical series. Consequently, although many of the included series are available monthly, all measures in these comparative tables are presented quarterly and annually.

Labor market indicators include employment measures from two major surveys and information on rates of change in compensation provided by the Employment Cost Index (ECI) program. The labor force participation rate, the employment-population ratio, and unemployment rates for major demographic groups based on the Current Population ("household") Survey are presented, while measures of employment and average weekly hours by major industry sector are given using nonfarm payroll data. The Employment Cost Index (compensation), by major sector and by bargaining status, is chosen from a variety of BLS compensation and wage measures because it provides a comprehensive measure of employer costs for hiring labor, not just outlays for wages, and it is not affected by employment shifts among occupations and industries.

Data on **changes in compensation, prices, and productivity** are presented in table 2. Measures of rates of change of compensation

and wages from the Employment Cost Index program are provided for all civilian nonfarm workers (excluding Federal and household workers) and for all private nonfarm workers. Measures of changes in consumer prices for all urban consumers; producer prices by stage of processing; overall prices by stage of processing; and overall export and import price indexes are given. Measures of productivity (output per hour of all persons) are provided for major sectors.

Alternative measures of wage and compensation rates of change, which reflect the overall trend in labor costs, are summarized in table 3. Differences in concepts and scope, related to the specific purposes of the series, contribute to the variation in changes among the individual measures.

Notes on the data

Definitions of each series and notes on the data are contained in later sections of these notes describing each set of data.

Employment and Unemployment Data

(Tables 1; 4–29)

Household survey data

Description of the series

Employment data in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 60,000 households selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

Employed persons include (1) all those who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons. A person working at more than one job is counted only in the job at which he or she worked the greatest number of hours.

Unemployed persons are those who did not work during the survey week, but were available for work except for temporary illness and had looked for jobs within the preceding 4 weeks. Persons who did not look for work because they were on layoff are also counted among the unemployed. **The unemployment rate** represents the number unemployed as a percent of the civilian labor force.

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population. Persons **not in the labor force** are those not classified as employed or unemployed. This group includes discouraged workers, defined as persons who want and are available for a job and who have looked for work sometime in the past 12 months (or since the end of their last job if they held one within the past 12 months), but are not currently looking, because they believe there are no jobs available or there are none for which they would qualify. The **civilian noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy. The **civilian labor force participation** rate is the proportion of the civilian noninstitutional population that is in the labor force. The **employment-population ratio** is employment as a percent of the civilian noninstitutional population.

Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the intercensal years. These adjustments affect the comparability of historical data. A description of these adjustments and their effect on the various data series appears in the Explanatory Notes of *Employment and Earnings*. For a discussion of changes introduced in January 2003, see "Revisions to the Current Population Survey Effective in January 2003" in the February 2003 issue of *Employment and Earnings* (available on the BLS Web site at **www.bls.gov/cps/rvcps03.pdf**).

Effective in January 2003, BLS began using the X-12 ARIMA seasonal adjustment program to seasonally adjust national labor force data. This program replaced the X-11 ARIMA program which had been used since January 1980. See "Revision of Seasonally Adjusted Labor Force Series in 2003," in the February 2003 issue of *Employment and Earnings* (available on the BLS Web site at **www.bls.gov/cps/cpsrs.pdf**) for a discussion of the introduction of the use of X-12 ARIMA for seasonal adjustment of the labor force data and the effects that it had on the data.

At the beginning of each calendar year, historical seasonally adjusted data usually are revised, and projected seasonal adjustment factors are calculated for use during the January–June period. The historical seasonally adjusted data usually are revised for only the most recent 5 years. In July, new seasonal adjustment factors, which incorporate the experience through June, are produced for the July–December period, but no revisions are made in the historical data.

FOR ADDITIONAL INFORMATION on national household survey data, contact the Division of Labor Force Statistics: (202) 691–6378.

Establishment survey data

Description of the series

Employment, hours, and earnings data in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by about 160,000 businesses and government agencies, which represent approximately 400,000 individual worksites and represent all industries except agriculture. The active CES sample covers approximately one-third of all nonfarm payroll workers. Industries are classified in accordance with the 2002 North American Industry Classification System. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

An **establishment** is an economic unit which produces goods or services (such as a factory or store) at a single location and is engaged in one type of economic activity.

Employed persons are all persons who received pay (including holiday and sick pay) for any part of the payroll period including the 12th day of the month. Persons holding more than one job (about 5 percent of all persons in the labor force) are counted in each establishment which reports them.

Production workers in the goods-producing industries cover employees, up through the level of working supervisors, who engage directly in the manufacture or construction of the establishment's product. In private service-providing industries, data are collected for nonsupervisory workers, which include most employees except those in executive,

managerial, and supervisory positions. Those workers mentioned in tables 11–16 include production workers in manufacturing and natural resources and mining; construction workers in construction; and nonsupervisory workers in all private service-providing industries. Production and nonsupervisory workers account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to reflect the effects of changes in consumer prices. The deflator for this series is derived from the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W).

Hours represent the average weekly hours of production or nonsupervisory workers for which pay was received, and are different from standard or scheduled hours. **Overtime hours** represent the portion of average weekly hours which was in excess of regular hours and for which overtime premiums were paid.

The **Diffusion Index** represents the percent of industries in which employment was rising over the indicated period, plus one-half of the industries with unchanged employment; 50 percent indicates an equal balance between industries with increasing and decreasing employment. In line with Bureau practice, data for the 1-, 3-, and 6-month spans are seasonally adjusted, while those for the 12-month span are unadjusted. Table 17 provides an index on private nonfarm employment based on 278 industries, and a manufacturing index based on 84 industries. These indexes are useful for measuring the dispersion of economic gains or losses and are also economic indicators.

Notes on the data

Establishment survey data are annually adjusted to comprehensive counts of employment (called "benchmarks"). The March 2003 benchmark was introduced in February 2004 with the release of data for January 2004, published in the March 2004 issue of the *Review*. With the release in June 2003, CES completed a conversion from the Standard Industrial Classification (SIC) system to the North American Industry Classification System (NAICS) and completed the transition from its original quota sample design to a probability-based sample design. The industry-coding update included reconstruction of historical estimates in order to preserve time series for data users. Normally 5 years of seasonally adjusted data are revised with each benchmark revision. However, with this release, the entire new time series history for all CES data series were re-seasonally adjusted due to the NAICS conversion, which resulted in the revision of all CES time series.

Also in June 2003, the CES program introduced concurrent seasonal adjustment for the national establishment data. Under this methodology, the first preliminary estimates for the current reference month and the revised estimates for the 2 prior months will be updated with concurrent factors with each new release of data. Concurrent seasonal adjustment incorporates all available data, including first preliminary estimates for the most current month, in the adjustment process. For additional information on all of the changes introduced in June 2003, see the June 2003 issue of *Employment and Earnings* and "Recent changes in the national Current Employment Statistics survey," *Monthly Labor Review,* June 2003, pp. 3–13.

Revisions in State data (table 11) occurred with the publication of January 2003 data. For information on the revisions for the State data, see the March and May 2003 issues of *Employment and Earnings*, and "Recent changes in the State and Metropolitan Area CES survey," *Monthly Labor Review*, June 2003, pp. 14–19.

Beginning in June 1996, the BLS uses the X-12-ARIMA methodology to seasonally adjust establishment survey data. This procedure, developed by the Bureau of the Census, controls for the effect of varying survey intervals (also known as the 4- versus 5-week effect), thereby providing improved measurement of over-the-month changes and underlying economic trends. Revisions of data, usually for the most recent 5-year period, are made once a year coincident with the benchmark revisions.

In the establishment survey, estimates for the most recent 2 months are based on incomplete returns and are published as preliminary in the tables (12–17 in the *Review).* When all returns have been received, the estimates are revised and published as "final" (prior to any benchmark revisions) in the third month of their appearance. Thus, December data are published as preliminary in January and February and as final in March. For the same reasons, quarterly establishment data (table 1) are preliminary for the first 2 months of publication and final in the third month. Fourth-quarter data are published as preliminary in January and February and as final in March.

FOR ADDITIONAL INFORMATION on establishment survey data, contact the Division of Current Employment Statistics: (202) 691–6555.

Unemployment data by State

Description of the series

Data presented in this section are obtained from the Local Area Unemployment Statistics (LAUS) program, which is conducted in cooperation with State employment security agencies.

Monthly estimates of the labor force, employment, and unemployment for States and sub-State areas are a key indicator of local economic conditions, and form the basis for determining the eligibility of an area for benefits under Federal economic assistance programs such as the Job Training Partnership Act. Seasonally adjusted unemployment rates are presented in table 10. Insofar as possible, the concepts and definitions underlying these data are those used in the national estimates obtained from the CPS.

Notes on the data

Data refer to State of residence. Monthly data for all States and the District of Columbia are derived using standardized procedures established by BLS. Once a year, estimates are revised to new population controls, usually with publication of January estimates, and benchmarked to annual average CPS levels.

FOR ADDITIONAL INFORMATION on data in this series, call (202) 691–6392 (table 10) or (202) 691–6559 (table 11).

Quarterly Census of Employment and Wages

Description of the series

Employment, wage, and establishment data in this section are derived from the quarterly tax reports submitted to State employment security agencies by private and State and local government employers subject to State unemployment insurance (UI) laws and from Federal, agencies subject to the Unemployment Compensation for Federal Employees (UCFE) program. Each quarter, State agencies edit and process the data and send the information to the Bureau of Labor Statistics.

The Quarterly Census of Employment and Wages (QCEW) data, also referred as ES-202 data, are the most complete enumeration of employment and wage information by industry at the national, State, metropolitan area, and county levels. They have broad economic significance in evaluating labor

market trends and major industry developments.

Definitions

In general, the Quarterly Census of Employment and Wages monthly employment data represent the number of **covered workers** who worked during, or received pay for, the pay period that included the 12th day of the month. **Covered private industry employment** includes most corporate officials, executives, supervisory personnel, professionals, clerical workers, wage earners, piece workers, and part-time workers. It excludes proprietors, the unincorporated self-employed, unpaid family members, and certain farm and domestic workers. Certain types of nonprofit employers, such as religious organizations, are given a choice of coverage or exclusion in a number of States. Workers in these organizations are, therefore, reported to a limited degree.

Persons on paid sick leave, paid holiday, paid vacation, and the like, are included. Persons on the payroll of more than one firm during the period are counted by each UI-subject employer if they meet the employment definition noted earlier. The employment count excludes workers who earned no wages during the entire applicable pay period because of work stoppages, temporary layoffs, illness, or unpaid vacations.

Federal employment data are based on reports of monthly employment and quarterly wages submitted each quarter to State agencies for all Federal installations with employees covered by the Unemployment Compensation for Federal Employees (UCFE) program, except for certain national security agencies, which are omitted for security reasons. Employment for all Federal agencies for any given month is based on the number of persons who worked during or received pay for the pay period that included the 12th of the month.

An **establishment** is an economic unit, such as a farm, mine, factory, or store, that produces goods or provides services. It is typically at a single physical location and engaged in one, or predominantly one, type of economic activity for which a single industrial classification may be applied. Occasionally, a single physical location encompasses two or more distinct and significant activities. Each activity should be reported as a separate establishment if separate records are kept and the various activities are classified under different NAICS industries.

Most employers have only one establishment; thus, the establishment is the predominant reporting unit or statistical entity for reporting employment and wages data. Most employers, including State and local governments who operate more than one establishment in a State, file a Multiple Worksite Report each quarter, in addition to their quarterly UI report. The Multiple Worksite Report is used to collect separate employment and wage data for each of the employer's establishments, which are not detailed on the UI report. Some very small multi-establishment employers do not file a Multiple Worksite Report. When the total employment in an employer's secondary establishments (all establishments other than the largest) is 10 or fewer, the employer generally will file a consolidated report for all establishments. Also, some employers either cannot or will not report at the establishment level and thus aggregate establishments into one consolidated unit, or possibly several units, though not at the establishment level.

For the Federal Government, the reporting unit is the **installation**: a single location at which a department, agency, or other government body has civilian employees. Federal agencies follow slightly different criteria than do private employers when breaking down their reports by installation. They are permitted to combine as a single statewide unit: 1) all installations with 10 or fewer workers, and 2) all installations that have a combined total in the State of fewer than 50 workers. Also, when there are fewer than 25 workers in all secondary installations in a State, the secondary installations may be combined and reported with the major installation. Last, if a Federal agency has fewer than five employees in a State, the agency headquarters office (regional office, district office) serving each State may consolidate the employment and wages data for that State with the data reported to the State in which the headquarters is located. As a result of these reporting rules, the number of reporting units is always larger than the number of employers (or government agencies) but smaller than the number of actual establishments (or installations).

Data reported for the first quarter are tabulated into **size** categories ranging from worksites of very small size to those with 1,000 employees or more. The size category is determined by the establishment's March employment level. It is important to note that each establishment of a multi-establishment firm is tabulated separately into the appropriate size category. The total employment level of the reporting multi-establishment firm is not used in the size tabulation.

Covered employers in most States report total **wages** paid during the calendar quarter, regardless of when the services were performed. A few State laws, however, specify that wages be reported for, or based on the period during which services are performed rather than the period during which compensation is paid. Under most State laws or regulations, wages include bonuses, stock options, the cash value of meals and lodging, tips and other gratuities, and, in some States, employer contributions to certain deferred compensation plans such as 401(k) plans.

Covered employer contributions for old-age, survivors, and disability insurance (OASDI), health insurance, unemployment insurance, workers' compensation, and private pension and welfare funds are not reported as wages. Employee contributions for the same purposes, however, as well as money withheld for income taxes, union dues, and so forth, are reported even though they are deducted from the worker's gross pay.

Wages of covered Federal workers represent the gross amount of all payrolls for all pay periods ending within the quarter. This includes cash allowances, the cash equivalent of any type of remuneration, severance pay, withholding taxes, and retirement deductions. Federal employee remuneration generally covers the same types of services as for workers in private industry.

Average annual wage per employee for any given industry are computed by dividing total annual wages by annual average employment. A further division by 52 yields average weekly wages per employee. Annual pay data only approximate annual earnings because an individual may not be employed by the same employer all year or may work for more than one employer at a time.

Average weekly or annual wage is affected by the ratio of full-time to part-time workers as well as the number of individuals in high-paying and low-paying occupations. When average pay levels between States and industries are compared, these factors should be taken into consideration. For example, industries characterized by high proportions of part-time workers will show average wage levels appreciably less than the weekly pay levels of regular full-time employees in these industries. The opposite effect characterizes industries with low proportions of part-time workers, or industries that typically schedule heavy weekend and overtime work. Average wage data also may be influenced by work stoppages, labor turnover rates, retroactive payments, seasonal factors, bonus payments, and so on.

Notes on the data

Beginning with the release of data for 2001, publications presenting data from the Covered Employment and Wages program have switched to the 2002 version of the North

American Industry Classification System (NAICS) as the basis for the assignment and tabulation of economic data by industry. NAICS is the product of a cooperative effort on the part of the statistical agencies of the United States, Canada, and Mexico. Due to difference in NAICS and Standard Industrial Classification (SIC) structures, industry data for 2001 is not comparable to the SIC-based data for earlier years.

Effective January 2001, the program began assigning Indian Tribal Councils and related establishments to local government ownership. This BLS action was in response to a change in Federal law dealing with the way Indian Tribes are treated under the Federal Unemployment Tax Act. This law requires federally recognized Indian Tribes to be treated similarly to State and local governments. In the past, the Covered Employment and Wage (CEW) program coded Indian Tribal Councils and related establishments in the private sector. As a result of the new law, CEW data reflects significant shifts in employment and wages between the private sector and local government from 2000 to 2001. Data also reflect industry changes. Those accounts previously assigned to civic and social organizations were assigned to tribal governments. There were no required industry changes for related establishments owned by these Tribal Councils. These tribal business establishments continued to be coded according to the economic activity of that entity.

To insure the highest possible quality of data, State employment security agencies verify with employers and update, if necessary, the industry, location, and ownership classification of all establishments on a 3-year cycle. Changes in establishment classification codes resulting from the verification process are introduced with the data reported for the first quarter of the year. Changes resulting from improved employer reporting also are introduced in the first quarter. For these reasons, some data, especially at more detailed geographic levels, may not be strictly comparable with earlier years.

County definitions are assigned according to Federal Information Processing Standards Publications as issued by the National Institute of Standards and Technology. Areas shown as counties include those designated as independent cities in some jurisdictions and, in Alaska, those areas designated by the Census Bureau where counties have not been created. County data also are presented for the New England States for comparative purposes, even though townships are the more common designation used in New England (and New Jersey).

The Office of Management and Budget (OMB) defines metropolitan areas for use in Federal statistical activities and updates these definitions as needed. Data in this table use metropolitan area criteria established by OMB in definitions issued June 30, 1999 (OMB Bulletin No. 99-04). These definitions reflect information obtained from the 1990 Decennial Census and the 1998 U.S. Census Bureau population estimate. A complete list of metropolitan area definitions is available from the National Technical Information Service (NTIS), Document Sales, 5205 Port Royal Road, Springfield, Va. 22161, telephone 1-800-553-6847.

OMB defines metropolitan areas in terms of entire counties, except in the six New England States where they are defined in terms of cities and towns. New England data in this table, however, are based on a county concept defined by OMB as New England County Metropolitan Areas (NECMA) because county-level data are the most detailed available from the Quarterly Census of Employment and Wages. The NECMA is a county-based alternative to the city- and town-based metropolitan areas in New England. The NECMA for a Metropolitan Statistical Area (MSA) include: (1) the county containing the first-named city in that MSA title (this county may include the first-named cities of other MSA, and (2) each additional county having at least half its population in the MSA in which first-named cities are in the county identified in step 1. The NECMA is officially defined areas that are meant to be used by statistical programs that cannot use the regular metropolitan area definitions in New England.

For additional information on the covered employment and wage data, contact the Division of Administrative Statistics and Labor Turnover at (202) 691–6567.

Job Openings and Labor Turnover Survey

Description of the series

Data for the **Job Openings and Labor Turnover Survey** (JOLTS) are collected and compiled from a sample of 16,000 business establishments. Each month, data are collected for total employment, job openings, hires, quits, layoffs and discharges, and other separations. The JOLTS program covers all private nonfarm establishments such as factories, offices, and stores, as well as Federal, State, and local government entities in the 50 States and the District of Columbia. The JOLTS sample design is a random sample drawn from a universe of more than eight million establishments compiled as part of the operations of the Quarterly Census of Employment and Wages, or QCEW, program. This program includes all employers subject to State unemployment insurance (UI) laws and Federal agencies subject to Unemployment Compensation for Federal Employees (UCFE).

The sampling frame is stratified by ownership, region, industry sector, and size class. Large firms fall into the sample with virtual certainty. JOLTS total employment estimates are controlled to the employment estimates of the Current Employment Statistics (CES) survey. A ratio of CES to JOLTS employment is used to adjust the levels for all other JOLTS data elements. Rates then are computed from the adjusted levels.

The monthly JOLTS data series begin with December 2000. Not seasonally adjusted data on job openings, hires, total separations, quits, layoffs and discharges, and other separations levels and rates are available for the total nonfarm sector, 16 private industry divisions and 2 government divisions based on the North American Industry Classification System (NAICS), and four geographic regions. Seasonally adjusted data on job openings, hires, total separations, and quits levels and rates are available for the total nonfarm sector, selected industry sectors, and four geographic regions.

Definitions

Establishments submit **job openings** in-for-mation for the last business day of the reference month. A job opening requires that (1) a specific position exists and there is work available for that position; and (2) work could start within 30 days regardless of whether a suitable candidate is found; and (3) the employer is actively recruiting from outside the establishment to fill the position. Included are full-time, part-time, permanent, short-term, and seasonal openings. Active recruiting means that the establishment is taking steps to fill a position by advertising in newspapers or on the Internet, posting help-wanted signs, accepting applications, or using other similar methods.

Jobs to be filled only by internal transfers, promotions, demotions, or recall from layoffs are excluded. Also excluded are jobs with start dates more than 30 days in the future, jobs for which employees have been hired but have not yet reported for work, and jobs to be filled by employees of temporary help agencies, employee leasing companies, outside contractors, or consultants. The job openings rate is computed by dividing the number of job openings by the sum of employment and job openings, and multiplying that quotient by 100.

Hires are the total number of additions to the payroll occurring at any time during the reference month, including both new and rehired employees and full-time and part-time, permanent, short-term and seasonal employees, employees recalled to the location after a layoff lasting more than 7 days, on-call or intermittent employees who returned to work after having been formally separated, and transfers from other locations. The hires count does not include transfers or promotions within the reporting site, employees returning from strike, employees of temporary help agencies or employee leasing companies, outside contractors, or consultants. The hires rate is computed by dividing the number of hires by employment, and multiplying that quotient by 100.

Separations are the total number of terminations of employment occurring at any time during the reference month, and are reported by type of separation—quits, layoffs and discharges, and other separations. Quits are voluntary separations by employees (except for retirements, which are reported as other separations). Layoffs and discharges are involuntary separations initiated by the employer and include layoffs with no intent to rehire, formal layoffs lasting or expected to last more than 7 days, discharges resulting from mergers, downsizing, or closings, firings or other discharges for cause, terminations of permanent or short-term employees, and terminations of seasonal employees. Other separations include retirements, transfers to other locations, deaths, and separations due to disability. Separations do not include transfers within the same location or employees on strike.

The separations rate is computed by dividing the number of separations by employment, and multiplying that quotient by 100. The quits, layoffs and discharges, and other separations rates are computed similarly, dividing the number by employment and multiplying by 100.

Notes on the data

The JOLTS data series on job openings, hires, and separations are relatively new. The full sample is divided into panels, with one panel enrolled each month. A full complement of panels for the original data series based on the 1987 Standard Industrial Classification (SIC) system was not completely enrolled in the survey until January 2002. The supple-mental panels of establishments needed to create NAICS estimates were not completely enrolled until May 2003. The data collected up until those points are from less than a full sample. Therefore, estimates from earlier months should be used with caution, as fewer sampled units were reporting data at that time.

In March 2002, BLS procedures for collecting hires and separations data were revised to address possible underreporting. As a result, JOLTS hires and separations estimates for months prior to March 2002 may not be comparable with estimates for March 2002 and later.

The Federal Government reorganization that involved transferring approximately 180,000 employees to the new Department of Homeland Security is not reflected in the JOLTS hires and separations estimates for the Federal Government. The Office of Personnel Management's record shows these transfers were completed in March 2003. The inclusion of transfers in the JOLTS definitions of hires and separations is intended to cover ongoing movements of workers between establishments. The Department of Homeland Security reorganization was a massive one-time event, and the inclusion of these intergovernmental transfers would distort the Federal Government time series.

Data users should note that seasonal adjustment of the JOLTS series is conducted with fewer data observations than is customary. The historical data, therefore, may be subject to larger than normal revisions. Because the seasonal patterns in economic data series typically emerge over time, the standard use of moving averages as seasonal filters to capture these effects requires longer series than are currently available. As a result, the stable seasonal filter option is used in the seasonal adjustment of the JOLTS data. When calculating seasonal factors, this filter takes an average for each calendar month after detrending the series. The stable seasonal filter assumes that the seasonal factors are fixed; a necessary assumption until sufficient data are available. When the stable seasonal filter is no longer needed, other program features also may be introduced, such as outlier adjustment and extended diagnostic testing. Additionally, it is expected that more series, such as layoffs and discharges and additional industries, may be seasonally adjusted when more data are available.

JOLTS hires and separations estimates cannot be used to exactly explain net changes in payroll employment. Some reasons why it is problematic to compare changes in payroll employment with JOLTS hires and separations, especially on a monthly basis, are: (1) the reference period for payroll employment is the pay period including the 12th of the month, while the reference period for hires and separations is the calendar month; and (2) payroll employment can vary from month to month simply because part-time and on-call workers may not always work during the pay period that includes the 12th of the month. Additionally, research has found that some reporters systematically underreport separations relative to hires due to a number of factors, including the nature of their payroll systems and practices. The shortfall appears to be about 2 percent or less over a 12-month period.

FOR ADDITIONAL INFORMATION on the Job Openings and Labor Turnover Survey, contact the Division of Administrative Statistics and Labor Turnover at (202) 961–5870.

Compensation and Wage Data

(Tables 1–3; 30–37)

The National Compensation Survey (NCS) produces a variety of compensation data. These include: The Employment Cost Index (ECI) and NCS benefit measures of the incidence and provisions of selected employee benefit plans. Selected samples of these measures appear in the following tables. NCS also compiles data on occupational wages and the Employer Costs for Employee Compensation (ECEC).

Employment Cost Index

Description of the series

The **Employment Cost Index** (ECI) is a quarterly measure of the rate of change in compensation per hour worked and includes wages, salaries, and employer costs of employee benefits. It is a Laspeyres Index that uses fixed employment weights to measure change in labor costs free from the influence of employment shifts among occupations and industries.

The ECI provides data for the civilian economy, which includes the total private nonfarm economy excluding private households, and the public sector excluding the Federal government. Data are collected each quarter for the pay period including the 12th day of March, June, September, and December.

Sample establishments are classified by industry categories based on the 2002 North American Classification System (NAICS). Within a sample establishment, specific job categories are selected and classified into about 800 occupations according to the 2000 Standard Occupational Classification (SOC) System. Individual occupations are com-

bined to represent one of ten intermediate aggregations, such as professional and related occupations, or one of five higher level aggregations, such as management, professional, and related occupations.

Fixed employment weights are used each quarter to calculate the most aggregate series—civilian, private, and State and local government. These fixed weights are also used to derive all of the industry and occupational series indexes. Beginning with the March 2006 estimates, 2002 fixed employment weights from the Bureau's Occupational Employment Statistics survey were introduced. From March 1995 to December 2005, 1990 employment counts were used. These fixed weights ensure that changes in these indexes reflect only changes in compensation, not employment shifts among industries or occupations with different levels of wages and compensation. For the series based on bargaining status, census region and division, and metropolitan area status, fixed employment data are not available. The employment weights are reallocated within these series each quarter based on the current ECI sample. The indexes for these series, consequently, are not strictly comparable with those for aggregate, occupational, and industry series.

Definitions

Total compensation costs include wages, salaries, and the employer's costs for employee benefits.

Wages and salaries consist of earnings before payroll deductions, including production bonuses, incentive earnings, commissions, and cost-of-living adjustments.

Benefits include the cost to employers for paid leave, supplemental pay (including nonproduction bonuses), insurance, retirement and savings plans, and legally required benefits (such as Social Security, workers' compensation, and unemployment insurance).

Excluded from wages and salaries and employee benefits are such items as payment-in-kind, free room and board, and tips.

Notes on the data

The ECI data in these tables reflect the con-version to the 2002 North American Industry Classification System (NAICS) and the 2000 Standard Occupational Classification (SOC) system. The NAICS and SOC data shown prior to 2006 are for informational purposes only. ECI series based on NAICS and SOC became the official BLS estimates starting in March 2006.

The ECI for changes in wages and salaries in the private nonfarm economy was published beginning in 1975. Changes in total compensation cost—wages and salaries and benefits combined—were published beginning in 1980. The series of changes in wages and salaries and for total compensation in the State and local government sector and in the civilian nonfarm economy (excluding Federal employees) were published beginning in 1981. Historical indexes (December 2005=100) are available on the Internet: **www.bls.gov/ect/**

ADDITIONAL INFORMATION on the Employment Cost Index is available at **www.bls.gov/ncs/ect/home.htm** or by telephone at (202) 691–6199.

National Compensation Survey Benefit Measures

Description of the series

NCS benefit measures of employee benefits are published in two separate reports. The annual summary provides data on the incidence of (access to and participation in) selected benefits and provisions of paid holidays and vacations, life insurance plans, and other selected benefit programs. Data on percentages of establishments offering major employee benefits, and on the employer and employee shares of contributions to medical care premiums also are presented. Selected benefit data appear in the following tables. A second publication, published later, contains more detailed information about health and retirement plans.

Definitions

Employer-provided benefits are benefits that are financed either wholly or partly by the employer. They may be sponsored by a union or other third party, as long as there is some employer financing. However, some benefits that are fully paid for by the employee also are included. For example, long-term care insurance paid entirely by the employee are included because the guarantee of insurability and availability at group premium rates are considered a benefit.

Employees are considered as having **access** to a benefit plan if it is available for their use. For example, if an employee is permitted to participate in a medical care plan offered by the employer, but the employee declines to do so, he or she is placed in the category with those having access to medical care.

Employees in contributory plans are considered as **participating** in an insurance or retirement plan if they have paid required contributions and fulfilled any applicable service requirement. Employees in noncontributory plans are counted as participating regardless of whether they have fulfilled the service requirements.

Defined benefit pension plans use predetermined formulas to calculate a retirement benefit (if any), and obligate the employer to provide those benefits. Benefits are generally based on salary, years of service, or both.

Defined contribution plans generally specify the level of employer and employee contributions to a plan, but not the formula for determining eventual benefits. Instead, individual accounts are set up for participants, and benefits are based on amounts credited to these accounts.

Tax-deferred savings plans are a type of defined contribution plan that allow participants to contribute a portion of their salary to an employer-sponsored plan and defer income taxes until withdrawal.

Flexible benefit plans allow employees to choose among several benefits, such as life insurance, medical care, and vacation days, and among several levels of coverage within a given benefit.

Notes on the data

ADDITIONAL INFORMATION ON THE NCS benefit measures is available at **www.bls.gov/ncs/ebs/home.htm** or by telephone at (202) 691–6199.

Work stoppages

Description of the series

Data on work stoppages measure the number and duration of major strikes or lockouts (involving 1,000 workers or more) occurring during the month (or year), the number of workers involved, and the amount of work time lost because of stoppage. These data are presented in table 37.

Data are largely from a variety of published sources and cover only establishments directly involved in a stoppage. They do not measure the indirect or secondary effect of stoppages on other establishments whose employees are idle owing to material shortages or lack of service.

Definitions

Number of stoppages: The number of strikes and lockouts involving 1,000 workers or more and lasting a full shift or longer.

Workers involved: The number of workers directly involved in the stoppage.

Number of days idle: The aggregate

number of workdays lost by workers involved in the stoppages.

Days of idleness as a percent of estimated working time: Aggregate workdays lost as a percent of the aggregate number of standard workdays in the period multiplied by total employment in the period.

Notes on the data

This series is not comparable with the one terminated in 1981 that covered strikes involving six workers or more.

ADDITIONAL INFORMATION on work stop-pages data is available at **www. bls. gov/cba/home.htm** or by telephone at (202) 691–6199.

Price Data

(Tables 2; 38–46)

Price data are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period—December 2003 = 100 for many Producer Price Indexes (unless otherwise noted), 1982–84 = 100 for many Consumer Price Indexes (unless otherwise noted), and 1990 = 100 for International Price Indexes.

Consumer Price Indexes

Description of the series

The **Consumer Price Index** (CPI) is a measure of the average change in the prices paid by urban consumers for a fixed market basket of goods and services. The CPI is calculated monthly for two population groups, one consisting only of urban households whose primary source of income is derived from the employment of wage earners and clerical workers, and the other consisting of all urban households. The wage earner index (CPI-W) is a continuation of the historic index that was introduced well over a half-century ago for use in wage negotiations. As new uses were developed for the CPI in recent years, the need for a broader and more representative index became apparent. The all-urban consumer index (CPI-U), introduced in 1978, is representative of the 1993–95 buying habits of about 87 percent of the noninstitutional population of the United States at that time, compared with 32 percent represented in the CPI-W. In addition to wage earners and clerical workers, the CPI-U covers professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctors' and dentists' fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items are kept essentially unchanged between major revisions so that only price changes will be measured. All taxes directly associated with the purchase and use of items are included in the index.

Data collected from more than 23,000 retail establishments and 5,800 housing units in 87 urban areas across the country are used to develop the "U.S. city average." Separate estimates for 14 major urban centers are presented in table 39. The areas listed are as indicated in footnote 1 to the table. The area indexes measure only the average change in prices for each area since the base period, and do not indicate differences in the level of prices among cities.

Notes on the data

In January 1983, the Bureau changed the way in which homeownership costs are meaured for the CPI-U. A rental equivalence method replaced the asset-price approach to homeownership costs for that series. In January 1985, the same change was made in the CPI-W. The central purpose of the change was to separate shelter costs from the investment component of homeownership so that the index would reflect only the cost of shelter services provided by owner-occupied homes. An updated CPI-U and CPI-W were introduced with release of the January 1987 and January 1998 data.

FOR ADDITIONAL INFORMATION, contact the Division of Prices and Price Indexes: (202) 691–7000.

Producer Price Indexes

Description of the series

Producer Price Indexes (PPI) measure average changes in prices received by domestic producers of commodities in all stages of processing. The sample used for calculating these indexes currently contains about 3,200 commodities and about 80,000 quotations per month, selected to represent the movement of prices of all commodities produced in the manufacturing; agriculture, forestry, and fishing; mining; and gas and electricity and public utilities sectors. The stage-of-processing structure of PPI organizes products by class of buyer and degree of fabrication (that is, finished goods, intermediate goods, and crude materials). The traditional commodity structure of PPI organizes products by similarity of end use or material composition. The industry and product structure of PPI organizes data in accordance with the 2002 North American Industry Classification System and product codes developed by the U.S. Census Bureau.

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire. Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

Since January 1992, price changes for the various commodities have been averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1987. The detailed data are aggregated to obtain indexes for stage-of-processing groupings, commodity groupings, durability-of-product groupings, and a number of special composite groups. All Producer Price Index data are subject to revision 4 months after original publication.

FOR ADDITIONAL INFORMATION, contact the Division of Industrial Prices and Price Indexes: (202) 691–7705.

International Price Indexes

Description of the series

The **International Price Program** produces monthly and quarterly export and import price indexes for nonmilitary goods and services traded between the United States and the rest of the world. The export price index provides a measure of price change for all products sold by U.S. residents to foreign buyers. ("Residents" is defined as in the national income accounts; it includes corporations, businesses, and individuals, but does not require the organizations to be U.S. owned nor the individuals to have U.S. citizenship.) The import price index provides a measure of price change for goods purchased from other countries by U.S. residents.

The product universe for both the import and export indexes includes raw materials, agricultural products, semifinished manufactures, and finished manufactures, including both capital and consumer goods. Price data for these items are collected primarily by mail questionnaire. In nearly all cases, the data are collected directly from the exporter or importer, although in a few cases, prices are obtained from other sources.

To the extent possible, the data gathered refer to prices at the U.S. border for exports and at either the foreign border or the U.S.

border for imports. For nearly all products, the prices refer to transactions completed during the first week of the month. Survey respondents are asked to indicate all discounts, allowances, and rebates applicable to the reported prices, so that the price used in the calculation of the indexes is the actual price for which the product was bought or sold.

In addition to general indexes of prices for U.S. exports and imports, indexes are also published for detailed product categories of exports and imports. These categories are defined according to the five-digit level of detail for the Bureau of Economic Analysis End-use Classification, the three-digit level for the Standard International Trade Classification (SITC), and the four-digit level of detail for the Harmonized System. Aggregate import indexes by country or region of origin are also available.

BLS publishes indexes for selected categories of internationally traded services, calculated on an international basis and on a balance-of-payments basis.

Notes on the data

The export and import price indexes are weighted indexes of the Laspeyres type. The trade weights currently used to compute both indexes relate to 2000.

Because a price index depends on the same items being priced from period to period, it is necessary to recognize when a product's specifications or terms of transaction have been modified. For this reason, the Bureau's questionnaire requests detailed descriptions of the physical and functional characteristics of the products being priced, as well as information on the number of units bought or sold, discounts, credit terms, packaging, class of buyer or seller, and so forth. When there are changes in either the specifications or terms of transaction of a product, the dollar value of each change is deleted from the total price change to obtain the "pure" change. Once this value is determined, a linking procedure is employed which allows for the continued repricing of the item.

FOR ADDITIONAL INFORMATION, contact the Division of International Prices: (202) 691–7155.

Productivity Data

(Tables 2; 47–50)

Business and major sectors

Description of the series

The productivity measures relate real output to real input. As such, they encompass a family of measures which include single-factor input measures, such as output per hour, output per unit of labor input, or output per unit of capital input, as well as measures of multifactor productivity (output per unit of combined labor and capital inputs). The Bureau indexes show the change in output relative to changes in the various inputs. The measures cover the business, nonfarm business, manufacturing, and nonfinancial corporate sectors.

Corresponding indexes of hourly compensation, unit labor costs, unit nonlabor payments, and prices are also provided.

Definitions

Output per hour of all persons (labor productivity) is the quantity of goods and services produced per hour of labor input. **Output per unit of capital services** (capital productivity) is the quantity of goods and services produced per unit of capital services input. **Multifactor productivity** is the quantity of goods and services produced per combined inputs. For private business and private nonfarm business, inputs include labor and capital units. For manufacturing, inputs include labor, capital, energy, nonenergy materials, and purchased business services.

Compensation per hour is total compensation divided by hours at work. Total compensation equals the wages and salaries of employees plus employers' contributions for social insurance and private benefit plans, plus an estimate of these payments for the self-employed (except for nonfinancial corporations in which there are no self-employed). **Real compensation per hour** is compensation per hour deflated by the change in the Consumer Price Index for All Urban Consumers.

Unit labor costs are the labor compensation costs expended in the production of a unit of output and are derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from current-dollar value of output and dividing by output.

Unit nonlabor costs contain all the components of unit nonlabor payments except unit profits.

Unit profits include corporate profits with inventory valuation and capital consumption adjustments per unit of output.

Hours of all persons are the total hours at work of payroll workers, self-employed persons, and unpaid family workers.

Labor inputs are hours of all persons adjusted for the effects of changes in the education and experience of the labor force.

Capital services are the flow of services from the capital stock used in production. It is developed from measures of the net stock of physical assets—equipment, structures, land, and inventories—weighted by rental prices for each type of asset.

Combined units of labor and capital inputs are derived by combining changes in labor and capital input with weights which represent each component's share of total cost. Combined units of labor, capital, energy, materials, and purchased business services are similarly derived by combining changes in each input with weights that represent each input's share of total costs. The indexes for each input and for combined units are based on changing weights which are averages of the shares in the current and preceding year (the Tornquist index-number formula).

Notes on the data

Business sector output is an annually-weighted index constructed by excluding from real gross domestic product (GDP) the following outputs: general government, nonprofit institutions, paid employees of private households, and the rental value of owner-occupied dwellings. Nonfarm business also excludes farming. Private business and private nonfarm business further exclude government enterprises. The measures are supplied by the U.S. Department of Commerce's Bureau of Economic Analysis. Annual estimates of manufacturing sectoral output are produced by the Bureau of Labor Statistics. Quarterly manufacturing output indexes from the Federal Reserve Board are adjusted to these annual output measures by the BLS. Compensation data are developed from data of the Bureau of Economic Analysis and the Bureau of Labor Statistics. Hours data are developed from data of the Bureau of Labor Statistics.

The productivity and associated cost measures in tables 47–50 describe the relationship between output in real terms and the labor and capital inputs involved in its production. They show the changes from period to period in the amount of goods and services produced per unit of input.

Although these measures relate output to hours and capital services, they do not measure the contributions of labor, capital, or any other specific factor of production. Rather, they reflect the joint effect of many influences, including changes in technology; shifts in the composition of the labor force; capital investment; level of output; changes in the utilization of capacity, energy, material, and research and development; the organi-

zation of production; managerial skill; and characteristics and efforts of the work force.

FOR ADDITIONAL INFORMATION on this productivity series, contact the Division of Productivity Research: (202) 691–5606.

Industry productivity measures

Description of the series

The BLS industry productivity indexes measure the relationship between output and inputs for selected industries and industry groups, and thus reflect trends in industry efficiency over time. Industry measures include labor productivity, multifactor productivity, compensation, and unit labor costs.

The industry measures differ in methodology and data sources from the productivity measures for the major sectors because the industry measures are developed independently of the National Income and Product Accounts framework used for the major sector measures.

Definitions

Output per hour is derived by dividing an index of industry output by an index of labor input. For most industries, **output** indexes are derived from data on the value of industry output adjusted for price change. For the remaining industries, output indexes are derived from data on the physical quantity of production.

The **labor input** series is based on the hours of all workers or, in the case of some transportation industries, on the number of employees. For most industries, the series consists of the hours of all employees. For some trade and services industries, the series also includes the hours of partners, proprietors, and unpaid family workers.

Unit labor costs represent the labor compensation costs per unit of output produced, and are derived by dividing an index of labor compensation by an index of output. **Labor compensation** includes payroll as well as supplemental payments, including both legally required expenditures and payments for voluntary programs.

Multifactor productivity is derived by dividing an index of industry output by an index of combined inputs consumed in producing that output. **Combined inputs** include capital, labor, and intermediate purchases. The measure of **capital input** represents the flow of services from the capital stock used in production. It is developed from measures of the net stock of physical assets—equipment, structures, land, and inventories. The measure of **intermediate purchases** is a combination of purchased materials, services, fuels, and electricity.

Notes on the data

The industry measures are compiled from data produced by the Bureau of Labor Statistics and the Census Bureau, with additional data supplied by other government agencies, trade associations, and other sources.

FOR ADDITIONAL INFORMATION on this series, contact the Division of Industry Productivity Studies: (202) 691–5618, or visit the Web site at: **www.bls.gov/lpc/home.htm**

International Comparisons

(Tables 51–53)

Labor force and unemployment

Description of the series

Tables 51 and 52 present comparative measures of the labor force, employment, and unemployment approximating U.S. concepts for the United States, Canada, Australia, Japan, and six European countries. The Bureau adjusts the figures for these selected countries, for all known major definitional differences, to the extent that data to prepare adjustments are available. Although precise comparability may not be achieved, these adjusted figures provide a better basis for international comparisons than the figures regularly published by each country. For further information on adjustments and comparability issues, see Constance Sorrentino, "International unemployment rates: how comparable are they?" *Monthly Labor Review,* June 2000, pp. 3–20, available on the Internet at **www.bls.gov/opub/mlr/2000/06/art1full.pdf**.

Definitions

For the principal U.S. definitions of the labor force, employment, and unemployment, see the Notes section on Employment and Unemployment Data: Household survey data.

Notes on the data

Foreign country data are adjusted as closely as possible to the U.S. definitions. Primary areas of adjustment address conceptual differences in upper age limits and definitions of employment and unemployment, provided that reliable data are available to make these adjustments. Adjustments are made where applicable to include employed and unemployed persons above upper age limits; some European countries do not include persons older than age 64 in their labor force measures, because a large portion of this population has retired. Adjustments are made to exclude active duty military from employment figures, although a small number of career military may be included in some European countries. Adjustments are made to exclude unpaid family workers who worked fewer than 15 hours per week from employment figures; U.S. concepts do not include them in employment, whereas most foreign countries include all unpaid family workers regardless of the number of hours worked. Adjustments are made to include full-time students seeking work and available for work as unemployed when they are classified as not in the labor force.

Where possible, lower age limits are based on the age at which compulsory schooling ends in each country, rather than based on the U.S. standard of 16. Lower age limits have ranged between 13 and 16 over the years covered; currently, the lower age limits are either 15 or 16 in all 10 countries.

Some adjustments for comparability are not made because data are unavailable for adjustment purposes. For example, no adjustments to unemployment are usually made for deviations from U.S. concepts in the treatment of persons waiting to start a new job or passive jobseekers. These conceptual differences have little impact on the measures. Furthermore, BLS studies have concluded that no adjustments should be made for persons on layoff who are counted as employed in some countries because of their strong job attachment as evidenced by, for example, payment of salary or the existence of a recall date. In the United States, persons on layoff have weaker job attachment and are classified as unemployed.

The annual labor force measures are obtained from monthly, quarterly, or continuous household surveys and may be calculated as averages of monthly or quarterly data. Quarterly and monthly unemployment rates are based on household surveys. For some countries, they are calculated by applying annual adjustment factors to current published data and, therefore, are less precise indicators of unemployment under U.S. concepts than the annual figures. The labor force measures may have breaks in series over time due to changes in surveys, sources, or estimation methods. Breaks are noted in data tables.

For up-to-date information on adjustments and breaks in series, see the Technical

Notes of *Comparative Civilian Labor Force Statistics, 10 Countries*, on the Internet at **www.bls.gov/fls/flscomparelf.htm**, and the Notes of *Unemployment rates in 10 countries, civilian labor force basis, approximating U.S. concepts, seasonally adjusted*, on the Internet at **www.bls.gov/fls/flsjec.pdf**.

FOR ADDITIONAL INFORMATION on this series, contact the Division of Foreign Labor Statistics: (202) 691-5654 or **flshelp@bls.gov.**

Manufacturing productivity and labor costs

Description of the series

Table 53 presents comparative indexes of manufacturing output per hour (labor productivity), output, total hours, compensation per hour, and unit labor costs for the United States, Australia, Canada, Japan, the Republic of Korea, Taiwan, and 10 European countries. These measures are trend comparisons—that is, series that measure changes over time—rather than level comparisons. BLS does *not* recommend using these series for level comparisons because of technical problems.

BLS constructs the comparative indexes from three basic aggregate measures—output, total labor hours, and total compensation. The hours and compensation measures refer to employees (wage and salary earners) in Belgium and Taiwan. For all other economies, the measures refer to all employed persons, including employees, self-employed persons, and unpaid family workers.

The data for recent years are based on the United Nations System of National Accounts 1993 (SNA 93). Manufacturing is generally defined according to the International Standard Industrial Classification (ISIC). However, the measures for France include parts of mining as well. For the United States and Canada, it is defined according to the North American Industry Classification System (NAICS 97).

Definitions

Output. For most economies, the output measures are real value added in manufacturing from national accounts. However, output for Japan prior to 1970 and for the Netherlands prior to 1960 are indexes of industrial production. The manufacturing value added measures for the United Kingdom are essentially identical to their indexes of industrial production.

For United States, the output measure for the manufacturing sector is a chain-weighted index of real gross product originating (deflated value added) produced by the Bureau of Economic Analysis of the U.S. Department of Commerce. Most of the other economies now also use chain-weighted as opposed to a fixed-year weights that are periodically updated.

To preserve the comparability of the U.S. measures with those of other economies, BLS uses gross product originating in manufacturing for the United States. The gross product originating series differs from the manufacturing output series that BLS publishes in its quarterly news releases on U.S. productivity and costs (and that underlies the measures that appear in tables 48 and 50 in this section). The quarterly measures are on a "sectoral output" basis, rather than a value-added basis. Sectoral output is gross output less intrasector transactions.

Total hours refer to hours worked in all economies. The measures are developed from statistics of manufacturing employment and average hours. For most other economies, recent years' aggregate hours series are obtained from national statistical offices, usually from national accounts. However, for some economies and for earlier years, BLS calculates the aggregate hours series using employment figures published with the national accounts, or other comprehensive employment series, and data on average hours worked.

Hourly compensation is total compensation divided by total hours. Total compensation includes all payments in cash or in-kind made directly to employees plus employer expenditures for legally required insurance programs and contractual and private benefit plans. For Australia, Canada, France, and Sweden, compensation is increased to account for important taxes on payroll or employment. For the United Kingdom, compensation is reduced between 1967 and 1991 to account for subsidies.

Labor productivity is defined as real output per hour worked. Although the labor productivity measure presented in this release relates output to the hours worked of persons employed in manufacturing, it does not measure the specific contributions of labor as a single factor of production. Rather, it reflects the joint effects of many influences, including new technology, capital investment, capacity utilization, energy use, and managerial skills, as well as the skills and efforts of the workforce.

Unit labor costs are defined as the cost of labor input required to produce one unit of output. They are computed as compensation in nominal terms divided by real output. Unit labor costs can also be computed by dividing hourly compensation by output per hour, that is, by labor productivity.

Notes on the data

The measures for recent years may be based on current indicators of manufacturing output (such as industrial production indexes), employment, average hours, and hourly compensation until national accounts and other statistics used for the long-term measures become available.

FOR ADDITIONAL INFORMATION on this series, go to **http://www.bls.gov/news.release/prod4.toc.htm** or contact the Division of Foreign Labor Statistics at (202) 691–5654.

Occupational Injury and Illness Data

(Tables 54–55)

Survey of Occupational Injuries and Illnesses

Description of the series

The Survey of Occupational Injuries and Illnesses collects data from employers about their workers' job-related nonfatal injuries and illnesses. The information that employers provide is based on records that they maintain under the Occupational Safety and Health Act of 1970. Self-employed individuals, farms with fewer than 11 employees, employers regulated by other Federal safety and health laws, and Federal, State, and local government agencies are excluded from the survey.

The survey is a Federal-State cooperative program with an independent sample selected for each participating State. A stratified random sample with a Neyman allocation is selected to represent all private industries in the State. The survey is stratified by Standard Industrial Classification and size of employment.

Definitions

Under the Occupational Safety and Health Act, employers maintain records of nonfatal work-related injuries and illnesses that involve one or more of the following: loss of consciousness, restriction of work or motion, transfer to another job, or medical treatment other than first aid.

Occupational injury is any injury such as a cut, fracture, sprain, or amputation that results from a work-related event or a single, instantaneous exposure in the work environment.

Occupational illness is an abnormal

condition or disorder, other than one resulting from an occupational injury, caused by exposure to factors associated with employment. It includes acute and chronic illnesses or disease which may be caused by inhalation, absorption, ingestion, or direct contact.

Lost workday injuries and illnesses are cases that involve days away from work, or days of restricted work activity, or both.

Lost workdays include the number of workdays (consecutive or not) on which the employee was either away from work or at work in some restricted capacity, or both, because of an occupational injury or illness. BLS measures of the number and incidence rate of lost workdays were discontinued beginning with the 1993 survey. The number of days away from work or days of restricted work activity does not include the day of injury or onset of illness or any days on which the employee would not have worked, such as a Federal holiday, even though able to work.

Incidence rates are computed as the number of injuries and/or illnesses or lost work days per 100 full-time workers.

Notes on the data

The definitions of occupational injuries and illnesses are from *Recordkeeping Guidelines for Occupational Injuries and Illnesses* (U.S. Department of Labor, Bureau of Labor Statistics, September 1986).

Estimates are made for industries and employment size classes for total recordable cases, lost workday cases, days away from work cases, and nonfatal cases without lost workdays. These data also are shown separately for injuries. Illness data are available for seven categories: occupational skin diseases or disorders, dust diseases of the lungs, respiratory conditions due to toxic agents, poisoning (systemic effects of toxic agents), disorders due to physical agents (other than toxic materials), disorders associated with repeated trauma, and all other occupational illnesses.

The survey continues to measure the number of new work-related illness cases which are recognized, diagnosed, and reported during the year. Some conditions, for example, long-term latent illnesses caused by exposure to carcinogens, often are difficult to relate to the workplace and are not adequately recognized and reported. These long-term latent illnesses are believed to be understated in the survey's illness measure. In contrast, the overwhelming majority of the reported new illnesses are those which are easier to directly relate to workplace activity (for example, contact dermatitis and carpal tunnel syndrome).

Most of the estimates are in the form of incidence rates, defined as the number of injuries and illnesses per 100 equivalent full-time workers. For this purpose, 200,000 employee hours represent 100 employee years (2,000 hours per employee). Full detail on the available measures is presented in the annual bulletin, *Occupational Injuries and Illnesses: Counts, Rates, and Characteristics.*

Comparable data for more than 40 States and territories are available from the BLS Office of Safety, Health and Working Conditions. Many of these States publish data on State and local government employees in addition to private industry data.

Mining and railroad data are furnished to BLS by the Mine Safety and Health Administration and the Federal Railroad Administration. Data from these organizations are included in both the national and State data published annually.

With the 1992 survey, BLS began publishing details on serious, nonfatal incidents resulting in days away from work. Included are some major characteristics of the injured and ill workers, such as occupation, age, gender, race, and length of service, as well as the circumstances of their injuries and illnesses (nature of the disabling condition, part of body affected, event and exposure, and the source directly producing the condition). In general, these data are available nationwide for detailed industries and for individual States at more aggregated industry levels.

FOR ADDITIONAL INFORMATION on occupational injuries and illnesses, contact the Office of Occupational Safety, Health and Working Conditions at (202) 691–6180, or access the Internet at: **www.bls. gov/iif/**

Census of Fatal Occupational Injuries

The Census of Fatal Occupational Injuries compiles a complete roster of fatal job-related injuries, including detailed data about the fatally injured workers and the fatal events. The program collects and cross checks fatality information from multiple sources, including death certificates, State and Federal workers' compensation reports, Occupational Safety and Health Administration and Mine Safety and Health Administration records, medical examiner and autopsy reports, media accounts, State motor vehicle fatality records, and follow-up questionnaires to employers.

In addition to private wage and salary workers, the self-employed, family members, and Federal, State, and local government workers are covered by the program. To be included in the fatality census, the decedent must have been employed (that is working for pay, compensation, or profit) at the time of the event, engaged in a legal work activity, or present at the site of the incident as a requirement of his or her job.

Definition

A fatal work injury is any intentional or unintentional wound or damage to the body resulting in death from acute exposure to energy, such as heat or electricity, or kinetic energy from a crash, or from the absence of such essentials as heat or oxygen caused by a specific event or incident or series of events within a single workday or shift. Fatalities that occur during a person's commute to or from work are excluded from the census, as well as work-related illnesses,which can be difficult to identify due to long latency periods.

Notes on the data

Twenty-eight data elements are collected, coded, and tabulated in the fatality program, including information about the fatally injured worker, the fatal incident, and the machinery or equipment involved. Summary worker demographic data and event characteristics are included in a national news release that is available about 8 months after the end of the reference year. The Census of Fatal Occupational Injuries was initiated in 1992 as a joint Federal-State effort. Most States issue summary information at the time of the national news release.

FOR ADDITIONAL INFORMATION on the Census of Fatal Occupational Injuries contact the BLS Office of Safety, Health, and Working Conditions at (202) 691–6175, or the Internet at: **www.bls.gov/iif/**

1. Labor market indicators

Selected indicators	2006	2007	2006		2007				2008		
			III	IV	I	II	III	IV	I	II	III
Employment data											
Employment status of the civilian noninstitutional population (household survey):[1]											
Labor force participation rate	66.2	66.0	66.2	66.3	66.2	66.0	66.0	66.0	66.0	66.1	66.1
Employment-population ratio	63.1	63.0	63.1	63.4	63.2	63.0	62.9	62.8	62.7	62.6	62.2
Unemployment rate	4.6	4.6	4.7	4.4	4.5	4.5	4.7	4.8	4.9	5.3	6.0
Men	4.6	4.7	4.6	4.5	4.6	4.6	4.8	4.9	5.0	5.5	6.4
16 to 24 years	11.2	11.6	11.4	11.0	10.8	11.5	11.8	12.2	12.7	13.3	14.6
25 years and older	3.5	3.6	3.5	3.3	3.6	3.5	3.6	3.7	3.8	4.2	5.0
Women	4.6	4.5	4.7	4.4	4.4	4.4	4.6	4.7	4.8	5.1	5.5
16 to 24 years	9.7	9.4	10.1	9.7	9.0	9.0	9.8	9.9	10.0	11.0	11.7
25 years and older	3.7	3.6	3.8	3.5	3.5	3.6	3.7	3.8	3.9	4.1	4.5
Employment, nonfarm (payroll data), in thousands:[1]											
Total nonfarm	136,086	137,626	136,528	136,982	137,310	137,625	137,837	138,078	137,831	137,617	137,318
Total private	114,113	115,423	114,472	114,899	115,167	115,423	115,610	115,759	115,454	115,154	114,776
Goods-producing	22,531	22,221	22,564	22,436	22,362	22,267	22,138	21,976	21,737	21,491	21,303
Manufacturing	14,155	13,883	14,138	14,033	13,953	13,890	13,822	13,772	13,644	13,527	13,380
Service-providing	113,556	115,405	113,964	114,546	114,948	115,358	115,699	116,102	116,094	116,126	116,015
Average hours:											
Total private	33.9	33.8	33.8	33.9	33.9	33.9	33.8	33.8	33.8	33.7	33.6
Manufacturing	41.1	41.2	41.3	41.1	41.2	41.4	41.4	41.1	41.2	41.0	40.7
Overtime	4.4	4.2	4.4	4.2	4.1	4.1	4.2	4.0	4.0	3.8	3.6
Employment Cost Index[1, 2, 3]											
Total compensation:											
Civilian nonfarm[4]	3.3	3.3	1.1	.6	.9	.8	1.0	.6	.8	.7	.8
Private nonfarm	3.2	3.0	.8	.7	.8	.9	.8	.6	.9	.7	.6
Goods-producing[5]	2.5	2.4	.7	.5	.4	1.0	.5	.6	1.0	.7	.4
Service-providing[5]	3.4	3.2	.9	.7	.9	.9	.9	.6	.9	.7	.6
State and local government	4.1	4.1	2.3	.9	1.0	.6	1.8	.7	.5	.5	1.7
Workers by bargaining status (private nonfarm):											
Union	3.0	2.0	.6	.6	-.3	1.2	.5	.7	.8	.8	.7
Nonunion	3.2	3.2	.9	.6	1.0	.9	.8	.6	.9	.7	.6

[1] Quarterly data seasonally adjusted.

[2] Annual changes are December-to-December changes. Quarterly changes are calculated using the last month of each quarter.

[3] The Employment Cost Index data reflect the conversion to the 2002 North American Classification System (NAICS) and the 2000 Standard Occupational Classification (SOC) system. The NAICS and SOC data shown prior to 2006 are for informational purposes only. Series based on NAICS and SOC became the official BLS estimates starting in March 2006.

[4] Excludes Federal and private household workers.

[5] Goods-producing industries include mining, construction, and manufacturing. Service-providing industries include all other private sector industries.

NOTE: Beginning in January 2003, household survey data reflect revised population controls. Nonfarm data reflect the conversion to the 2002 version of the North American Industry Classification System (NAICS), replacing the Standard Industrial Classification (SIC) system. NAICS-based data by industry are not comparable with SIC based data.

2. Annual and quarterly percent changes in compensation, prices, and productivity

Selected measures	2006	2007	2006		2007				2008		
			III	IV	I	II	III	IV	I	II	III
Compensation data[1, 2, 3]											
Employment Cost Index—compensation:											
Civilian nonfarm	3.3	3.3	1.1	0.6	0.9	0.8	1.0	0.6	0.8	0.7	0.8
Private nonfarm	3.2	3.0	.8	.7	.8	.9	.8	.6	.9	.7	.6
Employment Cost Index—wages and salaries:											
Civilian nonfarm	3.2	3.4	1.1	.6	1.1	.7	1.0	.7	.8	.7	.8
Private nonfarm	3.2	3.3	.8	.7	1.1	.8	.9	.6	.9	.7	.6
Price data[1]											
Consumer Price Index (All Urban Consumers): All Items	3.2	2.8	.0	-.5	1.8	1.5	.1	.7	1.7	2.5	.0
Producer Price Index:											
Finished goods	3.0	3.9	-.9	.1	2.2	1.9	.1	1.8	2.8	4.2	-.3
Finished consumer goods	3.5	4.5	-1.3	-.2	2.8	2.5	.2	1.9	3.4	5.3	-.6
Capital equipment	1.6	1.8	.0	1.3	.3	-.1	-.1	1.2	.7	.6	1.0
Intermediate materials, supplies, and components	6.5	4.0	-.4	-.8	1.5	3.2	.1	2.0	5.0	6.7	.9
Crude materials	1.4	12.2	1.2	4.0	5.7	3.8	-2.4	11.9	14.5	16.4	-15.5
Productivity data[4]											
Output per hour of all persons:											
Business sector	.9	1.5	-2.0	.2	-.1	5.0	6.2	.1	2.3	3.7	1.3
Nonfarm business sector	1.0	1.4	-2.1	.2	.0	4.1	5.8	.8	2.6	3.6	1.1
Nonfinancial corporations[5]	2.1	.9	2.7	-2.6	.4	3.4	1.8	1.9	-.2	8.6	-

[1] Annual changes are December-to-December changes. Quarterly changes are calculated using the last month of each quarter. Compensation and price data are not seasonally adjusted, and the price data are not compounded.

[2] Excludes Federal and private household workers.

[3] The Employment Cost Index data reflect the conversion to the 2002 North American Classification System (NAICS) and the 2000 Standard Occupational Classification (SOC) system. The NAICS and SOC data shown prior to 2006 are for informational purposes only. Series based on NAICS and SOC became the official BLS estimates starting in March 2006.

[4] Annual rates of change are computed by comparing annual averages. Quarterly percent changes reflect annual rates of change in quarterly indexes. The data are seasonally adjusted.

[5] Output per hour of all employees.

3. Alternative measures of wage and compensation changes

Components	Quarterly change					Four quarters ending—				
	2007		2008			2007		2008		
	III	IV	I	II	III	III	IV	I	II	III
Average hourly compensation: [1]										
All persons, business sector	3.6	4.4	3.6	3.8	4.7	4.8	3.7	3.4	3.9	4.1
All persons, nonfarm business sector	3.3	5.3	3.8	3.5	4.7	4.5	3.6	3.3	4.0	4.3
Employment Cost Index—compensation: [2]										
Civilian nonfarm[3]	1.0	.6	.8	.7	.8	3.3	3.3	3.3	3.1	2.9
Private nonfarm	.8	.6	.9	.7	.6	3.1	3.0	3.2	3.0	2.8
Union	.5	.7	.8	.8	.7	2.0	2.0	3.1	2.7	2.9
Nonunion	.8	.6	.9	.7	.6	3.2	3.2	3.2	3.0	2.8
State and local government	1.8	.7	.5	.5	1.7	4.3	4.1	3.6	3.5	3.4
Employment Cost Index—wages and salaries: [2]										
Civilian nonfarm[3]	1.0	.7	.8	.7	.8	3.3	3.4	3.2	3.2	3.1
Private nonfarm	.9	.6	.9	.7	.6	3.4	3.3	3.2	3.1	2.9
Union	.7	.3	.8	1.1	.7	2.7	2.3	2.6	2.9	2.9
Nonunion	.9	.7	.9	.7	.6	3.4	3.5	3.3	3.2	3.0
State and local government	1.7	.7	.6	.5	1.8	3.5	3.5	3.5	3.4	3.5

[1] Seasonally adjusted. "Quarterly average" is percent change from a quarter ago, at an annual rate.

[2] The Employment Cost Index data reflect the conversion to the 2002 North American Classification System (NAICS) and the 2000 Standard Occupational Classification (SOC) system. The NAICS and SOC data shown prior to 2006 are for informational purposes only. Series based on NAICS and SOC became the official BLS estimates starting in March 2006.

[3] Excludes Federal and private household workers.

4. Employment status of the population, by sex, age, race, and Hispanic origin, monthly data seasonally adjusted

[Numbers in thousands]

Employment status	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
TOTAL															
Civilian noninstitutional population[1]	228,815	231,867	232,715	232,939	233,156	232,616	232,809	232,995	233,198	233,405	233,627	233,864	234,107	234,360	234,612
Civilian labor force	151,428	153,124	153,306	153,828	153,866	153,824	153,374	153,784	153,957	154,534	154,390	154,603	154,853	154,732	155,038
Participation rate	66.2	66.0	65.9	66.0	66.0	66.1	65.9	66.0	66.0	66.2	66.1	66.1	66.1	66.0	66.1
Employed	144,427	146,047	146,016	146,647	146,211	146,248	145,993	145,969	146,331	146,046	145,891	145,819	145,477	145,255	144,958
Employment-population ratio[2]	63.1	63.0	62.7	63.0	62.7	62.9	62.7	62.6	62.7	62.6	62.4	62.4	62.1	62.0	61.8
Unemployed	7,001	7,078	7,291	7,181	7,655	7,576	7,381	7,815	7,626	8,487	8,499	8,784	9,376	9,477	10,080
Unemployment rate	4.6	4.6	4.8	4.7	5.0	4.9	4.8	5.1	5.0	5.5	5.5	5.7	6.1	6.1	6.5
Not in the labor force	77,387	78,743	79,409	79,111	79,290	78,792	79,436	79,211	79,241	78,871	79,237	79,261	79,253	79,628	79,575
Men, 20 years and over															
Civilian noninstitutional population[1]	102,145	103,555	103,973	104,087	104,197	103,866	103,961	104,052	104,152	104,258	104,371	104,490	104,613	104,741	104,869
Civilian labor force	77,562	78,596	78,664	79,075	79,004	78,864	78,748	78,838	78,776	78,878	79,037	79,327	79,318	79,444	79,451
Participation rate	75.9	75.9	75.7	76.0	75.8	75.9	75.7	75.8	75.6	75.7	75.7	75.9	75.8	75.8	75.8
Employed	74,431	75,337	75,274	75,834	75,499	75,427	75,362	75,197	75,148	75,001	74,998	75,094	74,866	74,631	74,441
Employment-population ratio[2]	72.9	72.8	72.4	72.9	72.5	72.6	72.5	72.3	72.2	71.9	71.9	71.9	71.6	71.3	71.0
Unemployed	3,131	3,259	3,389	3,240	3,505	3,437	3,386	3,641	3,628	3,877	4,038	4,234	4,452	4,813	5,010
Unemployment rate	4.0	4.1	4.3	4.1	4.4	4.4	4.3	4.6	4.6	4.9	5.1	5.3	5.6	6.1	6.3
Not in the labor force	24,584	24,959	25,309	25,012	25,193	25,002	25,213	25,214	25,376	25,380	25,334	25,163	25,295	25,298	25,418
Women, 20 years and over															
Civilian noninstitutional population[1]	109,992	111,330	111,703	111,805	111,903	111,739	111,822	111,902	111,990	112,083	112,183	112,290	112,401	112,518	112,633
Civilian labor force	66,585	67,516	67,623	67,776	67,866	67,982	67,816	68,159	68,176	68,390	68,446	68,303	68,672	68,423	68,757
Participation rate	60.5	60.6	60.5	60.6	60.6	60.8	60.6	60.9	60.9	61.0	61.0	60.8	61.1	60.8	61.0
Employed	63,834	64,799	64,827	64,980	64,912	65,098	64,950	65,055	65,260	65,138	65,238	65,167	65,047	65,072	65,090
Employment-population ratio[2]	58.0	58.2	58.0	58.1	58.0	58.3	58.1	58.1	58.3	58.1	58.2	58.0	57.9	57.8	57.8
Unemployed	2,751	2,718	2,796	2,796	2,954	2,885	2,865	3,104	2,916	3,252	3,208	3,135	3,625	3,351	3,666
Unemployment rate	4.1	4.0	4.1	4.1	4.4	4.2	4.2	4.6	4.3	4.8	4.7	4.6	5.3	4.9	5.3
Not in the labor force	43,407	43,814	44,080	44,029	44,037	43,756	44,006	43,743	43,814	43,693	43,737	43,988	43,729	44,094	43,877
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	16,678	16,982	17,040	17,048	17,056	17,012	17,027	17,041	17,056	17,064	17,073	17,084	17,092	17,101	17,110
Civilian labor force	7,281	7,012	7,020	6,977	6,996	6,978	6,810	6,787	7,005	7,266	6,907	6,973	6,863	6,865	6,830
Participation rate	43.7	41.3	41.2	40.9	41.0	41.0	40.0	39.8	41.1	42.6	40.5	40.8	40.2	40.1	39.9
Employed	6,162	5,911	5,914	5,832	5,801	5,724	5,681	5,717	5,923	5,907	5,655	5,558	5,563	5,552	5,427
Employment-population ratio[2]	36.9	34.8	34.7	34.2	34.0	33.6	33.4	33.5	34.7	34.6	33.1	32.5	32.6	32.5	31.7
Unemployed	1,119	1,101	1,105	1,145	1,196	1,254	1,130	1,070	1,082	1,358	1,253	1,415	1,299	1,313	1,404
Unemployment rate	15.4	15.7	15.7	16.4	17.1	18.0	16.6	15.8	15.4	18.7	18.1	20.3	18.9	19.1	20.6
Not in the labor force	9,397	9,970	10,020	10,071	10,059	10,034	10,216	10,254	10,051	9,798	10,166	10,110	10,229	10,236	10,279
White[3]															
Civilian noninstitutional population[1]	186,264	188,253	188,813	188,956	189,093	188,787	188,906	189,019	189,147	189,281	189,428	189,587	189,747	189,916	190,085
Civilian labor force	123,834	124,935	125,151	125,430	125,460	125,340	124,940	125,190	125,171	125,762	125,704	125,971	125,981	125,955	126,388
Participation rate	66.5	66.4	66.3	66.4	66.3	66.4	66.1	66.2	66.2	66.4	66.4	66.4	66.4	66.3	66.5
Employed	118,833	119,792	119,883	120,194	119,889	119,858	119,534	119,574	119,667	119,661	119,518	119,542	119,222	119,180	118,893
Employment-population ratio[2]	63.8	63.6	63.5	63.6	63.4	63.5	63.3	63.3	63.3	63.2	63.1	63.1	62.8	62.8	62.5
Unemployed	5,002	5,143	5,268	5,235	5,571	5,482	5,406	5,616	5,504	6,101	6,186	6,428	6,760	6,775	7,495
Unemployment rate	4.0	4.1	4.2	4.2	4.4	4.4	4.3	4.5	4.4	4.9	4.9	5.1	5.4	5.4	5.9
Not in the labor force	62,429	63,319	63,662	63,526	63,633	63,447	63,966	63,829	63,975	63,519	63,724	63,616	63,766	63,961	63,697
Black or African American[3]															
Civilian noninstitutional population[1]	27,007	27,485	27,627	27,666	27,704	27,640	27,675	27,709	27,746	27,780	27,816	27,854	27,896	27,939	27,982
Civilian labor force	17,314	17,496	17,430	17,453	17,538	17,713	17,632	17,702	17,753	17,742	17,716	17,767	17,973	17,737	17,793
Participation rate	64.1	63.7	63.1	63.1	63.3	64.1	63.7	63.9	64.0	63.9	63.7	63.8	64.4	63.5	63.6
Employed	15,765	16,051	15,946	15,980	15,961	16,090	16,169	16,116	16,234	16,029	16,085	16,040	16,074	15,714	15,810
Employment-population ratio[2]	58.4	58.4	57.7	57.8	57.6	58.2	58.4	58.2	58.5	57.7	57.8	57.6	57.6	56.2	56.5
Unemployed	1,549	1,445	1,483	1,473	1,577	1,623	1,463	1,586	1,520	1,713	1,632	1,726	1,899	2,023	1,983
Unemployment rate	8.9	8.3	8.5	8.4	9.0	9.2	8.3	9.0	8.6	9.7	9.2	9.7	10.6	11.4	11.1
Not in the labor force	9,693	9,989	10,197	10,212	10,165	9,927	10,043	10,007	9,992	10,038	10,100	10,088	9,923	10,202	10,190

See footnotes at end of table.

4. Continued—Employment status of the population, by sex, age, race, and Hispanic origin, monthly data seasonally adjusted

[Numbers in thousands]

Employment status	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Hispanic or Latino ethnicity															
Civilian noninstitutional population[1]	30,103	31,383	31,714	31,809	31,903	31,643	31,732	31,820	31,911	31,998	32,087	32,179	32,273	32,369	32,465
Civilian labor force	20,694	21,602	21,778	21,872	21,888	21,698	21,755	21,775	21,917	22,102	22,131	22,071	22,226	22,258	22,236
Participation rate	68.7	68.8	68.7	68.8	68.6	68.6	68.6	68.4	68.7	69.1	69.0	68.6	68.9	68.8	68.5
Employed	19,613	20,382	20,554	20,623	20,517	20,320	20,401	20,269	20,404	20,573	20,420	20,435	20,452	20,531	20,268
Employment-population ratio[2]	65.2	64.9	64.8	64.8	64.3	64.2	64.3	63.7	63.9	64.3	63.6	63.5	63.4	63.4	62.4
Unemployed	1,081	1,220	1,224	1,249	1,371	1,378	1,354	1,507	1,512	1,529	1,711	1,636	1,774	1,727	1,967
Unemployment rate	5.2	5.6	5.6	5.7	6.3	6.3	6.2	6.9	6.9	6.9	7.7	7.4	8.0	7.8	8.8
Not in the labor force	9,409	9,781	9,936	9,938	10,016	9,946	9,977	10,045	9,994	9,896	9,956	10,108	10,048	10,111	10,229

[1] The population figures are not seasonally adjusted.

[2] Civilian employment as a percent of the civilian noninstitutional population.

[3] Beginning in 2003, persons who selected this race group only; persons who selected more than one race group are not included. Prior to 2003, persons who reported more than one race were included in the group they identified as the main race.

NOTE: Estimates for the above race groups (white and black or African American) do not sum to totals because data are not presented for all races. In addition, persons whose ethnicity is identified as Hispanic or Latino may be of any race and, therefore, are classified by ethnicity as well as by race. Beginning in January 2003, data reflect revised population controls used in the household survey.

5. Selected employment indicators, monthly data seasonally adjusted

[In thousands]

Selected categories	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Characteristic															
Employed, 16 years and older	144,427	146,047	146,016	146,647	146,211	146,248	145,993	145,969	146,331	146,046	145,891	145,819	145,477	145,255	144,958
Men	77,502	78,254	78,177	78,604	78,260	78,157	78,113	77,948	78,038	77,954	77,794	77,823	77,632	77,396	77,108
Women	66,925	67,792	67,838	68,043	67,951	68,091	67,880	68,021	68,293	68,092	68,097	67,996	67,845	67,860	67,850
Married men, spouse present	45,700	46,314	46,189	46,339	46,213	46,063	46,136	45,961	45,964	45,862	45,911	46,120	45,829	45,958	45,870
Married women, spouse present	35,272	35,832	35,449	35,689	35,565	35,536	35,648	35,749	36,177	36,171	36,270	36,185	36,055	35,913	35,633
Persons at work part time[1]															
All industries:															
Part time for economic reasons	4,162	4,401	4,401	4,513	4,665	4,769	4,884	4,914	5,220	5,233	5,416	5,724	5,718	6,055	6,700
Slack work or business conditions	2,658	2,877	2,788	3,008	3,174	3,247	3,291	3,323	3,558	3,595	3,816	4,194	4,112	4,232	4,733
Could only find part-time work	1,189	1,210	1,215	1,223	1,236	1,163	1,222	1,362	1,323	1,281	1,336	1,286	1,362	1,516	1,491
Part time for noneconomic reasons	19,591	19,756	19,337	19,539	19,526	19,613	19,348	19,409	19,809	19,428	19,496	19,406	19,712	19,371	19,147
Nonagricultural industries:															
Part time for economic reasons	4,071	4,317	4,302	4,453	4,577	4,677	4,790	4,797	5,125	5,164	5,308	5,599	5,641	5,941	6,485
Slack work or business conditions	2,596	2,827	2,745	2,981	3,120	3,174	3,231	3,238	3,513	3,531	3,744	4,156	4,032	4,121	4,690
Could only find part-time work	1,178	1,199	1,207	1,205	1,219	1,149	1,216	1,354	1,331	1,288	1,328	1,277	1,350	1,537	1,481
Part time for noneconomic reasons	19,237	19,419	19,157	19,224	19,225	19,296	19,019	19,072	19,456	19,047	19,106	19,051	19,281	19,033	18,889

[1] Excludes persons "with a job but not at work" during the survey period for such reasons as vacation, illness, or industrial disputes.

NOTE: Beginning in January 2003, data reflect revised population controls used in the household survey.

6. Selected unemployment indicators, monthly data seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Characteristic															
Total, 16 years and older	4.6	4.6	4.8	4.7	5.0	4.9	4.8	5.1	5.0	5.5	5.5	5.7	6.1	6.1	6.5
Both sexes, 16 to 19 years	15.4	15.7	15.7	16.4	17.1	18.0	16.6	15.8	15.4	18.7	18.1	20.3	18.9	19.1	20.6
Men, 20 years and older	4.0	4.1	4.3	4.1	4.4	4.4	4.3	4.6	4.6	4.9	5.1	5.3	5.6	6.1	6.3
Women, 20 years and older	4.1	4.0	4.1	4.1	4.4	4.2	4.2	4.6	4.3	4.8	4.7	4.6	5.3	4.9	5.3
White, total [1]	4.0	4.1	4.2	4.2	4.4	4.4	4.3	4.5	4.4	4.9	4.9	5.1	5.4	5.4	5.9
Both sexes, 16 to 19 years	13.2	13.9	14.0	14.7	14.4	15.6	14.4	13.2	13.8	16.4	16.6	19.0	17.2	17.4	18.5
Men, 16 to 19 years	14.6	15.7	15.9	17.8	16.8	19.0	17.1	14.7	15.2	17.7	17.8	22.2	19.2	19.4	22.4
Women, 16 to 19 years	11.7	12.1	12.0	11.8	12.1	12.3	11.8	11.7	12.4	14.9	15.3	15.6	15.0	15.2	14.4
Men, 20 years and older	3.5	3.7	3.8	3.7	3.9	3.9	3.9	4.1	4.1	4.4	4.5	4.7	4.9	5.3	5.7
Women, 20 years and older	3.6	3.6	3.6	3.7	4.0	3.8	3.8	4.1	3.7	4.1	4.2	4.1	4.7	4.2	4.9
Black or African American, total [1]	8.9	8.3	8.5	8.4	9.0	9.2	8.3	9.0	8.6	9.7	9.2	9.7	10.6	11.4	11.1
Both sexes, 16 to 19 years	29.1	29.4	27.9	29.7	34.7	35.7	31.7	31.3	24.5	32.3	29.6	32.0	28.8	29.4	32.4
Men, 16 to 19 years	32.7	33.8	36.0	34.6	39.5	41.3	32.6	38.9	27.9	40.1	35.5	38.0	29.2	32.6	36.8
Women, 16 to 19 years	25.9	25.3	20.1	24.9	30.1	28.5	30.9	25.4	21.9	25.2	23.9	26.5	28.3	26.3	27.3
Men, 20 years and older	8.3	7.9	8.2	7.9	8.4	8.3	7.9	8.4	8.4	8.9	9.3	10.0	10.3	11.9	11.6
Women, 20 years and older	7.5	6.7	7.1	7.0	7.0	7.3	6.5	7.5	7.4	8.2	7.4	7.5	9.1	9.3	8.8
Hispanic or Latino ethnicity	5.2	5.6	5.6	5.7	6.3	6.3	6.2	6.9	6.9	6.9	7.7	7.4	8.0	7.8	8.8
Married men, spouse present	2.4	2.5	2.6	2.6	2.7	2.7	2.7	2.8	2.8	2.9	3.0	3.2	3.5	3.8	4.1
Married women, spouse present	2.9	2.8	2.9	3.0	3.1	3.1	3.1	3.3	3.0	3.1	3.3	3.3	3.7	3.5	4.2
Full-time workers	4.5	4.6	4.7	4.6	4.9	4.8	4.8	5.0	5.0	5.5	5.5	5.7	6.2	6.2	6.7
Part-time workers	5.1	4.9	5.0	5.0	5.6	5.4	5.0	5.3	4.9	5.5	5.4	5.5	5.7	5.9	5.7
Educational attainment [2]															
Less than a high school diploma	6.8	7.1	7.4	7.6	7.6	7.7	7.3	8.2	7.8	8.3	8.7	8.5	9.6	9.6	10.3
High school graduates, no college [3]	4.3	4.4	4.6	4.5	4.7	4.6	4.7	5.1	5.0	5.2	5.1	5.2	5.7	6.3	6.3
Some college or associate degree	3.6	3.6	3.5	3.3	3.7	3.6	3.7	3.8	3.9	4.3	4.2	4.5	4.8	5.0	5.2
Bachelor's degree and higher [4]	2.0	2.0	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.3	2.4	2.7	2.5	3.1

[1] Beginning in 2003, persons who selected this race group only; persons who selected more than one race group are not included. Prior to 2003, persons who reported more than one race were included in the group they identified as the main race.

[2] Data refer to persons 25 years and older.

7. Duration of unemployment, monthly data seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Less than 5 weeks	2,614	2,542	2,508	2,633	2,793	2,634	2,639	2,767	2,484	3,244	2,712	2,835	3,235	2,853	3,065
5 to 14 weeks	2,121	2,232	2,454	2,157	2,330	2,396	2,396	2,525	2,495	2,469	2,999	2,823	2,821	3,051	3,003
15 weeks and over	2,266	2,303	2,367	2,398	2,520	2,503	2,377	2,400	2,626	2,773	2,916	3,118	3,402	3,607	4,062
15 to 26 weeks	1,031	1,061	1,052	1,014	1,182	1,124	1,079	1,118	1,272	1,223	1,328	1,440	1,561	1,598	1,805
27 weeks and over	1,235	1,243	1,315	1,384	1,338	1,380	1,299	1,282	1,353	1,550	1,587	1,678	1,841	2,008	2,257
Mean duration, in weeks	16.8	16.8	17.0	17.2	16.6	17.5	16.8	16.2	16.9	16.6	17.5	17.1	17.4	18.4	19.7
Median duration, in weeks	8.3	8.5	8.7	8.7	8.4	8.8	8.4	8.1	9.3	8.3	10.0	9.7	9.2	10.2	10.6

NOTE: Beginning in January 2003, data reflect revised population controls used in the household survey.

8. Unemployed persons by reason for unemployment, monthly data seasonally adjusted

[Numbers in thousands]

Reason for unemployment	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Job losers[1]	3,321	3,515	3,731	3,609	3,857	3,796	3,854	4,154	4,014	4,282	4,370	4,407	4,824	5,171	5,719
On temporary layoff	921	976	1,064	979	975	1,040	971	1,056	1,099	1,113	1,077	1,037	1,266	1,407	1,340
Not on temporary layoff	2,400	2,539	2,668	2,630	2,882	2,756	2,883	3,098	2,915	3,169	3,292	3,370	3,559	3,764	4,379
Job leavers	827	793	790	783	798	830	769	781	850	870	833	861	999	974	940
Reentrants	2,237	2,142	2,103	2,160	2,343	2,201	2,112	2,117	2,134	2,460	2,498	2,705	2,652	2,555	2,623
New entrants	616	627	709	669	697	667	648	681	624	828	748	811	820	822	828
Percent of unemployed															
Job losers[1]	47.4	49.7	50.9	50.0	50.1	50.7	52.2	53.7	52.7	50.7	51.7	50.2	51.9	54.3	56.6
On temporary layoff	13.2	13.8	14.5	13.6	12.7	13.9	13.2	13.7	14.4	13.2	12.7	11.8	13.6	14.8	13.3
Not on temporary layoff	34.3	35.9	36.4	36.4	37.5	36.8	39.0	40.1	38.2	37.5	39.0	38.4	38.3	39.5	43.3
Job leavers	11.8	11.2	10.8	10.8	10.4	11.1	10.4	10.1	11.2	10.3	9.9	9.8	10.7	10.2	9.3
Reentrants	32.0	30.3	28.7	29.9	30.4	29.4	28.6	27.4	28.0	29.1	29.6	30.8	28.5	26.8	25.9
New entrants	8.8	8.9	9.7	9.3	9.1	8.9	8.8	8.8	8.2	9.8	8.9	9.2	8.8	8.6	8.2
Percent of civilian labor force															
Job losers[1]	2.2	2.3	2.4	2.3	2.5	2.5	2.5	2.7	2.6	2.8	2.8	2.9	3.1	3.3	3.7
Job leavers	.5	.5	.5	.5	.5	.5	.5	.5	.6	.6	.5	.6	.6	.6	.6
Reentrants	1.5	1.4	1.4	1.4	1.5	1.4	1.4	1.4	1.4	1.6	1.6	1.7	1.7	1.7	1.7
New entrants	.4	.4	.5	.4	.5	.4	.4	.4	.4	.5	.5	.5	.5	.5	.5

[1] Includes persons who completed temporary jobs.

NOTE: Beginning in January 2003, data reflect revised population controls used in the household survey.

9. Unemployment rates by sex and age, monthly data seasonally adjusted

[Civilian workers]

Sex and age	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Total, 16 years and older	4.6	4.6	4.8	4.7	5.0	4.9	4.8	5.1	5.0	5.5	5.5	5.7	6.1	6.1	6.5
16 to 24 years	10.5	10.5	10.8	10.7	11.8	11.7	11.3	11.3	11.0	13.0	12.6	13.4	13.1	13.2	13.7
16 to 19 years	15.4	15.7	15.7	16.4	17.1	18.0	16.6	15.8	15.4	18.7	18.1	20.3	18.9	19.1	20.6
16 to 17 years	17.2	17.5	17.5	19.0	19.6	20.4	18.3	18.6	19.7	21.2	23.3	24.9	22.1	21.6	22.9
18 to 19 years	14.1	14.5	14.3	14.4	15.4	15.9	15.5	14.0	13.2	17.5	15.6	17.3	17.1	17.6	18.3
20 to 24 years	8.2	8.2	8.6	8.0	9.4	8.7	8.9	9.3	8.9	10.4	10.1	10.2	10.5	10.5	10.6
25 years and older	3.6	3.6	3.7	3.7	3.9	3.8	3.8	4.0	3.9	4.1	4.3	4.4	4.9	5.0	5.3
25 to 54 years	3.8	3.7	3.8	3.8	4.1	3.9	3.9	4.2	4.2	4.4	4.5	4.6	5.1	5.2	5.5
55 years and older	3.0	3.1	3.1	3.0	3.2	3.2	3.2	3.4	3.0	3.3	3.3	3.6	4.1	4.1	4.5
Men, 16 years and older	4.6	4.7	4.9	4.7	5.1	5.1	4.9	5.2	5.1	5.6	5.7	6.1	6.3	6.7	7.1
16 to 24 years	11.2	11.6	12.0	11.8	12.8	13.1	12.5	12.5	12.0	14.1	13.8	15.2	14.3	14.4	16.4
16 to 19 years	16.9	17.6	18.1	19.5	19.8	21.8	18.7	17.8	16.9	20.7	19.9	23.4	20.7	21.0	24.5
16 to 17 years	18.6	19.4	19.0	21.4	22.1	24.0	20.5	22.0	22.2	23.3	26.2	29.4	24.0	23.0	26.9
18 to 19 years	15.7	16.5	16.8	17.8	18.4	19.5	18.0	15.2	14.5	19.6	17.1	19.9	18.6	20.1	21.6
20 to 24 years	8.7	8.9	9.3	8.6	9.8	9.4	9.9	10.3	9.9	11.0	11.2	11.6	11.5	11.5	12.8
25 years and older	3.5	3.6	3.7	3.6	3.8	3.8	3.7	4.0	4.0	4.2	4.3	4.6	5.0	5.5	5.5
25 to 54 years	3.6	3.7	3.8	3.7	4.0	4.0	3.8	4.1	4.3	4.4	4.6	4.9	5.2	5.8	5.7
55 years and older	3.0	3.2	3.1	3.1	3.2	3.2	3.2	3.3	3.0	3.4	3.4	3.7	4.2	4.4	4.6
Women, 16 years and older	4.6	4.5	4.6	4.6	4.9	4.7	4.7	5.0	4.8	5.3	5.2	5.2	5.8	5.5	5.8
16 to 24 years	9.7	9.4	9.6	9.4	10.7	10.1	9.9	10.0	9.8	11.9	11.2	11.4	11.9	11.9	10.7
16 to 19 years	13.8	13.8	13.3	13.4	14.4	14.2	14.5	13.8	14.0	16.6	16.3	17.1	17.1	17.1	16.3
16 to 17 years	15.9	15.7	16.1	17.1	17.3	17.2	16.2	15.5	17.5	19.0	20.3	20.4	20.2	20.3	19.1
18 t0 19 years	12.4	12.5	11.6	10.7	12.3	12.1	12.8	12.8	11.8	15.2	13.9	14.6	15.6	14.8	14.6
20 to 24 years	7.6	7.3	7.7	7.4	8.8	8.0	7.7	8.1	7.7	9.6	8.8	8.7	9.4	9.4	8.1
25 years and older	3.7	3.6	3.7	3.8	3.9	3.8	3.8	4.1	3.9	4.1	4.2	4.2	4.8	4.4	5.1
25 to 54 years	3.9	3.8	3.9	4.0	4.1	3.9	4.0	4.2	4.0	4.4	4.4	4.3	5.0	4.6	5.2
55 years and older[1]	2.9	3.0	3.0	2.8	2.9	3.4	3.3	3.4	2.8	2.8	3.4	4.3	4.5	3.9	4.3

[1] Data are not seasonally adjusted.

NOTE: Beginning in January 2003, data reflect revised population controls used in the household survey.

10. Unemployment rates by State, seasonally adjusted

State	Sept. 2007	Aug. 2008[p]	Sept. 2008[p]	State	Sept. 2007	Aug. 2008[p]	Sept. 2008[p]
Alabama	3.5	4.9	5.3	Missouri	5.3	6.7	6.5
Alaska	6.3	6.9	6.7	Montana	3.2	4.4	4.6
Arizona	3.8	5.6	5.9	Nebraska	3.1	3.5	3.6
Arkansas	5.5	4.8	4.9	Nevada	5.0	7.1	7.2
California	5.6	7.7	7.7	New Hampshire	3.4	4.2	4.1
Colorado	4.0	5.4	5.2	New Jersey	4.2	5.9	5.8
Connecticut	4.6	6.5	6.1	New Mexico	3.4	4.6	4.0
Delaware	3.3	4.8	4.8	New York	4.5	5.8	5.8
District of Columbia	5.7	6.9	7.0	North Carolina	4.7	6.9	6.9
Florida	4.2	6.6	6.6	North Dakota	3.3	3.6	3.6
Georgia	4.5	6.3	6.4	Ohio	5.7	7.4	7.2
Hawaii	2.8	4.2	4.5	Oklahoma	4.3	4.0	3.8
Idaho	2.7	4.6	5.0	Oregon	5.3	6.5	6.4
Illinois	5.2	7.3	6.9	Pennsylvania	4.4	5.8	5.7
Indiana	4.5	6.4	6.2	Rhode Island	5.1	8.6	8.8
Iowa	3.8	4.5	4.2	South Carolina	5.9	7.6	7.3
Kansas	4.0	4.7	4.8	South Dakota	2.9	3.3	3.2
Kentucky	5.4	6.8	7.1	Tennessee	4.9	6.6	7.2
Louisiana	3.9	4.7	5.2	Texas	4.3	5.0	5.1
Maine	4.9	5.5	5.6	Utah	2.8	3.7	3.5
Maryland	3.6	4.5	4.6	Vermont	3.9	4.9	5.2
Massachusetts	4.4	5.2	5.3	Virginia	3.1	4.6	4.3
Michigan	7.3	8.9	8.7	Washington	4.6	6.0	5.7
Minnesota	4.6	6.2	5.9	West Virginia	4.7	4.1	4.4
Mississippi	6.3	7.7	7.8	Wisconsin	4.9	5.1	5.0
				Wyoming	2.9	3.9	3.3

[p] = preliminary

11. Employment of workers on nonfarm payrolls by State, seasonally adjusted

State	Sept. 2007	Aug. 2008[p]	Sept. 2008[p]	State	Sept. 2007	Aug. 2008[p]	Sept. 2008[p]
Alabama	2,186,083	2,175,153	2,169,709	Missouri	3,038,803	3,007,649	3,010,217
Alaska	353,224	360,853	359,987	Montana	501,889	505,394	507,302
Arizona	3,040,494	3,100,259	3,134,758	Nebraska	987,298	996,253	999,914
Arkansas	1,370,231	1,373,423	1,379,507	Nevada	1,343,990	1,404,471	1,409,309
California	18,243,759	18,415,159	18,497,504	New Hampshire	738,454	743,999	746,299
Colorado	2,724,415	2,744,961	2,749,371	New Jersey	4,461,039	4,525,498	4,540,221
Connecticut	1,872,091	1,890,442	1,898,783	New Mexico	944,095	957,929	958,034
Delaware	443,014	447,046	446,360	New York	9,521,220	9,587,734	9,652,732
District of Columbia	325,571	332,388	332,322	North Carolina	4,528,914	4,568,570	4,577,528
Florida	9,173,375	9,326,000	9,344,301	North Dakota	366,800	372,342	374,266
Georgia	4,833,271	4,910,138	4,894,137	Ohio	5,981,546	5,994,695	6,000,391
Hawaii	648,155	664,199	667,453	Oklahoma	1,734,059	1,745,138	1,757,738
Idaho	757,125	754,766	759,393	Oregon	1,932,926	1,952,719	1,961,581
Illinois	6,723,745	6,725,873	6,707,818	Pennsylvania	6,284,133	6,403,374	6,444,916
Indiana	3,206,483	3,250,008	3,252,500	Rhode Island	577,180	570,978	572,769
Iowa	1,663,401	1,682,098	1,685,033	South Carolina	2,142,151	2,165,068	2,158,704
Kansas	1,480,837	1,493,640	1,501,233	South Dakota	443,852	445,066	447,367
Kentucky	2,043,243	2,039,875	2,047,438	Tennessee	3,049,969	3,033,920	3,049,201
Louisiana	2,002,224	2,048,904	2,053,649	Texas	11,520,835	11,744,547	11,787,861
Maine	704,526	710,970	711,686	Utah	1,372,565	1,383,446	1,387,620
Maryland	2,983,997	3,016,800	3,002,538	Vermont	352,614	351,142	353,165
Massachusetts	3,405,675	3,412,895	3,413,637	Virginia	4,067,506	4,144,496	4,142,322
Michigan	5,009,337	4,943,431	4,926,617	Washington	3,433,936	3,472,536	3,500,752
Minnesota	2,930,503	2,937,545	2,941,781	West Virginia	810,436	802,447	808,517
Mississippi	1,318,864	1,329,241	1,327,154	Wisconsin	3,089,777	3,075,250	3,089,362
				Wyoming	288,368	292,640	293,576

NOTE: Some data in this table may differ from data published elsewhere because of the continual updating of the database.

[p] = preliminary

12. Employment of workers on nonfarm payrolls by industry, monthly data seasonally adjusted

[In thousands]

Industry	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[p]	Oct.[p]
TOTAL NONFARM	136,086	137,623	137,977	138,037	138,078	138,002	137,919	137,831	137,764	137,717	137,617	137,550	137,423	137,139	136,899
TOTAL PRIVATE	114,113	115,420	115,715	115,759	115,745	115,666	115,557	115,454	115,363	115,264	115,154	115,048	114,909	114,666	114,403
GOODS-PRODUCING	22,531	22,221	22,101	22,049	21,976	21,907	21,816	21,737	21,628	21,577	21,491	21,437	21,367	21,284	21,152
Natural resources and mining	684	723	727	735	739	744	744	750	752	760	768	777	788	796	803
Logging	64.4	60.8	59.1	59.9	60.6	60.7	60.2	60.1	60.8	59.5	57.3	57.7	58.1	58.7	58.7
Mining	619.7	662.1	667.8	675.0	677.9	683.2	684.0	689.7	690.9	700.6	710.2	719.4	729.6	737.5	744.0
Oil and gas extraction	134.5	146.0	148.9	152.3	153.1	154.5	153.8	155.2	154.2	158.3	160.1	162.4	164.1	165.5	165.5
Mining, except oil and gas[1]	220.3	224.5	226.9	226.0	225.2	227.0	225.7	226.2	225.8	229.6	230.9	231.3	233.8	234.2	234.9
Coal mining	78.0	77.6	78.1	78.7	78.3	78.6	78.7	79.2	79.3	80.5	81.3	81.2	83.5	84.4	85.2
Support activities for mining	264.9	291.6	292.0	296.7	299.6	301.7	304.5	308.3	310.9	312.7	319.2	325.7	331.7	337.8	343.6
Construction	7,691	7,614	7,577	7,520	7,465	7,426	7,382	7,343	7,284	7,246	7,196	7,173	7,153	7,118	7,069
Construction of buildings	1,804.9	1,761.0	1,736.6	1,716.4	1,702.4	1,690.2	1,673.0	1,668.2	1,648.2	1,634.9	1,621.5	1,618.3	1,612.8	1,595.1	1,582.9
Heavy and civil engineering	985.1	1,001.2	999.5	999.0	993.8	984.6	977.6	976.9	967.4	965.3	959.5	955.5	952.8	950.4	946.1
Speciality trade contractors	4,901.1	4,851.9	4,841.3	4,804.8	4,768.4	4,750.8	4,731.8	4,697.5	4,668.0	4,645.6	4,615.1	4,598.7	4,587.8	4,572.2	4,540.2
Manufacturing	14,155	13,884	13,797	13,794	13,772	13,737	13,690	13,644	13,592	13,571	13,527	13,487	13,426	13,370	13,280
Production workers	10,137	9,979	9,934	9,944	9,933	9,922	9,879	9,847	9,799	9,784	9,738	9,692	9,636	9,581	9,485
Durable goods	8,981	8,816	8,761	8,763	8,739	8,718	8,685	8,652	8,607	8,594	8,564	8,541	8,482	8,442	8,367
Production workers	6,355	6,257	6,232	6,242	6,220	6,214	6,182	6,152	6,112	6,100	6,064	6,033	5,980	5,938	5,858
Wood products	558.8	519.7	511.8	509.0	507.2	503.5	498.6	492.9	490.9	482.4	477.3	473.3	467.6	462.7	456.1
Nonmetallic mineral products	509.6	503.4	500.9	499.5	496.4	494.4	492.2	487.7	486.3	482.1	479.3	476.6	475.8	472.1	472.5
Primary metals	464.0	456.0	451.5	452.6	452.2	452.3	451.4	451.3	450.1	448.7	446.8	446.0	443.0	444.6	443.5
Fabricated metal products	1,553.1	1,563.3	1,568.0	1,565.6	1,562.7	1,560.9	1,557.1	1,556.9	1,544.1	1,544.2	1,537.1	1,531.8	1,534.3	1,525.7	1,515.1
Machinery	1,183.2	1,188.2	1,189.0	1,189.9	1,191.0	1,193.8	1,191.7	1,195.1	1,193.1	1,195.1	1,194.4	1,196.5	1,193.0	1,189.8	1,187.7
Computer and electronic products[1]	1,307.5	1,271.9	1,256.5	1,260.5	1,257.6	1,256.3	1,251.9	1,254.1	1,253.8	1,250.1	1,247.1	1,246.1	1,247.4	1,245.4	1,241.2
Computer and peripheral equipment	196.2	186.9	185.1	185.5	185.4	184.9	185.9	186.0	186.7	186.2	184.6	185.1	185.4	185.6	185.8
Communications equipment	136.2	128.6	128.1	129.5	129.0	129.5	128.7	129.4	130.9	130.4	131.8	130.8	131.2	131.4	131.5
Semiconductors and electronic components	457.9	444.5	435.8	437.0	434.9	433.5	429.7	428.7	426.7	424.2	422.1	423.2	423.4	422.4	420.2
Electronic instruments	444.5	444.0	441.9	443.0	443.7	444.3	442.9	446.2	445.7	445.6	444.9	444.1	444.7	444.2	442.5
Electrical equipment and appliances	432.7	427.2	427.2	426.6	423.8	421.6	420.8	419.9	421.5	422.1	422.0	422.4	419.4	416.8	416.2
Transportation equipment	1,768.9	1,710.9	1,689.3	1,693.5	1,684.7	1,678.1	1,672.0	1,651.1	1,630.6	1,636.8	1,631.9	1,624.8	1,584.0	1,573.0	1,532.9
Furniture and related products	560.1	534.5	528.3	527.0	523.8	520.4	516.0	511.2	506.4	503.5	499.5	495.6	487.4	481.8	471.4
Miscellaneous manufacturing	643.7	641.0	638.2	638.8	639.9	636.4	633.3	632.0	630.2	629.1	628.8	627.7	630.1	629.9	630.0
Nondurable goods	5,174	5,068	5,036	5,031	5,033	5,019	5,005	4,992	4,985	4,977	4,963	4,946	4,944	4,928	4,913
Production workers	3,782	3,723	3,702	3,702	3,713	3,708	3,697	3,695	3,687	3,684	3,674	3,659	3,656	3,643	3,627
Food manufacturing	1,479.4	1,481.3	1,478.6	1,477.9	1,486.3	1,483.2	1,482.7	1,477.0	1,473.8	1,473.5	1,472.4	1,469.8	1,474.0	1,475.3	1,477.2
Beverages and tobacco products	194.2	195.7	195.2	194.3	192.0	191.1	189.3	190.8	193.3	193.7	192.5	192.2	191.3	191.2	189.8
Textile mills	195.0	169.9	164.9	164.9	163.0	162.0	161.4	158.7	156.4	155.1	152.2	149.9	150.6	149.2	147.9
Textile product mills	166.7	158.4	155.9	157.2	155.7	154.0	153.0	153.3	152.2	151.0	149.3	148.7	147.9	148.3	147.8
Apparel	232.4	213.0	206.8	206.4	204.8	202.0	200.6	198.1	198.0	196.6	196.4	195.9	196.1	193.4	189.4
Leather and allied products	36.8	33.9	33.7	34.1	33.7	34.5	33.5	33.5	33.9	33.7	34.6	33.9	35.1	35.1	35.0
Paper and paper products	470.5	460.6	459.2	458.6	460.3	459.0	457.8	457.9	458.4	458.1	456.6	454.9	453.4	451.0	451.7
Printing and related support activities	634.4	624.2	622.2	622.0	619.5	620.1	614.6	614.2	611.7	607.3	601.9	598.9	599.2	595.3	591.4
Petroleum and coal products	113.2	113.4	112.6	112.1	111.7	112.2	112.5	112.2	112.2	113.4	113.8	114.6	114.1	113.8	113.5
Chemicals	865.9	862.9	860.7	860.5	862.0	861.2	861.0	860.5	861.3	861.6	859.8	857.1	855.4	852.6	852.9
Plastics and rubber products	785.5	754.0	745.9	743.0	744.2	739.7	738.7	735.6	734.1	732.8	733.9	730.2	726.4	722.8	716.7
SERVICE-PROVIDING	113,556	115,402	115,876	115,988	116,102	116,095	116,103	116,094	116,136	116,140	116,126	116,113	116,056	115,855	115,747
PRIVATE SERVICE-PROVIDING	91,582	93,199	93,614	93,710	93,769	93,759	93,741	93,717	93,735	93,687	93,663	93,611	93,542	93,382	93,251
Trade, transportation, and utilities	26,276	26,608	26,644	26,693	26,658	26,631	26,579	26,552	26,496	26,451	26,431	26,393	26,346	26,278	26,211
Wholesale trade	5,904.5	6,028.3	6,069.8	6,075.0	6,072.9	6,067.3	6,057.6	6,054.3	6,043.9	6,038.4	6,034.6	6,017.6	6,007.1	6,005.2	5,983.7
Durable goods	3,074.8	3,130.7	3,147.4	3,152.4	3,145.0	3,138.0	3,127.3	3,127.8	3,118.1	3,109.8	3,103.6	3,094.3	3,084.9	3,082.2	3,064.1
Nondurable goods	2,041.3	2,069.3	2,086.5	2,086.6	2,089.3	2,090.9	2,088.4	2,087.5	2,086.9	2,089.3	2,088.4	2,078.4	2,075.2	2,071.7	2,070.0
Electronic markets and agents and brokers	788.5	828.4	835.9	836.0	838.6	838.4	841.9	839.0	838.9	839.3	842.6	844.9	847.0	851.3	849.6
Retail trade	15,353.3	15,490.7	15,469.1	15,513.1	15,487.8	15,472.2	15,428.8	15,401.4	15,355.7	15,331.8	15,324.2	15,302.4	15,274.7	15,229.9	15,191.8
Motor vehicles and parts dealers[1]	1,909.7	1,913.1	1,911.9	1,911.0	1,909.3	1,910.2	1,905.1	1,901.5	1,897.6	1,892.9	1,883.3	1,870.6	1,853.2	1,842.0	1,820.6
Automobile dealers	1,246.7	1,245.3	1,247.4	1,244.9	1,244.6	1,244.0	1,236.2	1,233.7	1,228.8	1,224.2	1,215.2	1,204.3	1,189.6	1,180.3	1,160.0
Furniture and home furnishings stores	586.9	581.0	577.3	584.9	584.5	579.9	575.9	570.6	569.0	568.5	568.9	569.2	566.4	563.5	560.3
Electronics and appliance stores	541.1	543.7	537.1	542.6	540.4	534.3	533.6	535.0	534.7	539.3	534.9	535.2	535.3	532.6	532.4

See notes at end of table.

12. Continued—Employment of workers on nonfarm payrolls by industry, monthly data seasonally adjusted
[In thousands]

Industry	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[p]	Oct.[p]
Building material and garden supply stores	1,324.1	1,305.3	1,285.4	1,279.9	1,271.6	1,266.0	1,258.5	1,250.8	1,240.5	1,240.3	1,238.2	1,230.1	1,237.0	1,237.3	1,235.0
Food and beverage stores	2,821.1	2,848.5	2,859.6	2,871.9	2,871.9	2,880.1	2,885.7	2,890.1	2,882.4	2,880.7	2,879.2	2,879.5	2,871.5	2,863.8	2,870.0
Health and personal care stores	961.1	988.6	991.0	998.6	999.9	1,000.6	993.5	993.9	993.4	990.9	990.4	990.0	985.1	985.5	983.6
Gasoline stations	864.1	861.2	862.0	859.1	850.5	853.8	854.2	852.6	847.4	841.2	844.4	841.3	839.8	833.9	835.6
Clothing and clothing accessories stores	1,450.9	1,500.4	1,500.9	1,524.5	1,508.6	1,498.2	1,496.3	1,498.9	1,495.4	1,494.5	1,494.8	1,494.8	1,495.8	1,494.1	1,493.4
Sporting goods, hobby, book, and music stores	645.5	658.2	664.0	664.0	661.6	667.2	661.9	658.6	651.5	653.2	654.5	649.3	659.5	660.5	664.6
General merchandise stores[1]	2,935.0	2,984.6	2,975.8	2,968.2	2,976.7	2,971.1	2,955.7	2,943.9	2,939.0	2,928.5	2,939.6	2,948.4	2,941.1	2,926.9	2,908.4
Department stores	1,557.2	1,576.7	1,568.5	1,560.6	1,568.4	1,564.3	1,543.3	1,534.3	1,528.1	1,514.7	1,516.3	1,517.2	1,507.0	1,493.8	1,475.8
Miscellaneous store retailers	881.0	868.7	869.0	868.3	866.3	869.4	865.3	862.8	863.3	860.8	858.9	857.4	856.4	856.6	857.0
Nonstore retailers	432.8	437.6	435.1	440.1	446.5	441.4	443.1	442.7	441.5	441.0	437.1	436.6	433.6	433.2	430.9
Transportation and warehousing	4,469.6	4,536.0	4,548.7	4,549.0	4,539.9	4,534.5	4,535.5	4,537.7	4,538.3	4,524.1	4,514.0	4,513.6	4,505.1	4,481.1	4,471.9
Air transportation	487.0	492.6	495.2	503.0	502.1	504.7	508.2	507.5	504.5	501.3	497.6	495.2	490.9	486.3	483.8
Rail transportation	227.5	234.4	234.0	233.8	232.5	233.8	233.7	233.7	233.5	233.0	230.0	232.1	230.6	232.2	232.2
Water transportation	62.7	64.3	64.9	65.0	64.4	63.8	62.5	61.6	62.3	61.3	61.8	61.9	60.7	60.1	59.7
Truck transportation	1,435.8	1,441.2	1,433.6	1,428.7	1,423.1	1,422.5	1,417.4	1,420.4	1,415.2	1,409.8	1,400.1	1,398.3	1,400.1	1,390.5	1,385.9
Transit and ground passenger transportation	399.3	410.0	417.4	411.5	411.8	411.9	413.5	412.9	418.3	412.9	416.4	417.1	416.5	409.2	410.2
Pipeline transportation	38.7	40.1	40.3	40.6	40.8	40.6	40.9	41.2	41.3	42.2	42.8	43.3	43.0	43.4	43.8
Scenic and sightseeing transportation	27.5	29.4	30.3	30.9	31.3	31.0	31.5	31.7	31.3	31.1	31.3	30.6	30.9	31.0	31.8
Support activities for transportation	570.6	582.9	589.9	589.2	587.1	584.9	585.9	586.3	588.2	587.1	587.0	590.3	590.8	590.3	590.4
Couriers and messengers	582.4	582.5	577.9	584.4	588.1	585.5	586.0	585.3	585.0	587.2	587.7	586.5	585.8	583.6	582.1
Warehousing and storage	638.1	658.7	665.2	661.9	658.7	655.8	655.9	657.1	658.7	658.2	659.3	658.3	655.8	654.5	652.0
Utilities	548.5	553.4	556.1	555.5	557.1	557.1	557.0	558.2	557.7	557.1	558.1	559.8	559.2	561.4	563.2
Information	3,038	3,029	3,027	3,022	3,018	3,014	3,016	3,013	3,007	3,002	2,997	2,988	2,984	2,981	2,981
Publishing industries, except Internet	902.4	898.2	894.6	892.2	889.7	889.2	886.8	882.9	882.8	879.7	877.0	873.0	870.4	868.7	867.2
Motion picture and sound recording industries	375.7	380.0	380.5	376.3	376.3	372.9	380.1	383.0	382.5	380.9	382.0	379.1	379.4	381.3	386.3
Broadcasting, except Internet.	328.3	326.4	324.8	325.0	321.9	323.0	322.1	322.5	320.8	321.2	319.6	320.4	318.4	317.6	319.5
Internet publishing and broadcasting															
Telecommunications	1,047.6	1,028.3	1,023.6	1,026.4	1,026.8	1,025.3	1,022.0	1,020.1	1,018.0	1,017.7	1,018.9	1,016.1	1,016.0	1,014.1	1,007.3
ISPs, search portals, and data processing	263.2	270.5	273.2	272.6	273.5	273.0	274.2	272.3	272.2	272.1	269.8	268.3	268.0	267.9	267.8
Other information services	120.8	125.7	130.0	129.5	129.3	130.5	131.2	131.9	130.7	130.1	130.0	130.8	131.7	131.8	132.9
Financial activities	8,328	8,308	8,283	8,260	8,252	8,244	8,231	8,231	8,229	8,226	8,213	8,206	8,196	8,180	8,156
Finance and insurance	6,156.0	6,146.6	6,124.5	6,115.5	6,111.2	6,106.2	6,102.2	6,103.4	6,103.8	6,098.8	6,088.0	6,081.1	6,075.1	6,064.7	6,050.2
Monetary authorities—central bank	21.2	21.1	20.8	20.7	20.7	20.7	20.9	20.9	21.1	21.0	20.9	20.9	20.8	20.8	20.4
Credit intermediation and related activities[1]	2,924.9	2,881.6	2,844.8	2,834.3	2,829.2	2,825.0	2,820.4	2,811.8	2,807.9	2,800.5	2,794.0	2,788.6	2,784.7	2,788.0	2,776.4
Depository credit intermediation[1]	1,802.0	1,822.5	1,829.3	1,823.4	1,824.6	1,821.5	1,823.3	1,821.6	1,822.9	1,820.6	1,818.1	1,815.3	1,813.2	1,810.8	1,808.0
Commercial banking	1,322.9	1,345.8	1,350.1	1,344.7	1,345.9	1,342.2	1,344.9	1,343.4	1,344.2	1,343.4	1,343.1	1,340.9	1,339.4	1,338.4	1,336.9
Securities, commodity contracts, investments	818.3	847.9	855.0	856.9	856.7	859.2	862.5	865.8	867.2	866.6	866.0	860.6	860.9	851.6	846.0
Insurance carriers and related activities	2,303.7	2,308.1	2,315.3	2,315.6	2,316.8	2,313.9	2,311.1	2,318.4	2,319.7	2,323.2	2,319.2	2,323.2	2,320.3	2,316.0	2,318.5
Funds, trusts, and other financial vehicles	87.9	87.8	88.6	88.0	87.8	87.4	87.3	86.5	87.9	87.5	87.9	87.8	88.4	88.3	88.9
Real estate and rental and leasing	2,172.5	2,161.7	2,158.6	2,144.7	2,140.6	2,138.0	2,128.6	2,127.8	2,124.9	2,127.3	2,125.1	2,125.3	2,121.3	2,115.3	2,106.2
Real estate	1,499.0	1,491.9	1,489.1	1,477.1	1,476.4	1,471.4	1,466.0	1,465.0	1,465.7	1,466.4	1,466.2	1,463.7	1,465.6	1,461.7	1,459.7
Rental and leasing services	645.5	640.3	639.7	637.4	633.6	635.2	631.0	631.1	627.4	629.5	627.2	629.3	623.8	621.5	614.7
Lessors of nonfinancial intangible assets	28.1	29.5	29.8	30.2	30.6	31.4	31.6	31.7	31.8	31.4	31.7	32.3	31.9	32.1	31.8
Professional and business services	17,566	17,962	18,070	18,079	18,131	18,101	18,073	18,014	18,031	17,982	17,927	17,904	17,854	17,815	17,770
Professional and technical services[1]	7,356.7	7,662.0	7,759.3	7,784.8	7,820.5	7,819.2	7,829.2	7,823.5	7,845.6	7,839.1	7,850.3	7,855.4	7,859.5	7,865.4	7,877.9
Legal services	1,173.2	1,176.4	1,179.7	1,175.2	1,173.9	1,173.0	1,174.9	1,172.6	1,172.5	1,172.2	1,171.3	1,168.8	1,166.6	1,165.0	1,163.9
Accounting and bookkeeping services	889.0	947.2	971.3	979.4	993.3	992.3	991.9	983.3	986.1	973.8	978.0	976.3	977.7	976.3	977.4
Architectural and engineering services	1,385.7	1,436.0	1,451.1	1,453.9	1,460.4	1,460.5	1,463.0	1,461.8	1,464.9	1,464.9	1,466.2	1,466.0	1,464.2	1,458.1	1,457.7

See notes at end of table

12. Continued—Employment of workers on nonfarm payrolls by industry, monthly data seasonally adjusted

[In thousands]

Industry	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[p]	Oct.[p]
Computer systems design and related services	1,284.6	1,359.8	1,380.0	1,387.5	1,391.4	1,391.6	1,393.5	1,391.3	1,403.9	1,408.9	1,411.7	1,419.7	1,424.5	1,429.0	1,434.5
Management and technical consulting services	886.4	952.8	974.8	985.1	994.3	989.2	992.7	997.0	1,001.3	1,006.9	1,014.6	1,019.0	1,019.8	1,028.2	1,028.5
Management of companies and enterprises	1,810.9	1,846.0	1,860.9	1,850.0	1,847.8	1,845.5	1,844.7	1,839.7	1,841.0	1,836.4	1,837.8	1,830.2	1,832.1	1,828.3	1,827.8
Administrative and waste services	8,398.3	8,453.6	8,449.6	8,444.1	8,462.8	8,436.2	8,398.6	8,351.2	8,344.4	8,306.0	8,239.2	8,218.1	8,162.7	8,121.1	8,064.3
Administrative and support services[1]	8,050.2	8,096.7	8,092.2	8,081.4	8,099.3	8,070.8	8,036.1	7,987.3	7,978.9	7,939.8	7,873.5	7,852.3	7,793.5	7,752.1	7,692.4
Employment services[1]	3,680.9	3,600.9	3,567.7	3,563.9	3,566.9	3,562.1	3,531.6	3,483.7	3,462.2	3,421.8	3,363.3	3,339.9	3,285.8	3,250.9	3,200.1
Temporary help services	2,637.4	2,605.1	2,592.0	2,583.7	2,578.5	2,574.6	2,536.8	2,506.0	2,487.1	2,451.6	2,415.3	2,391.6	2,353.5	2,325.3	2,291.7
Business support services	792.9	805.5	798.5	798.9	803.7	797.4	796.6	794.1	792.8	789.2	785.2	786.2	785.6	786.2	787.2
Services to buildings and dwellings	1,801.4	1,851.2	1,866.3	1,861.1	1,872.0	1,861.3	1,859.7	1,857.3	1,864.6	1,865.9	1,867.4	1,864.4	1,861.8	1,858.3	1,853.1
Waste management and remediation services	348.1	356.9	357.4	362.7	363.5	365.4	362.5	363.9	365.5	366.2	365.7	365.8	369.2	369.0	371.9
Educational and health services	17,826	18,327	18,490	18,522	18,568	18,617	18,665	18,709	18,757	18,820	18,891	18,935	18,997	18,981	19,002
Educational services	2,900.9	2,949.1	2,974.9	2,975.5	2,984.5	3,003.4	3,009.6	3,018.6	3,030.5	3,047.3	3,099.2	3,111.6	3,126.6	3,079.5	3,068.3
Health care and social assistance	14,925.3	15,377.6	15,515.1	15,546.7	15,583.2	15,613.6	15,655.0	15,690.5	15,726.1	15,772.4	15,791.3	15,823.3	15,870.8	15,901.9	15,933.8
Ambulatory health care services[1]	5,285.8	5,477.1	5,547.3	5,554.8	5,566.0	5,581.7	5,600.0	5,612.5	5,632.8	5,649.9	5,667.7	5,693.2	5,703.8	5,718.0	5,729.8
Offices of physicians	2,147.8	2,204.0	2,226.1	2,232.2	2,235.6	2,240.8	2,248.2	2,251.7	2,259.6	2,265.2	2,273.1	2,281.1	2,282.7	2,288.8	2,294.8
Outpatient care centers	492.6	507.1	511.4	511.0	513.0	511.5	512.0	511.9	514.9	516.6	516.7	520.3	522.2	518.6	521.5
Home health care services	865.6	913.3	930.3	929.1	930.9	934.7	939.5	943.3	946.1	951.0	954.5	960.8	963.4	967.1	969.5
Hospitals	4,423.4	4,517.3	4,549.7	4,558.8	4,572.4	4,579.3	4,592.8	4,606.4	4,616.2	4,635.0	4,642.9	4,653.5	4,669.1	4,676.4	4,686.5
Nursing and residential care facilities[1]	2,892.5	2,952.0	2,963.1	2,967.5	2,971.2	2,974.6	2,979.9	2,983.4	2,987.3	2,989.8	2,987.7	2,986.4	2,990.5	2,987.5	2,991.6
Nursing care facilities	1,581.4	1,600.8	1,603.1	1,605.9	1,608.2	1,608.8	1,613.3	1,609.6	1,610.7	1,612.1	1,608.9	1,606.5	1,607.4	1,602.8	1,605.7
Social assistance[1]	2,323.5	2,431.2	2,455.0	2,465.6	2,473.6	2,478.0	2,482.3	2,488.2	2,489.8	2,497.7	2,493.0	2,490.2	2,507.4	2,520.0	2,525.9
Child day care services	818.3	849.2	853.3	856.7	857.1	859.2	858.6	861.8	858.1	860.2	848.8	842.2	850.5	860.1	860.0
Leisure and hospitality	13,110	13,474	13,604	13,628	13,635	13,644	13,660	13,676	13,690	13,679	13,679	13,655	13,639	13,618	13,602
Arts, entertainment, and recreation	1,928.5	1,977.5	1,996.4	2,001.4	2,010.3	2,016.1	2,019.1	2,025.7	2,021.1	2,013.1	2,011.7	1,999.5	2,004.0	1,997.8	2,001.8
Performing arts and spectator sports	398.5	412.4	419.0	426.4	429.9	429.5	431.0	433.9	436.4	434.7	438.0	433.1	432.9	427.5	429.2
Museums, historical sites, zoos, and parks	123.8	130.2	131.9	131.6	131.5	132.6	131.7	133.4	132.6	133.9	132.7	132.1	131.7	130.2	129.4
Amusements, gambling, and recreation	1,406.3	1,434.9	1,445.5	1,443.4	1,448.9	1,454.0	1,456.4	1,458.4	1,452.1	1,444.5	1,441.0	1,434.3	1,439.4	1,440.1	1,443.2
Accommodations and food services	11,181.1	11,496.3	11,607.5	11,626.8	11,624.7	11,628.0	11,640.7	11,650.7	11,668.7	11,665.8	11,667.4	11,655.6	11,634.6	11,619.7	11,600.3
Accommodations	1,832.1	1,856.4	1,863.6	1,870.3	1,858.1	1,854.9	1,854.4	1,849.4	1,853.0	1,849.0	1,843.4	1,835.8	1,824.9	1,820.2	1,812.1
Food services and drinking places	9,349.0	9,639.9	9,743.9	9,756.5	9,766.6	9,773.1	9,786.3	9,801.3	9,815.7	9,816.8	9,824.0	9,819.8	9,809.7	9,799.5	9,788.2
Other services	5,438	5,491	5,496	5,506	5,507	5,508	5,517	5,522	5,525	5,527	5,525	5,530	5,526	5,529	5,529
Repair and maintenance	1,248.5	1,257.0	1,260.1	1,258.0	1,255.5	1,252.9	1,255.2	1,254.8	1,254.0	1,251.7	1,245.6	1,243.8	1,233.9	1,235.1	1,232.3
Personal and laundry services	1,288.4	1,305.2	1,303.4	1,309.7	1,306.9	1,306.6	1,306.4	1,308.5	1,309.9	1,310.6	1,312.8	1,315.1	1,318.5	1,320.2	1,319.6
Membership associations and organizations	2,901.2	2,928.8	2,932.8	2,938.0	2,944.4	2,948.9	2,955.6	2,959.0	2,961.4	2,964.3	2,966.5	2,970.8	2,973.6	2,974.1	2,976.6
Government	21,974	22,203	22,262	22,278	22,333	22,336	22,362	22,377	22,401	22,453	22,463	22,502	22,514	22,473	22,496
Federal	2,732	2,727	2,722	2,728	2,735	2,717	2,725	2,726	2,734	2,740	2,744	2,750	2,748	2,750	2,756
Federal, except U.S. Postal Service	1,962.6	1,964.6	1,963.5	1,966.7	1,972.3	1,977.3	1,982.9	1,986.6	1,996.0	2,006.5	2,013.1	2,018.6	2,025.2	2,031.4	2,038.8
U.S. Postal Service	769.7	762.3	758.3	761.7	763.1	739.7	741.6	739.1	737.9	733.3	731.0	731.5	722.4	718.7	716.7
State	5,075	5,125	5,138	5,131	5,153	5,159	5,158	5,157	5,170	5,174	5,179	5,193	5,210	5,197	5,193
Education	2,292.5	2,318.4	2,325.9	2,314.3	2,332.5	2,335.1	2,332.9	2,332.9	2,340.8	2,344.4	2,354.3	2,366.7	2,378.8	2,371.5	2,367.0
Other State government	2,782.0	2,806.6	2,812.4	2,816.5	2,820.9	2,824.0	2,824.9	2,823.8	2,829.1	2,829.7	2,824.9	2,826.5	2,831.2	2,825.7	2,826.1
Local	14,167	14,351	14,402	14,419	14,445	14,460	14,479	14,494	14,497	14,539	14,540	14,559	14,556	14,526	14,547
Education	7,913.0	7,976.6	7,994.6	7,999.6	8,016.5	8,018.0	8,031.9	8,035.7	8,032.1	8,060.0	8,053.2	8,072.5	8,058.6	8,032.2	8,055.4
Other local government	6,253.8	6,374.5	6,406.9	6,419.2	6,428.2	6,441.5	6,447.5	6,457.8	6,465.0	6,479.2	6,486.8	6,486.5	6,497.4	6,494.0	6,491.3

[1] Includes other industries not shown separately.

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

p = preliminary.

13. Average weekly hours of production or nonsupervisory workers[1] on private nonfarm payrolls, by industry, monthly data seasonally adjusted

Industry	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[p]	Oct.[p]
TOTAL PRIVATE	33.9	33.8	33.8	33.8	33.8	33.7	33.7	33.8	33.8	33.7	33.7	33.7	33.7	33.6	33.6
GOODS-PRODUCING	40.5	40.6	40.6	40.7	40.5	40.4	40.4	40.5	40.4	40.2	40.3	40.3	40.3	40.0	40.0
Natural resources and mining	45.6	45.9	46.0	46.2	45.8	45.7	45.7	46.2	44.9	44.6	45.0	44.8	45.3	44.4	44.5
Construction	39.0	39.0	39.0	39.1	39.0	38.8	38.7	38.9	38.9	38.5	38.7	38.7	38.7	38.4	38.3
Manufacturing	41.1	41.2	41.2	41.3	41.1	41.1	41.1	41.2	41.0	41.0	41.0	41.0	40.9	40.6	40.6
Overtime hours	4.4	4.2	4.1	4.1	4.0	4.0	4.0	4.0	4.0	3.9	3.8	3.8	3.7	3.6	3.6
Durable goods	41.4	41.5	41.5	41.5	41.3	41.4	41.4	41.5	41.3	41.2	41.2	41.3	41.2	40.8	40.8
Overtime hours	4.4	4.2	4.1	4.1	4.0	4.1	4.1	4.0	4.0	3.9	3.8	3.8	3.7	3.5	3.5
Wood products	39.8	39.4	39.5	39.0	39.2	39.0	39.0	38.7	38.8	39.1	39.3	39.0	38.9	38.4	37.9
Nonmetallic mineral products	43.0	42.3	42.6	42.9	41.5	42.2	42.1	43.1	42.2	42.3	42.1	42.5	42.3	42.0	42.0
Primary metals	43.6	42.9	42.6	42.7	42.2	42.5	42.4	42.9	42.4	42.2	42.5	42.4	42.7	42.3	42.2
Fabricated metal products	41.4	41.6	41.7	41.7	41.6	41.6	41.7	41.7	41.6	41.4	41.2	41.2	41.3	41.2	41.1
Machinery	42.4	42.6	42.9	42.9	42.9	43.1	43.0	42.7	42.5	42.1	42.1	42.1	42.7	42.3	42.2
Computer and electronic products	40.5	40.6	40.6	40.9	40.5	40.4	40.5	41.0	41.1	41.2	41.2	41.1	41.0	40.8	40.8
Electrical equipment and appliances	41.0	41.2	40.7	41.2	41.6	41.4	41.1	41.3	41.1	41.1	41.0	40.9	41.0	41.1	40.8
Transportation equipment	42.7	42.8	42.7	42.6	42.1	42.6	42.9	42.3	42.3	42.1	42.2	42.6	41.8	40.9	41.5
Furniture and related products	38.8	39.2	39.1	38.9	39.1	38.3	38.2	38.7	38.7	38.8	39.0	38.3	38.1	37.7	37.7
Miscellaneous manufacturing	38.7	38.9	39.0	38.8	38.8	39.0	38.8	39.3	39.3	39.2	39.2	39.1	39.5	38.9	38.9
Nondurable goods	40.6	40.8	40.8	40.9	40.8	40.6	40.6	40.7	40.5	40.5	40.5	40.5	40.4	40.3	40.3
Overtime hours	4.4	4.1	4.1	4.1	4.0	3.9	3.9	3.9	3.9	3.8	3.8	3.7	3.7	3.7	3.7
Food manufacturing	40.1	40.7	40.8	40.6	40.4	40.5	40.6	40.7	40.8	40.8	40.6	40.5	40.5	40.4	40.6
Beverage and tobacco products	40.8	40.8	40.6	40.5	40.8	40.5	40.1	40.4	39.6	39.7	39.0	38.9	38.2	38.1	37.7
Textile mills	40.6	40.3	40.2	39.9	40.2	38.7	38.8	38.8	38.4	39.0	38.9	39.4	39.5	38.9	38.3
Textile product mills	39.8	39.7	39.2	39.1	39.9	38.6	39.3	39.3	38.3	38.7	39.1	39.2	38.8	38.4	38.3
Apparel	36.5	37.2	36.6	36.9	37.5	36.7	36.8	36.7	36.6	36.0	36.4	37.0	36.4	36.0	35.9
Leather and allied products	38.9	38.1	37.7	38.1	39.1	38.2	38.2	38.7	38.6	38.7	38.5	38.4	37.6	37.9	37.7
Paper and paper products	42.9	43.2	43.3	43.7	44.0	44.0	43.9	43.6	43.3	42.5	42.7	42.6	43.0	42.6	42.7
Printing and related support activities	39.2	39.1	38.8	39.0	38.8	38.4	38.2	38.6	38.5	38.5	38.1	38.0	38.3	38.3	38.3
Petroleum and coal products	45.0	44.2	42.9	43.8	44.0	43.8	43.6	43.5	43.2	44.2	44.4	45.4	45.5	45.5	45.8
Chemicals	42.5	41.9	41.7	42.1	41.5	41.6	41.4	41.9	41.3	41.3	41.8	41.9	41.5	41.4	41.6
Plastics and rubber products	40.6	41.3	41.7	42.1	41.4	41.1	41.2	41.1	41.0	41.0	41.1	41.3	41.0	40.8	40.6
PRIVATE SERVICE-PROVIDING	32.5	32.4	32.4	32.4	32.4	32.4	32.3	32.4	32.4	32.4	32.4	32.3	32.4	32.3	32.3
Trade, transportation, and utilities	33.4	33.3	33.2	33.3	33.3	33.4	33.3	33.4	33.4	33.3	33.3	33.2	33.2	33.2	33.1
Wholesale trade	38.0	38.2	38.1	38.1	38.3	38.4	38.2	38.4	38.3	38.3	38.3	38.4	38.3	38.1	38.3
Retail trade	30.5	30.2	30.1	30.2	30.1	30.2	30.1	30.2	30.2	30.1	30.1	30.0	30.0	30.1	29.9
Transportation and warehousing	36.9	36.9	36.7	36.8	36.8	36.6	36.7	36.7	36.7	36.5	36.5	36.4	36.4	36.4	36.5
Utilities	41.4	42.4	42.2	42.5	42.8	43.1	42.8	43.3	42.6	42.4	42.8	42.4	42.2	42.5	42.6
Information	36.6	36.5	36.2	36.2	36.3	36.3	36.2	36.6	36.5	36.6	36.6	36.7	36.8	36.8	36.8
Financial activities	35.7	35.9	35.7	35.8	35.8	35.8	35.8	35.8	35.9	36.0	35.9	35.7	36.1	36.0	35.9
Professional and business services	34.6	34.8	34.8	34.7	34.8	34.7	34.6	34.8	34.8	34.8	34.8	34.8	34.9	34.8	34.9
Education and health services	32.5	32.6	32.6	32.6	32.6	32.6	32.6	32.7	32.6	32.7	32.6	32.6	32.6	32.5	32.5
Leisure and hospitality	25.7	25.5	25.4	25.3	25.3	25.3	25.3	25.3	25.4	25.3	25.3	25.2	25.2	25.2	25.2
Other services	30.9	30.9	30.8	30.9	30.8	30.8	30.8	30.9	30.8	30.8	30.8	30.8	30.9	30.8	30.9

[1] Data relate to production workers in natural resources and mining and manufacturing, construction workers in construction, and nonsupervisory workers in the service-providing industries.

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.
p = preliminary.

14. Average hourly earnings of production or nonsupervisory workers[1] on private nonfarm payrolls, by industry, monthly data seasonally adjusted

Industry	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[p]	Oct.[p]
TOTAL PRIVATE															
Current dollars	$16.76	$17.42	$17.59	$17.64	$17.70	$17.75	$17.81	$17.87	$17.89	$17.95	$18.00	$18.06	$18.14	$18.17	$18.21
Constant (1982) dollars	8.24	8.32	8.34	8.27	8.27	8.26	8.29	8.28	8.27	8.24	8.17	8.12	8.17	8.19	8.31
GOODS-PRODUCING	18.02	18.67	18.77	18.84	18.90	18.98	19.04	19.12	19.12	19.17	19.25	19.33	19.41	19.47	19.52
Natural resources and mining	19.90	20.96	21.05	21.02	21.54	21.75	21.69	22.01	21.61	21.71	22.01	22.54	23.02	23.14	23.20
Construction	20.02	20.95	21.07	21.20	21.30	21.38	21.47	21.56	21.60	21.70	21.77	21.84	22.01	22.10	22.14
Manufacturing	16.81	17.26	17.34	17.40	17.41	17.49	17.55	17.61	17.62	17.65	17.71	17.78	17.76	17.80	17.85
Excluding overtime	15.96	16.43	16.52	16.58	16.60	16.68	16.74	16.79	16.80	16.85	16.93	16.99	16.99	17.04	17.09
Durable goods	17.68	18.19	18.28	18.31	18.33	18.41	18.49	18.54	18.58	18.61	18.67	18.75	18.70	18.73	18.78
Nondurable goods	15.33	15.67	15.73	15.85	15.86	15.92	15.94	16.03	15.99	16.04	16.11	16.14	16.18	16.26	16.33
PRIVATE SERVICE-PRIVATE SERVICE-PROVIDING	16.42	17.10	17.28	17.33	17.39	17.44	17.50	17.55	17.58	17.64	17.69	17.74	17.82	17.85	17.90
Trade,transportation, and utilities	15.39	15.79	15.94	15.93	16.00	16.02	16.07	16.11	16.11	16.16	16.19	16.20	16.26	16.23	16.25
Wholesale trade	18.91	19.59	19.77	19.86	19.93	19.97	20.00	20.03	20.05	20.06	20.12	20.16	20.29	20.23	20.23
Retail trade	12.57	12.76	12.86	12.81	12.81	12.80	12.84	12.86	12.85	12.90	12.90	12.90	12.93	12.91	12.89
Transportation and warehousing	17.28	17.73	17.86	17.93	18.07	18.10	18.21	18.25	18.33	18.38	18.39	18.41	18.47	18.48	18.56
Utilities	27.40	27.87	28.32	28.18	28.52	28.61	28.58	28.77	28.56	28.81	29.14	28.65	28.88	28.82	28.80
Information	23.23	23.94	24.10	24.11	24.18	24.33	24.41	24.53	24.50	24.67	24.74	24.82	24.91	24.91	24.98
Financial activities	18.80	19.64	19.78	19.87	19.91	20.00	20.05	20.11	20.16	20.23	20.26	20.30	20.38	20.46	20.48
Professional and business services	19.13	20.13	20.31	20.42	20.46	20.53	20.63	20.74	20.84	20.90	21.01	21.12	21.30	21.39	21.50
Education and health services	17.38	18.11	18.34	18.43	18.48	18.54	18.59	18.61	18.64	18.71	18.75	18.81	18.85	18.90	18.93
Leisure and hospitality	9.75	10.41	10.60	10.61	10.65	10.67	10.73	10.74	10.79	10.81	10.85	10.86	10.89	10.90	10.91
Other services	14.77	15.42	15.59	15.66	15.71	15.74	15.76	15.77	15.79	15.81	15.85	15.90	15.92	15.94	15.98

[1] Data relate to production workers in natural resources and mining and manufacturing, construction workers in construction, and nonsupervisory workers in the service-providing industries.

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.
p = preliminary.

15. Average hourly earnings of production or nonsupervisory workers[1] on private nonfarm payrolls, by industry

Industry	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[p]	Oct.[p]
TOTAL PRIVATE	$16.76	$17.42	$17.60	$17.63	$17.75	$17.80	$17.85	$17.92	$17.91	$17.90	$17.96	$17.98	$18.05	$18.21	$18.22
Seasonally adjusted	–	–	17.59	17.64	17.70	17.75	17.81	17.87	17.89	17.95	18.00	18.06	18.14	18.17	18.21
GOODS-PRODUCING	18.02	18.67	18.86	18.88	18.96	18.90	18.94	19.03	19.06	19.13	19.24	19.37	19.50	19.61	19.60
Natural resources and mining	19.90	20.96	21.02	20.99	21.68	21.96	21.87	22.26	21.77	21.51	21.74	22.41	23.03	23.15	23.06
Construction	20.02	20.95	21.25	21.26	21.38	21.24	21.35	21.43	21.48	21.60	21.69	21.90	22.15	22.34	22.31
Manufacturing	16.81	17.26	17.34	17.42	17.51	17.53	17.55	17.60	17.63	17.63	17.71	17.71	17.73	17.83	17.82
Durable goods	17.68	18.19	18.30	18.36	18.46	18.43	18.50	18.53	18.56	18.57	18.67	18.63	18.69	18.79	18.77
Wood products	13.39	13.67	13.81	13.82	13.88	13.90	13.82	13.89	13.96	14.08	14.12	14.22	14.22	14.35	14.43
Nonmetallic mineral products	16.59	16.93	16.94	17.05	16.94	16.99	16.86	16.80	17.12	16.90	16.98	16.94	16.86	16.97	16.95
Primary metals	19.36	19.66	19.81	19.69	19.73	20.04	19.99	20.21	20.20	20.23	20.25	20.42	20.27	20.36	19.98
Fabricated metal products	16.17	16.53	16.69	16.70	16.82	16.77	16.78	16.85	16.81	16.84	16.92	16.94	17.07	17.15	17.15
Machinery	17.20	17.72	17.68	17.74	17.95	17.72	17.81	17.85	17.88	17.98	17.87	17.93	17.94	18.04	18.00
Computer and electronic products	18.94	19.95	20.28	20.22	20.33	20.51	20.60	20.80	20.90	20.99	21.06	21.15	21.25	21.30	21.41
Electrical equipment and appliances	15.54	15.94	15.80	15.68	15.73	15.70	15.73	15.66	15.76	15.69	15.75	15.87	15.95	16.02	15.80
Transportation equipment	22.41	23.02	23.20	23.41	23.46	23.34	23.48	23.46	23.52	23.53	23.79	23.68	23.81	23.99	24.05
Furniture and related products	13.80	14.32	14.36	14.35	14.50	14.38	14.37	14.42	14.45	14.48	14.58	14.52	14.59	14.54	14.53
Miscellaneous manufacturing	14.36	14.66	14.70	14.72	15.00	14.91	14.95	15.08	14.97	14.97	15.15	15.35	15.33	15.41	15.41
Nondurable goods	15.33	15.67	15.71	15.83	15.90	15.99	15.93	16.01	16.03	16.04	16.08	16.19	16.14	16.28	16.29
Food manufacturing	13.13	13.54	13.61	13.63	13.70	13.87	13.74	13.83	13.86	13.89	13.95	14.01	14.00	14.12	14.08
Beverages and tobacco products	18.18	18.49	18.69	19.54	19.69	19.55	19.64	19.59	19.26	19.05	18.57	18.86	18.43	18.83	19.12
Textile mills	12.55	13.00	12.93	13.06	13.13	13.29	13.35	13.45	13.45	13.50	13.58	13.77	13.68	13.72	13.75
Textile product mills	11.86	11.78	11.75	11.67	11.75	11.68	11.62	11.78	11.78	11.86	11.80	11.80	11.78	11.81	11.67
Apparel	10.65	11.05	11.16	11.20	11.28	11.43	11.46	11.35	11.51	11.43	11.36	11.35	11.28	11.47	11.40
Leather and allied products	11.44	12.04	12.10	12.50	12.12	12.78	12.68	12.81	12.63	12.88	12.88	12.85	12.94	12.94	13.00
Paper and paper products	18.01	18.43	18.50	18.47	18.71	18.78	18.61	18.66	18.58	18.74	18.89	19.07	18.76	18.98	18.93
Printing and related support activities	15.80	16.15	16.48	16.33	16.65	16.51	16.49	16.65	16.64	16.66	16.78	16.82	16.84	16.94	16.98
Petroleum and coal products	24.11	25.26	24.92	26.95	25.52	26.55	26.51	27.22	27.12	27.01	27.17	27.70	27.86	28.43	28.96
Chemicals	19.60	19.56	19.35	19.52	19.57	19.46	19.40	19.35	19.39	19.37	19.33	19.46	19.58	19.79	19.65
Plastics and rubber products	14.97	15.38	15.41	15.49	15.65	15.56	15.58	15.69	15.77	15.71	15.69	15.84	15.84	15.89	15.97
PRIVATE SERVICE-PROVIDING	16.42	17.10	17.27	17.31	17.45	17.52	17.58	17.65	17.62	17.59	17.64	17.63	17.69	17.86	17.88
Trade, transportation, and utilities	15.39	15.79	15.94	15.84	15.89	16.02	16.08	16.16	16.16	16.14	16.20	16.21	16.24	16.30	16.25
Wholesale trade	18.91	19.59	19.75	19.89	20.10	20.01	20.03	20.08	20.01	19.93	20.05	20.12	20.23	20.21	20.18
Retail trade	12.57	12.76	12.85	12.70	12.64	12.78	12.82	12.90	12.90	12.91	12.92	12.93	12.95	13.03	12.89
Transportation and warehousing	17.28	17.73	17.89	17.94	18.04	18.08	18.14	18.19	18.28	18.33	18.44	18.53	18.50	18.54	18.53
Utilities	27.40	27.87	28.44	28.17	28.61	28.62	28.61	28.88	28.69	28.83	29.01	28.48	28.64	28.92	28.84
Information	23.23	23.94	24.15	24.11	24.34	24.44	24.44	24.58	24.52	24.60	24.73	24.70	24.81	25.03	25.03
Financial activities	18.80	19.64	19.79	19.83	19.97	19.96	20.07	20.18	20.22	20.20	20.27	20.20	20.30	20.46	20.45
Professional and business services	19.13	20.13	20.19	20.33	20.67	20.65	20.77	20.93	20.84	20.81	21.03	20.99	21.06	21.27	21.38
Education and health services	17.38	18.11	18.33	18.42	18.51	18.61	18.58	18.62	18.63	18.64	18.68	18.85	18.84	18.95	18.89
Leisure and hospitality	9.75	10.41	10.61	10.67	10.77	10.73	10.82	10.76	10.80	10.82	10.77	10.72	10.79	10.89	10.90
Other services	14.77	15.42	15.55	15.61	15.75	15.74	15.78	15.84	15.82	15.84	15.85	15.80	15.84	15.94	15.93

1 Data relate to production workers in natural resources and mining and manufacturing, construction workers in construction, and nonsupervisory workers in the service-providing industries.

16. Average weekly earnings of production or nonsupervisory workers[1] on private nonfarm payrolls, by industry

Industry	Annual average		2007			2007									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[p]	Oct.[p]
TOTAL PRIVATE	$567.87	$589.72	$594.88	$594.13	$605.28	$592.74	$596.19	$605.70	$599.99	$601.44	$612.44	$605.93	$611.90	$611.86	$612.19
Seasonally adjusted	–	–	594.54	596.23	598.26	598.18	600.20	604.01	604.68	604.92	606.60	608.62	611.32	610.51	611.86
GOODS-PRODUCING	730.16	757.06	771.37	770.30	771.67	756.00	751.92	766.91	766.21	769.03	783.07	780.61	791.70	790.28	787.92
Natural resources and mining	907.95	961.78	981.63	969.74	992.94	988.20	986.34	1,017.28	970.94	950.74	987.00	1,006.21	1,052.47	1,039.44	1,033.09
CONSTRUCTION	781.21	816.06	841.50	829.14	825.27	805.00	800.63	825.06	824.83	833.76	852.42	858.48	874.93	869.03	865.63
Manufacturing	691.02	711.36	717.88	722.93	728.42	716.98	714.29	723.36	722.83	721.07	729.65	719.03	726.93	729.25	725.27
Durable goods	732.00	754.12	763.11	763.78	771.63	759.32	758.50	767.14	766.53	765.08	774.81	760.10	771.90	772.27	767.69
Wood products	532.99	539.10	548.26	534.83	546.87	530.98	523.78	531.99	538.86	553.34	564.80	558.85	560.27	559.65	548.34
Nonmetallic mineral products	712.71	716.79	730.11	731.45	696.23	696.59	686.20	715.68	722.46	718.25	726.74	726.73	726.67	726.32	716.99
Primary metals	843.59	843.28	841.93	842.73	844.44	851.70	847.58	869.03	852.44	853.71	868.73	859.68	865.53	865.30	837.16
Fabricated metal products	668.98	687.13	700.98	701.40	708.12	695.96	693.01	702.65	699.30	697.18	698.80	691.15	706.70	710.01	706.58
Machinery	728.84	753.99	762.01	762.82	780.83	763.73	762.27	763.98	761.69	756.96	754.11	749.47	762.45	763.09	757.80
Computer and electronic products	766.96	809.19	827.42	833.06	841.66	822.45	826.06	852.80	854.81	862.69	873.99	862.92	871.25	877.56	875.67
Electrical equipment and appliances	636.95	656.58	649.38	652.29	671.67	649.98	638.64	645.19	646.16	640.15	648.90	641.15	650.76	661.63	649.38
Transportation equipment	957.65	985.57	992.96	999.61	1,006.43	994.28	1,002.60	994.70	999.60	985.91	1,013.45	975.62	1,000.02	988.39	1,000.48
Furniture and related products	535.90	561.03	561.48	559.65	578.55	545.00	541.75	555.17	553.44	557.48	571.54	557.57	566.09	553.97	544.88
Miscellaneous manufacturing	555.90	569.98	574.77	571.14	589.50	580.00	575.58	594.15	586.82	583.83	595.40	594.05	607.07	600.99	596.37
Nondurable goods	621.97	639.99	644.11	653.78	656.67	646.00	638.79	648.41	647.61	646.41	652.85	652.46	653.67	662.60	659.75
Food manufacturing	525.99	550.65	560.73	562.92	561.70	556.19	546.85	555.97	559.94	565.32	566.37	567.41	569.80	580.33	575.87
Beverages and tobacco products	741.34	753.80	751.34	787.46	793.51	778.09	769.89	785.56	768.47	763.91	733.52	737.43	711.40	711.77	709.35
Textile mills	509.39	524.47	515.91	521.09	539.64	514.32	512.64	521.86	515.14	523.80	529.62	535.65	543.10	543.31	522.50
Textile product mills	472.24	467.96	457.08	457.46	478.23	449.68	454.34	464.13	450.00	454.24	468.46	462.56	460.60	454.69	443.46
Apparel	389.20	411.52	410.69	415.52	423.00	416.05	420.58	418.82	423.57	412.62	415.78	416.55	410.59	410.63	410.40
Leather and allied products	445.47	459.43	458.59	478.75	484.80	484.36	480.57	499.59	491.31	502.32	501.03	485.73	481.37	487.84	486.20
Paper and paper products	772.39	795.20	806.60	816.37	834.47	826.32	805.81	807.98	802.66	788.95	804.71	806.66	804.80	818.04	810.20
Printing and related support activities	618.92	632.08	644.37	640.14	654.35	630.68	629.92	644.36	640.64	638.08	634.28	630.75	646.66	657.27	657.13
Petroleum and coal products	1,085.50	1,115.24	1,074.05	1,204.67	1,099.91	1,157.58	1,134.63	1,165.02	1,163.45	1,188.44	1,228.08	1,276.97	1,264.84	1,310.62	1,355.33
Chemicals	833.67	819.99	801.09	823.74	818.03	809.54	801.22	810.77	800.81	794.17	811.86	811.48	812.57	821.29	817.44
Plastics and rubber products	608.41	635.15	642.60	652.13	657.30	639.52	637.22	644.86	646.57	644.11	649.57	644.69	649.44	653.08	648.38
PRIVATE SERVICE-PROVIDING	532.78	554.78	557.82	559.11	570.62	558.89	564.32	573.63	567.36	566.40	578.59	571.21	574.93	576.88	577.52
Trade, transportation, and utilities	514.34	526.38	529.21	525.89	535.49	525.46	529.03	538.13	534.90	534.23	545.94	541.41	542.42	544.42	537.88
Wholesale trade	718.63	748.90	752.48	757.81	779.88	758.38	759.14	775.09	764.38	761.33	779.95	770.60	774.81	770.00	770.88
Retail trade	383.02	385.20	386.79	382.27	385.52	379.57	380.75	387.00	385.71	387.30	394.06	391.78	392.39	396.11	384.12
Transportation and warehousing	636.97	654.83	656.56	661.99	678.30	650.88	654.85	667.57	663.56	665.38	680.44	674.49	678.95	678.56	676.35
Utilities	1,135.34	1,182.17	1,208.70	1,194.41	1,221.65	1,222.07	1,218.79	1,241.84	1,225.06	1,219.51	1,247.43	1,204.70	1,202.88	1,237.78	1,234.35
Information	850.42	873.63	874.23	872.78	893.28	877.40	879.84	902.09	887.62	890.52	917.48	908.96	915.49	926.11	923.61
Financial activities	672.21	705.29	702.55	705.95	726.91	708.58	716.50	730.52	721.85	721.14	739.86	719.12	728.77	730.42	730.07
Professional and business services	662.27	700.15	702.61	705.45	727.58	704.17	714.49	734.64	725.23	724.19	744.46	728.35	737.10	738.07	746.16
Education and health services	564.94	590.18	595.73	600.49	607.13	604.83	603.85	608.87	603.61	605.80	610.84	614.51	614.18	615.88	612.04
Leisure and hospitality	250.34	265.45	268.43	266.75	272.48	262.89	269.42	272.23	272.16	273.75	278.94	276.58	278.38	272.25	273.59
Other services	456.50	476.80	478.94	480.79	488.25	480.07	482.87	489.46	485.67	486.29	492.94	488.22	492.62	490.95	492.24

1 Data relate to production workers in natural resources and mining and manufacturing, construction workers in construction, and nonsupervisory workers in the service-providing industries.

NOTE: See "Notes on the data" for a description of the most recent benchmark revision.
Dash indicates data not available.
p = preliminary.

17. Diffusion indexes of employment change, seasonally adjusted

[In percent]

Timespan and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Private nonfarm payrolls, 278 industries											
Over 1-month span:												
2004	50.5	50.5	64.1	62.6	61.7	58.9	56.0	50.0	56.9	56.9	51.3	51.8
2005	52.2	60.6	54.2	58.2	55.8	58.2	58.0	61.3	54.7	53.6	62.4	54.7
2006	65.1	60.9	64.4	59.3	53.3	52.7	60.4	58.9	53.5	55.8	57.1	56.0
2007	51.6	51.8	52.7	51.1	56.6	50.4	52.2	51.6	56.4	54.6	48.2	48.5
2008	45.4	41.4	47.4	45.6	46.4	42.3	38.3	46.2	38.1	37.6		
Over 3-month span:												
2004	54.4	52.9	57.3	63.5	68.8	66.6	61.3	56.4	57.7	59.5	61.9	54.6
2005	52.2	55.5	57.5	60.8	58.9	61.9	60.4	63.9	61.1	54.4	54.9	61.3
2006	67.2	66.2	66.6	65.5	60.6	58.2	56.0	58.9	55.7	56.4	57.1	58.4
2007	58.4	54.7	55.3	54.7	56.2	53.3	53.1	54.7	58.4	56.8	54.7	52.4
2008	46.7	42.7	42.3	44.0	43.1	44.0	36.3	37.4	35.9	37.0		
Over 6-month span:												
2004	50.0	51.6	55.3	60.9	63.7	65.1	65.1	63.9	60.4	61.7	58.2	56.0
2005	54.6	57.3	56.8	57.5	57.5	58.2	64.4	62.8	62.0	59.3	61.5	62.0
2006	63.1	64.4	67.2	67.0	64.4	66.4	61.5	61.7	60.4	59.7	60.8	56.0
2007	59.1	56.4	57.5	56.8	58.8	58.2	56.2	58.0	58.2	57.1	54.6	53.8
2008	51.5	49.8	44.7	46.5	43.6	39.1	37.6	39.1	34.9	33.8		
Over 12-month span:												
2004	40.5	42.3	45.1	48.9	51.3	58.2	57.5	55.7	57.3	58.8	60.6	60.8
2005	60.6	60.8	59.7	58.9	58.0	60.0	60.9	63.3	60.4	58.9	59.5	61.7
2006	67.2	65.1	65.5	62.6	64.8	66.4	64.4	64.4	66.2	65.1	64.4	65.5
2007	62.6	59.1	60.4	58.9	59.5	58.4	57.5	58.8	61.7	60.4	59.9	57.7
2008	53.8	54.6	52.6	50.4	49.3	45.8	44.7	42.5	41.2	37.2		
	Manufacturing payrolls, 84 industries											
Over 1-month span:												
2004	43.5	47.6	47.0	63.7	50.6	51.2	58.3	42.9	42.9	48.2	42.3	39.9
2005	36.3	48.8	42.9	44.6	42.3	35.1	38.1	47.0	45.8	46.4	47.0	47.0
2006	57.7	45.8	54.8	48.8	38.1	53.0	50.6	44.0	36.3	40.5	38.1	39.3
2007	47.6	35.7	30.4	29.8	37.5	39.3	41.7	33.3	40.5	45.2	44.6	36.3
2008	40.5	28.6	38.1	35.1	44.6	30.4	26.8	37.5	26.2	27.4		
Over 3-month span:												
2004	41.1	40.5	43.5	56.5	58.9	61.3	57.7	47.0	46.4	41.7	44.6	38.7
2005	38.1	39.3	42.3	44.6	36.3	37.5	33.3	39.9	45.8	41.7	38.7	49.4
2006	54.8	52.4	47.6	48.8	44.6	50.6	42.9	47.6	36.3	37.5	32.1	34.5
2007	33.9	28.6	32.1	27.4	29.8	32.7	31.0	34.5	32.1	39.3	44.0	41.7
2008	35.7	27.4	26.8	29.2	29.8	35.7	24.4	22.6	22.6	25.0		
Over 6-month span:												
2004	29.2	31.5	32.7	44.6	49.4	54.8	59.5	56.0	51.2	51.8	44.0	38.7
2005	33.9	38.1	35.1	36.9	32.1	32.1	41.7	35.7	36.3	36.9	37.5	42.3
2006	42.9	45.2	50.6	47.6	48.2	47.6	46.4	48.8	43.5	41.7	38.7	29.8
2007	34.5	27.4	23.8	27.4	31.5	34.5	33.3	31.0	29.2	35.1	34.5	32.7
2008	34.5	33.9	32.1	28.0	26.8	20.8	19.6	24.4	18.5	19.0		
Over 12-month span:												
2004	13.1	14.3	13.1	20.2	23.2	35.7	36.9	38.1	36.9	44.0	44.6	44.6
2005	44.6	43.5	41.7	40.5	36.3	35.1	32.1	33.9	32.7	33.3	33.3	38.1
2006	44.6	40.5	40.5	39.3	39.3	44.6	41.7	42.3	46.4	48.2	45.2	44.0
2007	39.3	36.3	36.9	28.6	29.8	26.2	26.8	29.2	30.4	29.8	33.3	33.9
2008	29.8	29.8	29.8	24.4	27.4	24.4	23.8	21.4	22.6	20.8		

NOTE: Figures are the percent of industries with employment increasing plus one-half of the industries with unchanged employment, where 50 percent indicates an equal balance between industries with increasing and decreasing employment.

See the "Definitions" in this section. See "Notes on the data" for a description of the most recent benchmark revision.

Data for the two most recent months are preliminary.

18. Job openings levels and rates by industry and region, seasonally adjusted

Industry and region	Levels[1] (in thousands)							Percent						
	2008							2008						
	Apr.	May	June	July	Aug.	Sept.	Oct.[p]	Apr.	May	June	July	Aug.	Sept.	Oct.[p]
Total[2]	3,612	3,631	3,497	3,492	3,375	3,214	3,052	2.6	2.6	2.5	2.5	2.4	2.3	2.2
Industry														
Total private[2]	3,192	3,185	3,073	3,046	2,952	2,778	2,609	2.7	2.7	2.6	2.6	2.5	2.4	2.2
Construction	99	130	100	94	85	110	56	1.3	1.8	1.4	1.3	1.2	1.5	0.8
Manufacturing	244	249	241	229	245	213	196	1.8	1.8	1.7	1.7	1.8	1.6	1.5
Trade, transportation, and utilities	550	572	539	569	572	458	520	2.0	2.1	2.0	2.1	2.1	1.7	1.9
Professional and business services	676	649	670	696	634	567	503	3.6	3.5	3.6	3.7	3.4	3.1	2.8
Education and health services	684	648	682	687	643	617	611	3.5	3.3	3.5	3.5	3.3	3.1	3.1
Leisure and hospitality	491	503	452	432	383	443	392	3.5	3.5	3.2	3.1	2.7	3.2	2.8
Government	422	451	417	412	423	440	436	1.8	2.0	1.8	1.8	1.8	1.9	1.9
Region[3]														
Northeast	618	600	608	615	617	590	557	2.3	2.3	2.3	2.3	2.4	2.3	2.1
South	1,364	1,386	1,440	1,384	1,317	1,240	1,194	2.7	2.7	2.8	2.7	2.6	2.4	2.4
Midwest	752	721	676	638	664	664	685	2.3	2.2	2.1	2.0	2.1	2.1	2.1
West	883	937	789	847	777	710	610	2.8	2.9	2.5	2.7	2.5	2.3	1.9

[1] Detail will not necessarily add to totals because of the independent seasonal adjustment of the various series.

[2] Includes natural resources and mining, information, financial activities, and other services, not shown separately.

[3] **Northeast:** Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont; **South:** Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia; **Midwest**: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin; **West:** Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

NOTE: The job openings level is the number of job openings on the last business day of the month; the job openings rate is the number of job openings on the last business day of the month as a percent of total employment plus job openings.

[p] = preliminary.

19. Hires levels and rates by industry and region, seasonally adjusted

Industry and region	Levels[1] (in thousands)							Percent						
	2008							2008						
	Apr.	May	June	July	Aug.	Sept.	Oct.[p]	Apr.	May	June	July	Aug.	Sept.	Oct.[p]
Total[2]	4,715	4,123	4,438	4,026	4,063	4,362	4,062	3.4	3.0	3.2	2.9	3.0	3.2	3.0
Industry														
Total private[2]	4,311	3,871	4,136	3,751	3,822	4,090	3,743	3.7	3.4	3.6	3.3	3.3	3.6	3.3
Construction	385	286	354	242	322	288	337	5.3	3.9	4.9	3.4	4.5	4.0	4.8
Manufacturing	300	274	285	249	251	281	268	2.2	2.0	2.1	1.8	1.9	2.1	2.0
Trade, transportation, and utilities	943	828	906	858	878	875	849	3.6	3.1	3.4	3.3	3.3	3.3	3.2
Professional and business services	858	770	889	748	701	741	678	4.8	4.3	5.0	4.2	3.9	4.2	3.8
Education and health services	510	479	485	474	509	514	507	2.7	2.5	2.6	2.5	2.7	2.7	2.7
Leisure and hospitality	841	847	741	798	728	830	705	6.1	6.2	5.4	5.8	5.3	6.1	5.2
Government	407	329	340	321	315	313	332	1.8	1.5	1.5	1.4	1.4	1.4	1.5
Region[3]														
Northeast	743	646	761	657	679	688	651	2.9	2.5	3.0	2.6	2.7	2.7	2.5
South	1,725	1,538	1,666	1,512	1,549	1,570	1,511	3.5	3.1	3.4	3.0	3.1	3.2	3.1
Midwest	986	914	966	934	926	1,020	926	3.1	2.9	3.1	3.0	2.9	3.3	3.0
West	1,246	1,111	1,084	979	1,004	1,057	956	4.0	3.6	3.5	3.2	3.3	3.4	3.1

[1] Detail will not necessarily add to totals because of the independent seasonal adjustment of the various series.

[2] Includes natural resources and mining, information, financial activities, and other services, not shown separately.

[3] **Northeast**: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont; **South:** Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia; **Midwest:** Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin; **West:** Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

NOTE: The hires level is the number of hires during the entire month; the hires rate is the number of hires during the entire month as a percent of total employment.

[p] = preliminary.

20. Total separations levels and rates by industry and region, seasonally adjusted

Industry and region	Levels[1] (in thousands)							Percent						
	2008							2008						
	Apr.	May	June	July	Aug.	Sept.	Oct.[p]	Apr.	May	June	July	Aug.	Sept.	Oct.[p]
Total[2]	4,404	4,313	4,368	4,359	4,398	4,042	4,234	3.2	3.1	3.2	3.2	3.2	2.9	3.1
Industry														
Total private[2]	4,112	4,046	4,115	4,128	4,149	3,792	3,972	3.6	3.5	3.6	3.6	3.6	3.3	3.5
Construction	378	393	409	473	400	403	437	5.2	5.4	5.7	6.6	5.6	5.7	6.2
Manufacturing	390	359	353	324	325	335	459	2.9	2.6	2.6	2.4	2.4	2.5	3.5
Trade, transportation, and utilities	1,003	868	1,003	1,013	933	916	959	3.8	3.3	3.8	3.8	3.5	3.5	3.7
Professional and business services	739	741	799	694	851	696	719	4.1	4.1	4.5	3.9	4.8	3.9	4.0
Education and health services	429	434	417	464	424	378	427	2.3	2.3	2.2	2.4	2.2	2.0	2.2
Leisure and hospitality	722	801	749	741	754	714	641	5.3	5.8	5.5	5.4	5.5	5.2	4.7
Government	295	269	259	244	257	251	258	1.3	1.2	1.1	1.1	1.1	1.1	1.1
Region[3]														
Northeast	709	685	658	745	705	600	578	2.8	2.7	2.6	2.9	2.7	2.3	2.3
South	1,666	1,614	1,681	1,629	1,633	1,456	1,576	3.4	3.3	3.4	3.3	3.3	2.9	3.2
Midwest	949	915	954	912	893	956	1,013	3.0	2.9	3.0	2.9	2.8	3.0	3.2
West	1,094	1,096	1,089	1,099	1,142	1,017	1,076	3.5	3.5	3.5	3.6	3.7	3.3	3.5

[1] Detail will not necessarily add to totals because of the independent seasonal adjustment of the various series.

[2] Includes natural resources and mining, information, financial activities, and other services, not shown separately.

[3] **Northeast:** Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont; **South:** Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia; **Midwest:** Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin; **West:** Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

NOTE: The total separations level is the number of total separations during the entire month; the total separations rate is the number of total separations during the entire month as a percent of total employment.

[p]= preliminary

21. Quits levels and rates by industry and region, seasonally adjusted

Industry and region	Levels[1] (in thousands)							Percent						
	2008							2008						
	Apr.	May	June	July	Aug.	Sept.	Oct.[p]	Apr.	May	June	July	Aug.	Sept.	Oct.[p]
Total[2]	2,444	2,336	2,365	2,314	2,252	2,144	2,163	1.8	1.7	1.7	1.7	1.6	1.6	1.6
Industry														
Total private[2]	2,301	2,210	2,242	2,209	2,134	2,032	2,048	2.0	1.9	1.9	1.9	1.9	1.8	1.8
Construction	127	124	139	157	150	118	115	1.7	1.7	1.9	2.2	2.1	1.7	1.6
Manufacturing	182	163	154	134	143	141	148	1.3	1.2	1.1	1.0	1.1	1.1	1.1
Trade, transportation, and utilities	550	495	545	545	485	494	503	2.1	1.9	2.1	2.1	1.8	1.9	1.9
Professional and business services	385	391	413	363	352	317	360	2.1	2.2	2.3	2.0	2.0	1.8	2.0
Education and health services	270	229	246	268	234	234	254	1.4	1.2	1.3	1.4	1.2	1.2	1.3
Leisure and hospitality	516	547	525	499	482	485	448	3.8	4.0	3.8	3.7	3.5	3.6	3.3
Government	144	126	123	111	121	120	118	.6	.6	.5	.5	.5	.5	.5
Region[3]														
Northeast	368	327	344	341	306	279	278	1.4	1.3	1.3	1.3	1.2	1.1	1.1
South	1,001	937	969	930	912	821	855	2.0	1.9	2.0	1.9	1.8	1.7	1.7
Midwest	500	485	515	504	513	531	506	1.6	1.5	1.6	1.6	1.6	1.7	1.6
West	575	584	539	541	518	492	511	1.9	1.9	1.7	1.8	1.7	1.6	1.7

[1] Detail will not necessarily add to totals because of the independent seasonal adjustment of the various series.

[2] Includes natural resources and mining, information, financial activities, and other services, not shown separately.

[3] **Northeast:** Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont; **South:** Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia; **Midwest**: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin; **West:** Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

NOTE: The quits level is the number of quits during the entire month; the quits rate is the number of quits during the entire month as a percent of total employment.

[p] = preliminary.

22. Quarterly Census of Employment and Wages: 10 largest counties, first quarter 2008.

County by NAICS supersector	Establishments, first quarter 2008 (thousands)	Employment		Average weekly wage[1]	
		March 2008 (thousands)	Percent change, March 2007-08[2]	First quarter 2008	Percent change, first quarter 2007-08[2]
United States[3]	9,112.7	134,761.1	0.4	$905	2.4
Private industry	8,820.9	112,728.2	.2	913	2.4
Natural resources and mining	125.3	1,731.8	2.7	1,020	10.5
Construction	890.0	7,020.0	-4.1	898	4.8
Manufacturing	361.3	13,529.8	-2.3	1,079	1.9
Trade, transportation, and utilities	1,923.2	26,031.1	.2	745	1.9
Information	144.9	3,013.5	-.1	1,469	2.3
Financial activities	872.4	8,005.6	-1.7	1,898	.2
Professional and business services	1,504.2	17,691.9	.5	1,131	4.2
Education and health services	838.9	17,845.8	3.0	767	3.6
Leisure and hospitality	731.2	13,112.5	1.3	360	2.9
Other services	1,194.1	4,444.1	1.0	547	3.4
Government	291.8	22,032.9	1.3	868	2.7
Los Angeles, CA	425.0	4,229.6	.4	992	2.1
Private industry	421.0	3,617.0	-.1	975	2.1
Natural resources and mining	.5	11.4	-5.0	1,745	13.8
Construction	14.0	149.6	-5.5	975	2.6
Manufacturing	14.8	440.0	-3.4	1,084	5.0
Trade, transportation, and utilities	54.2	803.6	.0	792	1.1
Information	8.5	214.6	2.2	1,723	.5
Financial activities	24.4	240.6	-4.3	1,807	.3
Professional and business services	42.4	597.5	-1.5	1,165	4.3
Education and health services	27.9	492.5	2.9	848	3.4
Leisure and hospitality	26.7	397.9	1.2	528	3.5
Other services	192.2	250.0	1.3	441	4.8
Government	4.0	612.6	3.2	1,088	1.5
Cook, IL	138.2	2,490.4	-.5	1,147	2.7
Private industry	136.8	2,178.2	-.5	1,167	2.9
Natural resources and mining	.1	1.0	-10.7	919	-6.5
Construction	12.1	84.3	-4.9	1,315	9.2
Manufacturing	7.0	229.4	-3.0	1,062	1.8
Trade, transportation, and utilities	27.4	465.9	-1.1	838	2.7
Information	2.5	57.5	.4	1,820	.2
Financial activities	15.7	209.6	-2.4	2,905	4.5
Professional and business services	28.5	431.2	-.1	1,403	3.2
Education and health services	13.7	373.1	1.9	833	3.3
Leisure and hospitality	11.5	226.6	1.2	412	1.2
Other services	14.2	95.6	.6	721	2.9
Government	1.4	312.2	-.5	1,006	1.3
New York, NY	118.5	2,376.0	1.7	2,805	-1.0
Private industry	118.3	1,923.2	1.9	3,229	-1.4
Natural resources and mining	.0	.2	-4.5	2,375	23.3
Construction	2.3	36.2	8.9	1,596	8.6
Manufacturing	3.0	36.0	-6.3	1,499	-4.1
Trade, transportation, and utilities	21.7	246.4	.8	1,211	.8
Information	4.4	134.1	.7	2,698	5.0
Financial activities	18.7	377.6	.7	9,840	-3.7
Professional and business services	24.7	489.3	1.9	2,343	3.8
Education and health services	8.7	293.1	1.5	989	3.9
Leisure and hospitality	11.3	213.9	3.7	766	2.7
Other services	17.6	87.8	1.8	1,105	7.6
Government	.3	452.8	.8	1,004	1.7
Harris, TX	96.6	2,046.5	3.4	1,172	3.8
Private industry	96.1	1,791.5	3.5	1,212	3.9
Natural resources and mining	1.5	80.0	5.5	3,698	13.5
Construction	6.7	157.0	5.4	1,042	3.6
Manufacturing	4.7	184.1	2.7	1,524	2.8
Trade, transportation, and utilities	22.2	426.9	3.3	1,068	1.6
Information	1.4	32.6	.0	1,363	-4.0
Financial activities	10.6	120.3	.9	1,701	1.3
Professional and business services	19.3	337.7	3.6	1,293	4.0
Education and health services	10.2	216.5	4.6	839	3.1
Leisure and hospitality	7.5	176.8	3.0	384	2.7
Other services	11.4	58.5	1.7	632	5.3
Government	.5	255.0	2.9	893	2.1
Maricopa, AZ	101.7	1,805.2	-1.4	867	1.3
Private industry	101.0	1,580.7	-1.9	865	1.1
Natural resources and mining	.5	8.7	-4.2	991	22.5
Construction	11.0	144.5	-14.2	884	2.4
Manufacturing	3.6	127.3	-4.6	1,252	5.0
Trade, transportation, and utilities	22.4	372.2	-.1	805	-1.2
Information	1.7	30.9	3.5	1,164	.9
Financial activities	13.0	145.0	-4.4	1,238	-.8
Professional and business services	22.6	306.8	-1.9	870	1.6
Education and health services	9.9	206.5	4.6	879	3.4
Leisure and hospitality	7.3	187.1	.6	405	.0
Other services	7.2	50.5	1.0	577	4.2
Government	.7	224.5	2.8	880	3.0

See footnotes at end of table.

22. Continued—Quarterly Census of Employment and Wages: 10 largest counties, first quarter 2008.

County by NAICS supersector	Establishments, first quarter 2008 (thousands)	Employment		Average weekly wage[1]	
		March 2008 (thousands)	Percent change, March 2007-08[2]	First quarter 2008	Percent change, first quarter 2007-08[2]
Orange, CA	100.1	1,504.9	-1.1	$1,019	1.2
Private industry	98.7	1,347.3	-1.4	1,001	.9
Natural resources and mining	.2	6.5	.7	563	-.2
Construction	7.0	94.5	-8.2	1,080	.7
Manufacturing	5.3	174.2	-2.2	1,188	3.0
Trade, transportation, and utilities	17.5	276.2	-.4	918	-1.2
Information	1.4	29.7	-2.7	1,544	10.9
Financial activities	11.0	115.7	-13.6	1,722	([4])
Professional and business services	19.0	273.9	-1.7	1,124	3.7
Education and health services	9.9	146.8	4.2	863	3.0
Leisure and hospitality	7.1	175.1	3.5	397	.3
Other services	15.3	47.9	1.7	560	.4
Government	1.4	157.6	1.5	1,170	3.0
Dallas, TX	67.8	1,489.7	2.0	1,119	2.6
Private industry	67.3	1,322.2	1.9	1,145	2.5
Natural resources and mining	.6	8.0	13.6	3,497	20.2
Construction	4.4	84.0	3.7	953	1.6
Manufacturing	3.1	135.4	-3.3	1,320	1.0
Trade, transportation, and utilities	15.1	304.5	1.4	1,003	2.8
Information	1.7	49.6	.3	1,694	5.2
Financial activities	8.8	144.1	([4])	1,869	2.2
Professional and business services	14.7	279.0	3.8	1,236	3.3
Education and health services	6.6	148.6	3.6	891	3.7
Leisure and hospitality	5.3	128.8	2.6	509	-2.9
Other services	6.5	38.9	1.7	625	3.1
Government	.5	167.4	2.6	913	3.4
San Diego, CA	97.8	1,327.6	.0	945	1.9
Private industry	96.5	1,098.1	-.5	936	1.7
Natural resources and mining	.8	11.3	.7	534	4.3
Construction	7.1	78.0	-12.3	985	3.4
Manufacturing	3.2	103.1	-.2	1,316	5.5
Trade, transportation, and utilities	14.4	216.1	-1.7	772	3.8
Information	1.3	38.2	1.9	1,910	-4.8
Financial activities	9.7	76.4	-6.5	1,329	-2.4
Professional and business services	16.1	217.2	-.2	1,170	3.5
Education and health services	8.1	135.2	4.1	840	3.1
Leisure and hospitality	6.9	160.4	2.0	422	1.7
Other services	24.3	55.9	1.4	482	.6
Government	1.3	229.5	2.7	986	2.2
King, WA	76.8	1,186.2	2.7	1,125	4.2
Private industry	76.3	1,030.4	2.9	1,142	4.3
Natural resources and mining	.4	3.1	.4	1,621	-.5
Construction	6.9	71.3	4.9	1,086	6.7
Manufacturing	2.5	112.5	1.4	1,443	4.9
Trade, transportation, and utilities	15.1	220.2	2.1	958	1.9
Information	1.8	77.8	5.2	2,144	12.8
Financial activities	7.1	76.1	.3	1,651	-1.8
Professional and business services	13.7	189.6	3.3	1,306	3.7
Education and health services	6.5	124.4	4.2	837	5.5
Leisure and hospitality	6.2	110.0	3.6	447	-1.1
Other services	16.2	45.4	.6	599	7.7
Government	.5	155.8	1.5	1,010	3.0
Miami-Dade, FL	88.2	1,029.9	-1.0	871	1.5
Private industry	87.8	876.6	-1.2	837	1.2
Natural resources and mining	.5	10.8	-6.5	465	-1.5
Construction	6.5	50.9	-11.4	812	1.0
Manufacturing	2.7	46.0	-6.3	774	2.1
Trade, transportation, and utilities	23.5	253.7	-.2	777	1.0
Information	1.6	20.1	-3.6	1,354	-3.2
Financial activities	10.6	70.5	-3.0	1,483	4.0
Professional and business services	17.9	135.6	-4.1	992	.7
Education and health services	9.4	141.7	3.9	796	3.2
Leisure and hospitality	5.9	107.0	.1	506	1.8
Other services	7.6	37.2	2.5	526	1.3
Government	.4	153.3	.2	1,062	2.5

[1] Average weekly wages were calculated using unrounded data.

[2] Percent changes were computed from quarterly employment and pay data adjusted for noneconomic county reclassifications. See Notes on Current Labor Statistics.

[3] Totals for the United States do not include data for Puerto Rico or the Virgin Islands.

[4] Data do not meet BLS or State agency disclosure standards.

NOTE: Includes workers covered by Unemployment Insurance (UI) and Unemployment Compensation for Federal Employees (UCFE) programs. Data are preliminary.

23. Quarterly Census of Employment and Wages: by State, first quarter 2008.

State	Establishments, first quarter 2008 (thousands)	Employment		Average weekly wage[1]	
		March 2008 (thousands)	Percent change, March 2007-08	First quarter 2008	Percent change, first quarter 2007-08
United States[2]	9,112.7	134,761.1	0.4	$905	2.4
Alabama	121.7	1,947.0	-.2	740	3.2
Alaska	21.1	303.0	1.0	866	4.2
Arizona	162.7	2,639.7	-1.3	820	2.4
Arkansas	85.2	1,178.4	-.1	667	4.1
California	1,345.1	15,561.5	.1	1,008	2.1
Colorado	178.2	2,300.0	1.7	920	3.6
Connecticut	113.2	1,683.9	1.2	1,254	-.6
Delaware	29.0	418.4	.5	987	.1
District of Columbia	32.5	680.8	1.1	1,488	4.3
Florida	631.0	7,918.6	-2.2	777	1.8
Georgia	276.4	4,060.9	.1	847	1.3
Hawaii	39.0	628.1	.2	773	3.5
Idaho	57.6	645.3	.2	635	.3
Illinois	365.0	5,796.1	.1	980	2.6
Indiana	160.1	2,858.7	-.7	757	2.4
Iowa	94.2	1,469.8	.9	710	3.6
Kansas	86.0	1,363.2	1.0	737	2.4
Kentucky	112.9	1,794.0	.1	714	2.4
Louisiana	121.7	1,887.3	1.3	765	4.8
Maine	50.8	584.1	.5	701	3.5
Maryland	164.8	2,530.3	.0	963	2.8
Massachusetts	212.7	3,203.1	.9	1,143	3.3
Michigan	259.1	4,058.8	-1.8	857	.9
Minnesota	173.5	2,644.8	.6	908	4.0
Mississippi	71.0	1,138.2	.8	634	3.3
Missouri	175.2	2,708.0	.0	768	3.5
Montana	42.9	432.4	.9	625	4.3
Nebraska	59.1	912.2	1.4	687	3.2
Nevada	76.7	1,266.3	-1.2	839	4.7
New Hampshire	48.9	621.2	.3	863	3.4
New Jersey	276.3	3,939.9	.5	1,133	3.3
New Mexico	54.5	823.8	.6	717	4.7
New York	582.3	8,555.0	1.3	1,399	.1
North Carolina	258.4	4,069.1	.9	788	1.3
North Dakota	25.4	343.3	2.6	652	6.2
Ohio	294.4	5,189.1	-1.0	798	1.0
Oklahoma	100.4	1,560.0	1.6	707	4.7
Oregon	133.8	1,713.1	.3	776	2.9
Pennsylvania	341.5	5,608.8	.5	869	2.4
Rhode Island	35.9	464.8	-1.5	851	2.3
South Carolina	117.4	1,888.3	.1	695	2.8
South Dakota	30.3	389.4	2.0	632	5.2
Tennessee	143.4	2,746.4	.6	761	3.3
Texas	558.7	10,420.8	2.8	903	3.6
Utah	86.7	1,220.2	1.4	718	3.2
Vermont	24.8	300.8	-.3	735	4.4
Virginia	229.2	3,653.5	.2	918	2.0
Washington	218.9	2,928.6	2.1	899	3.7
West Virginia	48.8	700.3	.3	679	4.0
Wisconsin	159.7	2,734.3	.2	760	2.2
Wyoming	24.8	277.2	2.9	779	6.7
Puerto Rico	57.1	1,004.5	-1.6	489	2.7
Virgin Islands	3.5	46.5	1.1	708	3.4

[1] Average weekly wages were calculated using unrounded data.

[2] Totals for the United States do not include data for Puerto Rico or the Virgin Islands.

NOTE: Includes workers covered by Unemployment Insurance (UI) and Unemployment Compensation for Federal Employees (UCFE) programs. Data are preliminary.

24. Annual data: Quarterly Census of Employment and Wages, by ownership

Year	Average establishments	Average annual employment	Total annual wages (in thousands)	Average annual wage per employee	Average weekly wage
	Total covered (UI and UCFE)				
1998	7,634,018	124,183,549	$3,967,072,423	$31,945	$614
1999	7,820,860	127,042,282	4,235,579,204	33,340	641
2000	7,879,116	129,877,063	4,587,708,584	35,323	679
2001	7,984,529	129,635,800	4,695,225,123	36,219	697
2002	8,101,872	128,233,919	4,714,374,741	36,764	707
2003	8,228,840	127,795,827	4,826,251,547	37,765	726
2004	8,364,795	129,278,176	5,087,561,796	39,354	757
2005	8,571,144	131,571,623	5,351,949,496	40,677	782
2006	8,784,027	133,833,834	5,692,569,465	42,535	818
2007	8,971,897	135,366,106	6,018,089,108	44,458	855
	UI covered				
1998	7,586,767	121,400,660	$3,845,494,089	$31,676	$609
1999	7,771,198	124,255,714	4,112,169,533	33,094	636
2000	7,828,861	127,005,574	4,454,966,824	35,077	675
2001	7,933,536	126,883,182	4,560,511,280	35,943	691
2002	8,051,117	125,475,293	4,570,787,218	36,428	701
2003	8,177,087	125,031,551	4,676,319,378	37,401	719
2004	8,312,729	126,538,579	4,929,262,369	38,955	749
2005	8,518,249	128,837,948	5,188,301,929	40,270	774
2006	8,731,111	131,104,860	5,522,624,197	42,124	810
2007	8,908,198	132,639,806	5,841,231,314	44,038	847
	Private industry covered				
1998	7,381,518	105,082,368	$3,337,621,699	$31,762	$611
1999	7,560,567	107,619,457	3,577,738,557	33,244	639
2000	7,622,274	110,015,333	3,887,626,769	35,337	680
2001	7,724,965	109,304,802	3,952,152,155	36,157	695
2002	7,839,903	107,577,281	3,930,767,025	36,539	703
2003	7,963,340	107,065,553	4,015,823,311	37,508	721
2004	8,093,142	108,490,066	4,245,640,890	39,134	753
2005	8,294,662	110,611,016	4,480,311,193	40,505	779
2006	8,505,496	112,718,858	4,780,833,389	42,414	816
2007	8,681,001	114,012,221	5,057,840,759	44,362	853
	State government covered				
1998	67,347	4,240,779	$142,512,445	$33,605	$646
1999	70,538	4,296,673	149,011,194	34,681	667
2000	65,096	4,370,160	158,618,365	36,296	698
2001	64,583	4,452,237	168,358,331	37,814	727
2002	64,447	4,485,071	175,866,492	39,212	754
2003	64,467	4,481,845	179,528,728	40,057	770
2004	64,544	4,484,997	184,414,992	41,118	791
2005	66,278	4,527,514	191,281,126	42,249	812
2006	66,921	4,565,908	200,329,294	43,875	844
2007	67,381	4,611,395	211,677,002	45,903	883
	Local government covered				
1998	137,902	12,077,513	$365,359,945	$30,251	$582
1999	140,093	12,339,584	385,419,781	31,234	601
2000	141,491	12,620,081	408,721,690	32,387	623
2001	143,989	13,126,143	440,000,795	33,521	645
2002	146,767	13,412,941	464,153,701	34,605	665
2003	149,281	13,484,153	480,967,339	35,669	686
2004	155,043	13,563,517	499,206,488	36,805	708
2005	157,309	13,699,418	516,709,610	37,718	725
2006	158,695	13,820,093	541,461,514	39,179	753
2007	159,816	14,016,190	571,713,553	40,790	784
	Federal government covered (UCFE)				
1998	47,252	2,782,888	$121,578,334	$43,688	$840
1999	49,661	2,786,567	123,409,672	44,287	852
2000	50,256	2,871,489	132,741,760	46,228	889
2001	50,993	2,752,619	134,713,843	48,940	941
2002	50,755	2,758,627	143,587,523	52,050	1,001
2003	51,753	2,764,275	149,932,170	54,239	1,043
2004	52,066	2,739,596	158,299,427	57,782	1,111
2005	52,895	2,733,675	163,647,568	59,864	1,151
2006	52,916	2,728,974	169,945,269	62,274	1,198
2007	63,699	2,726,300	176,857,794	64,871	1,248

NOTE: Data are final. Detail may not add to total due to rounding.

25. Annual data: Quarterly Census of Employment and Wages, establishment size and employment, private ownership, by supersector, first quarter 2007

Industry, establishments, and employment	Total	Size of establishments								
		Fewer than 5 workers[1]	5 to 9 workers	10 to 19 workers	20 to 49 workers	50 to 99 workers	100 to 249 workers	250 to 499 workers	500 to 999 workers	1,000 or more workers
Total all industries[2]										
Establishments, first quarter	8,572,894	5,189,837	1,407,987	933,910	648,489	220,564	124,980	30,568	11,049	5,510
Employment, March	112,536,714	7,670,620	9,326,775	12,610,385	19,566,806	15,156,364	18,718,813	10,438,705	7,479,948	11,568,298
Natural resources and mining										
Establishments, first quarter	124,002	69,260	23,451	15,289	10,137	3,250	1,842	519	190	64
Employment, March	1,686,694	111,702	155,044	205,780	304,936	222,684	278,952	179,598	126,338	101,660
Construction										
Establishments, first quarter	883,409	580,647	141,835	84,679	52,336	15,341	6,807	1,326	350	88
Employment, March	7,321,288	835,748	929,707	1,137,104	1,564,722	1,046,790	1,004,689	443,761	232,556	126,211
Manufacturing										
Establishments, first quarter	361,070	136,649	61,845	54,940	53,090	25,481	19,333	6,260	2,379	1,093
Employment, March	13,850,738	238,848	415,276	755,931	1,657,463	1,785,569	2,971,836	2,140,531	1,613,357	2,271,927
Trade, transportation, and utilities										
Establishments, first quarter	1,905,750	1,017,012	381,434	248,880	160,549	53,721	34,536	7,315	1,792	511
Employment, March	25,983,275	1,683,738	2,539,291	3,335,327	4,845,527	3,709,371	5,140,740	2,510,273	1,167,986	1,051,022
Information										
Establishments, first quarter	143,094	81,414	20,986	16,338	13,384	5,609	3,503	1,134	489	237
Employment, March	3,016,454	113,901	139,730	222,710	411,218	387,996	533,877	392,350	335,998	478,674
Financial activities										
Establishments, first quarter	863,784	563,670	155,984	81,849	40,668	12,037	6,313	1,863	939	461
Employment, March	8,146,274	890,816	1,029,911	1,080,148	1,210,332	822,627	945,396	645,988	648,691	872,365
Professional and business services										
Establishments, first quarter	1,456,681	989,991	196,645	125,014	83,127	32,388	20,412	5,902	2,263	939
Employment, March	17,612,073	1,375,429	1,292,744	1,685,085	2,520,739	2,243,595	3,102,005	2,012,609	1,535,591	1,844,276
Education and health services										
Establishments, first quarter	812,914	388,773	179,011	116,031	75,040	27,393	18,815	4,153	1,906	1,792
Employment, March	17,331,231	700,195	1,189,566	1,559,689	2,258,922	1,908,595	2,828,678	1,409,073	1,319,128	4,157,385
Leisure and hospitality										
Establishments, first quarter	716,126	275,121	120,795	132,408	134,766	39,766	10,681	1,639	646	304
Employment, March	12,949,319	439,080	815,688	1,858,394	4,054,666	2,648,733	1,510,212	551,528	438,008	633,010
Other services										
Establishments, first quarter	1,119,209	908,792	118,963	57,419	25,169	5,562	2,731	457	95	21
Employment, March	4,402,263	1,109,065	776,354	756,783	732,313	379,320	401,371	152,994	62,295	31,768

[1] Includes establishments that reported no workers in March 2007.

[2] Includes data for unclassified establishments, not shown separately.

NOTE: Data are final. Detail may not add to total due to rounding.

26. Average annual wages for 2006 and 2007 for all covered workers[1] by metropolitan area

Metropolitan area[2]	Average annual wages[3]		
	2006	2007	Percent change, 2006-07
Metropolitan areas[4]	$44,165	$46,139	4.5
Abilene, TX	29,842	31,567	5.8
Aguadilla-Isabela-San Sebastian, PR	19,277	20,295	5.3
Akron, OH	38,088	39,499	3.7
Albany, GA	32,335	33,378	3.2
Albany-Schenectady-Troy, NY	41,027	42,191	2.8
Albuquerque, NM	36,934	38,191	3.4
Alexandria, LA	31,329	32,757	4.6
Allentown-Bethlehem-Easton, PA-NJ	39,787	41,784	5.0
Altoona, PA	30,394	31,988	5.2
Amarillo, TX	33,574	35,574	6.0
Ames, IA	35,331	37,041	4.8
Anchorage, AK	42,955	45,237	5.3
Anderson, IN	32,184	32,850	2.1
Anderson, SC	30,373	31,086	2.3
Ann Arbor, MI	47,186	49,427	4.7
Anniston-Oxford, AL	32,724	34,593	5.7
Appleton, WI	35,308	36,575	3.6
Asheville, NC	32,268	33,406	3.5
Athens-Clarke County, GA	33,485	34,256	2.3
Atlanta-Sandy Springs-Marietta, GA	45,889	48,111	4.8
Atlantic City, NJ	38,018	39,276	3.3
Auburn-Opelika, AL	30,468	31,554	3.6
Augusta-Richmond County, GA-SC	35,638	36,915	3.6
Austin-Round Rock, TX	45,737	46,458	1.6
Bakersfield, CA	36,020	38,254	6.2
Baltimore-Towson, MD	45,177	47,177	4.4
Bangor, ME	31,746	32,829	3.4
Barnstable Town, MA	36,437	37,691	3.4
Baton Rouge, LA	37,245	39,339	5.6
Battle Creek, MI	39,362	40,628	3.2
Bay City, MI	35,094	35,680	1.7
Beaumont-Port Arthur, TX	39,026	40,682	4.2
Bellingham, WA	32,618	34,239	5.0
Bend, OR	33,319	34,318	3.0
Billings, MT	33,270	35,372	6.3
Binghamton, NY	35,048	36,322	3.6
Birmingham-Hoover, AL	40,798	42,570	4.3
Bismarck, ND	32,550	34,118	4.8
Blacksburg-Christiansburg-Radford, VA	34,024	35,248	3.6
Bloomington, IN	30,913	32,028	3.6
Bloomington-Normal, IL	41,359	42,082	1.7
Boise City-Nampa, ID	36,734	37,553	2.2
Boston-Cambridge-Quincy, MA-NH	56,809	59,817	5.3
Boulder, CO	50,944	52,745	3.5
Bowling Green, KY	32,529	33,308	2.4
Bremerton-Silverdale, WA	37,694	39,506	4.8
Bridgeport-Stamford-Norwalk, CT	74,890	79,973	6.8
Brownsville-Harlingen, TX	25,795	27,126	5.2
Brunswick, GA	32,717	32,705	0.0
Buffalo-Niagara Falls, NY	36,950	38,218	3.4
Burlington, NC	32,835	33,132	0.9
Burlington-South Burlington, VT	40,548	41,907	3.4
Canton-Massillon, OH	33,132	34,091	2.9
Cape Coral-Fort Myers, FL	37,065	37,658	1.6
Carson City, NV	40,115	42,030	4.8
Casper, WY	38,307	41,105	7.3
Cedar Rapids, IA	38,976	41,059	5.3
Champaign-Urbana, IL	34,422	35,788	4.0
Charleston, WV	36,887	38,687	4.9
Charleston-North Charleston, SC	35,267	36,954	4.8
Charlotte-Gastonia-Concord, NC-SC	45,732	46,975	2.7
Charlottesville, VA	39,051	40,819	4.5
Chattanooga, TN-GA	35,358	36,522	3.3
Cheyenne, WY	35,306	36,191	2.5
Chicago-Naperville-Joliet, IL-IN-WI	48,631	50,823	4.5
Chico, CA	31,557	33,207	5.2
Cincinnati-Middletown, OH-KY-IN	41,447	42,969	3.7
Clarksville, TN-KY	30,949	32,216	4.1
Cleveland, TN	33,075	34,666	4.8
Cleveland-Elyria-Mentor, OH	41,325	42,783	3.5
Coeur d'Alene, ID	29,797	31,035	4.2
College Station-Bryan, TX	30,239	32,630	7.9
Colorado Springs, CO	38,325	39,745	3.7
Columbia, MO	32,207	33,266	3.3
Columbia, SC	35,209	36,293	3.1
Columbus, GA-AL	32,334	34,511	6.7
Columbus, IN	40,107	41,078	2.4
Columbus, OH	41,168	42,655	3.6
Corpus Christi, TX	35,399	37,186	5.0
Corvallis, OR	40,586	41,981	3.4

See footnotes at end of table.

26. Continued — Average annual wages for 2006 and 2007 for all covered workers[1] by metropolitan area

Metropolitan area[2]	Average annual wages[3]		
	2006	2007	Percent change, 2006-07
Cumberland, MD-WV	$29,859	$31,373	5.1
Dallas-Fort Worth-Arlington, TX	47,525	49,627	4.4
Dalton, GA	33,266	34,433	3.5
Danville, IL	33,141	34,086	2.9
Danville, VA	28,870	30,212	4.6
Davenport-Moline-Rock Island, IA-IL	37,559	39,385	4.9
Dayton, OH	39,387	40,223	2.1
Decatur, AL	34,883	35,931	3.0
Decatur, IL	39,375	41,039	4.2
Deltona-Daytona Beach-Ormond Beach, FL	31,197	32,196	3.2
Denver-Aurora, CO	48,232	50,180	4.0
Des Moines, IA	41,358	42,895	3.7
Detroit-Warren-Livonia, MI	47,455	49,019	3.3
Dothan, AL	31,473	32,367	2.8
Dover, DE	34,571	35,978	4.1
Dubuque, IA	33,044	34,240	3.6
Duluth, MN-WI	33,677	35,202	4.5
Durham, NC	49,314	52,420	6.3
Eau Claire, WI	31,718	32,792	3.4
El Centro, CA	30,035	32,419	7.9
Elizabethtown, KY	32,072	32,701	2.0
Elkhart-Goshen, IN	35,878	36,566	1.9
Elmira, NY	33,968	34,879	2.7
El Paso, TX	29,903	31,354	4.9
Erie, PA	33,213	34,788	4.7
Eugene-Springfield, OR	33,257	34,329	3.2
Evansville, IN-KY	36,858	37,182	0.9
Fairbanks, AK	41,296	42,345	2.5
Fajardo, PR	21,002	22,075	5.1
Fargo, ND-MN	33,542	35,264	5.1
Farmington, NM	36,220	38,572	6.5
Fayetteville, NC	31,281	33,216	6.2
Fayetteville-Springdale-Rogers, AR-MO	35,734	37,325	4.5
Flagstaff, AZ	32,231	34,473	7.0
Flint, MI	39,409	39,310	-0.3
Florence, SC	33,610	34,305	2.1
Florence-Muscle Shoals, AL	29,518	30,699	4.0
Fond du Lac, WI	33,376	34,664	3.9
Fort Collins-Loveland, CO	37,940	39,335	3.7
Fort Smith, AR-OK	30,932	31,236	1.0
Fort Walton Beach-Crestview-Destin, FL	34,409	35,613	3.5
Fort Wayne, IN	35,641	36,542	2.5
Fresno, CA	33,504	35,111	4.8
Gadsden, AL	29,499	30,979	5.0
Gainesville, FL	34,573	36,243	4.8
Gainesville, GA	34,765	36,994	6.4
Glens Falls, NY	32,780	33,564	2.4
Goldsboro, NC	29,331	30,177	2.9
Grand Forks, ND-MN	29,234	30,745	5.2
Grand Junction, CO	33,729	36,221	7.4
Grand Rapids-Wyoming, MI	38,056	38,953	2.4
Great Falls, MT	29,542	31,009	5.0
Greeley, CO	35,144	37,066	5.5
Green Bay, WI	36,677	37,788	3.0
Greensboro-High Point, NC	35,898	37,213	3.7
Greenville, NC	32,432	33,703	3.9
Greenville, SC	35,471	36,536	3.0
Guayama, PR	24,551	26,094	6.3
Gulfport-Biloxi, MS	34,688	34,971	0.8
Hagerstown-Martinsburg, MD-WV	34,621	35,468	2.4
Hanford-Corcoran, CA	31,148	32,504	4.4
Harrisburg-Carlisle, PA	39,807	41,424	4.1
Harrisonburg, VA	31,522	32,718	3.8
Hartford-West Hartford-East Hartford, CT	51,282	54,188	5.7
Hattiesburg, MS	30,059	30,729	2.2
Hickory-Lenoir-Morganton, NC	31,323	32,364	3.3
Hinesville-Fort Stewart, GA	31,416	33,210	5.7
Holland-Grand Haven, MI	36,895	37,470	1.6
Honolulu, HI	39,009	40,748	4.5
Hot Springs, AR	27,684	28,448	2.8
Houma-Bayou Cane-Thibodaux, LA	38,417	41,604	8.3
Houston-Baytown-Sugar Land, TX	50,177	53,494	6.6
Huntington-Ashland, WV-KY-OH	32,648	33,973	4.1
Huntsville, AL	44,659	45,763	2.5
Idaho Falls, ID	31,632	29,878	-5.5
Indianapolis, IN	41,307	42,227	2.2
Iowa City, IA	35,913	37,457	4.3
Ithaca, NY	38,337	39,387	2.7
Jackson, MI	36,836	38,267	3.9
Jackson, MS	34,605	35,771	3.4

See footnotes at end of table.

26. Continued — Average annual wages for 2006 and 2007 for all covered workers[1] by metropolitan area

Metropolitan area[2]	Average annual wages[3]		
	2006	2007	Percent change, 2006-07
Jackson, TN	$34,477	$35,059	1.7
Jacksonville, FL	40,192	41,437	3.1
Jacksonville, NC	25,854	27,005	4.5
Janesville, WI	36,732	36,790	0.2
Jefferson City, MO	31,771	32,903	3.6
Johnson City, TN	31,058	31,985	3.0
Johnstown, PA	29,972	31,384	4.7
Jonesboro, AR	28,972	30,378	4.9
Joplin, MO	30,111	31,068	3.2
Kalamazoo-Portage, MI	37,099	38,402	3.5
Kankakee-Bradley, IL	32,389	33,340	2.9
Kansas City, MO-KS	41,320	42,921	3.9
Kennewick-Richland-Pasco, WA	38,750	40,439	4.4
Killeen-Temple-Fort Hood, TX	31,511	32,915	4.5
Kingsport-Bristol-Bristol, TN-VA	35,100	36,399	3.7
Kingston, NY	33,697	35,018	3.9
Knoxville, TN	37,216	38,386	3.1
Kokomo, IN	45,808	47,269	3.2
La Crosse, WI-MN	31,819	32,949	3.6
Lafayette, IN	35,380	36,419	2.9
Lafayette, LA	38,170	40,684	6.6
Lake Charles, LA	35,883	37,447	4.4
Lakeland, FL	33,530	34,394	2.6
Lancaster, PA	36,171	37,043	2.4
Lansing-East Lansing, MI	39,890	40,866	2.4
Laredo, TX	28,051	29,009	3.4
Las Cruces, NM	29,969	31,422	4.8
Las Vegas-Paradise, NV	40,139	42,336	5.5
Lawrence, KS	29,896	30,830	3.1
Lawton, OK	29,830	30,617	2.6
Lebanon, PA	31,790	32,876	3.4
Lewiston, ID-WA	30,776	31,961	3.9
Lewiston-Auburn, ME	32,231	33,118	2.8
Lexington-Fayette, KY	37,926	39,290	3.6
Lima, OH	33,790	35,177	4.1
Lincoln, NE	33,703	34,750	3.1
Little Rock-North Little Rock, AR	36,169	39,305	8.7
Logan, UT-ID	26,766	27,810	3.9
Longview, TX	35,055	36,956	5.4
Longview, WA	35,140	37,101	5.6
Los Angeles-Long Beach-Santa Ana, CA	48,680	50,480	3.7
Louisville, KY-IN	38,673	40,125	3.8
Lubbock, TX	31,977	32,761	2.5
Lynchburg, VA	33,242	34,412	3.5
Macon, GA	34,126	34,243	0.3
Madera, CA	31,213	33,266	6.6
Madison, WI	40,007	41,201	3.0
Manchester-Nashua, NH	46,659	49,235	5.5
Mansfield, OH	33,171	33,109	-0.2
Mayaguez, PR	20,619	21,326	3.4
McAllen-Edinburg-Pharr, TX	26,712	27,651	3.5
Medford, OR	31,697	32,877	3.7
Memphis, TN-MS-AR	40,580	42,339	4.3
Merced, CA	31,147	32,351	3.9
Miami-Fort Lauderdale-Miami Beach, FL	42,175	43,428	3.0
Michigan City-La Porte, IN	31,383	32,570	3.8
Midland, TX	42,625	45,574	6.9
Milwaukee-Waukesha-West Allis, WI	42,049	43,261	2.9
Minneapolis-St. Paul-Bloomington, MN-WI	46,931	49,542	5.6
Missoula, MT	30,652	32,233	5.2
Mobile, AL	36,126	36,890	2.1
Modesto, CA	35,468	36,739	3.6
Monroe, LA	30,618	31,992	4.5
Monroe, MI	40,938	41,636	1.7
Montgomery, AL	35,383	36,223	2.4
Morgantown, WV	32,608	35,241	8.1
Morristown, TN	31,914	32,806	2.8
Mount Vernon-Anacortes, WA	32,851	34,620	5.4
Muncie, IN	30,691	31,326	2.1
Muskegon-Norton Shores, MI	33,949	34,982	3.0
Myrtle Beach-Conway-North Myrtle Beach, SC	27,905	28,576	2.4
Napa, CA	41,788	44,171	5.7
Naples-Marco Island, FL	39,320	41,300	5.0
Nashville-Davidson--Murfreesboro, TN	41,003	42,728	4.2
New Haven-Milford, CT	44,892	47,039	4.8
New Orleans-Metairie-Kenner, LA	42,434	43,255	1.9
New York-Northern New Jersey-Long Island, NY-NJ-PA	61,388	65,685	7.0
Niles-Benton Harbor, MI	36,967	38,140	3.2
Norwich-New London, CT	43,184	45,463	5.3
Ocala, FL	31,330	31,623	0.9

See footnotes at end of table.

26. Continued — Average annual wages for 2006 and 2007 for all covered workers[1] by metropolitan area

Metropolitan area[2]	Average annual wages[3]		
	2006	2007	Percent change, 2006-07
Ocean City, NJ	$31,801	$32,452	2.0
Odessa, TX	37,144	41,758	12.4
Ogden-Clearfield, UT	32,890	34,067	3.6
Oklahoma City, OK	35,846	37,192	3.8
Olympia, WA	37,787	39,678	5.0
Omaha-Council Bluffs, NE-IA	38,139	39,273	3.0
Orlando, FL	37,776	38,633	2.3
Oshkosh-Neenah, WI	39,538	41,014	3.7
Owensboro, KY	32,491	33,593	3.4
Oxnard-Thousand Oaks-Ventura, CA	45,467	47,669	4.8
Palm Bay-Melbourne-Titusville, FL	39,778	40,975	3.0
Panama City-Lynn Haven, FL	33,341	33,950	1.8
Parkersburg-Marietta, WV-OH	32,213	33,547	4.1
Pascagoula, MS	36,287	39,131	7.8
Pensacola-Ferry Pass-Brent, FL	33,530	34,165	1.9
Peoria, IL	42,283	43,470	2.8
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	48,647	50,611	4.0
Phoenix-Mesa-Scottsdale, AZ	42,220	43,697	3.5
Pine Bluff, AR	32,115	33,094	3.0
Pittsburgh, PA	40,759	42,910	5.3
Pittsfield, MA	36,707	38,075	3.7
Pocatello, ID	28,418	29,268	3.0
Ponce, PR	20,266	21,019	3.7
Portland-South Portland-Biddeford, ME	36,979	38,497	4.1
Portland-Vancouver-Beaverton, OR-WA	42,607	44,335	4.1
Port St. Lucie-Fort Pierce, FL	34,408	36,375	5.7
Poughkeepsie-Newburgh-Middletown, NY	39,528	40,793	3.2
Prescott, AZ	30,625	32,048	4.6
Providence-New Bedford-Fall River, RI-MA	39,428	40,674	3.2
Provo-Orem, UT	32,308	34,141	5.7
Pueblo, CO	30,941	32,552	5.2
Punta Gorda, FL	32,370	32,833	1.4
Racine, WI	39,002	40,746	4.5
Raleigh-Cary, NC	41,205	42,801	3.9
Rapid City, SD	29,920	31,119	4.0
Reading, PA	38,048	39,945	5.0
Redding, CA	33,307	34,953	4.9
Reno-Sparks, NV	39,537	41,365	4.6
Richmond, VA	42,495	44,530	4.8
Riverside-San Bernardino-Ontario, CA	36,668	37,846	3.2
Roanoke, VA	33,912	35,419	4.4
Rochester, MN	42,941	44,786	4.3
Rochester, NY	39,481	40,752	3.2
Rockford, IL	37,424	38,304	2.4
Rocky Mount, NC	31,556	32,527	3.1
Rome, GA	34,850	33,041	-5.2
Sacramento--Arden-Arcade--Roseville, CA	44,552	46,385	4.1
Saginaw-Saginaw Township North, MI	37,747	37,507	-0.6
St. Cloud, MN	33,018	33,996	3.0
St. George, UT	28,034	29,052	3.6
St. Joseph, MO-KS	31,253	31,828	1.8
St. Louis, MO-IL	41,354	42,873	3.7
Salem, OR	32,764	33,986	3.7
Salinas, CA	37,974	39,419	3.8
Salisbury, MD	33,223	34,833	4.8
Salt Lake City, UT	38,630	40,935	6.0
San Angelo, TX	30,168	30,920	2.5
San Antonio, TX	36,763	38,274	4.1
San Diego-Carlsbad-San Marcos, CA	45,784	47,657	4.1
Sandusky, OH	33,526	33,471	-0.2
San Francisco-Oakland-Fremont, CA	61,343	64,559	5.2
San German-Cabo Rojo, PR	19,498	19,777	1.4
San Jose-Sunnyvale-Santa Clara, CA	76,608	82,038	7.1
San Juan-Caguas-Guaynabo, PR	24,812	25,939	4.5
San Luis Obispo-Paso Robles, CA	35,146	36,740	4.5
Santa Barbara-Santa Maria-Goleta, CA	40,326	41,967	4.1
Santa Cruz-Watsonville, CA	40,776	41,540	1.9
Santa Fe, NM	35,320	37,395	5.9
Santa Rosa-Petaluma, CA	41,533	42,824	3.1
Sarasota-Bradenton-Venice, FL	35,751	36,424	1.9
Savannah, GA	35,684	36,695	2.8
Scranton--Wilkes-Barre, PA	32,813	34,205	4.2
Seattle-Tacoma-Bellevue, WA	49,455	51,924	5.0
Sheboygan, WI	35,908	37,049	3.2
Sherman-Denison, TX	34,166	35,672	4.4
Shreveport-Bossier City, LA	33,678	34,892	3.6
Sioux City, IA-NE-SD	31,826	33,025	3.8
Sioux Falls, SD	34,542	36,056	4.4
South Bend-Mishawaka, IN-MI	35,089	36,266	3.4
Spartanburg, SC	37,077	37,967	2.4

See footnotes at end of table.

26. Continued — Average annual wages for 2006 and 2007 for all covered workers[1] by metropolitan area

Metropolitan area[2]	Average annual wages[3]		
	2006	2007	Percent change, 2006-07
Spokane, WA	$34,016	$35,539	4.5
Springfield, IL	40,679	42,420	4.3
Springfield, MA	37,962	39,487	4.0
Springfield, MO	30,786	31,868	3.5
Springfield, OH	31,844	32,017	0.5
State College, PA	35,392	36,797	4.0
Stockton, CA	36,426	37,906	4.1
Sumter, SC	29,294	30,267	3.3
Syracuse, NY	38,081	39,620	4.0
Tallahassee, FL	35,018	36,543	4.4
Tampa-St. Petersburg-Clearwater, FL	38,016	39,215	3.2
Terre Haute, IN	31,341	32,349	3.2
Texarkana, TX-Texarkana, AR	32,545	34,079	4.7
Toledo, OH	37,039	38,538	4.0
Topeka, KS	34,806	36,109	3.7
Trenton-Ewing, NJ	54,274	56,645	4.4
Tucson, AZ	37,119	38,524	3.8
Tulsa, OK	37,637	38,942	3.5
Tuscaloosa, AL	35,613	36,737	3.2
Tyler, TX	36,173	37,184	2.8
Utica-Rome, NY	32,457	33,916	4.5
Valdosta, GA	26,794	27,842	3.9
Vallejo-Fairfield, CA	40,225	42,932	6.7
Vero Beach, FL	33,823	35,901	6.1
Victoria, TX	36,642	38,317	4.6
Vineland-Millville-Bridgeton, NJ	37,749	39,408	4.4
Virginia Beach-Norfolk-Newport News, VA-NC	36,071	37,734	4.6
Visalia-Porterville, CA	29,772	30,968	4.0
Waco, TX	33,450	34,679	3.7
Warner Robins, GA	38,087	39,220	3.0
Washington-Arlington-Alexandria, DC-VA-MD-WV	58,057	60,711	4.6
Waterloo-Cedar Falls, IA	34,329	35,899	4.6
Wausau, WI	34,438	35,710	3.7
Weirton-Steubenville, WV-OH	31,416	32,893	4.7
Wenatchee, WA	28,340	29,475	4.0
Wheeling, WV-OH	30,620	31,169	1.8
Wichita, KS	38,763	39,662	2.3
Wichita Falls, TX	30,785	32,320	5.0
Williamsport, PA	31,431	32,506	3.4
Wilmington, NC	32,948	34,239	3.9
Winchester, VA-WV	34,895	36,016	3.2
Winston-Salem, NC	37,712	38,921	3.2
Worcester, MA	42,726	44,652	4.5
Yakima, WA	28,401	29,743	4.7
Yauco, PR	19,001	19,380	2.0
York-Hanover, PA	37,226	38,469	3.3
Youngstown-Warren-Boardman, OH-PA	33,852	34,698	2.5
Yuba City, CA	33,642	35,058	4.2
Yuma, AZ	28,369	30,147	6.3

[1] Includes workers covered by Unemployment Insurance (UI) and Unemployment Compensation for Federal Employees (UCFE) programs.

[2] Includes data for Metropolitan Statistical Areas (MSA) as defined by OMB Bulletin No. 04-03 as of February 18, 2004.

[3] Each year's total is based on the MSA definition for the specific year. Annual changes include differences resulting from changes in MSA definitions.

[4] Totals do not include the six MSAs within Puerto Rico.

27. Annual data: Employment status of the population

[Numbers in thousands]

Employment status	1997	1998[1]	1999[1]	2000[1]	2001[1]	2002	2003	2004	2005	2006	2007
Civilian noninstitutional population	203,133	205,220	207,753	212,577	215,092	217,570	221,168	223,357	226,082	228,815	231,867
Civilian labor force	136,297	137,673	139,368	142,583	143,734	144,863	146,510	147,401	149,320	151,428	153,124
Labor force participation rate	67.1	67.1	67.1	67.1	66.8	66.6	66.2	66	66	66.2	66
Employed	129,558	131,463	133,488	136,891	136,933	136,485	137,736	139,252	141,730	144,427	146,047
Employment-population ratio	63.8	64.1	64.3	64.4	63.7	62.7	62.3	62.3	62.7	63.1	63
Unemployed	6,739	6,210	5,880	5,692	6,801	8,378	8,774	8,149	7,591	7,001	7,078
Unemployment rate	4.9	4.5	4.2	4	4.7	5.8	6	5.5	5.1	4.6	4.6
Not in the labor force	66,837	67,547	68,385	69,994	71,359	72,707	74,658	75,956	76,762	77,387	78,743

[1] Not strictly comparable with prior years.

28. Annual data: Employment levels by industry

[In thousands]

Industry	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total private employment	103,113	106,021	108,686	110,996	110,707	108,828	108,416	109,814	111,899	114,184	115,717
Total nonfarm employment	122,776	125,930	128,993	131,785	131,826	130,341	129,999	131,435	133,703	136,174	137,969
Goods-producing	23,886	24,354	24,465	24,649	23,873	22,557	21,816	21,882	22,190	22,570	22,378
Natural resources and mining	654	645	598	599	606	583	572	591	628	684	722
Construction	5,813	6,149	6,545	6,787	6,826	6,716	6,735	6,976	7,336	7,689	7,624
Manufacturing	17,419	17,560	17,322	17,263	16,441	15,259	14,510	14,315	14,226	14,197	14,032
Private service-providing	79,227	81,667	84,221	86,346	86,834	86,271	86,599	87,932	89,709	91,615	93,339
Trade, transportation, and utilities	24,700	25,186	25,771	26,225	25,983	25,497	25,287	25,533	25,959	26,231	26,472
Wholesale trade	5,663.90	5,795.20	5,892.50	5,933.20	5,772.70	5,652.30	5,607.50	5,662.90	5,764.40	5,897.60	6,005.30
Retail trade	14,388.90	14,609.30	14,970.10	15,279.80	15,238.60	15,025.10	14,917.30	15,058.20	15,279.60	15,319.30	15,382.00
Transportation and warehousing	4,026.50	4,168.00	4,300.30	4,410.30	4,372.00	4,223.60	4,185.40	4,248.60	4,360.90	4,465.80	4,531.20
Utilities	620.9	613.4	608.5	601.3	599.4	596.2	577	563.8	554	548.5	553.5
Information	3,084	3,218	3,419	3,631	3,629	3,395	3,188	3,118	3,061	3,055	3,087
Financial activities	7,178	7,462	7,648	7,687	7,807	7,847	7,977	8,031	8,153	8,363	8,446
Professional and business services	14,335	15,147	15,957	16,666	16,476	15,976	15,987	16,395	16,954	17,552	17,920
Education and health services	14,087	14,446	14,798	15,109	15,645	16,199	16,588	16,953	17,372	17,838	18,377
Leisure and hospitality	11,018	11,232	11,543	11,862	12,036	11,986	12,173	12,493	12,816	13,143	13,565
Other services	4,825	4,976	5,087	5,168	5,258	5,372	5,401	5,409	5,395	5,432	5,472
Government	19,664	19,909	20,307	20,790	21,118	21,513	21,583	21,621	21,804	21,990	22,252

29. Annual data: Average hours and earnings of production or nonsupervisory workers on nonfarm payrolls, by industry

Industry	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Private sector:											
Average weekly hours	34.5	34.5	34.3	34.3	34	33.9	33.7	33.7	33.8	33.9	33.8
Average hourly earnings (in dollars)	12.51	13.01	13.49	14.02	14.54	14.97	15.37	15.69	16.13	16.76	17.41
Average weekly earnings (in dollars)	431.86	448.56	463.15	481.01	493.79	506.72	518.06	529.09	544.33	567.87	589.36
Goods-producing:											
Average weekly hours	41.1	40.8	40.8	40.7	39.9	39.9	39.8	40	40.1	40.5	40.5
Average hourly earnings (in dollars)	13.82	14.23	14.71	15.27	15.78	16.33	16.8	17.19	17.6	18.02	18.64
Average weekly earnings (in dollars)	568.43	580.99	599.99	621.86	630.04	651.61	669.13	688.17	705.31	729.87	755.73
Natural resources and mining											
Average weekly hours	46.2	44.9	44.2	44.4	44.6	43.2	43.6	44.5	45.6	45.6	45.9
Average hourly earnings (in dollars)	15.57	16.2	16.33	16.55	17	17.19	17.56	18.07	18.72	19.9	20.99
Average weekly earnings (in dollars)	720.11	727.28	721.74	734.92	757.92	741.97	765.94	803.82	853.71	908.01	962.54
Construction:											
Average weekly hours	38.9	38.8	39	39.2	38.7	38.4	38.4	38.3	38.6	39	38.9
Average hourly earnings (in dollars)	15.67	16.23	16.8	17.48	18	18.52	18.95	19.23	19.46	20.02	20.94
Average weekly earnings (in dollars)	609.48	629.75	655.11	685.78	695.89	711.82	726.83	735.55	750.22	781.04	814.83
Manufacturing:											
Average weekly hours	41.7	41.4	41.4	41.3	40.3	40.5	40.4	40.8	40.7	41.1	41.2
Average hourly earnings (in dollars)	13.14	13.45	13.85	14.32	14.76	15.29	15.74	16.15	16.56	16.8	17.23
Average weekly earnings (in dollars)	548.22	557.12	573.17	590.65	595.19	618.75	635.99	658.59	673.37	690.83	710.51
Private service-providing:											
Average weekly hours	32.8	32.8	32.7	32.7	32.5	32.5	32.4	32.3	32.4	32.5	32.4
Average hourly earnings (in dollars)	12.07	12.61	13.09	13.62	14.18	14.59	14.99	15.29	15.74	16.42	17.09
Average weekly earnings (in dollars)	395.51	413.5	427.98	445.74	461.08	473.8	484.81	494.22	509.58	532.84	554.47
Trade, transportation, and utilities:											
Average weekly hours	34.3	34.2	33.9	33.8	33.5	33.6	33.6	33.5	33.4	33.4	33.4
Average hourly earnings (in dollars)	11.9	12.39	12.82	13.31	13.7	14.02	14.34	14.58	14.92	15.4	15.82
Average weekly earnings (in dollars)	407.57	423.3	434.31	449.88	459.53	471.27	481.14	488.42	498.43	514.61	528.22
Wholesale trade:											
Average weekly hours	38.8	38.6	38.6	38.8	38.4	38	37.9	37.8	37.7	38	38.2
Average hourly earnings (in dollars)	14.41	15.07	15.62	16.28	16.77	16.98	17.36	17.65	18.16	18.91	19.56
Average weekly earnings (in dollars)	559.39	582.21	602.77	631.4	643.45	644.38	657.29	667.09	685	718.3	747.7
Retail trade:											
Average weekly hours	38.8	38.6	38.6	38.8	38.4	38	37.9	37.8	37.7	38	30.2
Average hourly earnings (in dollars)	14.41	15.07	15.62	16.28	16.77	16.98	17.36	17.65	18.16	18.91	12.8
Average weekly earnings (in dollars)	559.39	582.21	602.77	631.4	643.45	644.38	657.29	667.09	685	718.3	747.7
Transportation and warehousing:											
Average weekly hours	39.4	38.7	37.6	37.4	36.7	36.8	36.8	37.2	37	36.9	37
Average hourly earnings (in dollars)	13.78	14.12	14.55	15.05	15.33	15.76	16.25	16.52	16.7	17.28	17.76
Average weekly earnings (in dollars)	542.55	546.86	547.97	562.31	562.7	579.75	598.41	614.82	618.58	637.14	656.95
Utilities:											
Average weekly hours	42	42	42	42	41.4	40.9	41.1	40.9	41.1	41.4	42.4
Average hourly earnings (in dollars)	20.59	21.48	22.03	22.75	23.58	23.96	24.77	25.61	26.68	27.42	27.93
Average weekly earnings (in dollars)	865.26	902.94	924.59	955.66	977.18	979.09	1,017.27	1,048.44	1,095.90	1,136.08	1,185.08
Information:											
Average weekly hours	36.3	36.6	36.7	36.8	36.9	36.5	36.2	36.3	36.5	36.6	36.4
Average hourly earnings (in dollars)	17.14	17.67	18.4	19.07	19.8	20.2	21.01	21.4	22.06	23.23	23.92
Average weekly earnings (in dollars)	622.4	646.52	675.32	700.89	731.11	738.17	760.81	777.05	805	850.81	871.03
Financial activities:											
Average weekly hours	35.7	36	35.8	35.9	35.8	35.6	35.5	35.5	35.9	35.8	35.9
Average hourly earnings (in dollars)	13.22	13.93	14.47	14.98	15.59	16.17	17.14	17.52	17.94	18.8	19.66
Average weekly earnings (in dollars)	472.37	500.95	517.57	537.37	558.02	575.51	609.08	622.87	645.1	672.4	706.01
Professional and business services:											
Average weekly hours	34.3	34.3	34.4	34.5	34.2	34.2	34.1	34.2	34.2	34.6	34.8
Average hourly earnings (in dollars)	13.57	14.27	14.85	15.52	16.33	16.81	17.21	17.48	18.08	19.12	20.15
Average weekly earnings (in dollars)	465.51	490	510.99	535.07	557.84	574.66	587.02	597.56	618.87	662.23	700.96
Education and health services:											
Average weekly hours	32.2	32.2	32.1	32.2	32.3	32.4	32.3	32.4	32.6	32.5	32.6
Average hourly earnings (in dollars)	12.56	13	13.44	13.95	14.64	15.21	15.64	16.15	16.71	17.38	18.03
Average weekly earnings (in dollars)	404.65	418.82	431.35	449.29	473.39	492.74	505.69	523.78	544.59	564.95	587.2
Leisure and hospitality:											
Average weekly hours	26	26.2	26.1	26.1	25.8	25.8	25.6	25.7	25.7	25.7	25.5
Average hourly earnings (in dollars)	7.32	7.67	7.96	8.32	8.57	8.81	9	9.15	9.38	9.75	10.41
Average weekly earnings (in dollars)	190.52	200.82	208.05	217.2	220.73	227.17	230.42	234.86	241.36	250.11	265.03
Other services:											
Average weekly hours	32.7	32.6	32.5	32.5	32.3	32	31.4	31	30.9	30.9	30.9
Average hourly earnings (in dollars)	11.29	11.79	12.26	12.73	13.27	13.72	13.84	13.98	14.34	14.77	15.22
Average weekly earnings (in dollars)	368.63	384.25	398.77	413.41	428.64	439.76	434.41	433.04	443.37	456.6	470.05

NOTE: Data reflect the conversion to the 2002 version of the North American Industry Classification System (NAICS), replacing the Standard Industrial Classification (SIC) system. NAICS-based data by industry are not comparable with SIC-based data.

30. Employment Cost Index, compensation,[1] by occupation and industry group

[December 2005 = 100]

Series	2006		2007				2008			Percent change	
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	3 months ended	12 months ended
										Sept. 2008	
Civilian workers[2]	102.7	103.3	104.2	105.0	106.1	106.7	107.6	108.3	109.2	0.8	2.9
Workers by occupational group											
Management, professional, and related	103.0	103.7	104.7	105.5	106.7	107.2	108.3	109.0	110.1	1.0	3.2
Management, business, and financial	102.7	103.2	104.4	105.2	106.2	106.6	108.2	108.9	109.7	.7	3.3
Professional and related	103.2	104.0	104.9	105.7	107.0	107.6	108.4	109.0	110.4	1.3	3.2
Sales and office	102.4	103.0	103.8	104.8	105.5	106.4	106.8	107.7	108.2	.5	2.6
Sales and related	101.7	102.3	102.4	103.6	104.1	105.2	105.0	106.1	106.0	-.1	1.8
Office and administrative support	102.8	103.5	104.7	105.5	106.4	107.1	108.0	108.6	109.5	.8	2.9
Natural resources, construction, and maintenance	103.0	103.6	104.1	105.1	106.1	106.8	107.7	108.4	109.3	.8	3.0
Construction and extraction	103.0	103.7	104.3	105.7	106.5	107.4	108.5	109.6	110.3	.6	3.6
Installation, maintenance, and repair	103.0	103.6	103.7	104.4	105.6	106.2	106.7	107.0	108.0	.9	2.3
Production, transportation, and material moving	101.8	102.4	102.7	103.5	104.2	104.7	105.6	106.2	106.9	.7	2.6
Production	101.6	102.0	102.1	102.8	103.3	104.1	104.8	105.3	105.9	.6	2.5
Transportation and material moving	102.2	102.8	103.4	104.4	105.3	105.6	106.6	107.3	108.1	.7	2.7
Service occupations	102.5	103.5	104.8	105.5	106.9	107.7	108.4	109.1	110.2	1.0	3.1
Workers by industry											
Goods-producing	102.0	102.5	102.9	103.9	104.4	105.0	106.1	106.8	107.3	.5	2.8
Manufacturing	101.4	101.8	102.0	102.9	103.2	103.8	104.7	105.1	105.6	.5	2.3
Service-providing	102.9	103.5	104.4	105.2	106.4	107.0	107.8	108.5	109.5	.9	2.9
Education and health services	103.5	104.2	104.9	105.5	107.2	107.9	108.6	109.2	110.8	1.5	3.4
Health care and social assistance	103.5	104.3	105.4	106.1	107.1	107.9	108.9	109.6	110.4	.7	3.1
Hospitals	103.2	104.0	105.1	105.7	106.7	107.5	108.4	109.2	110.2	.9	3.3
Nursing and residential care facilities	102.6	103.7	104.5	105.0	105.6	106.3	107.3	108.2	109.0	.7	3.2
Education services	103.4	104.1	104.5	104.9	107.3	107.9	108.3	108.9	111.1	2.0	3.5
Elementary and secondary schools	103.5	104.2	104.6	105.0	107.4	107.9	108.2	108.8	111.1	2.1	3.4
Public administration[3]	102.4	103.8	105.6	106.6	108.0	109.1	109.7	110.1	111.6	1.4	3.3
Private industry workers	102.5	103.2	104.0	104.9	105.7	106.3	107.3	108.0	108.7	.6	2.8
Workers by occupational group											
Management, professional, and related	102.9	103.5	104.6	105.5	106.4	106.8	108.1	108.9	109.6	.6	3.0
Management, business, and financial	102.7	103.1	104.3	105.1	106.0	106.3	108.0	108.7	109.3	.6	3.1
Professional and related	103.1	103.9	104.9	105.9	106.7	107.3	108.3	109.0	109.9	.8	3.0
Sales and office	102.3	102.9	103.7	104.7	105.3	106.1	106.6	107.5	107.9	.4	2.5
Sales and related	101.7	102.3	102.4	103.6	104.2	105.2	105.0	106.2	106.0	-.2	1.7
Office and administrative support	102.7	103.4	104.5	105.4	106.0	106.7	107.8	108.5	109.2	.6	3.0
Natural resources, construction, and maintenance	103.0	103.6	104.0	105.0	105.9	106.7	107.6	108.3	109.0	.6	2.9
Construction and extraction	103.1	103.7	104.4	105.7	106.5	107.4	108.6	109.7	110.3	.5	3.6
Installation, maintenance, and repair	103.0	103.4	103.5	104.1	105.2	105.8	106.3	106.6	107.4	.8	2.1
Production, transportation, and material moving	101.7	102.3	102.5	103.3	103.9	104.5	105.5	106.0	106.6	.6	2.6
Production	101.6	102.0	102.1	102.8	103.2	104.0	104.8	105.2	105.8	.6	2.5
Transportation and material moving	102.0	102.6	103.1	104.1	104.9	105.3	106.4	107.2	107.7	.5	2.7
Service occupations	102.3	103.1	104.5	105.2	106.4	107.0	107.8	108.7	109.4	.6	2.8
Workers by industry and occupational group											
Goods-producing industries	102.0	102.5	102.9	103.9	104.4	105.0	106.1	106.8	107.2	.4	2.7
Management, professional, and related	101.6	102.0	102.7	103.8	104.3	104.4	106.1	106.6	106.7	.1	2.3
Sales and office	102.1	102.8	103.0	103.7	104.1	104.8	105.1	106.3	106.7	.4	2.5
Natural resources, construction, and maintenance	102.7	103.3	104.0	105.3	106.1	107.0	108.1	109.0	109.8	.7	3.5
Production, transportation, and material moving	101.6	102.0	102.1	102.9	103.3	104.0	104.8	105.3	105.8	.5	2.4
Construction	103.0	103.6	104.7	105.9	106.9	107.6	108.9	110.1	110.6	.5	3.5
Manufacturing	101.4	101.8	102.0	102.9	103.2	103.8	104.7	105.1	105.6	.5	2.3
Management, professional, and related	101.3	101.4	102.0	103.3	103.3	103.5	104.9	105.2	105.4	.2	2.0
Sales and office	101.3	102.1	102.4	103.2	103.5	104.3	105.0	106.1	106.7	.6	3.1
Natural resources, construction, and maintenance	101.5	102.1	101.7	102.4	102.8	103.9	104.6	104.5	105.3	.8	2.4
Production, transportation, and material moving	101.5	101.9	101.9	102.6	103.1	103.8	104.5	105.0	105.5	.5	2.3
Service-providing industries	102.7	103.4	104.3	105.2	106.1	106.7	107.7	108.5	109.1	.6	2.8
Management, professional, and related	103.2	103.8	105.0	105.9	106.8	107.3	108.5	109.3	110.2	.8	3.2
Sales and office	102.3	102.9	103.7	104.8	105.4	106.3	106.8	107.7	108.0	.3	2.5
Natural resources, construction, and maintenance	103.6	104.0	104.0	104.5	105.7	106.2	106.7	107.3	107.8	.5	2.0
Production, transportation, and material moving	101.9	102.6	103.0	104.0	104.7	105.2	106.4	107.0	107.6	.6	2.8
Service occupations	102.3	103.1	104.5	105.3	106.4	107.1	107.9	108.7	109.5	.7	2.9
Trade, transportation, and utilities	102.4	103.0	103.1	104.2	104.7	105.5	106.1	107.3	107.6	.3	2.8

See footnotes at end of table.

30. Continued—Employment Cost Index, compensation,[1] by occupation and industry group

[December 2005 = 100]

Series	2006		2007				2008			Percent change	
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	3 months ended	12 months ended
										Sept. 2008	
Wholesale trade	102.4	102.9	103.7	104.6	104.2	105.3	105.7	107.2	107.1	-0.1	2.8
Retail trade	101.9	102.7	102.9	103.9	105.1	106.1	106.6	107.6	108.2	.6	2.9
Transportation and warehousing	101.6	102.2	102.8	104.0	104.5	104.5	105.6	106.4	106.8	.4	2.2
Utilities	110.1	110.4	102.8	104.7	105.0	105.6	106.5	108.1	108.1	.0	3.0
Information	103.0	103.2	104.3	105.6	105.8	106.1	106.1	106.2	107.2	.9	1.3
Financial activities	102.1	102.5	104.2	104.6	105.4	105.6	106.8	107.3	107.4	.1	1.9
Finance and insurance	102.6	102.9	104.6	104.9	105.7	106.1	107.0	107.7	107.6	-.1	1.8
Real estate and rental and leasing	100.2	100.8	102.2	103.0	104.1	103.7	105.5	105.7	106.4	.7	2.2
Professional and business services	102.9	103.5	104.7	105.9	106.9	107.5	109.0	109.9	110.8	.8	3.6
Education and health services	103.2	104.1	105.1	105.7	106.9	107.7	108.6	109.4	110.3	.8	3.2
Education services	103.2	104.2	104.5	104.9	106.7	107.5	108.1	109.1	111.4	2.1	4.4
Health care and social assistance	103.2	104.1	105.2	105.9	106.9	107.8	108.8	109.4	110.1	.6	3.0
Hospitals	103.2	103.9	105.0	105.6	106.5	107.3	108.2	109.1	110.1	.9	3.4
Leisure and hospitality	102.4	103.7	105.3	106.0	107.5	108.1	109.0	109.3	110.6	1.2	2.9
Accommodation and food services	102.5	104.0	105.8	106.4	108.1	108.6	109.5	110.0	111.4	1.3	3.1
Other services, except public administration	103.6	104.0	105.7	106.1	107.1	107.6	108.7	109.4	109.9	.5	2.6
State and local government workers	103.2	104.1	105.1	105.7	107.6	108.4	108.9	109.4	111.3	1.7	3.4
Workers by occupational group											
Management, professional, and related	103.3	104.0	104.9	105.4	107.5	108.3	108.8	109.3	111.3	1.8	3.5
Professional and related	103.4	104.0	104.8	105.3	107.5	108.2	108.6	109.1	111.1	1.8	3.3
Sales and office	103.3	104.1	105.6	106.2	107.9	108.6	108.8	109.3	111.0	1.6	2.9
Office and administrative support	103.5	104.2	105.7	106.4	108.2	108.9	109.3	109.8	111.4	1.5	3.0
Service occupations	103.1	104.5	105.4	106.3	108.0	109.1	109.7	110.0	111.9	1.7	3.6
Workers by industry											
Education and health services	103.7	104.3	104.8	105.3	107.5	108.2	108.6	109.1	111.2	1.9	3.4
Education services	103.5	104.1	104.6	105.0	107.4	108.0	108.4	108.8	111.0	2.0	3.4
Schools	103.5	104.1	104.6	104.9	107.4	108.0	108.4	108.8	111.0	2.0	3.4
Elementary and secondary schools	103.6	104.2	104.7	105.0	107.4	108.0	108.3	108.8	111.1	2.1	3.4
Health care and social assistance	105.1	105.7	107.1	107.6	108.6	109.3	110.1	111.1	112.7	1.4	3.8
Hospitals	103.3	104.3	105.6	106.3	107.5	108.2	109.2	109.7	110.8	1.0	3.1
Public administration [3]	102.4	103.8	105.6	106.6	108.0	109.1	109.7	110.1	111.6	1.4	3.3

[1] Cost (cents per hour worked) measured in the Employment Cost Index consists of wages, salaries, and employer cost of employee benefits.

[2] Consists of private industry workers (excluding farm and household workers) and State and local government (excluding Federal Government) workers.

[3] Consists of legislative, judicial, administrative, and regulatory activities.

NOTE: The Employment Cost Index data reflect the conversion to the 2002 North American Classification System (NAICS) and the 2000 Standard Occupational Classification (SOC) system. The NAICS and SOC data shown prior to 2006 are for informational purposes only. Series based on NAICS and SOC became the official BLS estimates starting in March 2006.

31. Employment Cost Index, wages and salaries, by occupation and industry group

[December 2005 = 100]

Series	2006		2007				2008			Percent change	
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	3 months ended	12 months ended
										Sept. 2008	
Civilian workers[1]	102.6	103.2	104.3	105.0	106.0	106.7	107.6	108.4	109.3	0.8	3.1
Workers by occupational group											
Management, professional, and related	102.9	103.6	104.7	105.4	106.6	107.1	108.2	109.0	110.1	1.0	3.3
Management, business, and financial	102.7	103.1	104.7	105.4	106.4	106.7	108.2	109.0	109.8	.7	3.2
Professional and related	103.1	103.8	104.7	105.3	106.7	107.4	108.3	109.0	110.3	1.2	3.4
Sales and office	102.4	103.0	103.8	104.8	105.4	106.2	106.7	107.7	108.1	.4	2.6
Sales and related	102.0	102.5	102.7	103.9	104.3	105.5	105.2	106.6	106.3	-.3	1.9
Office and administrative support	102.6	103.3	104.5	105.3	106.1	106.8	107.8	108.5	109.3	.7	3.0
Natural resources, construction, and maintenance	102.7	103.4	104.3	105.1	106.3	107.1	108.1	109.0	109.9	.8	3.4
Construction and extraction	102.9	103.7	104.6	105.7	106.6	107.7	109.0	109.9	110.7	.7	3.8
Installation, maintenance, and repair	102.6	103.1	103.8	104.4	105.8	106.4	107.0	107.8	108.8	.9	2.8
Production, transportation, and material moving	101.9	102.5	103.2	103.9	104.7	105.1	106.1	106.9	107.7	.7	2.9
Production	101.8	102.3	103.2	103.6	104.3	104.7	105.7	106.5	107.2	.7	2.8
Transportation and material moving	102.1	102.7	103.3	104.2	105.1	105.5	106.6	107.3	108.2	.8	2.9
Service occupations	102.2	103.2	104.6	105.3	106.5	107.3	108.0	108.7	109.9	1.1	3.2
Workers by industry											
Goods-producing	102.3	102.9	103.9	104.7	105.4	106.0	107.1	108.0	108.6	.6	3.0
Manufacturing	101.9	102.3	103.3	103.9	104.5	104.9	105.9	106.7	107.4	.7	2.8
Service-providing	102.7	103.3	104.3	105.1	106.2	106.8	107.7	108.5	109.4	.8	3.0
Education and health services	103.1	103.8	104.4	104.9	106.6	107.4	108.0	108.7	110.2	1.4	3.4
Health care and social assistance	103.2	104.1	105.1	105.9	107.1	107.9	108.9	109.6	110.4	.7	3.1
Hospitals	102.9	103.8	104.8	105.6	106.7	107.4	108.4	109.4	110.5	1.0	3.6
Nursing and residential care facilities	102.2	103.3	104.1	104.7	105.8	106.4	107.4	108.1	109.1	.9	3.1
Education services	103.0	103.5	103.7	104.0	106.2	106.9	107.3	107.9	110.0	1.9	3.6
Elementary and secondary schools	102.9	103.4	103.6	103.8	106.0	106.6	107.0	107.5	109.9	2.2	3.7
Public administration[2]	102.0	103.5	104.5	105.2	106.4	107.4	108.2	108.6	109.9	1.2	3.3
Private industry workers	102.5	103.2	104.3	105.1	106.0	106.6	107.6	108.4	109.1	.6	2.9
Workers by occupational group											
Management, professional, and related	103.0	103.6	104.9	105.8	106.7	107.2	108.5	109.3	110.1	.7	3.2
Management, business, and financial	102.8	103.1	104.7	105.5	106.3	106.6	108.2	109.0	109.7	.6	3.2
Professional and related	103.1	104.0	105.1	106.0	107.0	107.6	108.7	109.5	110.4	.8	3.2
Sales and office	102.4	103.0	103.8	104.8	105.3	106.2	106.7	107.7	108.0	.3	2.6
Sales and related	102.0	102.6	102.8	104.0	104.4	105.5	105.3	106.6	106.4	-.2	1.9
Office and administrative support	102.6	103.3	104.5	105.4	106.0	106.7	107.7	108.5	109.2	.6	3.0
Natural resources, construction, and maintenance	102.8	103.4	104.2	105.1	106.2	107.1	108.1	109.0	109.8	.7	3.4
Construction and extraction	103.0	103.7	104.7	105.8	106.7	107.8	109.2	110.1	110.8	.6	3.8
Installation, maintenance, and repair	102.6	103.0	103.7	104.2	105.6	106.1	106.8	107.6	108.5	.8	2.7
Production, transportation, and material moving	101.8	102.4	103.1	103.8	104.5	105.0	106.0	106.8	107.5	.7	2.9
Production	101.7	102.2	103.1	103.6	104.2	104.6	105.6	106.4	107.2	.8	2.9
Transportation and material moving	102.0	102.6	103.2	104.1	105.0	105.4	106.5	107.4	108.0	.6	2.9
Service occupations	102.0	102.9	104.6	105.3	106.5	107.1	107.9	108.8	109.7	.8	3.0
Workers by industry and occupational group											
Goods-producing industries	102.3	102.9	103.9	104.7	105.4	106.0	107.1	108.0	108.6	.6	3.0
Management, professional, and related	102.4	102.8	104.4	105.3	105.9	106.0	107.7	108.4	108.7	.3	2.6
Sales and office	102.2	103.1	103.4	104.1	104.7	105.5	105.8	107.2	107.6	.4	2.8
Natural resources, construction, and maintenance	102.7	103.4	104.4	105.6	106.5	107.6	108.8	109.6	110.5	.8	3.8
Production, transportation, and material moving	101.9	102.4	103.2	103.7	104.4	104.8	105.7	106.6	107.3	.7	2.8
Construction	102.9	103.7	104.9	106.0	107.0	107.8	109.0	110.0	110.6	.5	3.4
Manufacturing	101.9	102.3	103.3	103.9	104.5	104.9	105.9	106.7	107.4	.7	2.8
Management, professional, and related	102.2	102.3	103.8	104.6	105.0	105.3	106.7	107.2	107.6	.4	2.5
Sales and office	101.1	102.0	102.4	103.2	103.9	104.7	105.5	106.9	107.6	.7	3.6
Natural resources, construction, and maintenance	102.3	103.0	103.8	104.3	105.0	105.9	106.8	107.1	108.1	.9	3.0
Production, transportation, and material moving	101.8	102.3	103.1	103.6	104.2	104.5	105.4	106.3	107.1	.8	2.8
Service-providing industries	102.6	103.3	104.4	105.3	106.1	106.8	107.7	108.6	109.3	.6	3.0
Management, professional, and related	103.1	103.7	105.0	105.9	106.8	107.4	108.6	109.4	110.3	.8	3.3
Sales and office	102.4	102.9	103.8	104.9	105.4	106.3	106.8	107.7	108.0	.3	2.5
Natural resources, construction, and maintenance	103.0	103.4	103.9	104.3	105.7	106.3	106.9	108.0	108.6	.6	2.7
Production, transportation, and material moving	101.7	102.4	103.0	104.0	104.6	105.2	106.3	107.1	107.8	.7	3.1
Service occupations	102.0	102.9	104.6	105.3	106.6	107.2	108.0	108.8	109.7	.8	2.9
Trade, transportation, and utilities	102.1	102.7	103.2	104.3	104.6	105.5	105.9	107.2	107.5	.3	2.8

31. Continued—Employment Cost Index, wages and salaries, by occupation and industry group

[December 2005 = 100]

Series	2006		2007				2008			Percent change	
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	3 months ended	12 months ended
										Sept. 2008	
Wholesale trade	102.7	103.0	103.8	104.8	104.0	105.2	105.2	107.2	106.8	-0.4	2.7
Retail trade	101.9	102.8	103.1	104.2	105.1	106.1	106.4	107.6	108.1	.5	2.9
Transportation and warehousing	101.4	101.9	102.5	103.7	104.1	104.2	105.0	106.0	106.7	.7	2.5
Utilities	103.0	103.5	104.3	105.5	106.1	106.8	108.0	109.3	109.3	.0	3.0
Information	102.6	102.4	103.8	104.9	105.2	105.3	105.3	106.3	107.3	.9	2.0
Financial activities	102.5	102.8	104.7	104.9	106.0	105.9	107.2	107.7	107.7	.0	1.6
Finance and insurance	102.9	103.2	105.4	105.5	106.5	106.6	107.9	108.4	108.2	-.2	1.6
Real estate and rental and leasing	100.8	101.4	101.6	102.4	103.6	103.1	104.5	104.7	105.3	.6	1.6
Professional and business services	103.0	103.5	104.8	105.9	106.7	107.5	109.1	110.0	111.0	.9	4.0
Education and health services	103.0	104.0	104.8	105.6	106.9	107.7	108.6	109.2	110.2	.9	3.1
Education services	103.1	104.1	104.2	104.6	106.4	107.4	107.9	108.6	110.8	2.0	4.1
Health care and social assistance	103.0	103.9	104.9	105.8	107.0	107.8	108.7	109.4	110.1	.6	2.9
Hospitals	102.9	103.7	104.6	105.4	106.5	107.2	108.2	109.2	110.3	1.0	3.6
Leisure and hospitality	102.3	103.7	105.7	106.4	108.1	108.8	109.7	109.9	111.4	1.4	3.1
Accommodation and food services	102.2	103.8	106.0	106.5	108.4	109.0	110.0	110.4	111.9	1.4	3.2
Other services, except public administration	103.4	103.8	105.7	106.1	107.3	107.9	109.2	109.9	110.4	.5	2.9
State and local government workers	102.8	103.5	104.1	104.6	106.4	107.1	107.7	108.2	110.1	1.8	3.5
Workers by occupational group											
Management, professional, and related	102.9	103.5	104.0	104.3	106.3	107.0	107.6	108.2	110.1	1.8	3.6
Professional and related	103.0	103.6	103.9	104.2	106.3	107.0	107.5	108.1	110.1	1.9	3.6
Sales and office	102.6	103.2	104.5	104.8	106.3	107.0	107.4	107.9	109.3	1.3	2.8
Office and administrative support	102.7	103.4	104.7	105.0	106.5	107.3	107.8	108.3	109.7	1.3	3.0
Service occupations	102.4	103.9	104.5	105.2	106.5	107.7	108.3	108.6	110.4	1.7	3.7
Workers by industry											
Education and health services	103.1	103.6	104.0	104.2	106.3	107.1	107.5	108.1	110.2	1.9	3.7
Education services	103.0	103.4	103.7	103.9	106.1	106.8	107.2	107.7	109.9	2.0	3.6
Schools	103.0	103.4	103.6	103.9	106.1	106.8	107.2	107.7	109.9	2.0	3.6
Elementary and secondary schools	103.0	103.4	103.6	103.8	106.0	106.6	106.9	107.5	109.8	2.1	3.6
Health care and social assistance	104.8	105.5	106.6	107.2	108.2	109.2	110.1	111.0	112.8	1.6	4.3
Hospitals	103.1	104.4	105.7	106.5	107.6	108.6	109.8	110.3	111.4	1.0	3.5
Public administration [2]	102.0	103.5	104.5	105.2	106.4	107.4	108.2	108.6	109.9	1.2	3.3

[1] Consists of private industry workers (excluding farm and household workers) and State and local government (excluding Federal Government) workers.

[2] Consists of legislative, judicial, administrative, and regulatory activities.

NOTE: The Employment Cost Index data reflect the conversion to the 2002 North American Classification System (NAICS) and the 2000 Standard Occupational Classification (SOC) system. The NAICS and SOC data shown prior to 2006 are for informational purposes only. Series based on NAICS and SOC became the official BLS estimates starting in March 2006.

32. Employment Cost Index, benefits, by occupation and industry group

[December 2005 = 100]

Series	2006		2007				2008			Percent change	
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	3 months ended	12 months ended
										Sept. 2008	
Civilian workers	102.8	103.6	104.0	105.1	106.1	106.8	107.6	108.1	108.9	0.7	2.6
Private industry workers	102.5	103.1	103.2	104.3	105.0	105.6	106.5	107.0	107.5	.5	2.4
Workers by occupational group											
Management, professional, and related	102.8	103.4	103.8	104.9	105.6	106.0	107.3	107.9	108.5	.6	2.7
Sales and office	102.0	102.9	103.4	104.3	105.2	106.0	106.5	107.0	107.6	.6	2.3
Natural resources, construction, and maintenance	103.5	104.0	103.4	104.8	105.3	105.9	106.5	107.0	107.5	.5	2.1
Production, transportation, and material moving	101.6	102.0	101.2	102.4	102.7	103.7	104.4	104.5	104.8	.3	2.0
Service occupations	103.0	103.6	104.2	105.1	106.0	106.7	107.6	108.5	108.7	.2	2.5
Workers by industry											
Goods-producing	101.3	101.7	100.9	102.2	102.4	103.2	104.0	104.4	104.6	.2	2.1
Manufacturing	100.5	100.8	99.6	101.0	100.7	101.7	102.3	102.2	102.3	.1	1.6
Service-providing	103.0	103.7	104.1	105.2	106.0	106.6	107.6	108.1	108.7	.6	2.5
State and local government workers	104.1	105.2	107.0	108.0	110.3	111.0	111.4	111.8	113.9	1.9	3.3

NOTE: The Employment Cost Index data reflect the conversion to the 2002 North American Classification System (NAICS) and the 2000 Standard Occupational Classification (SOC) system. The NAICS and SOC data shown prior to 2006 are for informational purposes only. Series based on NAICS and SOC became the official BLS estimates starting in March 2006.

33. Employment Cost Index, private industry workers by bargaining status and region

[December 2005 = 100]

Series	2006		2007				2008			Percent change	
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	3 months ended	12 months ended
										Sept. 2008	
COMPENSATION											
Workers by bargaining status[1]											
Union	102.4	103.0	102.7	103.9	104.4	105.1	105.9	106.7	107.4	0.7	2.9
Goods-producing	101.8	102.2	101.5	102.8	103.1	104.0	104.6	105.6	106.2	.6	3.0
Manufacturing	100.5	100.8	99.2	100.0	100.0	101.0	101.4	101.7	102.1	.4	2.1
Service-providing	102.9	103.6	103.7	104.7	105.4	106.0	107.0	107.5	108.3	.7	2.8
Nonunion	102.6	103.2	104.2	105.1	105.9	106.5	107.5	108.3	108.9	.6	2.8
Goods-producing	102.0	102.5	103.3	104.2	104.8	105.4	106.5	107.1	107.6	.5	2.7
Manufacturing	101.7	102.1	102.8	103.7	104.1	104.6	105.6	106.2	106.6	.4	2.4
Service-providing	102.7	103.4	104.4	105.3	106.2	106.8	107.7	108.6	109.2	.6	2.8
Workers by region[1]											
Northeast	102.5	103.3	104.0	105.1	106.2	106.8	107.4	108.1	108.7	.6	2.4
South	102.8	103.5	104.3	105.3	106.1	106.7	107.8	108.5	109.1	.6	2.8
Midwest	102.3	102.8	103.3	104.2	104.6	105.3	106.0	107.0	107.4	.4	2.7
West	102.5	103.0	104.2	104.9	105.7	106.5	107.8	108.4	109.3	.8	3.4
WAGES AND SALARIES											
Workers by bargaining status[1]											
Union	101.7	102.3	102.8	103.7	104.4	104.7	105.5	106.7	107.4	.7	2.9
Goods-producing	101.9	102.3	102.7	103.6	104.3	104.3	105.2	106.4	107.1	.7	2.7
Manufacturing	101.4	101.7	102.0	102.5	102.9	102.6	103.4	104.4	104.9	.5	1.9
Service-providing	101.6	102.2	102.9	103.8	104.6	104.9	105.8	106.9	107.7	.7	3.0
Nonunion	102.7	103.3	104.5	105.3	106.2	106.9	107.9	108.7	109.4	.6	3.0
Goods-producing	102.4	103.0	104.2	105.0	105.8	106.4	107.7	108.4	109.0	.6	3.0
Manufacturing	102.0	102.5	103.6	104.2	104.9	105.5	106.6	107.3	108.0	.7	3.0
Service-providing	102.7	103.4	104.6	105.4	106.3	107.0	107.9	108.8	109.4	.6	2.9
Workers by region[1]											
Northeast	102.5	103.1	104.0	105.0	106.1	106.6	107.5	108.2	108.7	.5	2.5
South	102.9	103.6	104.6	105.6	106.5	107.0	108.1	109.1	109.8	.6	3.1
Midwest	102.0	102.6	103.6	104.4	105.0	105.6	106.3	107.5	107.9	.4	2.8
West	102.7	103.2	104.8	105.4	106.2	107.0	108.3	108.9	109.9	.9	3.5

[1] The indexes are calculated differently from those for the occupation and industry groups. For a detailed description of the index calculation, see the Monthly Labor Review Technical Note, "Estimation procedures for the Employment Cost Index," May 1982.

NOTE: The Employment Cost Index data reflect the conversion to the 2002 North American Classification System (NAICS) and the 2000 Standard Occupational Classification (SOC) system. The NAICS and SOC data shown prior to 2006 are for informational purposes only. Series based on NAICS and SOC became the official BLS estimates starting in March 2006.

34. National Compensation Survey: Retirement benefits in private industry by access, participation, and selected series, 2003–2007

Series	Year				
	2003	2004	2005	2006	2007 [1]
All retirement					
Percentage of workers with access					
All workers	57	59	60	60	61
White-collar occupations[2]	67	69	70	69	-
Management, professional, and related	-	-	-	-	76
Sales and office	-	-	-	-	64
Blue-collar occupations[2]	59	59	60	62	-
Natural resources, construction, and maintenance	-	-	-	-	61
Production, transportation, and material moving	-	-	-	-	65
Service occupations	28	31	32	34	36
Full-time	67	68	69	69	70
Part-time	24	27	27	29	31
Union	86	84	88	84	84
Non-union	54	56	56	57	58
Average wage less than $15 per hour	45	46	46	47	47
Average wage $15 per hour or higher	76	77	78	77	76
Goods-producing industries	70	70	71	73	70
Service-providing industries	53	55	56	56	58
Establishments with 1-99 workers	42	44	44	44	45
Establishments with 100 or more workers	75	77	78	78	78
Percentage of workers participating					
All workers	49	50	50	51	51
White-collar occupations[2]	59	61	61	60	-
Management, professional, and related	-	-	-	-	69
Sales and office	-	-	-	-	54
Blue-collar occupations[2]	50	50	51	52	-
Natural resources, construction, and maintenance	-	-	-	-	51
Production, transportation, and material moving	-	-	-	-	54
Service occupations	21	22	22	24	25
Full-time	58	60	60	60	60
Part-time	18	20	19	21	23
Union	83	81	85	80	81
Non-union	45	47	46	47	47
Average wage less than $15 per hour	35	36	35	36	36
Average wage $15 per hour or higher	70	71	71	70	69
Goods-producing industries	63	63	64	64	61
Service-providing industries	45	47	47	47	48
Establishments with 1-99 workers	35	37	37	37	37
Establishments with 100 or more workers	65	67	67	67	66
Take-up rate (all workers)[3]	-	-	85	85	84
Defined Benefit					
Percentage of workers with access					
All workers	20	21	22	21	21
White-collar occupations[2]	23	24	25	23	-
Management, professional, and related	-	-	-	-	29
Sales and office	-	-	-	-	19
Blue-collar occupations[2]	24	26	26	25	-
Natural resources, construction, and maintenance	-	-	-	-	26
Production, transportation, and material moving	-	-	-	-	26
Service occupations	8	6	7	8	8
Full-time	24	25	25	24	24
Part-time	8	9	10	9	10
Union	74	70	73	70	69
Non-union	15	16	16	15	15
Average wage less than $15 per hour	12	11	12	11	11
Average wage $15 per hour or higher	34	35	35	34	33
Goods-producing industries	31	32	33	32	29
Service-providing industries	17	18	19	18	19
Establishments with 1-99 workers	9	9	10	9	9
Establishments with 100 or more workers	34	35	37	35	34

See footnotes at end of table.

34. Continued—National Compensation Survey: Retirement benefits in private industry by access, participation, and selected series, 2003–2007

Series	Year				
	2003	2004	2005	2006	2007 [1]
Percentage of workers participating					
All workers	20	21	21	20	20
White-collar occupations[2]	22	24	24	22	-
Management, professional, and related	-	-	-	-	28
Sales and office	-	-	-	-	17
Blue-collar occupations[2]	24	25	26	25	-
Natural resources, construction, and maintenance	-	-	-	-	25
Production, transportation, and material moving	-	-	-	-	25
Service occupations	7	6	7	7	7
Full-time	24	24	25	23	23
Part-time	8	9	9	8	9
Union	72	69	72	68	67
Non-union	15	15	15	14	15
Average wage less than $15 per hour	11	11	11	10	10
Average wage $15 per hour or higher	33	35	34	33	32
Goods-producing industries	31	31	32	31	28
Service-providing industries	16	18	18	17	18
Establishments with 1-99 workers	8	9	9	9	9
Establishments with 100 or more workers	33	34	36	33	32
Take-up rate (all workers)[3]	-	-	97	96	95
Defined Contribution					
Percentage of workers with access					
All workers	51	53	53	54	55
White-collar occupations[2]	62	64	64	65	-
Management, professional, and related	-	-	-	-	71
Sales and office	-	-	-	-	60
Blue-collar occupations[2]	49	49	50	53	-
Natural resources, construction, and maintenance	-	-	-	-	51
Production, transportation, and material moving	-	-	-	-	56
Service occupations	23	27	28	30	32
Full-time	60	62	62	63	64
Part-time	21	23	23	25	27
Union	45	48	49	50	49
Non-union	51	53	54	55	56
Average wage less than $15 per hour	40	41	41	43	44
Average wage $15 per hour or higher	67	68	69	69	69
Goods-producing industries	60	60	61	63	62
Service-providing industries	48	50	51	52	53
Establishments with 1-99 workers	38	40	40	41	42
Establishments with 100 or more workers	65	68	69	70	70
Percentage of workers participating					
All workers	40	42	42	43	43
White-collar occupations[2]	51	53	53	53	-
Management, professional, and related	-	-	-	-	60
Sales and office	-	-	-	-	47
Blue-collar occupations[2]	38	38	38	40	-
Natural resources, construction, and maintenance	-	-	-	-	40
Production, transportation, and material moving	-	-	-	-	41
Service occupations	16	18	18	20	20
Full-time	48	50	50	51	50
Part-time	14	14	14	16	18
Union	39	42	43	44	41
Non-union	40	42	41	43	43
Average wage less than $15 per hour	29	30	29	31	30
Average wage $15 per hour or higher	57	59	59	58	57
Goods-producing industries	49	49	50	51	49
Service-providing industries	37	40	39	40	41
Establishments with 1-99 workers	31	32	32	33	33
Establishments with 100 or more workers	51	53	53	54	53
Take-up rate (all workers)[3]	-	-	78	79	77

See footnotes at end of table.

34. Continued—National Compensation Survey: Retirement benefits in private industry by access, participation, and selected series, 2003–2007

Series	Year				
	2003	2004	2005	2006	2007 [1]
Employee Contribution Requirement					
Employee contribution required	-	-	61	61	65
Employee contribution not required	-	-	31	33	35
Not determinable	-	-	8	6	0
Percent of establishments					
Offering retirement plans	47	48	51	48	46
Offering defined benefit plans	10	10	11	10	10
Offering defined contribution plans	45	46	48	47	44

[1] The 2002 North American Industry Classification System (NAICS) replaced the 1987 Standard Industrial Classification (SIC) System. Estimates for goods-producing and service-providing (formerly service-producing) industries are considered comparable. Also introduced was the 2000 Standard Occupational Classification (SOC) to replace the 1990 Census of Population system. Only service occupations are considered comparable.

[2] The white-collar and blue-collar occupation series were discontinued effective 2007.

[3] The take-up rate is an estimate of the percentage of workers with access to a plan who participate in the plan.

Note: Where applicable, dashes indicate no employees in this category or data do not meet publication criteria.

35. National Compensation Survey: Health insurance benefits in private industry by access, particpation, and selected series, 2003-2007

Series	Year				
	2003	2004	2005	2006	2007 [1]
Medical insurance					
Percentage of workers with access					
All workers	60	69	70	71	71
White-collar occupations[2]	65	76	77	77	-
Management, professional, and related	-	-	-	-	85
Sales and office	-	-	-	-	71
Blue-collar occupations[2]	64	76	77	77	-
Natural resources, construction, and maintenance	-	-	-	-	76
Production, transportation, and material moving	-	-	-	-	78
Service occupations	38	42	44	45	46
Full-time	73	84	85	85	85
Part-time	17	20	22	22	24
Union	67	89	92	89	88
Non-union	59	67	68	68	69
Average wage less than $15 per hour	51	57	58	57	57
Average wage $15 per hour or higher	74	86	87	88	87
Goods-producing industries	68	83	85	86	85
Service-providing industries	57	65	66	66	67
Establishments with 1-99 workers	49	58	59	59	59
Establishments with 100 or more workers	72	82	84	84	84
Percentage of workers participating					
All workers	45	53	53	52	52
White-collar occupations[2]	50	59	58	57	-
Management, professional, and related	-	-	-	-	67
Sales and office	-	-	-	-	48
Blue-collar occupations[2]	51	60	61	60	-
Natural resources, construction, and maintenance	-	-	-	-	61
Production, transportation, and material moving	-	-	-	-	60
Service occupations	22	24	27	27	28
Full-time	56	66	66	64	64
Part-time	9	11	12	13	12
Union	60	81	83	80	78
Non-union	44	50	49	49	49
Average wage less than $15 per hour	35	40	39	38	37
Average wage $15 per hour or higher	61	71	72	71	70
Goods-producing industries	57	69	70	70	68
Service-providing industries	42	48	48	47	47
Establishments with 1-99 workers	36	43	43	43	42
Establishments with 100 or more workers	55	64	65	63	62
Take-up rate (all workers)[3]	-	-	75	74	73
Dental					
Percentage of workers with access					
All workers	40	46	46	46	46
White-collar occupations[2]	47	53	54	53	-
Management, professional, and related	-	-	-	-	62
Sales and office	-	-	-	-	47
Blue-collar occupations[2]	40	47	47	46	-
Natural resources, construction, and maintenance	-	-	-	-	43
Production, transportation, and material moving	-	-	-	-	49
Service occupations	22	25	25	27	28
Full-time	49	56	56	55	56
Part-time	9	13	14	15	16
Union	57	73	73	69	68
Non-union	38	43	43	43	44
Average wage less than $15 per hour	30	34	34	34	34
Average wage $15 per hour or higher	55	63	62	62	61
Goods-producing industries	48	56	56	56	54
Service-providing industries	37	43	43	43	44
Establishments with 1-99 workers	27	31	31	31	30
Establishments with 100 or more workers	55	64	65	64	64

See footnotes at end of table.

35. Continued—National Compensation Survey: Health insurance benefits in private industry by access, particpation, and selected series, 2003-2007

Series	Year				
	2003	2004	2005	2006	2007 [1]
Percentage of workers participating					
All workers	32	37	36	36	36
White-collar occupations[2]	37	43	42	41	-
Management, professional, and related	-	-	-	-	51
Sales and office	-	-	-	-	33
Blue-collar occupations[2]	33	40	39	38	-
Natural resources, construction, and maintenance	-	-	-	-	36
Production, transportation, and material moving	-	-	-	-	38
Service occupations	15	16	17	18	20
Full-time	40	46	45	44	44
Part-time	6	8	9	10	9
Union	51	68	67	63	62
Non-union	30	33	33	33	33
Average wage less than $15 per hour	22	26	24	23	23
Average wage $15 per hour or higher	47	53	52	52	51
Goods-producing industries	42	49	49	49	45
Service-providing industries	29	33	33	32	33
Establishments with 1-99 workers	21	24	24	24	24
Establishments with 100 or more workers	44	52	51	50	49
Take-up rate (all workers)[3]	-	-	78	78	77
Vision care					
Percentage of workers with access	25	29	29	29	29
Percentage of workers participating	19	22	22	22	22
Outpatient Prescription drug coverage					
Percentage of workers with access	-	-	64	67	68
Percentage of workers participating	-	-	48	49	49
Percent of estalishments offering healthcare benefits	58	61	63	62	60
Percentage of medical premium paid by Employer and Employee					
Single coverage					
Employer share	82	82	82	82	81
Employee share	18	18	18	18	19
Family coverage					
Employer share	70	69	71	70	71
Employee share	30	31	29	30	29

[1] The 2002 North American Industry Classification System (NAICS) replaced the 1987 Standard Industrial Classification (SIC) System. Estimates for goods-producing and service-providing (formerly service-producing) industries are considered comparable. Also introduced was the 2000 Standard Occupational Classification (SOC) to replace the 1990 Census of Population system. Only service occupations are considered comparable.

[2] The white-collar and blue-collar occupation series were discontinued effective 2007.

[3] The take-up rate is an estimate of the percentage of workers with access to a plan who participate in the plan.

Note: Where applicable, dashes indicate no employees in this category or data do not meet publication criteria.

36. National Compensation Survey: Percent of workers in private industry with access to selected benefits, 2003-2007

Benefit	Year				
	2003	2004	2005	2006	2007
Life insurance	50	51	52	52	58
Short-term disabilty insurance	39	39	40	39	39
Long-term disability insurance	30	30	30	30	31
Long-term care insurance	11	11	11	12	12
Flexible work place	4	4	4	4	5
Section 125 cafeteria benefits					
Flexible benefits	-	-	17	17	17
Dependent care reimbursement account	-	-	29	30	31
Healthcare reimbursement account	-	-	31	32	33
Health Savings Account	-	-	5	6	8
Employee assistance program	-	-	40	40	42
Paid leave					
Holidays	79	77	77	76	77
Vacations	79	77	77	77	77
Sick leave	-	59	58	57	57
Personal leave	-	-	36	37	38
Family leave					
Paid family leave	-	-	7	8	8
Unpaid family leave	-	-	81	82	83
Employer assistance for child care	18	14	14	15	15
Nonproduction bonuses	49	47	47	46	47

Note: Where applicable, dashes indicate no employees in this category or data do not meet publication criteria.

37. Work stoppages involving 1,000 workers or more

Measure	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.[p]
Number of stoppages:															
Beginning in period	20	21	3	1	2	0	2	2	1	2	2	1	2	2	2
In effect during period	23	23	3	2	4	1	3	4	2	4	2	1	2	2	3
Workers involved:															
Beginning in period (in thousands)	70.1	189.2	41.7	10.5	6.5	0	6.2	5.7	2.3	3.4	4.2	8.5	7	28.2	8.7
In effect during period (in thousands)	191	220.9	41.7	14.2	20.7	10.5	16.7	11.9	6	9.4	4.2	8.5	7	28.2	35.7
Days idle:															
Number (in thousands)	2,687.50	1,264.80	73.9	284	254.8	220.5	148.8	140.9	104.4	125	12.3	42.5	102.4	469.8	521.7
Percent of estimated working time [1]	0.01	0.01	0	0.01	0.01	0.01	0.01	0	0	0	0	0	0	0.02	0.02

[1] Agricultural and government employees are included in the total employed and total working time; private household, forestry, and fishery employees are excluded. An explanation of the measurement of idleness as a percentage of the total time worked is found in "Total economy measures of strike idleness," *Monthly Labor Review*, October 1968, pp. 54–56.

NOTE: p = preliminary.

38. Consumer Price Indexes for All Urban Consumers and for Urban Wage Earners and Clerical Workers: U.S. city average, by expenditure category and commodity or service group

[1982–84 = 100, unless otherwise indicated]

Series	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
CONSUMER PRICE INDEX FOR ALL URBAN CONSUMERS															
All items	201.6	207.342	208.936	210.177	210.036	211.080	211.693	213.528	214.823	216.632	218.815	219.964	219.086	218.783	216.573
All items (1967 = 100)	603.9	621.106	625.879	629.598	629.174	632.301	634.139	639.636	643.515	648.933	655.474	658.915	656.284	655.376	648.758
Food and beverages	195.7	203.300	206.124	206.563	206.936	208.837	209.462	209.692	211.365	212.251	213.383	215.326	216.419	217.672	218.705
Food	195.2	202.916	205.796	206.277	206.704	208.618	209.166	209.385	211.102	212.054	213.243	215.299	216.422	217.696	218.738
Food at home	193.1	201.245	204.333	204.745	205.208	207.983	208.329	208.203	210.851	211.863	213.171	215.785	217.259	218.629	219.660
Cereals and bakery products	212.8	222.107	224.691	225.668	226.461	228.661	233.389	236.261	240.034	244.192	245.758	250.321	250.080	250.924	252.832
Meats, poultry, fish, and eggs	186.6	195.616	198.474	198.616	198.755	200.035	199.688	199.775	200.770	200.960	202.914	205.075	207.488	209.937	210.706
Dairy and related products[1]	181.4	194.770	205.319	205.959	205.299	206.905	208.166	206.171	207.680	207.778	209.117	213.981	214.748	213.533	212.733
Fruits and vegetables	252.9	262.628	263.648	268.407	272.482	279.072	272.129	268.446	272.746	276.481	277.957	280.209	283.296	285.986	285.484
Nonalcoholic beverages and beverage materials	147.4	153.432	155.545	154.299	153.648	157.863	157.805	158.089	159.730	158.336	158.320	159.346	160.055	161.499	163.727
Other foods at home	169.6	173.275	174.695	173.963	174.057	176.085	177.863	178.238	181.806	182.680	183.804	185.725	186.991	187.944	189.348
Sugar and sweets	171.5	176.772	177.236	178.600	178.631	180.193	180.588	182.214	184.878	185.097	185.558	187.067	187.813	189.929	190.515
Fats and oils	168.0	172.921	176.050	175.327	176.068	181.813	184.878	182.808	190.640	193.364	196.150	201.205	203.059	206.274	208.300
Other foods	185.0	188.244	189.695	188.340	188.325	190.037	192.064	192.597	195.993	196.787	197.888	199.566	200.961	201.388	202.993
Other miscellaneous foods[1,2]	113.9	115.105	114.850	115.396	115.267	115.162	118.182	117.321	118.500	118.744	118.453	120.510	121.033	121.144	122.699
Food away from home[1]	199.4	206.659	209.275	209.854	210.233	211.070	211.878	212.537	213.083	213.967	215.015	216.376	217.063	218.225	219.290
Other food away from home[1,2]	136.6	144.068	146.074	146.628	145.814	146.649	148.385	148.564	148.667	149.666	149.873	151.120	151.133	152.040	153.544
Alcoholic beverages	200.7	207.026	209.126	209.018	208.704	210.425	212.044	212.407	213.503	213.532	213.912	214.394	215.094	216.055	216.972
Housing	203.2	209.586	210.701	210.745	210.933	212.244	213.026	214.389	214.890	215.809	217.941	219.610	219.148	218.184	217.383
Shelter	232.1	240.611	242.405	242.207	242.372	243.871	244.786	245.995	246.004	246.069	247.083	248.075	247.985	247.737	247.844
Rent of primary residence	225.1	234.679	237.135	238.169	239.102	239.850	240.325	240.874	241.474	241.803	242.640	243.367	244.181	244.926	245.855
Lodging away from home	136.0	142.813	143.172	136.703	133.545	140.176	144.092	149.434	146.378	145.634	148.621	153.032	149.146	143.597	141.140
Owners' equivalent rent of primary residence[3]	238.2	246.235	248.075	248.876	249.532	250.106	250.481	250.966	251.418	251.576	252.170	252.504	252.957	253.493	253.902
Tenants' and household insurance[1,2]	116.5	117.004	116.640	116.997	117.003	117.435	117.622	117.701	118.422	118.411	119.092	118.764	118.562	119.944	119.916
Fuels and utilities	194.7	200.632	200.836	202.161	203.006	204.796	205.795	209.221	213.302	219.881	231.412	239.039	235.650	228.450	221.199
Fuels	177.1	181.744	181.509	182.725	183.516	185.107	185.994	189.693	194.121	201.212	213.762	221.742	217.455	209.501	201.176
Fuel oil and other fuels	234.9	251.453	261.745	291.845	299.296	306.937	308.269	332.139	342.811	363.872	389.423	395.706	367.794	349.164	318.667
Gas (piped) and electricity	182.1	186.262	185.337	184.753	185.155	186.475	187.376	190.105	194.379	200.999	213.375	221.805	218.656	210.950	203.503
Household furnishings and operations	127.0	126.875	126.233	126.252	126.066	126.515	126.753	127.423	127.332	127.598	127.625	127.884	128.013	128.584	128.789
Apparel	119.5	118.998	121.846	121.204	118.257	115.795	117.839	120.881	122.113	120.752	117.019	114.357	116.376	121.168	122.243
Men's and boys' apparel	114.1	112.368	114.953	114.807	112.026	110.691	112.917	114.994	116.653	116.479	112.011	109.669	110.180	112.720	115.067
Women's and girls' apparel	110.7	110.296	113.402	112.166	109.418	104.367	106.340	110.645	111.221	108.722	104.312	100.049	104.211	111.774	111.833
Infants' and toddlers' apparel[1]	116.5	113.948	117.149	117.339	113.779	113.861	115.750	116.037	116.358	114.582	111.555	109.218	109.558	113.494	116.158
Footwear	123.5	122.374	124.675	125.005	122.258	121.148	122.377	124.407	126.212	125.537	123.568	122.421	121.982	124.907	126.442
Transportation	180.9	184.682	184.952	190.677	189.984	190.839	190.520	195.189	198.608	205.262	211.787	212.806	206.739	203.861	192.709
Private transportation	177.0	180.778	180.919	186.839	186.134	186.978	186.571	191.067	194.574	201.133	207.257	208.038	201.779	199.153	187.976
New and used motor vehicles[2]	95.6	94.303	94.201	94.562	94.754	94.834	94.581	94.318	93.973	93.705	93.598	93.650	93.260	92.480	92.071
New vehicles	137.6	136.254	135.344	136.250	136.664	136.827	136.279	135.727	135.175	134.669	134.516	134.397	133.404	132.399	132.264
Used cars and trucks[1]	140.0	135.747	136.950	136.616	136.943	137.203	137.248	137.225	136.787	136.325	135.980	135.840	135.405	132.916	129.733
Motor fuel	221.0	239.070	239.048	262.282	258.132	260.523	259.242	278.739	294.291	322.124	347.418	349.731	323.822	315.078	268.537
Gasoline (all types)	219.9	237.959	237.819	260.943	256.790	259.338	257.845	276.497	291.910	319.787	344.981	347.357	321.511	313.535	266.382
Motor vehicle parts and equipment	117.3	121.583	123.017	123.487	123.928	124.282	125.225	126.325	126.049	126.824	127.824	129.118	130.327	131.048	131.917
Motor vehicle maintenance and repair	215.6	222.963	224.939	225.672	226.120	227.732	228.731	229.765	230.528	231.730	233.162	234.788	236.125	237.121	238.227
Public transportation	226.6	230.002	232.725	233.758	233.408	234.334	235.724	242.929	244.164	251.600	264.681	270.002	268.487	261.318	252.323
Medical care	336.2	351.054	355.653	357.041	357.661	360.459	362.155	363.000	363.184	363.396	363.616	363.963	364.477	365.036	365.746
Medical care commodities	285.9	289.999	292.161	293.201	293.610	295.355	296.130	297.308	296.951	294.896	295.194	294.777	295.003	295.461	295.791
Medical care services	350.6	369.302	374.750	376.250	376.940	380.135	382.196	382.872	383.292	384.505	384.685	385.361	385.990	386.579	387.440
Professional services	289.3	300.792	303.532	303.780	304.784	306.529	307.928	308.726	309.227	310.917	311.317	311.926	312.396	312.527	312.914
Hospital and related services	468.1	498.922	510.006	515.359	515.677	523.313	527.971	528.968	530.144	531.022	531.606	533.558	535.501	537.728	540.853
Recreation[2]	110.9	111.443	111.753	111.842	111.705	112.083	112.365	112.731	112.874	112.987	112.991	113.277	113.786	114.032	114.169
Video and audio[1,2]	104.6	102.949	103.157	102.719	102.691	102.986	103.171	103.548	103.477	102.988	102.306	102.203	102.546	102.706	102.193
Education and communication[2]	116.8	119.577	121.557	121.409	121.506	121.762	121.766	121.832	122.073	122.348	122.828	123.445	124.653	125.505	125.686
Education[2]	162.1	171.388	176.339	176.717	176.927	177.440	177.460	177.407	177.754	177.994	178.385	179.229	183.184	186.148	186.669
Educational books and supplies	388.9	420.418	431.432	431.606	434.352	437.822	439.052	439.906	442.160	442.770	443.309	444.382	458.989	462.787	463.825
Tuition, other school fees, and child care	468.1	494.079	508.449	509.605	510.016	511.301	511.253	511.013	511.887	512.579	513.743	516.264	527.230	536.082	537.606
Communication[1,2]	84.1	83.367	83.659	83.250	83.282	83.396	83.391	83.502	83.670	83.929	84.394	84.840	84.701	84.524	84.535
Information and information processing[1,2]	81.7	80.720	80.946	80.519	80.546	80.642	80.638	80.752	80.921	81.080	81.513	81.965	81.815	81.635	81.652
Telephone services[1,2]	95.8	98.247	99.031	98.775	98.792	98.906	98.837	99.031	99.494	99.879	100.677	101.339	101.301	101.311	101.407
Information and information processing other than telephone services[1,4]	12.5	10.597	10.385	10.204	10.215	10.229	10.253	10.246	10.170	10.118	10.071	10.087	10.012	9.901	9.874
Personal computers and peripheral equipment[1,2]	120.9	108.411	104.336	100.104	100.000	100.998	100.545	100.359	98.853	97.028	95.663	94.711	92.921	90.797	89.945
Other goods and services	321.7	333.328	335.680	336.379	337.633	339.052	340.191	341.827	343.410	344.709	345.885	346.810	346.990	348.166	349.276
Tobacco and smoking products	519.9	554.184	560.626	561.967	566.696	572.684	575.227	574.890	576.359	581.185	589.904	596.782	597.361	597.581	599.744
Personal care[1]	190.2	195.622	196.763	197.156	197.643	198.112	198.716	199.982	201.028	201.523	201.537	201.545	201.623	202.486	203.107
Personal care products[1]	155.8	158.285	158.381	158.561	158.236	158.201	157.677	158.440	159.398	158.790	158.868	158.989	159.252	159.643	159.826
Personal care services[1]	209.7	216.559	217.887	218.604	219.656	219.932	220.848	222.752	222.799	223.649	223.520	223.719	224.151	224.614	225.564

See footnotes at end of table.

38. Continued—Consumer Price Indexes for All Urban Consumers and for Urban Wage Earners and Clerical Workers
U.S. city average, by expenditure category and commodity or service group
[1982–84 = 100, unless otherwise indicated]

Series	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
Miscellaneous personal services	313.6	324.984	328.056	328.610	329.908	332.183	333.826	335.427	337.685	339.824	340.547	340.077	341.053	343.431	343.131
Commodity and service group:															
Commodities	164.0	167.509	168.664	171.043	170.511	171.179	171.530	173.884	175.838	178.341	180.534	181.087	179.148	179.117	175.257
Food and beverages	195.7	203.300	206.124	206.563	206.936	208.837	209.462	209.692	211.365	212.251	213.383	215.326	216.419	217.672	218.705
Commodities less food and beverages	145.9	147.515	147.924	151.067	150.162	150.303	150.530	153.682	155.690	158.778	161.337	161.301	158.179	157.621	151.874
Nondurables less food and beverages	176.7	182.526	184.091	190.560	188.635	188.692	189.420	196.185	200.926	207.875	213.489	213.363	207.284	206.919	195.127
Apparel	119.5	118.998	121.846	121.204	118.257	115.795	117.839	120.881	122.113	120.752	117.019	114.357	116.376	121.168	122.243
and apparel	216.3	226.224	227.026	238.067	236.735	238.389	238.297	247.546	254.599	266.943	278.584	280.062	268.740	265.100	244.935
Durables	114.5	112.473	111.889	112.103	112.093	112.300	112.094	112.059	111.671	111.362	111.232	111.275	110.779	110.077	109.677
Services	238.9	246.848	248.878	248.974	249.225	250.648	251.527	252.817	253.426	254.509	256.668	258.422	258.638	258.059	257.559
Rent of shelter[3]	241.9	250.813	252.713	252.495	252.669	254.239	255.199	256.470	256.463	256.532	257.585	258.637	258.547	258.255	258.368
Transportation services	230.8	233.731	235.458	236.449	236.504	237.347	237.929	239.556	240.150	242.343	245.759	247.869	248.806	248.047	247.762
Other services	277.5	285.559	289.307	289.592	289.945	290.905	291.406	292.218	293.016	293.959	294.668	295.677	297.923	299.598	299.923
Special indexes:															
All items less food	202.7	208.098	209.478	210.846	210.610	211.512	212.136	214.236	215.462	217.411	219.757	220.758	219.552	218.991	216.250
All items less shelter	191.9	196.639	198.171	199.998	199.734	200.609	201.110	203.217	205.040	207.566	210.242	211.468	210.264	209.936	206.776
All items less medical care	194.7	200.080	201.544	202.770	202.600	203.569	204.136	205.992	207.317	209.170	211.408	212.576	211.653	211.321	209.021
Commodities less food	148.0	149.720	150.180	153.234	152.344	152.531	152.799	155.881	157.870	160.880	163.385	163.364	160.341	159.825	154.250
Nondurables less food	178.2	184.012	185.610	191.668	189.844	190.000	190.781	197.167	201.693	208.233	213.538	213.447	207.769	207.483	196.442
Nondurables less food and apparel	213.9	223.411	224.338	234.241	233.014	234.667	234.736	243.109	249.571	260.703	271.235	272.612	262.470	259.278	241.183
Nondurables	186.7	193.468	195.646	199.253	198.422	199.346	200.030	203.767	207.096	211.240	214.783	215.628	212.882	213.274	207.435
Services less rent of shelter[3]	253.3	260.764	263.109	263.599	263.966	265.311	266.154	267.567	269.007	271.467	275.200	277.982	278.606	277.615	276.297
Services less medical care services	229.6	236.847	238.657	238.671	238.894	240.201	241.004	242.310	242.921	243.982	246.219	248.007	248.198	247.563	246.997
Energy	196.9	207.723	207.588	219.009	217.506	219.465	219.311	230.505	240.194	257.106	275.621	280.833	266.283	258.020	231.561
All items less energy	203.7	208.925	210.714	210.888	210.890	211.846	212.545	213.420	213.851	214.101	214.600	215.335	215.873	216.397	216.695
All items less food and energy	205.9	210.729	212.318	212.435	212.356	213.138	213.866	214.866	215.059	215.180	215.553	216.045	216.476	216.862	217.023
Commodities less food and energy	140.6	140.053	140.501	140.547	140.014	139.845	140.324	141.056	141.156	140.677	139.925	139.535	139.785	140.528	140.659
Energy commodities	223.0	241.018	241.642	265.420	261.976	264.660	263.508	283.362	298.757	326.414	351.886	354.423	328.240	318.918	272.921
Services less energy	244.7	253.058	255.385	255.549	255.785	257.220	258.098	259.249	259.503	260.049	261.216	262.323	262.867	262.980	263.156
CONSUMER PRICE INDEX FOR URBAN WAGE EARNERS AND CLERICAL WORKERS															
All items	197.1	202.767	204.338	205.891	205.777	206.744	207.254	209.147	210.698	212.788	215.223	216.304	215.247	214.935	212.182
All items (1967 = 100)	587.2	603.982	608.662	613.287	612.948	615.828	617.345	622.985	627.606	633.830	641.082	644.303	641.155	640.226	632.025
Food and beverages	194.9	202.531	205.428	205.763	206.141	208.055	208.674	208.927	210.559	211.438	212.700	214.662	215.850	217.098	218.141
Food	194.4	202.134	205.082	205.451	205.855	207.794	208.317	208.571	210.252	211.200	212.514	214.577	215.812	217.090	218.120
Food at home	192.2	200.273	203.442	203.741	204.141	206.870	207.242	207.196	209.657	210.624	212.079	214.679	216.214	217.594	218.600
Cereals and bakery products	213.1	222.409	224.897	225.941	226.696	229.105	233.915	236.764	240.663	244.648	246.493	250.972	250.842	251.448	253.561
Meats, poultry, fish, and eggs	186.1	195.193	198.146	198.325	198.489	199.686	199.141	199.484	200.285	200.501	202.424	204.557	207.211	209.515	210.314
Dairy and related products[1]	180.9	194.474	205.100	205.850	205.149	206.652	207.750	205.660	207.135	207.088	208.510	213.582	214.139	212.841	211.808
Fruits and vegetables	251.0	260.484	261.774	265.736	269.533	275.843	268.954	266.030	270.169	274.136	276.641	278.885	282.171	284.612	283.549
Nonalcoholic beverages and beverage materials	146.7	152.786	154.873	153.610	152.883	157.130	157.456	157.488	158.799	157.285	157.309	158.527	159.024	160.850	163.265
Other foods at home	169.1	172.630	174.215	173.393	173.511	175.572	177.442	177.713	181.215	182.241	183.342	185.174	186.458	187.467	188.806
Sugar and sweets	170.5	175.323	176.248	176.845	177.051	178.902	179.740	181.033	183.725	184.127	184.378	186.054	186.860	188.914	189.574
Fats and oils	168.7	173.640	176.683	176.101	176.736	182.307	185.292	183.706	191.560	194.228	197.155	201.821	203.721	207.069	208.973
Other foods	185.2	188.405	189.987	188.657	188.646	190.364	192.430	192.832	196.106	197.081	198.153	199.722	201.119	201.632	203.138
Other miscellaneous foods[1,2]	114.2	115.356	115.378	115.803	115.658	115.658	118.828	117.754	118.751	119.248	118.879	121.015	121.443	121.589	123.026
Food away from home[1]	199.1	206.412	209.037	209.518	209.931	210.776	211.517	212.193	212.794	213.723	214.851	216.177	217.002	218.147	219.219
Other food away from home[1,2]	136.2	143.462	144.764	145.233	144.454	145.625	146.924	147.188	147.335	148.517	149.306	150.232	150.301	151.321	152.910
Alcoholic beverages	200.6	207.097	209.176	208.958	208.934	210.473	212.507	212.748	213.633	213.486	213.976	214.440	214.931	215.728	216.953
Housing	198.5	204.795	205.916	206.288	206.638	207.692	208.268	209.388	210.161	211.191	213.441	215.026	214.743	213.954	213.156
Shelter	224.8	232.998	234.812	235.069	235.480	236.550	237.158	237.965	238.261	238.353	239.198	239.845	240.038	240.163	240.517
Rent of primary residence	224.2	233.806	236.259	237.288	238.216	238.955	239.419	239.932	240.507	240.818	241.623	242.276	243.010	243.741	244.624
Lodging away from home[2]	135.3	142.339	142.666	136.244	133.179	139.825	143.046	148.110	145.936	144.979	148.378	152.248	148.368	142.591	140.763
Owners' equivalent rent of primary residence[3]	216.0	223.175	224.811	225.548	226.151	226.703	227.057	227.488	227.893	228.007	228.536	228.824	229.219	229.670	230.028
Tenants' and household insurance[1,2]	116.8	117.366	116.982	117.370	117.396	117.740	117.921	117.999	118.683	118.615	119.293	119.006	118.894	120.279	120.258
Fuels and utilities	193.1	198.863	198.796	200.151	200.831	202.663	203.584	206.861	210.912	217.388	228.843	236.381	233.373	226.709	219.325
Fuels	174.4	179.031	178.539	179.777	180.379	182.025	182.823	186.315	190.657	197.554	209.843	217.640	213.807	206.544	198.191
Fuel oil and other fuels	234.0	251.121	261.972	292.098	298.656	306.087	307.599	329.271	339.009	358.947	381.903	388.208	363.535	345.907	317.012
Gas (piped) and electricity	180.2	184.357	183.172	182.781	183.066	184.522	185.324	188.143	192.434	199.045	211.398	219.612	216.557	209.442	201.651
Household furnishings and operations	122.6	122.477	122.039	122.031	121.880	122.322	122.547	123.184	123.108	123.287	123.434	123.798	123.944	124.500	124.719
Apparel	119.1	118.518	121.536	120.920	118.126	115.866	117.883	120.809	121.855	120.407	116.706	113.978	116.214	120.990	121.957
Men's and boys' apparel	114.0	112.224	114.710	114.784	112.487	111.494	113.592	115.808	117.136	116.621	112.395	109.969	110.513	112.973	115.495
Women's and girls' apparel	110.3	110.202	113.623	112.165	109.375	104.456	106.512	110.712	110.971	108.594	104.062	99.772	104.584	112.304	111.880
Infants' and toddlers' apparel[1]	118.6	116.278	119.670	119.897	116.419	116.323	118.442	118.990	119.200	117.213	114.057	111.502	111.593	115.764	118.496
Footwear	123.1	122.062	124.372	124.649	122.029	121.137	122.408	124.343	126.150	125.335	123.381	122.380	122.026	124.873	126.352
Transportation	180.3	184.344	184.639	190.761	189.967	190.918	190.639	195.710	199.556	206.757	213.633	214.533	207.796	204.785	192.198
Private transportation	177.5	181.496	181.717	187.951	187.159	188.093	187.762	192.740	196.641	203.781	210.423	211.201	204.348	201.476	188.871
New and used motor vehicles[2]	94.7	93.300	93.268	93.529	93.733	93.842	93.664	93.455	93.158	92.850	92.714	92.686	92.287	91.305	90.530

See footnotes at end of table.

38. Continued—Consumer Price Indexes for All Urban Consumers and for Urban Wage Earners and Clerical Workers: U.S. city average, by expenditure category and commodity or service group

[1982–84 = 100, unless otherwise indicated]

Series	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
New vehicles	138.6	137.415	136.509	137.372	137.736	137.931	137.445	136.910	136.456	135.933	135.728	135.556	134.540	133.504	133.351
Used cars and trucks [1]	140.8	136.586	137.798	137.457	137.791	138.052	138.094	138.070	137.616	137.145	136.790	136.639	136.186	133.669	130.444
Motor fuel	221.6	239.900	240.040	263.248	259.032	261.531	260.402	279.975	295.618	323.495	348.762	351.124	325.116	316.717	269.639
Gasoline (all types)	220.7	238.879	238.906	262.013	257.792	260.457	259.112	277.842	293.349	321.291	346.459	348.888	322.930	315.324	267.580
Motor vehicle parts and equipment	116.9	121.356	122.830	123.302	123.786	124.416	125.238	126.330	126.032	126.742	127.750	128.997	130.228	131.072	132.088
Motor vehicle maintenance and repair	218.1	225.535	227.472	228.267	228.692	230.255	231.349	232.344	232.983	234.221	235.550	237.324	238.583	239.571	240.688
Public transportation	225.0	228.531	231.182	231.999	231.363	232.594	233.979	240.729	241.966	249.310	261.779	266.259	264.755	258.142	249.168
Medical care	335.7	350.882	355.719	357.165	357.745	360.710	362.329	363.069	363.356	363.462	363.628	363.942	364.652	365.250	366.000
Medical care commodities	279.0	282.558	284.517	285.475	285.913	287.703	288.335	289.254	288.796	286.825	287.033	286.562	286.880	287.397	287.725
Medical care services	351.1	370.111	375.899	377.498	378.119	381.507	383.510	384.149	384.753	385.769	385.911	386.560	387.420	388.036	388.947
Professional services	291.7	303.169	306.072	306.300	307.333	309.169	310.426	311.259	311.757	313.294	313.618	314.235	314.893	314.977	315.458
Hospital and related services	463.6	493.740	505.077	510.836	510.961	518.853	523.654	524.534	526.495	527.230	527.948	529.798	532.065	534.394	537.382
Recreation [2]	108.2	108.572	108.793	108.805	108.702	109.046	109.315	109.742	109.775	109.876	109.905	110.198	110.698	110.904	110.947
Video and audio [1,2]	103.9	102.559	102.833	102.465	102.523	102.839	103.028	103.525	103.414	102.958	102.306	102.267	102.643	102.819	102.267
Education and communication [2]	113.9	116.301	117.891	117.686	117.782	118.097	118.079	118.155	118.462	118.737	119.264	119.852	120.809	121.439	121.569
Education [2]	160.3	169.280	173.700	174.016	174.276	175.134	175.118	175.101	175.545	175.791	176.148	176.879	180.819	183.613	184.091
Educational books and supplies	390.7	423.730	434.800	434.979	437.391	441.207	441.927	442.639	444.594	445.394	445.740	446.741	461.104	465.570	466.885
Tuition, other school fees, and child care	453.3	477.589	490.061	491.022	491.554	493.797	493.672	493.546	494.711	495.384	496.449	498.598	509.241	517.389	518.726
Communication [1,2]	86.0	85.782	86.182	85.807	85.834	85.935	85.919	86.016	86.244	86.496	87.017	87.490	87.369	87.224	87.226
Information and information processing [1,2]	84.3	83.928	84.282	83.894	83.917	84.008	83.992	84.091	84.320	84.511	85.007	85.484	85.355	85.208	85.214
Telephone services [1,2]	95.9	98.373	99.149	98.874	98.887	98.988	98.931	99.090	99.566	99.939	100.723	101.375	101.339	101.350	101.436
Information and information processing other than telephone services [1,4]	13.0	11.062	10.877	10.710	10.722	10.737	10.754	10.745	10.671	10.621	10.585	10.600	10.525	10.414	10.375
Personal computers and peripheral equipment [1,2]	121.0	108.164	104.366	100.257	100.000	101.067	100.582	100.265	98.820	97.010	95.766	94.691	92.931	90.722	89.690
Other goods and services	330.9	344.004	346.742	347.427	348.830	350.630	351.979	353.351	354.887	356.523	358.419	359.961	360.102	361.125	362.354
Tobacco and smoking products	521.6	555.502	562.134	563.435	568.410	574.724	577.359	576.910	578.296	583.296	592.248	599.180	599.823	600.293	602.533
Personal care [1]	188.3	193.590	194.769	195.122	195.467	195.885	196.564	197.803	198.859	199.367	199.404	199.495	199.501	200.284	200.930
Personal care products [1]	155.7	158.268	158.408	158.579	158.407	158.167	157.877	158.730	159.585	158.993	159.052	159.237	159.345	159.730	159.914
Personal care services [1]	209.8	216.823	218.149	218.897	219.945	220.324	221.338	223.043	223.088	223.922	223.838	223.994	224.464	224.910	225.800
Miscellaneous personal services	314.1	326.100	329.706	330.258	330.850	333.154	334.868	336.476	338.851	341.212	341.921	341.763	342.974	345.175	344.622
Commodity and service group:															
Commodities	165.7	169.554	170.865	173.489	172.952	173.711	174.083	176.727	178.900	181.837	184.495	185.105	182.846	182.647	177.906
Food and beverages	194.9	202.531	205.428	205.763	206.141	208.055	208.674	208.927	210.559	211.438	212.700	214.662	215.850	217.098	218.141
Commodities less food and beverages	148.7	150.865	151.448	155.011	154.086	154.345	154.603	158.156	160.488	164.188	167.344	167.376	163.761	162.971	155.982
Nondurables less food and beverages	182.6	189.507	191.230	198.661	196.636	196.910	197.606	205.166	210.558	218.794	225.585	225.595	218.454	217.828	203.762
Apparel	119.1	118.518	121.536	120.920	118.126	115.866	117.883	120.809	121.855	120.407	116.706	113.978	116.214	120.990	121.957
Nondurables less food, beverages, and apparel	226.1	237.858	238.798	251.442	249.863	251.751	251.621	262.252	270.496	285.024	298.593	300.341	287.124	283.056	259.204
Durables	114.6	112.640	112.241	112.413	112.450	112.688	112.560	112.549	112.171	111.845	111.769	111.820	111.357	110.451	109.782
Services	234.1	241.696	243.572	243.906	244.275	245.484	246.154	247.197	248.045	249.175	251.365	252.991	253.304	252.861	252.369
Rent of shelter [3]	216.6	224.617	226.393	226.636	227.035	228.071	228.660	229.443	229.719	229.810	230.620	231.255	231.445	231.541	231.885
Transporatation services	230.6	233.420	234.848	235.874	236.020	236.883	237.426	238.496	239.044	240.728	243.395	245.005	246.041	245.722	246.003
Other services	268.2	275.218	278.404	278.513	278.783	279.780	280.199	281.017	281.829	282.720	283.449	284.449	286.389	287.792	287.898
Special indexes:															
All items less food	197.5	202.698	204.015	205.783	205.575	206.371	206.877	209.055	210.583	212.870	215.498	216.407	214.950	214.361	210.949
All items less shelter	189.2	193.940	195.440	197.479	197.174	198.113	198.592	200.904	202.931	205.774	208.817	210.069	208.544	208.068	204.149
All items less medical care	191.3	196.564	198.022	199.565	199.431	200.329	200.800	202.713	204.290	206.423	208.906	210.002	208.900	208.563	205.726
Commodities less food	150.6	152.875	153.499	156.977	156.073	156.365	156.670	160.152	162.455	166.070	169.169	169.213	165.689	164.937	158.132
Nondurables less food	183.8	190.698	192.442	199.471	197.551	197.892	198.660	205.843	211.005	218.809	225.276	225.309	218.562	218.010	204.734
Nondurables less food and apparel	223.0	234.201	235.233	246.726	245.286	247.136	247.188	256.899	264.488	277.717	290.127	291.760	279.753	276.112	254.473
Nondurables	189.5	196.772	199.075	203.087	202.222	203.268	203.933	208.101	211.757	216.582	220.813	221.740	218.473	218.725	211.680
Services less rent of shelter [3]	224.7	230.876	232.628	233.029	233.314	234.576	235.258	236.483	237.922	240.181	243.780	246.411	246.834	245.787	244.331
Services less medical care services	225.3	232.195	233.850	234.115	234.468	235.557	236.154	237.201	238.048	239.167	241.422	243.071	243.354	242.868	242.316
Energy	196.8	208.066	207.885	219.861	218.104	220.163	219.983	231.533	241.518	258.903	277.597	282.579	267.624	259.864	232.106
All items less energy	198.0	203.002	204.797	205.066	205.155	205.991	206.588	207.296	207.812	208.021	208.458	209.062	209.718	210.325	210.649
All items less food and energy	199.2	203.554	205.107	205.355	205.377	205.992	206.605	207.406	207.687	207.747	208.007	208.317	208.857	209.329	209.511
Commodities less food and energy	141.1	140.612	141.236	141.254	140.815	140.696	141.238	141.973	142.040	141.558	140.878	140.492	140.802	141.428	141.375
Energy commodities	223.0	241.257	241.955	265.598	261.928	264.633	263.601	283.359	298.852	326.565	351.873	354.402	328.310	319.507	272.894
Services less energy	239.9	247.888	250.127	250.546	250.925	252.103	252.756	253.589	254.031	254.517	255.513	256.365	257.072	257.411	257.774

[1] Not seasonally adjusted.

[2] Indexes on a December 1997 = 100 base.

[3] Indexes on a December 1982 = 100 base.

[4] Indexes on a December 1988 = 100 base.

NOTE: Index applied to a month as a whole, not to any specific date.

39. Consumer Price Index: U.S. city average and available local area data: all items

[1982–84 = 100, unless otherwise indicated]

	Pricing schedule[1]	All Urban Consumers 2008						Urban Wage Earners 2008					
		May	June	July	Aug.	Sept.	Oct.	May	June	July	Aug.	Sept.	Oct.
U.S. city average	M	216.632	218.815	219.964	219.086	218.783	216.573	212.788	215.223	216.304	215.247	214.935	212.182
Region and area size[2]													
Northeast urban	M	230.089	232.649	234.545	233.788	232.841	230.837	227.114	229.829	231.488	230.790	229.949	227.762
Size A—More than 1,500,000	M	232.005	234.518	236.460	236.107	235.314	233.165	227.412	230.120	231.808	231.465	230.579	228.437
Size B/C—50,000 to 1,500,000[3]	M	136.913	138.542	139.623	138.537	137.723	136.730	137.624	139.286	140.253	139.329	138.881	137.489
Midwest urban[4]	M	207.168	208.968	210.071	209.351	209.252	206.019	202.912	204.867	206.038	205.121	205.023	201.236
Size A—More than 1,500,000	M	208.291	209.813	211.003	210.341	210.283	207.049	202.969	204.509	205.761	204.989	205.002	201.323
Size B/C—50,000 to 1,500,000[3]	M	132.682	134.018	134.595	133.969	133.982	131.946	132.867	134.409	135.037	134.236	134.215	131.699
Size D—Nonmetropolitan (less than 50,000)	M	202.720	205.122	206.435	206.251	205.522	202.086	201.494	204.023	205.452	204.812	204.064	200.017
South urban	M	210.006	212.324	213.304	212.387	212.650	210.108	207.912	210.469	211.438	210.362	210.572	207.312
Size A—More than 1,500,000	M	211.846	214.359	215.373	214.496	214.854	212.617	210.748	213.549	214.379	213.439	213.579	210.663
Size B/C—50,000 to 1,500,000[3]	M	133.714	134.980	135.643	135.004	135.093	133.285	132.808	134.222	134.952	134.179	134.285	132.017
Size D—Nonmetropolitan (less than 50,000)	M	211.225	214.739	215.274	214.655	215.258	213.103	212.533	216.357	216.901	216.031	216.762	213.696
West urban	M	221.009	223.040	223.867	222.823	222.132	221.034	216.029	218.508	219.248	217.854	217.028	215.499
Size A—More than 1,500,000	M	224.704	226.767	227.562	226.541	225.910	224.967	218.141	220.603	221.232	219.827	219.169	217.714
Size B/C—50,000 to 1,500,000[3]	M	134.023	135.283	136.021	135.207	134.834	133.795	134.133	135.738	136.478	135.464	134.873	133.694
Size classes:													
A[5]	M	197.898	199.840	200.941	200.278	199.982	198.148	196.844	199.028	200.009	199.187	198.842	196.590
B/C[3]	M	133.997	135.330	136.055	135.315	135.160	133.587	133.729	135.240	135.986	135.138	135.003	133.026
D	M	209.308	211.989	212.555	212.138	211.740	209.755	208.246	211.236	211.929	211.233	210.844	208.028
Selected local areas[6]													
Chicago–Gary–Kenosha, IL–IN–WI	M	214.932	215.738	217.459	215.971	215.465	213.363	208.403	209.021	211.020	209.435	209.084	206.772
Los Angeles–Riverside–Orange County, CA	M	226.651	229.033	229.886	228.484	227.449	226.159	219.702	222.435	223.245	221.230	220.285	218.726
New York, NY–Northern NJ–Long Island, NY–NJ–CT–PA	M	236.151	238.580	240.273	240.550	240.089	238.403	230.923	233.776	235.446	235.510	234.703	232.778
Boston–Brockton–Nashua, MA–NH–ME–CT	1	235.344	–	241.258	–	238.519	–	235.419	–	240.511	–	238.133	–
Cleveland–Akron, OH	1	204.882	–	206.941	–	206.219	–	195.898	–	198.063	–	197.260	–
Dallas–Ft Worth, TX	1	202.357	–	206.413	–	205.883	–	206.258	–	210.830	–	209.666	–
Washington–Baltimore, DC–MD–VA–WV[7]	1	139.649	–	142.065	–	142.036	–	139.332	–	141.622	–	141.679	–
Atlanta, GA	2	–	212.032	–	211.404	–	206.388	–	212.013	–	211.113	–	205.236
Detroit–Ann Arbor–Flint, MI	2	–	207.593	–	209.484	–	205.238	–	203.524	–	205.492	–	200.570
Houston–Galveston–Brazoria, TX	2	–	193.567	–	192.723	–	191.140	–	193.742	–	193.206	–	190.600
Miami–Ft. Lauderdale, FL	2	–	225.079	–	225.473	–	223.699	–	223.849	–	224.597	–	222.038
Philadelphia–Wilmington–Atlantic City, PA–NJ–DE–MD	2	–	228.408	–	228.337	–	225.113	–	228.429	–	228.212	–	225.069
San Francisco–Oakland–San Jose, CA	2	–	225.181	–	225.411	–	225.824	–	221.454	–	221.385	–	221.192
Seattle–Tacoma–Bremerton, WA	2	–	228.068	–	227.745	–	225.915	–	223.573	–	223.273	–	220.687

[1] Foods, fuels, and several other items priced every month in all areas; most other goods and services priced as indicated:
M—Every month.
1—January, March, May, July, September, and November.
2—February, April, June, August, October, and December.

[2] Regions defined as the four Census regions.

[3] Indexes on a December 1996 = 100 base.

[4] The "North Central" region has been renamed the "Midwest" region by the Census Bureau. It is composed of the same geographic entities.

[5] Indexes on a December 1986 = 100 base.

[6] In addition, the following metropolitan areas are published semiannually and appear in tables 34 and 39 of the January and July issues of the *CPI Detailed Report*: Anchorage, AK; Cincinnatti, OH–KY–IN; Kansas City, MO–KS; Milwaukee–Racine, WI; Minneapolis–St. Paul, MN–WI; Pittsburgh, PA; Port-land–Salem, OR–WA; St Louis, MO–IL; San Diego, CA; Tampa–St. Petersburg–Clearwater, FL.

[7] Indexes on a November 1996 = 100 base.

NOTE: Local area CPI indexes are byproducts of the national CPI program. Each local index has a smaller sample size and is, therefore, subject to substantially more sampling and other measurement error. As a result, local area indexes show greater volatility than the national index, although their long-term trends are similar. Therefore, the Bureau of Labor Statistics strongly urges users to consider adopting the national average CPI for use in their escalator clauses. Index applies to a month as a whole, not to any specific date. Dash indicates data not available.

40. Annual data: Consumer Price Index, U.S. city average, all items and major groups

[1982–84 = 100]

Series	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Consumer Price Index for All Urban Consumers:											
All items:											
Index	160.5	163.0	166.6	172.2	177.1	179.9	184.0	188.9	195.3	201.6	207.342
Percent change	2.3	1.6	2.2	3.4	2.8	1.6	2.3	2.7	3.4	3.2	2.8
Food and beverages:											
Index	157.7	161.1	164.6	168.4	173.6	176.8	180.5	186.6	191.2	195.7	203.300
Percent change	2.6	2.2	2.2	2.3	3.1	1.8	2.1	3.3	2.5	2.4	3.9
Housing:											
Index	156.8	160.4	163.9	169.6	176.4	180.3	184.8	189.5	195.7	203.2	209.586
Percent change	2.6	2.3	2.2	3.5	4.0	2.2	2.5	2.5	3.3	3.8	3.1
Apparel:											
Index	132.9	133.0	131.3	129.6	127.3	124.0	120.9	120.4	119.5	119.5	118.998
Percent change	.9	.1	–1.3	–1.3	–1.8	–2.6	–2.5	–.4	–.7	.0	-0.4
Transportation:											
Index	144.3	141.6	144.4	153.3	154.3	152.9	157.6	163.1	173.9	180.9	184.682
Percent change	0.9	–1.9	2.0	6.2	0.7	–.9	3.1	3.5	6.6	4.0	2.1
Medical care:											
Index	234.6	242.1	250.6	260.8	272.8	285.6	297.1	310.1	323.2	336.2	351.054
Percent change	2.8	3.2	3.5	4.1	4.6	4.7	4.0	4.4	4.2	4.0	4.4
Other goods and services:											
Index	224.8	237.7	258.3	271.1	282.6	293.2	298.7	304.7	313.4	321.7	333.328
Percent change	4.4	5.7	8.7	5.0	4.2	3.8	1.9	2.0	2.9	2.6	3.6
Consumer Price Index for Urban Wage Earners and Clerical Workers:											
All items:											
Index	157.6	159.7	163.2	168.9	173.5	175.9	179.8	184.5	191.0	197.1	202.767
Percent change	2.3	1.3	2.2	3.5	2.7	1.4	2.2	5.1	1.1	3.2	2.9

41. Producer Price Indexes, by stage of processing

[1982 = 100]

Grouping	Annual average		2007			2008									
	2006	2007	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July[p]	Aug.[p]	Sept.[p]	Oct.[p]
Finished goods	160.4	166.6	168.6	171.4	170.4	172.0	172.3	175.1	176.5	179.8	182.4	185.0	182.1	182.0	177.3
Finished consumer goods	166.0	173.5	175.9	179.4	178.2	180.1	180.4	184.2	185.8	190.3	193.8	197.1	193.1	192.7	185.4
Finished consumer foods	156.7	167.0	169.7	169.5	172.2	174.5	173.6	176.0	175.5	177.6	180.0	180.9	181.4	182.0	180.7
Finished consumer goods excluding foods	169.2	175.6	177.9	182.9	180.1	181.9	182.7	187.1	189.6	195.0	199.0	203.2	197.4	196.7	186.8
Nondurable goods less food	182.6	191.7	194.5	201.5	197.9	200.3	201.4	208.2	211.7	220.0	226.4	232.5	223.8	222.6	205.5
Durable goods	136.9	138.3	139.8	140.2	139.5	140.1	140.2	139.9	140.5	140.3	139.7	140.3	139.9	140.1	144.1
Capital equipment	146.9	149.5	150.6	151.0	150.7	151.4	151.8	151.8	152.4	152.7	152.7	153.6	153.7	154.3	156.8
Intermediate materials, supplies, and components	164.0	170.7	172.2	176.2	175.7	177.8	179.1	184.5	187.3	192.8	197.2	202.5	200.2	198.7	189.8
Materials and components for manufacturing	155.9	162.4	164.4	166.1	166.3	168.4	170.1	173.1	175.5	179.1	182.4	186.6	190.6	187.1	181.8
Materials for food manufacturing	146.2	161.4	166.3	166.6	169.8	173.6	176.7	180.0	180.3	182.7	185.4	187.7	187.4	185.2	179.2
Materials for nondurable manufacturing	175.0	184.0	189.4	195.1	195.1	199.3	201.5	206.0	209.5	215.9	222.8	231.9	243.8	236.9	226.0
Materials for durable manufacturing	180.5	189.8	189.0	188.6	188.1	189.5	193.1	200.3	205.6	211.9	215.4	219.4	220.1	213.0	204.3
Components for manufacturing	134.5	136.3	136.6	136.7	136.8	137.4	137.8	137.9	138.6	139.4	140.1	141.4	142.1	142.5	142.6
Materials and components for construction	188.4	192.5	193.2	193.2	193.4	194.4	195.7	197.3	200.2	203.3	206.5	209.9	213.1	214.4	212.8
Processed fuels and lubricants	162.8	173.9	175.5	189.7	186.3	188.6	189.0	206.1	211.8	227.3	238.4	249.6	224.2	223.2	193.2
Containers	175.0	180.3	182.3	183.2	183.4	185.1	185.7	185.9	187.0	187.6	189.2	191.6	194.2	198.1	199.4
Supplies	157.0	161.7	163.0	163.9	164.6	166.8	168.1	170.0	171.3	173.1	174.6	177.7	179.4	179.9	177.9
Crude materials for further processing	184.8	207.1	211.8	225.6	229.0	235.5	245.5	262.1	274.6	293.1	301.2	317.9	280.0	257.8	208.8
Foodstuffs and feedstuffs	119.3	146.7	150.0	152.9	158.5	162.6	165.4	169.2	168.1	173.2	178.1	179.3	170.4	168.0	147.9
Crude nonfood materials	230.6	246.3	252.0	274.1	275.4	283.8	299.9	327.7	352.4	382.4	393.0	423.3	360.5	320.8	248.2
Special groupings:															
Finished goods, excluding foods	161.0	166.2	168.1	171.6	169.6	171.0	171.7	174.6	176.4	180.1	182.8	185.9	182.0	181.7	176.0
Finished energy goods	145.9	156.3	159.1	170.4	163.8	166.6	167.2	177.5	182.4	194.8	204.6	213.0	198.2	195.5	167.8
Finished goods less energy	157.9	162.8	164.7	164.9	165.5	166.7	167.0	167.6	168.0	168.8	169.4	170.4	170.7	171.3	172.8
Finished consumer goods less energy	162.7	168.7	170.8	171.0	172.0	173.5	173.7	174.7	174.9	175.9	176.8	177.8	178.3	178.9	179.9
Finished goods less food and energy	158.7	161.7	163.2	163.6	163.5	164.4	165.0	165.1	165.7	166.1	166.0	167.1	167.3	167.9	170.4
Finished consumer goods less food and energy	166.7	170.0	171.8	172.2	172.2	173.2	174.0	174.1	174.8	175.2	175.2	176.2	176.6	177.2	179.8
Consumer nondurable goods less food and energy	191.5	197.0	199.0	199.3	200.0	201.4	203.0	203.6	204.3	205.4	206.0	207.6	208.8	209.8	210.5
Intermediate materials less foods and feeds	165.4	171.5	172.9	177.0	176.3	178.2	179.4	184.7	187.7	193.3	197.8	203.0	200.5	199.1	190.3
Intermediate foods and feeds	135.2	154.4	159.6	161.4	164.6	170.6	175.0	180.3	180.5	184.5	186.6	194.6	194.0	192.2	181.1
Intermediate energy goods	162.8	174.6	177.4	191.1	187.8	190.5	191.5	208.6	213.4	228.7	240.3	253.0	230.3	226.2	196.7
Intermediate goods less energy	162.1	167.6	168.9	170.2	170.4	172.3	173.7	176.0	178.4	181.4	183.9	187.3	190.1	189.4	185.7
Intermediate materials less foods and energy	163.8	168.4	169.5	170.8	170.9	172.5	173.7	175.8	178.3	181.2	183.8	186.9	189.9	189.3	186.0
Crude energy materials	226.9	232.8	237.7	267.1	268.3	273.6	291.7	325.4	346.1	386.1	400.4	437.9	352.7	311.4	233.7
Crude materials less energy	152.3	182.6	187.4	189.2	194.1	200.9	205.9	211.7	218.5	223.9	228.2	232.2	223.2	213.3	183.6
Crude nonfood materials less energy	244.5	282.6	292.8	289.9	291.7	307.3	319.7	332.1	366.7	372.4	373.8	387.2	379.1	342.6	283.6

p = preliminary.

42. Producer Price Indexes for the net output of major industry groups

[December 2003 = 100, unless otherwise indicated]

NAICS	Industry	2007			2008									
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July[p]	Aug.[p]	Sept.[p]	Oct.[p]
	Total mining industries (December 1984=100)	228.3	249.3	249.5	254.2	263.8	287.2	301.6	329.0	341.4	368.9	306.9	276.2	218.8
211	Oil and gas extraction (December 1985=100)	279.6	314.8	315.9	321.9	335.0	371.6	390.8	436.2	456.0	499.4	395.4	345.1	250.3
212	Mining, except oil and gas	162.4	161.3	161.2	164.9	170.3	174.8	186.1	184.7	185.8	189.3	191.6	189.4	188.7
213	Mining support activities	168.5	168.7	164.9	167.2	168.8	169.8	170.1	172.2	173.1	176.5	178.8	178.3	180.2
	Total manufacturing industries (December 1984=100)	164.5	168.0	166.9	168.5	169.6	173.4	175.3	179.4	182.0	185.6	183.0	183.1	176.8
311	Food manufacturing (December 1984=100)	160.7	161.4	162.8	165.8	167.5	169.8	171.2	174.0	176.1	180.1	180.8	180.2	176.9
312	Beverage and tobacco manufacturing	111.1	111.1	111.2	112.1	112.7	112.7	112.9	114.2	114.1	115.2	114.9	115.2	115.8
313	Textile mills	108.9	109.1	109.3	110.1	110.3	110.4	110.6	111.4	111.7	112.6	113.9	115.1	114.9
315	Apparel manufacturing	101.5	101.5	101.5	101.8	101.8	102.0	102.2	102.2	102.1	102.4	102.8	102.6	102.7
316	Leather and allied product manufacturing (December 1984=100)	150.4	150.5	151.1	152.0	152.4	152.6	152.7	152.4	153.4	154.4	154.8	154.2	154.1
321	Wood products manufacturing	106.5	106.1	106.1	105.7	105.5	105.9	106.2	108.2	109.2	109.0	109.2	109.6	107.7
322	Paper manufacturing	117.1	117.8	118.0	118.5	119.2	119.6	120.2	120.5	120.9	121.6	124.2	126.5	127.2
323	Printing and related support activities	107.1	107.2	107.4	107.8	108.1	108.2	109.0	109.2	109.5	110.0	110.4	110.5	110.4
324	Petroleum and coal products manufacturing (December 1984=100)	266.9	305.5	288.4	294.9	298.4	337.1	347.7	384.1	406.0	428.9	383.9	381.6	300.4
325	Chemical manufacturing (December 1984=100)	206.4	209.2	210.4	213.6	215.8	218.4	221.1	224.5	228.5	233.7	240.0	241.2	239.2
326	Plastics and rubber products manufacturing (December 1984=100)	151.6	152.2	153.2	154.8	155.6	156.4	156.8	158.3	159.4	162.7	165.0	166.4	168.3
331	Primary metal manufacturing (December 1984=100)	188.6	188.9	188.6	190.4	194.2	202.4	211.5	221.1	227.8	233.2	235.1	227.4	217.8
332	Fabricated metal product manufacturing (December 1984=100)	163.3	163.7	164.3	165.6	166.8	168.3	171.1	173.0	174.7	177.3	178.9	180.3	180.1
333	Machinery manufacturing	112.7	113.0	113.1	113.8	114.3	114.6	115.1	115.8	116.4	117.9	118.5	119.0	119.3
334	Computer and electronic products manufacturing	93.1	92.8	92.6	92.6	92.8	92.7	92.7	92.8	92.8	93.0	93.0	92.9	92.8
335	Electrical equipment, appliance, and components manufacturing	124.2	124.5	124.4	125.2	125.9	127.1	127.3	127.8	128.2	129.0	129.9	129.9	129.4
336	Transportation equipment manufacturing	106.3	106.6	106.0	106.6	106.6	106.1	106.7	106.6	105.9	106.5	106.3	106.5	109.8
337	Furniture and related product manufacturing (December 1984=100)	166.1	166.6	166.4	167.1	167.8	168.3	169.5	170.2	171.3	172.1	172.7	173.6	174.3
339	Miscellaneous manufacturing	107.2	107.5	107.7	108.5	108.7	109.2	109.3	109.4	109.9	110.4	110.8	110.7	110.8
	Retail trade													
441	Motor vehicle and parts dealers	115.3	116.1	118.0	118.3	118.4	117.9	118.9	118.3	118.1	118.1	118.8	118.7	118.4
442	Furniture and home furnishings stores	120.1	121.1	119.0	119.6	118.8	120.1	119.4	120.2	119.6	120.3	120.8	122.0	122.5
443	Electronics and appliance stores	111.1	114.9	89.3	109.0	110.2	113.4	119.7	118.7	105.8	110.1	109.9	109.5	111.8
446	Health and personal care stores	123.5	123.8	123.8	124.8	124.5	125.5	127.2	127.3	127.8	135.4	133.1	134.2	135.8
447	Gasoline stations (June 2001=100)	78.0	73.7	66.6	67.1	61.6	60.6	65.7	59.3	67.6	80.1	84.3	85.3	114.9
454	Nonstore retailers	130.2	125.7	134.7	136.0	133.8	133.1	136.4	136.5	141.8	140.9	167.6	159.5	169.1
	Transportation and warehousing													
481	Air transportation (December 1992=100)	187.2	189.4	187.1	192.0	191.8	198.6	199.5	203.7	213.5	211.4	213.0	208.8	212.0
483	Water transportation	117.2	116.5	116.4	119.0	119.2	120.6	121.1	124.7	127.0	129.3	132.2	134.6	136.0
491	Postal service (June 1989=100)	175.5	175.5	175.5	175.5	175.5	175.5	175.5	180.5	180.5	180.5	180.5	180.5	180.5
	Utilities													
221	Utilities	127.2	126.6	127.4	127.8	129.7	131.1	134.5	137.0	141.7	146.3	146.2	140.7	137.6
	Health care and social assistance													
6211	Office of physicians (December 1996=100)	122.9	121.5	122.7	123.3	123.3	123.3	123.2	123.2	123.2	123.2	123.4	123.4	123.7
6215	Medical and diagnostic laboratories	107.7	106.7	106.7	107.3	107.3	107.3	107.3	106.9	106.9	106.9	106.9	106.9	108.0
6216	Home health care services (December 1996=100)	125.1	125.3	125.3	125.4	125.5	125.5	125.4	125.4	125.4	125.4	126.8	126.4	126.9
622	Hospitals (December 1992=100)	161.3	161.9	161.9	162.4	162.6	162.9	162.7	162.7	162.6	163.2	163.1	163.4	164.4
6231	Nursing care facilities	116.4	116.5	117.0	117.9	118.0	118.3	118.5	118.6	118.6	119.1	119.4	119.4	120.2
62321	Residential mental retardation facilities	113.9	114.3	114.6	115.4	117.2	117.7	118.2	118.5	118.5	117.8	118.1	118.3	118.7
	Other services industries													
511	Publishing industries, except Internet	108.5	108.5	108.5	109.7	109.8	110.4	110.9	110.7	110.4	110.8	111.3	110.3	110.8
515	Broadcasting, except Internet	101.0	102.3	103.6	104.4	104.6	105.2	106.4	105.5	104.4	103.3	104.3	104.3	110.0
517	Telecommunications	101.8	101.2	100.7	100.6	100.9	100.6	101.0	101.3	101.1	101.0	101.7	101.4	100.6
5182	Data processing and related services	100.3	100.5	100.4	100.4	100.5	100.5	100.4	100.8	100.8	101.0	101.1	101.1	101.3
523	Security, commodity contracts, and like activity	121.4	124.2	123.0	122.5	122.9	121.0	119.6	119.6	120.2	118.8	119.4	119.0	117.2
53112	Lessors or nonresidental buildings (except miniwarehouse)	108.5	108.5	110.0	108.1	108.2	109.7	109.5	110.5	110.4	110.2	111.5	111.9	113.0
5312	Offices of real estate agents and brokers	110.5	110.5	109.9	110.3	109.8	110.0	110.2	106.9	106.9	107.0	105.4	105.5	104.0
5313	Real estate support activities	103.5	106.1	105.6	106.6	106.0	106.8	107.3	108.3	108.2	109.7	110.8	108.7	108.7
5321	Automotive equipment rental and leasing (June 2001=100)	118.9	118.4	119.1	121.3	121.3	125.1	120.3	122.0	125.4	132.6	133.4	128.8	131.8
5411	Legal services (December 1996=100)	154.8	155.1	155.1	159.9	160.3	160.7	161.1	160.9	161.1	161.5	161.7	161.5	163.1
541211	Offices of certified public accountants	113.1	112.9	113.0	115.6	114.1	113.8	112.7	114.0	112.7	115.8	116.3	115.9	115.8
5413	Architectural, engineering, and related services (December 1996=100)	140.8	140.8	140.8	139.2	140.3	140.3	140.5	140.5	141.3	141.5	141.5	141.6	142.4
54181	Advertising agencies	105.1	105.1	105.1	105.2	105.3	105.3	105.7	106.3	106.3	105.7	105.7	106.3	106.3
5613	Employment services (December 1996=100)	122.4	122.3	122.2	122.3	123.0	123.0	122.9	122.7	122.8	123.1	123.5	123.2	123.6
56151	Travel agencies	102.5	101.7	100.2	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	99.9	101.4
56172	Janitorial services	106.9	107.1	108.7	108.9	109.1	108.9	108.9	109.0	109.1	109.1	109.8	109.5	109.3
5621	Waste collection	108.9	109.5	108.4	110.7	112.1	112.0	112.2	111.9	112.6	112.1	113.1	113.9	112.5
721	Accommodation (December 1996=100)	145.8	144.7	143.7	145.4	145.2	145.3	145.6	144.9	147.0	152.8	152.4	144.7	148.5

p = preliminary.

43. Annual data: Producer Price Indexes, by stage of processing

[1982 = 100]

Index	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Finished goods											
Total	131.8	130.7	133.0	138.0	140.7	138.9	143.3	148.5	155.7	160.4	166.6
Foods	134.5	134.3	135.1	137.2	141.3	140.1	145.9	152.7	155.7	156.7	166.9
Energy	83.4	75.1	78.8	94.1	96.8	88.8	102.0	113.0	132.6	145.9	156.4
Other	142.4	143.7	146.1	148.0	150.0	150.2	150.5	152.7	156.4	158.7	161.7
Intermediate materials, supplies, and components											
Total	125.6	123.0	123.2	129.2	129.7	127.8	133.7	142.6	154.0	164.0	170.6
Foods	123.2	123.2	120.8	119.2	124.3	123.2	134.4	145.0	146.0	146.2	161.5
Energy	89.0	80.8	84.3	101.7	104.1	95.9	111.9	123.2	149.2	162.8	174.6
Other	134.2	133.5	133.1	136.6	136.4	135.8	138.5	146.5	154.6	163.8	168.4
Crude materials for further processing											
Total	111.1	96.8	98.2	120.6	121.0	108.1	135.3	159.0	182.2	184.8	207.3
Foods	112.2	103.9	98.7	100.2	106.1	99.5	113.5	127.0	122.7	119.3	146.7
Energy	87.3	68.6	78.5	122.1	122.3	102.0	147.2	174.6	234.0	226.9	233.0
Other	103.5	84.5	91.1	118.0	101.5	101.0	116.9	149.2	176.7	210.0	238.8

44. U.S. export price indexes by end-use category

[2000 = 100]

Category	2007			2008									
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
ALL COMMODITIES	117.6	118.7	119.3	120.7	121.8	123.8	124.4	124.8	126.1	128.0	125.9	124.9	122.5
Foods, feeds, and beverages	164.1	165.9	171.1	180.5	188.7	196.9	192.8	193.3	198.0	211.5	189.6	190.2	173.9
Agricultural foods, feeds, and beverages	167.6	169.8	175.2	185.0	193.8	202.6	198.2	198.9	204.0	218.9	194.7	195.7	177.5
Nonagricultural (fish, beverages) food products	134.2	133.1	136.1	142.0	144.7	148.3	146.4	145.5	146.1	147.0	145.7	143.6	143.4
Industrial supplies and materials	150.5	153.9	154.1	157.1	159.1	165.5	167.9	169.6	173.2	177.8	174.1	169.4	162.8
Agricultural industrial supplies and materials	142.7	144.9	144.7	146.0	150.6	159.3	157.9	156.9	158.0	162.8	160.9	157.4	148.8
Fuels and lubricants	204.8	224.7	222.8	232.1	225.6	249.5	259.3	275.8	297.2	312.3	275.8	267.4	240.7
Nonagricultural supplies and materials, excluding fuel and building materials	146.5	147.9	148.5	150.9	154.1	158.2	160.1	160.1	161.6	165.1	165.4	160.8	156.6
Selected building materials	114.2	113.8	113.7	113.3	113.8	114.2	114.1	113.9	113.8	114.5	115.2	115.4	116.8
Capital goods	100.1	100.3	100.6	100.9	101.3	101.2	101.5	101.6	102.0	101.9	101.9	101.9	101.8
Electric and electrical generating equipment	107.1	107.2	107.5	107.7	108.3	108.6	108.7	108.6	108.9	109.3	109.2	109.6	109.8
Nonelectrical machinery	93.2	93.4	93.6	93.7	93.9	93.7	93.9	93.9	94.2	94.0	94.0	94.0	93.7
Automotive vehicles, parts, and engines	106.5	106.5	106.7	106.9	107.0	107.1	107.5	107.5	107.4	107.7	107.8	107.9	108.3
Consumer goods, excluding automotive	106.4	106.8	107.3	107.3	107.4	108.0	108.1	108.1	108.2	108.5	109.0	109.3	109.8
Nondurables, manufactured	107.4	108.0	108.2	108.1	108.2	109.3	109.8	110.0	110.1	109.8	109.6	109.0	108.8
Durables, manufactured	104.2	104.4	105.2	105.2	105.5	105.4	105.1	105.1	105.2	106.0	107.2	108.7	109.9
Agricultural commodities	162.8	165.0	169.3	177.5	185.6	194.3	190.5	190.8	195.2	208.2	188.2	188.3	172.0
Nonagricultural commodities	114.4	115.4	115.7	116.6	117.3	118.8	119.6	120.1	121.2	122.3	121.5	120.4	119.0

45. U.S. import price indexes by end-use category

[2000 = 100]

Category	2007			2008									
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
ALL COMMODITIES	123.6	127.5	127.3	129.2	129.5	133.5	137.3	141.2	145.5	147.5	143.1	138.4	131.9
Foods, feeds, and beverages	133.2	133.4	134.4	138.1	137.8	141.8	143.7	145.0	147.7	149.7	150.4	148.1	145.7
Agricultural foods, feeds, and beverages	146.5	147.1	148.3	153.1	152.6	157.3	159.8	162.2	165.1	167.6	167.9	165.1	162.1
Nonagricultural (fish, beverages) food products	103.2	102.5	103.0	104.3	104.4	106.8	107.2	105.9	108.4	109.1	110.9	109.6	108.7
Industrial supplies and materials	197.2	212.8	211.3	218.2	219.0	234.5	248.7	265.0	283.0	290.7	270.8	251.1	223.6
Fuels and lubricants	262.4	294.8	290.3	301.9	300.0	329.0	354.6	388.3	423.7	437.6	392.4	350.9	295.6
Petroleum and petroleum products	277.7	312.2	306.7	319.6	315.6	347.5	375.8	412.2	450.3	465.0	420.0	377.1	314.2
Paper and paper base stocks	112.2	108.0	109.2	112.5	113.4	114.1	116.2	117.1	117.3	118.9	119.7	119.8	119.9
Materials associated with nondurable supplies and materials	131.4	133.7	135.3	143.6	146.6	147.8	148.7	149.6	152.9	157.4	159.5	162.3	161.8
Selected building materials	115.7	115.6	116.0	115.9	113.8	114.1	114.3	116.2	119.2	121.3	122.1	122.5	120.4
Unfinished metals associated with durable goods	211.0	214.8	217.2	215.3	224.5	241.5	259.2	263.6	273.2	273.4	270.2	257.0	238.2
Nonmetals associated with durable goods	103.0	103.3	103.8	105.4	105.9	105.2	106.2	107.3	107.6	110.7	111.8	111.4	110.6
Capital goods	92.0	92.1	92.2	91.9	92.0	92.2	93.0	93.3	93.2	93.4	93.4	93.4	93.2
Electric and electrical generating equipment	106.8	107.5	107.9	107.7	108.7	109.3	111.5	111.7	112.0	112.7	113.0	112.8	112.0
Nonelectrical machinery	87.7	87.7	87.7	87.4	87.4	87.5	88.0	88.4	88.2	88.4	88.3	88.3	88.1
Automotive vehicles, parts, and engines	105.6	106.2	106.8	107.1	107.2	107.4	107.8	107.8	107.9	108.1	108.3	108.2	108.3
Consumer goods, excluding automotive	102.2	102.4	102.6	103.1	103.5	104.0	104.6	104.8	104.9	105.1	105.2	105.1	105.2
Nondurables, manufactured	105.1	105.3	105.5	106.5	106.8	107.5	107.9	108.0	107.9	108.2	108.4	108.1	108.2
Durables, manufactured	99.0	99.2	99.3	99.6	100.0	100.4	101.1	101.3	101.5	101.7	101.7	101.8	102.0
Nonmanufactured consumer goods	103.3	103.3	103.8	104.0	104.1	104.3	105.6	105.8	106.6	106.7	106.6	106.5	105.8

46. U.S. international price Indexes for selected categories of services

[2000 = 100, unless indicated otherwise]

Category	2006		2007				2008		
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.
Import air freight	133.1	131.2	130.7	132.3	134.2	141.8	144.4	158.7	156.8
Export air freight	117.9	116.7	117.0	117.0	119.8	127.1	132.0	140.8	146.2
Import air passenger fares (Dec. 2006 = 100)	130.9	125.4	122.9	144.6	140.2	135.3	131.3	171.6	161.3
Export air passenger fares (Dec. 2006 = 100)	142.4	137.3	140.2	147.3	154.6	155.7	156.4	171.4	174.9

47. Indexes of productivity, hourly compensation, and unit costs, quarterly data seasonally adjusted

[1992 = 100]

Item	2005		2006				2007				2008		
	III	IV	I	II	III	IV	I	II	III	IV	I	II	III
Business													
Output per hour of all persons	135.6	135.3	136.1	136.6	135.9	135.9	135.9	137.6	139.7	139.7	140.5	141.8	142.2
Compensation per hour	164.1	165.8	168.0	168.1	169.0	172.6	174.7	175.5	177.0	178.9	180.6	182.2	184.3
Real compensation per hour	119.6	119.6	120.7	119.7	119.1	122.1	122.4	121.6	121.9	121.7	121.5	121.2	120.6
Unit labor costs	121.1	122.6	123.5	123.1	124.3	127.0	128.5	127.5	126.7	128.1	128.5	128.6	129.6
Unit nonlabor payments	131.6	132.4	133.4	136.2	136.2	133.4	134.3	137.4	139.7	139.2	140.2	140.9	143.1
Implicit price deflator	125.0	126.3	127.2	128.0	128.8	129.4	130.7	131.2	131.6	132.2	132.9	133.2	134.7
Nonfarm business													
Output per hour of all persons	134.6	134.2	135.1	135.7	135.0	135.0	135.0	136.4	138.3	138.6	139.5	140.8	141.1
Compensation per hour	163.2	164.7	166.8	167.1	167.9	171.7	173.7	174.1	175.5	177.8	179.5	181.1	183.1
Real compensation per hour	118.9	118.8	119.8	118.9	118.3	121.4	121.8	120.7	120.8	120.9	120.8	120.4	119.8
Unit labor costs	121.2	122.7	123.5	123.2	124.4	127.1	128.7	127.7	126.9	128.3	128.7	128.6	129.8
Unit nonlabor payments	133.2	134.2	135.5	138.6	138.3	134.8	135.2	138.2	140.3	139.8	141.0	141.9	144.4
Implicit price deflator	125.6	126.9	127.9	128.8	129.5	130.0	131.1	131.5	131.8	132.5	133.2	133.5	135.2
Nonfinancial corporations													
Output per hour of all employees	142.8	144.8	146.3	146.0	147.0	146.0	146.2	147.4	148.1	148.8	148.7	151.8	–
Compensation per hour	160.8	161.2	164.5	164.5	165.1	167.8	170.3	171.3	172.5	175.0	176.2	177.8	–
Real compensation per hour	117.2	116.3	118.1	117.0	116.3	118.7	119.4	118.7	118.7	119.0	118.6	118.2	–
Total unit costs	113.5	111.8	112.5	113.1	112.8	115.3	116.7	116.5	116.8	117.9	118.6	117.7	–
Unit labor costs	112.6	111.4	112.4	112.6	112.3	114.9	116.5	116.2	116.5	117.6	118.5	117.1	–
Unit nonlabor costs	115.7	113.1	112.9	114.4	114.2	116.2	117.2	117.4	117.8	118.9	119.0	119.1	–
Unit profits	152.2	177.4	182.5	183.1	193.0	173.9	171.8	172.5	166.8	155.9	150.3	147.0	–
Unit nonlabor payments	125.5	130.3	131.5	132.8	135.3	131.6	131.8	132.2	130.9	128.8	127.4	126.6	–
Implicit price deflator	116.9	117.7	118.8	119.4	120.0	120.5	121.6	121.5	121.3	121.3	121.5	120.3	–
Manufacturing													
Output per hour of all persons	172.9	172.8	172.6	172.7	174.5	175.4	177.0	178.7	180.6	182.5	184.0	183.1	182.6
Compensation per hour	166.5	165.3	170.9	169.5	170.3	174.6	176.9	176.4	176.4	179.7	181.4	183.1	185.3
Real compensation per hour	121.3	119.2	122.7	120.7	120.0	123.5	124.0	122.3	121.4	122.2	122.1	121.7	121.2
Unit labor costs	96.3	95.6	99.0	98.2	97.6	99.5	100.0	98.7	97.6	98.5	98.6	100.0	101.5

NOTE: Dash indicates data not available.

48. Annual indexes of multifactor productivity and related measures, selected years

[2000 = 100, unless otherwise indicated]

Item	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Private business													
Productivity:													
Output per hour of all persons	87.4	90.0	91.7	94.3	97.2	100.0	102.8	107.1	111.2	114.5	116.8	118.0	120.2
Output per unit of capital services	104.6	104.7	104.9	103.5	102.3	100.0	96.0	94.8	95.6	97.5	98.6	99.1	98.1
Multifactor productivity	93.7	95.3	96.2	97.5	98.7	100.0	100.1	101.8	104.4	107.0	108.8	109.4	110.1
Output	79.2	82.8	87.2	91.5	96.2	100.0	100.5	102.0	105.2	109.7	113.8	117.4	120.1
Inputs:													
Labor input	88.8	90.7	94.2	96.4	99.0	100.0	98.6	97.2	97.0	98.4	100.2	102.8	103.8
Capital services	75.7	79.1	83.2	88.4	94.1	100.0	104.6	107.6	110.0	112.5	115.4	118.5	122.3
Combined units of labor and capital input	84.4	86.9	90.6	93.9	97.5	100.0	100.3	100.2	100.7	102.5	104.6	107.4	109.2
Capital per hour of all persons	83.6	85.9	87.4	91.1	95.0	100.0	107.0	112.9	116.3	117.4	118.4	119.1	122.3
Private nonfarm business													
Productivity:													
Output per hour of all persons	88.2	90.5	92.0	94.5	97.3	100.0	102.7	107.1	111.0	114.2	116.4	117.6	119.7
Output per unit of capital services	105.6	105.5	105.3	103.9	102.5	100.0	96.0	94.7	95.4	97.3	98.3	98.7	97.9
Multifactor productivity	94.5	95.9	96.5	97.8	98.8	100.0	100.1	101.8	104.3	106.8	108.6	109.0	109.7
Output	79.3	82.8	87.2	91.5	96.3	100.0	100.5	102.1	105.2	109.6	113.7	117.4	120.1
Inputs:													
Labor input	88.2	90.2	93.9	96.2	99.0	100.0	98.7	97.2	97.1	98.6	100.4	103.1	104.1
Capital services	75.0	78.5	82.7	88.1	93.9	100.0	104.7	107.8	110.3	112.7	115.6	118.9	122.8
Combined units of labor and capital input	83.9	86.4	90.3	93.6	97.4	100.0	100.5	100.2	100.8	102.6	104.7	107.6	109.4
Capital per hour of all persons	83.5	85.8	87.3	91.0	94.9	100.0	107.0	113.1	116.4	117.4	118.4	119.1	122.4
Manufacturing [1996 = 100]													
Productivity:													
Output per hour of all persons	79.8	82.7	87.3	92.0	96.1	100.0	101.6	108.6	115.3	117.9	123.5	125.0	–
Output per unit of capital services	98.7	98.0	100.6	100.7	100.4	100.0	93.5	92.3	93.2	95.4	98.9	100.2	–
Multifactor productivity	90.8	91.2	93.8	95.9	96.7	100.0	98.7	102.4	105.2	108.0	108.4	110.1	–
Output	80.3	83.1	89.2	93.8	97.4	100.0	94.9	94.3	95.2	96.9	100.4	102.3	–
Inputs:													
Hours of all persons	100.6	100.4	102.2	101.9	101.3	100.0	93.5	86.8	82.6	82.2	81.3	81.8	–
Capital services	81.4	84.8	88.7	93.2	97.0	100.0	101.5	102.1	102.1	101.6	101.5	102.0	–
Energy	113.7	110.4	108.2	105.4	105.5	100.0	90.6	89.3	84.4	84.0	91.6	86.6	–
Nonenergy materials	78.9	86.0	92.9	97.7	102.6	100.0	93.3	88.4	87.7	87.3	92.4	91.5	–
Purchased business services	88.8	88.5	92.1	95.0	100.0	100.0	100.7	98.2	99.1	97.0	104.5	106.6	–
Combined units of all factor inputs	88.5	91.1	95.1	97.8	100.7	100.0	96.2	92.1	90.5	89.7	92.7	92.9	–

NOTE: Dash indicates data not available.

49. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years

[1992 = 100]

Item	1962	1972	1982	1992	1999	2000	2001	2002	2003	2004	2005	2006	2007
Business													
Output per hour of all persons	52.9	71.2	80.1	100.0	112.8	116.1	119.1	123.9	128.7	132.4	135.0	136.4	139.0
Compensation per hour	15.1	26.7	63.6	100.0	125.8	134.7	140.3	145.3	151.2	156.9	163.2	169.6	178.3
Real compensation per hour	65.2	83.3	90.6	100.0	108.1	112.0	113.5	115.7	117.7	119.0	119.7	120.5	123.2
Unit labor costs	28.5	37.4	79.4	100.0	111.5	116.0	117.9	117.3	117.5	118.5	120.9	124.4	128.3
Unit nonlabor payments	26.1	35.7	70.1	100.0	109.4	107.2	110.0	114.2	118.3	124.7	130.8	134.6	135.4
Implicit price deflator	27.6	36.8	75.9	100.0	110.7	112.7	114.9	116.1	117.8	120.8	124.5	128.2	131.0
Nonfarm business													
Output per hour of all persons	55.9	73.1	80.8	100.0	112.5	115.7	118.6	123.5	128.0	131.6	134.1	135.4	137.9
Compensation per hour	15.6	26.9	63.9	100.0	125.2	134.2	139.5	144.6	150.4	155.9	162.1	168.5	177.1
Real compensation per hour	67.3	84.0	91.1	100.0	107.6	111.6	112.8	115.1	117.1	118.2	118.9	119.7	122.3
Unit labor costs	27.8	36.8	79.1	100.0	111.3	116.0	117.7	117.1	117.5	118.5	120.9	124.5	128.4
Unit nonlabor payments	25.8	34.9	69.3	100.0	110.9	108.7	111.6	116.0	119.6	125.5	132.4	136.4	136.2
Implicit price deflator	27.1	36.1	75.5	100.0	111.1	113.3	115.4	116.7	118.3	121.1	125.1	128.9	131.3
Nonfinancial corporations													
Output per hour of all employees	60.4	74.2	83.1	100.0	117.9	122.5	124.7	129.7	134.6	139.6	141.6	142.6	144.8
Compensation per hour	17.4	28.8	66.5	100.0	124.2	133.0	138.6	143.6	149.5	153.9	159.8	165.4	173.4
Real compensation per hour	75.1	90.0	94.7	100.0	106.7	110.6	112.1	114.3	116.4	116.7	117.2	117.5	119.8
Total unit costs	27.3	37.5	80.4	100.0	104.0	107.4	111.6	110.7	111.0	110.0	112.7	115.4	118.5
Unit labor costs	28.7	38.8	80.0	100.0	105.3	108.6	111.2	110.7	111.0	110.3	112.9	116.0	119.8
Unit nonlabor costs	23.4	33.9	81.3	100.0	100.4	104.2	112.6	110.8	111.1	109.3	112.2	113.8	114.9
Unit profits	54.5	54.1	75.2	100.0	129.1	108.7	82.2	98.0	109.9	144.8	154.4	162.9	153.5
Unit nonlabor payments	31.7	39.3	79.7	100.0	108.0	105.4	104.5	107.4	110.7	118.8	123.5	126.9	125.2
Implicit price deflator	29.7	39.0	79.9	100.0	106.2	107.5	108.9	109.6	110.9	113.1	116.4	119.7	121.6
Manufacturing													
Output per hour of all persons	–	–	–	100.0	133.7	139.1	141.2	151.0	160.4	163.9	171.9	173.8	179.7
Compensation per hour	–	–	–	100.0	123.5	134.7	137.8	147.8	158.2	161.5	168.3	173.0	182.6
Real compensation per hour	–	–	–	100.0	106.1	112.0	111.5	117.7	123.2	122.4	123.5	122.8	126.1
Unit labor costs	–	–	–	100.0	92.4	96.9	97.6	97.9	98.7	98.5	97.9	99.5	101.6
Unit nonlabor payments	–	–	–	100.0	102.9	103.5	102.0	100.3	102.9	110.2	121.1	126.2	–
Implicit price deflator	–	–	–	100.0	99.5	101.4	100.6	99.5	101.5	106.4	113.5	117.4	–

Dash indicates data not available.

50. Annual indexes of output per hour for selected NAICS industries

[1997=100]

NAICS	Industry	1987	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	Mining												
21	Mining	85.5	100.0	103.6	111.4	111.0	109.1	113.6	116.0	106.8	96.0	87.2	-
211	Oil and gas extraction	80.1	100.0	101.2	107.9	119.4	121.6	123.8	130.1	111.7	107.8	100.3	-
2111	Oil and gas extraction	80.1	100.0	101.2	107.9	119.4	121.6	123.8	130.1	111.7	107.8	100.3	-
212	Mining, except oil and gas	69.8	100.0	104.5	105.8	106.3	109.0	110.9	113.6	115.9	114.0	110.6	-
2121	Coal mining	58.5	100.0	106.5	110.3	115.8	114.6	112.4	113.2	112.8	107.6	100.0	-
2122	Metal ore mining	71.2	100.0	109.3	112.3	122.0	131.9	138.6	142.8	137.4	130.0	123.4	-
2123	Nonmetallic mineral mining and quarrying	88.5	100.0	101.3	101.2	96.2	99.3	103.6	108.1	114.2	118.2	118.7	-
	Utilities												
2211	Power generation and supply	65.6	100.0	103.7	103.5	107.0	106.4	102.9	105.1	107.5	114.3	115.4	-
2212	Natural gas distribution	67.8	100.0	99.0	102.7	113.2	110.1	115.4	114.1	118.3	122.2	119.0	-
	Manufacturing												
311	Food	94.1	100.0	103.9	105.9	107.1	109.5	113.8	116.8	117.3	123.3	121.1	-
3111	Animal food	83.6	100.0	109.0	110.9	109.7	131.4	142.7	165.8	149.5	165.5	150.4	-
3112	Grain and oilseed milling	81.1	100.0	107.5	116.1	113.1	119.5	122.4	123.9	130.3	133.0	130.7	-
3113	Sugar and confectionery products	87.6	100.0	103.5	106.5	109.9	108.6	108.0	112.5	118.2	130.7	129.2	-
3114	Fruit and vegetable preserving and specialty	92.4	100.0	107.1	109.5	111.8	121.4	126.9	123.0	126.2	132.0	126.9	-
3115	Dairy products	82.7	100.0	100.0	93.6	95.9	97.1	105.0	110.5	107.4	109.6	110.2	-
3116	Animal slaughtering and processing	97.4	100.0	100.0	101.2	102.6	103.7	107.3	106.6	108.0	117.4	116.9	-
3117	Seafood product preparation and packaging	123.1	100.0	120.2	131.6	140.5	153.0	169.8	173.2	162.2	186.1	203.8	-
3118	Bakeries and tortilla manufacturing	100.9	100.0	103.8	108.6	108.3	109.9	108.9	109.3	113.8	115.4	110.5	-
3119	Other food products	97.5	100.0	107.8	111.4	112.6	106.2	111.9	118.8	119.3	116.2	116.3	-
312	Beverages and tobacco products	78.1	100.0	97.6	87.3	88.3	89.5	82.6	90.9	94.7	100.5	94.0	-
3121	Beverages	77.1	100.0	99.0	90.7	90.8	92.7	99.4	108.3	114.1	120.3	112.0	-
3122	Tobacco and tobacco products	71.9	100.0	98.5	91.0	95.9	98.2	67.0	78.7	82.4	93.1	94.9	-
313	Textile mills	73.7	100.0	102.6	106.2	106.7	109.5	125.3	136.1	138.6	152.8	150.5	-
3131	Fiber, yarn, and thread mills	66.5	100.0	102.1	103.9	101.3	109.1	133.3	148.8	154.1	143.5	139.7	-
3132	Fabric mills	68.0	100.0	104.2	110.0	110.1	110.3	125.4	137.3	138.6	164.2	170.5	-
3133	Textile and fabric finishing mills	91.3	100.0	101.2	102.2	104.4	108.5	119.8	125.1	127.7	139.8	126.2	-
314	Textile product mills	93.0	100.0	98.7	102.5	107.1	104.5	107.3	112.7	123.4	128.0	121.1	-
3141	Textile furnishings mills	91.2	100.0	99.3	99.1	104.5	103.1	105.5	114.4	122.3	125.7	117.3	-
3149	Other textile product mills	92.2	100.0	96.7	107.6	108.9	103.1	105.1	104.2	120.4	128.9	126.1	-
315	Apparel	71.9	100.0	101.8	111.7	116.8	116.5	102.9	112.4	103.4	110.9	114.0	-
3151	Apparel knitting mills	76.2	100.0	96.1	101.4	108.9	105.6	112.0	105.6	96.6	120.0	123.7	-
3152	Cut and sew apparel	69.8	100.0	102.3	114.6	119.8	119.5	103.9	117.2	108.4	113.5	117.6	-
3159	Accessories and other apparel	97.8	100.0	109.0	99.3	98.3	105.2	76.1	78.7	70.8	74.0	67.3	-
316	Leather and allied products	71.6	100.0	106.6	112.7	120.3	122.4	97.7	99.8	109.5	123.6	132.5	-
3161	Leather and hide tanning and finishing	94.0	100.0	100.3	98.1	100.1	100.3	81.2	82.2	93.5	118.7	118.1	-
3162	Footwear	76.7	100.0	102.1	117.3	122.3	130.7	102.7	104.8	100.7	105.6	115.4	-
3169	Other leather products	92.3	100.0	113.3	110.4	122.8	117.6	96.2	100.3	127.7	149.7	174.6	-
321	Wood products	95.0	100.0	101.2	102.9	102.7	106.1	113.6	114.7	115.6	123.1	124.9	-
3211	Sawmills and wood preservation	77.6	100.0	100.3	104.7	105.4	108.8	114.4	121.3	118.2	127.3	129.7	-
3212	Plywood and engineered wood products	99.7	100.0	105.1	98.7	98.8	105.2	110.3	107.0	102.9	110.2	117.4	-
3219	Other wood products	103.0	100.0	101.0	104.5	103.0	104.7	113.9	113.9	119.6	126.3	125.3	-
322	Paper and paper products	85.8	100.0	102.3	104.1	106.3	106.8	114.2	118.9	123.4	124.5	127.3	-
3221	Pulp, paper, and paperboard mills	81.7	100.0	102.5	111.1	116.3	119.9	133.1	141.4	148.0	147.7	151.1	-
3222	Converted paper products	89.0	100.0	102.5	100.1	101.1	100.5	105.6	109.6	112.9	114.8	116.6	-
323	Printing and related support activities	97.6	100.0	100.6	102.8	104.6	105.3	110.2	111.1	114.5	119.5	121.1	-
3231	Printing and related support activities	97.6	100.0	100.6	102.8	104.6	105.3	110.2	111.1	114.5	119.5	121.1	-
324	Petroleum and coal products	71.1	100.0	102.2	107.1	113.5	112.1	118.0	119.2	123.4	123.8	122.8	-
3241	Petroleum and coal products	71.1	100.0	102.2	107.1	113.5	112.1	118.0	119.2	123.4	123.8	122.8	-
325	Chemicals	85.9	100.0	99.9	103.5	106.6	105.3	114.2	118.4	125.8	134.1	137.5	-
3251	Basic chemicals	94.6	100.0	102.8	115.7	117.5	108.8	123.8	136.0	154.4	165.2	169.3	-
3252	Resin, rubber, and artificial fibers	77.4	100.0	106.0	109.8	109.8	106.2	123.1	122.2	121.9	130.5	134.9	-
3253	Agricultural chemicals	80.4	100.0	98.8	87.4	92.1	90.0	99.2	108.4	117.4	132.5	130.7	-
3254	Pharmaceuticals and medicines	87.3	100.0	93.8	95.7	95.6	99.5	97.4	101.5	104.1	110.0	115.0	-
3255	Paints, coatings, and adhesives	89.4	100.0	100.1	100.3	100.8	105.6	108.9	115.2	119.1	120.8	115.4	-
3256	Soap, cleaning compounds, and toiletries	84.4	100.0	98.0	93.0	102.8	106.0	124.1	118.2	135.3	153.1	162.9	-
3259	Other chemical products and preparations	75.4	100.0	99.2	109.3	119.7	110.4	120.8	123.0	121.3	123.5	118.1	-
326	Plastics and rubber products	80.9	100.0	103.2	107.9	110.2	112.3	120.8	126.0	128.7	132.6	132.8	-
3261	Plastics products	83.1	100.0	104.2	109.9	112.3	114.6	123.8	129.5	131.9	135.6	133.8	-
3262	Rubber products	75.5	100.0	99.4	100.2	101.7	102.3	107.1	111.0	114.4	118.7	124.9	-
327	Nonmetallic mineral products	87.6	100.0	103.7	104.3	102.5	100.0	104.6	111.2	108.7	115.3	114.6	-
3271	Clay products and refractories	86.9	100.0	101.2	102.7	102.9	98.4	99.7	103.5	109.2	114.6	111.9	-
3272	Glass and glass products	82.4	100.0	101.3	106.7	108.1	102.9	107.5	115.3	113.8	123.1	132.9	-
3273	Cement and concrete products	93.6	100.0	105.1	105.9	101.6	98.0	102.4	108.3	102.8	106.5	103.1	-

50. Continued - Annual indexes of output per hour for selected NAICS industries

[1997=100]

NAICS	Industry	1987	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
3274	Lime and gypsum products	88.2	100.0	114.9	104.4	98.5	101.8	99.0	107.1	104.7	119.3	116.5	-
3279	Other nonmetallic mineral products	83.0	100.0	99.0	95.6	96.6	98.6	106.9	113.6	110.6	118.9	116.3	-
331	Primary metals	81.0	100.0	102.0	102.8	101.3	101.0	115.2	118.2	132.0	135.5	134.3	-
3311	Iron and steel mills and ferroalloy production	64.8	100.0	101.3	104.8	106.0	104.4	125.1	130.4	164.9	163.1	163.5	-
3312	Steel products from purchased steel	79.7	100.0	100.6	93.8	96.4	97.9	96.8	93.9	88.6	90.8	86.1	-
3313	Alumina and aluminum production	90.5	100.0	101.5	103.5	96.6	96.2	124.5	126.8	137.3	154.4	151.7	-
3314	Other nonferrous metal production	96.8	100.0	111.3	108.4	102.3	99.5	107.6	120.6	123.1	122.3	115.7	-
3315	Foundries	81.4	100.0	101.2	104.5	103.6	107.4	116.7	116.3	123.9	128.6	131.8	-
332	Fabricated metal products	87.3	100.0	101.3	103.0	104.8	104.8	110.9	114.4	113.4	116.9	119.7	-
3321	Forging and stamping	85.4	100.0	103.5	110.9	121.1	120.7	125.0	133.1	142.0	147.6	152.7	-
3322	Cutlery and handtools	86.3	100.0	99.9	108.0	105.9	110.3	113.4	113.2	107.6	114.1	116.6	-
3323	Architectural and structural metals	88.7	100.0	100.9	102.0	100.6	101.6	106.0	108.8	105.4	109.2	113.5	-
3324	Boilers, tanks, and shipping containers	86.0	100.0	100.0	96.5	94.2	94.4	98.9	101.6	93.6	95.7	96.6	-
3325	Hardware	88.7	100.0	100.5	105.2	114.3	113.5	115.5	125.4	126.0	131.8	131.1	-
3326	Spring and wire products	82.2	100.0	110.6	111.4	112.6	111.9	125.7	135.3	133.8	143.2	140.6	-
3327	Machine shops and threaded products	76.9	100.0	99.6	104.2	108.2	108.8	114.8	115.7	114.6	116.3	117.1	-
3328	Coating, engraving, and heat treating metals	75.5	100.0	100.9	101.0	105.5	107.3	116.1	118.3	125.3	136.5	135.5	-
3329	Other fabricated metal products	91.0	100.0	101.9	99.6	99.9	96.7	106.5	111.6	111.2	112.5	117.7	-
333	Machinery	82.3	100.0	102.9	104.7	111.5	109.0	116.6	125.2	127.0	134.1	137.4	-
3331	Agriculture, construction, and mining machinery	74.6	100.0	103.3	94.3	100.3	100.3	103.7	116.1	125.4	129.4	129.1	-
3332	Industrial machinery	75.1	100.0	95.1	105.8	130.0	105.8	117.6	117.0	126.5	122.4	135.3	-
3333	Commercial and service industry machinery	87.0	100.0	106.3	110.0	101.3	94.5	97.8	104.7	106.5	115.1	122.3	-
3334	HVAC and commercial refrigeration equipment	84.0	100.0	106.2	110.2	107.9	110.8	118.6	130.0	132.8	137.1	133.4	-
3335	Metalworking machinery	85.1	100.0	99.1	100.3	106.1	103.3	112.7	115.2	117.1	127.3	128.3	-
3336	Turbine and power transmission equipment	80.2	100.0	105.0	110.8	114.9	126.9	130.7	143.0	126.4	132.5	128.5	-
3339	Other general purpose machinery	83.5	100.0	103.7	106.0	113.7	110.5	117.9	128.1	127.1	138.4	143.8	-
334	Computer and electronic products	28.4	100.0	118.4	149.5	181.8	181.4	188.0	217.2	244.3	259.6	282.2	-
3341	Computer and peripheral equipment	11.0	100.0	140.4	195.9	235.0	252.2	297.4	373.4	415.1	543.3	715.7	-
3342	Communications equipment	39.8	100.0	107.1	135.4	164.1	152.9	128.2	143.1	148.4	143.7	178.2	-
3343	Audio and video equipment	61.7	100.0	105.4	119.6	126.3	128.4	150.1	171.0	239.3	230.2	240.7	-
3344	Semiconductors and electronic components	17.0	100.0	125.8	173.9	232.2	230.0	263.1	321.6	360.0	381.6	380.4	-
3345	Electronic instruments	70.2	100.0	102.3	106.7	116.7	119.3	118.1	125.3	145.4	146.6	150.6	-
3346	Magnetic media manufacturing and reproduction	85.7	100.0	106.4	108.9	105.8	99.8	110.4	126.1	142.6	142.1	137.7	-
335	Electrical equipment and appliances	75.5	100.0	103.9	106.6	111.5	111.4	113.4	117.2	123.3	130.0	129.4	-
3351	Electric lighting equipment	91.1	100.0	104.4	102.8	102.0	106.7	112.4	111.4	122.7	130.3	136.7	-
3352	Household appliances	73.3	100.0	105.2	104.0	117.2	124.6	132.3	146.7	159.6	164.5	173.2	-
3353	Electrical equipment	68.7	100.0	100.2	98.7	99.4	101.0	101.8	103.4	110.8	118.5	118.1	-
3359	Other electrical equipment and components	78.8	100.0	105.8	114.7	119.7	113.1	114.0	116.2	115.6	121.6	115.7	-
336	Transportation equipment	81.6	100.0	109.7	118.0	109.4	113.6	127.4	137.5	134.9	140.9	142.4	-
3361	Motor vehicles	75.4	100.0	113.4	122.6	109.7	110.0	126.0	140.7	142.1	148.4	163.8	-
3362	Motor vehicle bodies and trailers	85.0	100.0	102.9	103.1	98.8	88.7	105.4	109.8	110.7	114.2	110.9	-
3363	Motor vehicle parts	78.7	100.0	104.9	110.0	112.3	114.8	130.5	137.0	138.0	144.1	143.7	-
3364	Aerospace products and parts	87.2	100.0	119.1	120.8	103.4	115.7	118.6	119.0	113.2	125.0	117.9	-
3365	Railroad rolling stock	55.6	100.0	103.3	116.5	118.5	126.1	146.1	139.8	131.5	137.3	148.0	-
3366	Ship and boat building	95.5	100.0	99.3	112.0	122.0	121.5	131.0	133.9	138.7	131.7	127.3	-
3369	Other transportation equipment	73.8	100.0	111.5	113.8	132.4	140.2	150.9	163.0	168.3	184.1	197.8	-
337	Furniture and related products	84.8	100.0	102.0	101.6	101.4	103.4	112.6	117.0	118.4	125.0	127.8	-
3371	Household and institutional furniture	85.2	100.0	102.2	103.1	101.9	105.5	111.8	114.7	113.6	120.8	124.0	-
3372	Office furniture and fixtures	85.8	100.0	100.0	98.2	100.2	98.0	115.9	125.2	130.7	134.9	134.4	-
3379	Other furniture related products	86.3	100.0	106.9	102.0	99.5	105.0	110.2	110.0	121.3	128.3	130.8	-
339	Miscellaneous manufacturing	81.1	100.0	105.2	107.8	114.7	116.6	124.2	132.7	134.9	144.6	149.8	-
3391	Medical equipment and supplies	76.3	100.0	109.0	111.1	115.5	120.7	129.1	138.9	139.5	148.5	152.8	-
3399	Other miscellaneous manufacturing	85.4	100.0	102.1	105.0	113.6	111.8	118.0	124.7	128.6	137.8	143.2	-
	Wholesale trade												
42	Wholesale trade	73.2	100.0	103.4	111.2	116.5	117.7	123.3	127.5	134.8	135.8	138.6	141.5
423	Durable goods	62.3	100.0	107.1	119.2	125.0	128.9	140.2	146.6	161.5	167.4	174.5	178.4
4231	Motor vehicles and parts	74.5	100.0	106.4	120.4	116.7	120.0	133.4	137.6	143.5	146.5	162.7	161.8
4232	Furniture and furnishings	80.5	100.0	99.9	102.3	112.5	110.7	116.0	123.9	130.0	127.1	130.6	131.1
4233	Lumber and construction supplies	109.1	100.0	105.4	109.3	107.7	116.6	123.9	133.0	139.4	140.2	135.4	124.5
4234	Commercial equipment	28.0	100.0	125.5	162.0	181.9	217.9	264.9	299.1	352.8	402.0	447.3	508.5
4235	Metals and minerals	101.7	100.0	100.9	94.0	93.9	94.4	96.3	97.5	106.3	104.2	99.9	94.4
4236	Electric goods	42.8	100.0	105.9	127.5	152.8	147.6	159.5	165.7	194.1	204.6	222.1	235.1
4237	Hardware and plumbing	82.2	100.0	101.8	104.4	103.7	100.5	102.6	103.9	107.3	104.5	105.6	105.8
4238	Machinery and supplies	74.1	100.0	104.3	102.9	105.5	102.9	100.3	103.4	112.4	117.6	121.2	121.5
4239	Miscellaneous durable goods	89.8	100.0	100.8	113.7	114.7	116.8	124.6	119.6	135.0	135.5	122.3	118.4
424	Nondurable goods	91.0	100.0	99.1	100.8	105.1	105.1	105.8	110.5	113.6	114.3	113.1	115.0

50. Continued - Annual indexes of output per hour for selected NAICS industries

[1997=100]

NAICS	Industry	1987	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
4241	Paper and paper products	85.6	100.0	98.4	100.1	100.9	104.6	116.6	119.7	130.9	141.7	136.9	146.5
4242	Druggists' goods	70.7	100.0	94.2	93.1	85.9	84.9	89.8	100.2	105.8	112.1	109.7	104.3
4243	Apparel and piece goods	86.3	100.0	103.6	105.1	108.8	115.2	122.8	125.9	131.0	140.8	146.6	148.3
4244	Grocery and related products	87.9	100.0	101.1	101.0	102.4	101.9	98.6	104.9	104.1	103.4	103.8	109.7
4245	Farm product raw materials	81.6	100.0	94.3	101.6	105.1	102.1	98.1	98.2	109.3	111.0	117.9	125.1
4246	Chemicals	90.4	100.0	97.1	93.3	87.9	85.3	89.1	92.2	91.2	87.4	85.1	86.4
4247	Petroleum	84.4	100.0	88.5	102.9	138.1	140.6	153.6	151.1	163.2	153.3	149.4	149.1
4248	Alcoholic beverages	99.3	100.0	106.5	105.6	108.4	106.4	106.8	107.9	103.1	104.0	107.4	108.5
4249	Miscellaneous nondurable goods	111.2	100.0	105.4	106.8	115.0	111.9	106.1	109.8	120.7	124.1	121.9	117.1
425	Electronic markets and agents and brokers	64.3	100.0	102.4	112.3	120.1	110.7	109.8	104.5	101.6	91.5	95.0	98.3
4251	Electronic markets and agents and brokers	64.3	100.0	102.4	112.3	120.1	110.7	109.8	104.5	101.6	91.5	95.0	98.3
	Retail trade												
44-45	Retail trade	79.2	100.0	105.7	112.7	116.1	120.1	125.6	131.6	137.9	141.3	147.3	152.7
441	Motor vehicle and parts dealers	78.4	100.0	106.4	115.1	114.3	116.0	119.9	124.3	127.3	126.7	129.3	132.2
4411	Automobile dealers	79.2	100.0	106.5	116.3	113.7	115.5	117.2	119.5	124.7	123.5	125.8	129.8
4412	Other motor vehicle dealers	74.1	100.0	109.6	114.8	115.3	124.6	133.6	133.8	143.3	134.6	142.6	146.9
4413	Auto parts, accessories, and tire stores	71.8	100.0	105.1	107.6	108.4	101.3	107.7	115.1	110.1	115.5	115.9	112.0
442	Furniture and home furnishings stores	75.1	100.0	104.1	110.8	115.9	122.4	129.3	134.6	146.7	150.5	158.2	168.7
4421	Furniture stores	77.3	100.0	104.3	107.5	112.0	119.7	125.2	128.8	139.2	142.3	151.1	156.6
4422	Home furnishings stores	71.3	100.0	104.1	115.2	121.0	126.1	134.9	142.6	156.8	161.4	168.3	184.6
443	Electronics and appliance stores	38.0	100.0	122.6	150.6	173.7	196.7	233.5	292.7	334.1	367.5	412.0	471.1
4431	Electronics and appliance stores	38.0	100.0	122.6	150.6	173.7	196.7	233.5	292.7	334.1	367.5	412.0	471.1
444	Building material and garden supply stores	75.8	100.0	107.4	113.8	113.3	116.8	120.8	127.1	134.6	134.8	137.9	142.2
4441	Building material and supplies dealers	77.6	100.0	108.3	115.3	115.1	116.7	121.3	127.4	134.0	134.9	138.0	140.0
4442	Lawn and garden equipment and supplies stores	66.9	100.0	102.4	105.5	103.1	118.4	118.3	125.7	140.1	134.7	138.3	162.1
445	Food and beverage stores	110.8	100.0	99.9	101.9	101.0	103.8	104.7	107.2	112.9	117.9	120.6	123.8
4451	Grocery stores	111.1	100.0	99.6	102.5	101.1	103.3	104.8	106.7	112.2	116.8	118.2	120.6
4452	Specialty food stores	138.5	100.0	100.5	96.4	98.5	108.2	105.3	112.2	120.3	125.3	139.4	145.4
4453	Beer, wine, and liquor stores	93.6	100.0	104.6	99.1	105.7	107.1	110.1	117.0	127.8	139.8	146.1	156.8
446	Health and personal care stores	84.0	100.0	104.0	107.1	112.2	116.2	122.9	129.5	134.3	133.4	139.3	139.0
4461	Health and personal care stores	84.0	100.0	104.0	107.1	112.2	116.2	122.9	129.5	134.3	133.4	139.3	139.0
447	Gasoline stations	83.9	100.0	106.7	110.7	107.7	112.9	125.1	119.9	122.2	124.7	124.9	129.3
4471	Gasoline stations	83.9	100.0	106.7	110.7	107.7	112.9	125.1	119.9	122.2	124.7	124.9	129.3
448	Clothing and clothing accessories stores	66.3	100.0	106.3	114.0	123.5	126.4	131.3	138.9	139.1	147.6	162.4	176.6
4481	Clothing stores	67.1	100.0	108.7	114.2	125.0	130.3	136.0	141.8	140.9	153.0	169.4	186.9
4482	Shoe stores	65.3	100.0	94.2	104.9	110.0	111.5	125.2	132.5	124.8	132.0	145.1	141.6
4483	Jewelry, luggage, and leather goods stores	64.5	100.0	108.7	122.5	130.5	123.9	118.7	132.9	144.3	138.9	148.3	162.9
451	Sporting goods, hobby, book, and music stores	74.9	100.0	107.9	114.0	121.1	127.1	127.6	131.5	151.1	163.5	170.5	167.8
4511	Sporting goods and musical instrument stores	73.2	100.0	111.5	119.8	129.4	134.5	136.0	141.1	166.0	179.3	191.4	189.2
4512	Book, periodical, and music stores	78.9	100.0	101.0	103.2	105.8	113.0	111.6	113.7	123.6	134.3	132.4	128.3
452	General merchandise stores	73.5	100.0	105.3	113.4	120.2	124.8	129.1	136.9	140.7	145.0	149.8	152.5
4521	Department stores	87.2	100.0	100.4	104.5	106.2	103.8	102.0	106.8	109.0	110.0	112.7	107.0
4529	Other general merchandise stores	54.8	100.0	114.7	131.0	147.3	164.7	179.3	188.8	192.9	199.8	204.8	219.3
453	Miscellaneous store retailers	65.1	100.0	108.9	111.3	114.1	112.6	119.1	126.1	130.8	139.2	155.0	160.8
4531	Florists	77.6	100.0	102.3	116.2	115.2	102.7	113.8	108.9	103.4	123.7	145.1	132.9
4532	Office supplies, stationery and gift stores	61.4	100.0	111.5	119.2	127.3	132.3	141.5	153.9	172.8	182.4	204.8	224.5
4533	Used merchandise stores	64.5	100.0	119.1	113.4	116.5	121.9	142.0	149.7	152.6	156.6	167.6	182.0
4539	Other miscellaneous store retailers	68.3	100.0	105.3	103.0	104.4	96.9	94.4	99.9	96.9	101.6	114.0	115.4
454	Nonstore retailers	50.7	100.0	114.3	128.9	152.2	163.6	182.1	195.5	215.5	220.6	261.9	290.8
4541	Electronic shopping and mail-order houses	39.4	100.0	120.2	142.6	160.2	179.6	212.7	243.6	273.0	290.1	355.9	397.2
4542	Vending machine operators	95.5	100.0	106.3	105.4	111.1	95.7	91.3	102.3	110.5	114.4	125.7	132.4
4543	Direct selling establishments	70.8	100.0	101.9	104.3	122.5	127.9	135.1	127.0	130.3	119.6	127.5	138.4
	Transportation and warehousing												
481	Air transportation	81.1	100.0	97.6	98.2	98.1	91.9	102.1	112.8	126.9	135.5	142.5	-
482111	Line-haul railroads	58.9	100.0	102.1	105.5	114.3	121.9	131.9	142.0	146.4	138.4	142.8	-
48412	General freight trucking, long-distance	85.7	100.0	99.4	99.1	101.9	103.2	107.0	110.7	110.7	113.2	112.3	-
48421	Used household and office goods moving	106.7	100.0	91.0	96.1	94.8	84.0	81.6	86.2	88.6	88.3	87.0	-
491	U.S. Postal service	90.9	100.0	101.6	102.8	105.5	106.3	106.4	107.8	110.0	111.2	111.3	-
4911	U.S. Postal service	90.9	100.0	101.6	102.8	105.5	106.3	106.4	107.8	110.0	111.2	111.3	-
492	Couriers and messengers	148.3	100.0	112.6	117.6	122.0	123.4	131.1	134.0	126.8	125.1	128.6	-
493	Warehousing and storage	-	100.0	106.4	107.7	109.3	115.3	122.1	124.8	122.5	124.9	122.3	-
4931	Warehousing and storage	-	100.0	106.4	107.7	109.3	115.3	122.1	124.8	122.5	124.9	122.3	-
49311	General warehousing and storage	-	100.0	112.1	112.9	115.8	126.3	136.1	138.9	131.0	132.2	127.9	-
49312	Refrigerated warehousing and storage	-	100.0	97.9	103.4	95.4	85.4	87.2	92.3	99.3	97.5	88.5	-
	Information												
511	Publishing industries, except internet	64.1	100.0	116.1	116.3	117.1	116.6	117.2	126.4	130.7	136.5	142.7	-

50. Continued - Annual indexes of output per hour for selected NAICS industries

[1997=100]

NAICS	Industry	1987	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
5111	Newspaper, book, and directory publishers	105.0	100.0	103.9	104.1	107.7	105.8	104.7	109.5	106.6	107.6	110.8	-
5112	Software publishers	10.2	100.0	134.8	129.2	119.2	117.4	122.1	138.1	160.6	173.7	177.0	-
51213	Motion picture and video exhibition	90.7	100.0	99.8	101.8	106.5	101.6	99.8	100.4	103.6	102.4	105.7	-
515	Broadcasting, except internet	99.5	100.0	100.8	102.9	103.6	99.2	104.0	107.9	112.5	117.7	125.5	-
5151	Radio and television broadcasting	98.1	100.0	91.5	92.6	92.1	89.6	95.1	94.6	96.6	100.9	109.5	-
5152	Cable and other subscription programming	105.6	100.0	136.2	139.1	141.2	128.1	129.8	146.0	158.7	164.6	169.9	-
5171	Wired telecommunications carriers	56.9	100.0	107.7	116.7	122.7	116.7	124.1	130.5	131.7	138.2	146.2	-
5172	Wireless telecommunications carriers	75.6	100.0	110.5	145.2	152.8	191.9	217.9	242.6	292.2	381.9	435.9	-
5175	Cable and other program distribution	105.2	100.0	97.1	95.8	91.6	87.7	95.0	101.3	113.8	110.6	110.6	-
	Finance and insurance												
52211	Commercial banking	72.8	100.0	97.0	99.8	102.7	99.6	102.1	103.6	108.4	108.5	114.2	-
	Real estate and rental and leasing												
532111	Passenger car rental	92.7	100.0	100.1	112.2	112.3	111.1	114.6	121.1	118.2	110.2	111.8	-
53212	Truck, trailer, and RV rental and leasing	60.3	100.0	115.4	120.9	121.7	113.5	114.0	115.8	136.6	145.1	162.2	-
53223	Video tape and disc rental	77.0	100.0	113.2	129.4	134.9	133.3	130.3	148.5	154.5	144.2	176.4	-
	Professional and technical services												
541213	Tax preparation services	82.9	100.0	107.6	105.8	100.9	94.4	111.4	110.0	99.9	103.6	99.7	-
54131	Architectural services	90.0	100.0	111.4	106.8	107.6	111.0	107.6	112.6	118.3	120.8	119.1	-
54133	Engineering services	90.2	100.0	98.2	98.0	102.0	100.1	100.5	100.5	107.8	115.4	116.2	-
54181	Advertising agencies	95.9	100.0	89.2	97.9	107.5	106.9	113.1	121.1	133.5	131.5	132.8	-
541921	Photography studios, portrait	98.1	100.0	124.8	109.8	108.9	102.2	97.6	104.1	93.0	93.5	95.3	-
	Administrative and waste services												
56131	Employment placement agencies	-	100.0	86.8	93.2	89.8	99.6	116.8	115.4	119.8	115.9	122.9	-
56151	Travel agencies	89.3	100.0	111.4	115.5	119.4	115.2	127.6	147.2	167.2	182.4	189.9	-
56172	Janitorial services	75.1	100.0	95.3	98.6	101.0	102.1	105.6	118.8	116.6	121.5	115.6	-
	Health care and social assistance												
6215	Medical and diagnostic laboratories	-	100.0	118.8	124.7	131.9	135.3	137.6	140.8	140.8	137.9	140.1	-
621511	Medical laboratories	-	100.0	117.2	121.4	127.4	127.7	123.1	128.6	130.7	126.0	128.2	-
621512	Diagnostic imaging centers	-	100.0	121.4	129.7	139.9	148.3	163.3	160.0	153.5	154.0	156.3	-
	Arts, entertainment, and recreation												
71311	Amusement and theme parks	112.0	100.0	110.5	105.2	106.0	93.0	106.5	113.2	101.4	109.9	97.7	-
71395	Bowling centers	106.0	100.0	89.9	89.4	93.4	94.3	96.4	102.4	107.9	106.1	110.6	-
	Accommodation and food services												
7211	Traveler accommodation	85.1	100.0	100.1	105.6	111.8	107.6	112.1	114.4	120.4	115.0	111.8	-
722	Food services and drinking places	96.0	100.0	101.0	100.9	103.5	103.8	104.4	106.3	107.0	107.9	109.7	109.2
7221	Full-service restaurants	92.1	100.0	100.9	100.8	103.0	103.6	104.4	104.2	104.8	105.2	106.0	105.1
7222	Limited-service eating places	96.5	100.0	101.2	100.4	102.0	102.5	102.7	105.4	106.8	107.5	109.8	108.6
7223	Special food services	89.9	100.0	100.6	105.2	115.0	115.3	114.9	117.6	118.0	119.2	118.7	120.2
7224	Drinking places, alcoholic beverages	136.7	100.0	99.7	98.8	100.6	97.6	102.9	118.6	112.2	121.6	135.7	145.2
	Other services												
8111	Automotive repair and maintenance	85.9	100.0	103.6	106.1	109.4	108.9	103.7	104.1	112.0	111.9	112.8	-
81211	Hair, nail, and skin care services	83.5	100.0	108.6	108.6	108.2	114.6	110.4	119.7	125.0	129.9	122.3	-
81221	Funeral homes and funeral services	103.7	100.0	106.8	103.3	94.8	91.8	94.6	95.7	92.9	93.2	99.7	-
8123	Drycleaning and laundry services	97.1	100.0	100.1	105.0	107.6	110.9	112.5	103.8	110.6	120.5	119.6	-
81292	Photofinishing	95.8	100.0	69.3	76.3	73.8	81.2	100.5	100.5	102.0	112.4	114.4	-

NOTE: Dash indicates data are not available.

51. Unemployment rates, approximating U.S. concepts, 10 countries, seasonally adjusted

[Percent]

Country	2006	2007	2006				2007				2008
			I	II	III	IV	I	II	III	IV	I
United States	4.6	4.6	4.7	4.7	4.7	4.4	4.5	4.5	4.7	4.8	4.9
Canada	5.5	5.3	5.7	5.4	5.6	5.4	5.4	5.3	5.2	5.2	5.2
Australia	4.8	4.4	5.0	4.9	4.7	4.5	4.5	4.3	4.3	4.3	4.1
Japan	4.2	3.9	4.2	4.2	4.2	4.1	4.0	3.8	3.8	3.9	3.9
France	9.5	8.6	9.8	9.7	9.5	9.2	9.0	8.8	8.5	8.2	8.1
Germany	10.4	8.7	11.1	10.6	10.1	9.6	9.3	8.9	8.5	8.2	7.7
Italy	6.9	6.1	7.3	6.9	6.7	6.4	6.3	6.1	6.0	6.0	-
Netherlands	3.9	3.2	4.3	3.9	3.8	3.8	3.6	3.2	3.0	3.0	-
Sweden	7.0	6.1	7.3	7.3	6.7	6.5	6.4	6.1	5.8	5.9	5.8
United Kingdom	5.5	5.4	5.3	5.5	5.6	5.5	5.5	5.4	5.4	5.2	-

NOTE: Dash indicates data not available.

Quarterly figures for France, Germany, Italy, and the Netherlands are calculated by applying annual adjustment factors to current published data and therefore should be viewed as less precise indicators of unemployment under U.S. concepts than the annual figures. Quarterly figures for Sweden are BLS seasonally adjusted estimates derived from Swedish not seasonally adjusted data.

For further qualifications and historical annual data, see the BLS report *Comparative Civilian Labor Force Statistics, 10 Countries* (on the Internet at **http://www.bls.gov/fls/flscomparelf.htm**). For monthly unemployment rates, as well as the quarterly and annual rates published in this table, see the BLS report *Unemployment rates in 10 countries, civilian labor force basis, approximating U.S. concepts, seasonally adjusted* (on the Internet at **http://www.bls.gov/fls/flsjec.pdf**). Unemployment rates may differ between the two reports mentioned, because the former is updated semi-annually, whereas the latter is updated monthly and reflects the most recent revisions in source data.

52. Annual data: employment status of the working-age population, approximating U.S. concepts, 10 countries

[Numbers in thousands]

Employment status and country	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Civilian labor force											
United States	136,297	137,673	139,368	142,583	143,734	144,863	146,510	147,401	149,320	151,428	153,124
Canada	14,884	15,135	15,403	15,637	15,891	16,366	16,733	16,955	17,108	17,351	17,696
Australia	9,204	9,339	9,414	9,590	9,744	9,893	10,079	10,221	10,506	10,699	10,948
Japan	67,200	67,240	67,090	66,990	66,860	66,240	66,010	65,770	65,850	65,960	66,080
France	25,116	25,434	25,791	26,099	26,393	26,646	26,851	26,937	27,092	27,322	27,509
Germany	39,415	39,752	39,375	39,302	39,459	39,413	39,276	39,711	40,760	41,250	-
Italy	22,753	23,004	23,176	23,361	23,524	23,728	24,020	24,084	24,179	24,395	24,459
Netherlands	7,612	7,744	7,881	8,052	8,199	8,345	8,379	8,439	8,459	8,541	8,686
Sweden	4,414	4,401	4,423	4,482	4,522	4,537	4,557	4,571	4,694	4,748	4,823
United Kingdom	28,401	28,474	28,777	28,952	29,085	29,337	29,559	29,791	30,126	30,586	30,774
Participation rate[1]											
United States	67.1	67.1	67.1	67.1	66.8	66.6	66.2	66.0	66.0	66.2	66.0
Canada	65.1	65.4	65.9	66.0	66.1	67.1	67.7	67.7	67.4	67.4	67.7
Australia	64.3	64.3	64.0	64.4	64.4	64.3	64.6	64.6	65.3	65.6	66.0
Japan	63.2	62.8	62.4	62.0	61.6	60.8	60.3	60.0	60.0	60.0	60.0
France	55.6	56.0	56.3	56.6	56.7	56.8	56.8	56.6	56.5	56.6	56.7
Germany	57.3	57.7	56.9	56.7	56.7	56.4	56.0	56.4	57.6	58.2	-
Italy	47.3	47.7	47.9	48.1	48.3	48.5	49.1	49.1	48.7	48.9	48.6
Netherlands	61.1	61.8	62.5	63.4	64.0	64.7	64.6	64.8	64.7	65.1	65.9
Sweden	63.2	62.8	62.7	63.7	63.6	63.9	63.8	63.6	64.8	65.0	65.3
United Kingdom	62.5	62.5	62.8	62.9	62.7	62.9	63.0	63.0	63.1	63.5	63.4
Employed											
United States	129,558	131,463	133,488	136,891	136,933	136,485	137,736	139,252	141,730	144,427	146,047
Canada	13,637	13,973	14,331	14,681	14,866	15,223	15,586	15,861	16,080	16,393	16,767
Australia	8,444	8,618	8,762	8,989	9,086	9,264	9,480	9,668	9,975	10,186	10,470
Japan	64,900	64,450	63,920	63,790	63,460	62,650	62,510	62,640	62,910	63,210	63,510
France	22,176	22,597	23,080	23,714	24,167	24,312	24,373	24,354	24,493	24,717	25,135
Germany	35,508	36,059	36,042	36,236	36,350	36,018	35,615	35,604	36,185	36,978	-
Italy	20,169	20,370	20,617	20,973	21,359	21,666	21,972	22,124	22,290	22,721	22,953
Netherlands	7,189	7,408	7,605	7,813	8,014	8,114	8,069	8,052	8,056	8,205	8,408
Sweden	3,969	4,033	4,110	4,222	4,295	4,303	4,293	4,271	4,334	4,416	4,530
United Kingdom	26,413	26,686	27,051	27,368	27,599	27,813	28,075	28,372	28,665	28,917	29,120
Employment-population ratio[2]											
United States	63.8	64.1	64.3	64.4	63.7	62.7	62.3	62.3	62.7	63.1	63.0
Canada	59.6	60.4	61.3	62.0	61.9	62.4	63.1	63.3	63.4	63.6	64.2
Australia	59.0	59.3	59.6	60.3	60.0	60.2	60.7	61.1	62.0	62.5	63.1
Japan	61.0	60.2	59.4	59.0	58.4	57.5	57.1	57.1	57.3	57.5	57.6
France	49.1	49.7	50.4	51.4	51.9	51.8	51.5	51.1	51.1	51.2	51.8
Germany	51.6	52.3	52.1	52.2	52.2	51.5	50.8	50.6	51.2	52.2	-
Italy	41.9	42.2	42.6	43.2	43.8	44.3	44.9	45.1	44.9	45.5	45.6
Netherlands	57.7	59.1	60.3	61.5	62.6	62.9	62.2	61.8	61.6	62.5	63.8
Sweden	56.8	57.6	58.3	60.0	60.4	60.6	60.1	59.4	59.9	60.4	61.3
United Kingdom	58.2	58.5	59.1	59.4	59.5	59.6	59.8	60.0	60.1	60.1	60.0
Unemployed											
United States	6,739	6,210	5,880	5,692	6,801	8,378	8,774	8,149	7,591	7,001	7,078
Canada	1,248	1,162	1,072	956	1,026	1,143	1,147	1,093	1,028	958	929
Australia	759	721	652	602	658	629	599	553	531	512	478
Japan	2,300	2,790	3,170	3,200	3,400	3,590	3,500	3,130	2,940	2,750	2,570
France	2,940	2,837	2,711	2,385	2,226	2,334	2,478	2,583	2,599	2,605	2,374
Germany	3,907	3,693	3,333	3,065	3,110	3,396	3,661	4,107	4,575	4,272	-
Italy	2,584	2,634	2,559	2,388	2,164	2,062	2,048	1,960	1,889	1,673	1,506
Netherlands	423	337	277	239	186	231	310	387	402	336	278
Sweden	445	368	313	260	227	234	264	300	361	332	293
United Kingdom	1,987	1,788	1,726	1,584	1,486	1,524	1,484	1,419	1,462	1,669	1,654
Unemployment rate											
United States	4.9	4.5	4.2	4.0	4.7	5.8	6.0	5.5	5.1	4.6	4.6
Canada	8.4	7.7	7.0	6.1	6.5	7.0	6.9	6.4	6.0	5.5	5.3
Australia	8.3	7.7	6.9	6.3	6.8	6.4	5.9	5.4	5.1	4.8	4.4
Japan	3.4	4.1	4.7	4.8	5.1	5.4	5.3	4.8	4.5	4.2	3.9
France	11.7	11.2	10.5	9.1	8.4	8.8	9.2	9.6	9.6	9.5	8.6
Germany	9.9	9.3	8.5	7.8	7.9	8.6	9.3	10.3	11.2	10.4	8.7
Italy	11.4	11.5	11.0	10.2	9.2	8.7	8.5	8.1	7.8	6.9	6.2
Netherlands	5.6	4.4	3.5	3.0	2.3	2.8	3.7	4.6	4.8	3.9	3.2
Sweden	10.1	8.4	7.1	5.8	5.0	5.2	5.8	6.6	7.7	7.0	6.1
United Kingdom	7.0	6.3	6.0	5.5	5.1	5.2	5.0	4.8	4.9	5.5	5.4

[1] Labor force as a percent of the working-age population.

[2] Employment as a percent of the working-age population.

NOTE: Dash indicates data not available.

There are breaks in series for the United States (1998, 1999, 2000, 2003, 2004), Australia (2001), Germany (1999, 2005), the Netherlands (2000), and Sweden (2005). For further qualifications and historical annual data, see the BLS report *Comparative Civilian Labor Force Statistics, 10 Countries* (on the Internet at **http://www.bls.gov/fls/flscomparelf.htm**). Unemployment rates may differ from those in the BLS report *Unemployment rates in 10 countries, civilian labor force basis, approximating U.S. concepts, seasonally adjusted* (on the Internet at **http://www.bls.gov/fls/flsjec.pdf**), because the former is updated semi-annually, whereas the latter is updated monthly and reflects the most recent revisions in source data.

53. Annual indexes of manufacturing productivity and related measures, 16 economies

[1996 = 100]

Measure and economy	1980	1990	1993	1994	1995	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Output per hour																
United States	58.6	80.1	88.1	92.7	96.2	104.2	111.5	117.1	126.1	127.4	140.9	149.8	159.0	162.4	165.9	172.7
Canada	66.5	85.2	94.0	99.3	100.5	104.5	109.6	114.2	121.1	118.5	120.5	121.1	123.1	127.8	127.7	130.4
Australia	72.6	91.1	96.2	98.7	97.2	102.2	107.3	109.0	115.2	117.9	123.2	125.5	127.2	128.1	129.4	133.4
Japan	54.8	81.3	87.6	89.0	95.6	103.5	104.5	107.3	113.0	110.6	114.7	122.5	131.0	139.6	142.2	146.2
Korea, Rep. of	–	58.0	75.9	82.8	90.9	112.8	125.7	139.8	151.7	150.6	165.3	176.8	197.2	212.1	233.5	253.9
Taiwan	40.4	73.9	83.4	86.6	93.0	104.1	109.2	116.0	122.2	127.7	139.2	143.6	150.9	162.3	173.9	189.0
Belgium	57.2	84.7	89.6	94.4	98.6	109.8	111.2	110.2	114.1	115.3	119.1	122.0	127.6	131.5	134.4	137.3
Denmark	75.3	90.3	92.0	103.4	103.4	108.0	107.4	109.1	113.0	113.2	113.9	118.7	125.5	126.9	133.4	134.3
France	56.9	84.2	90.0	95.9	99.7	105.9	111.4	116.2	124.5	127.0	132.4	138.4	142.2	148.7	154.6	158.5
Germany	67.1	86.1	89.1	95.8	97.3	105.9	106.3	108.9	116.5	119.5	120.7	125.0	129.7	134.6	144.1	151.3
Italy	60.1	82.5	87.2	94.9	99.5	102.0	100.6	101.4	106.7	107.0	105.7	103.5	105.0	106.4	105.9	105.4
Netherlands	58.7	81.4	86.2	94.1	97.9	100.3	103.2	107.4	115.2	115.7	119.2	121.7	129.9	135.8	140.2	144.0
Norway	77.3	96.8	98.3	98.3	97.1	100.2	97.7	101.1	104.2	107.1	110.2	119.7	126.8	131.2	135.0	134.7
Spain	62.8	86.8	94.9	97.8	101.2	101.0	102.7	104.5	105.6	108.0	108.4	111.1	113.2	115.4	117.7	122.2
Sweden	60.0	73.9	82.6	91.1	96.8	109.1	115.6	126.2	134.8	131.0	145.3	157.1	173.9	184.7	195.6	197.3
United Kingdom	55.9	87.8	100.1	102.7	101.0	102.0	102.9	107.8	115.2	119.4	122.4	128.2	136.0	140.2	147.0	150.8
Output																
United States	60.5	80.7	85.7	92.2	96.4	106.1	113.2	118.1	125.5	118.5	121.8	123.2	130.1	131.4	135.2	138.3
Canada	71.2	88.7	87.7	94.4	98.7	106.3	111.7	121.0	133.1	128.0	129.0	128.3	131.4	133.5	132.2	130.8
Australia	80.2	93.1	92.7	97.5	96.9	102.3	105.2	105.0	109.9	108.9	114.2	116.2	116.3	115.8	114.7	118.6
Japan	59.0	94.3	93.5	92.1	95.9	102.5	97.1	96.7	101.8	96.2	94.7	99.8	105.6	111.1	115.8	119.0
Korea, Rep. of	20.5	63.2	75.5	84.1	94.0	104.9	96.6	117.6	137.6	140.6	151.2	159.6	177.3	189.8	205.9	219.3
Taiwan	38.2	76.7	85.0	90.1	95.0	105.7	109.1	117.1	125.7	116.4	126.7	133.5	146.5	156.7	168.4	185.8
Belgium	74.8	96.6	92.8	97.0	99.6	108.2	110.1	110.2	114.9	114.9	114.0	112.5	116.6	116.3	119.4	122.4
Denmark	85.6	94.7	90.3	100.0	104.8	108.2	109.1	110.0	113.9	114.0	110.7	107.6	109.3	105.9	111.7	116.2
France	83.2	97.5	93.8	96.8	100.3	104.7	109.7	113.4	118.6	119.8	119.7	121.9	123.0	125.9	127.2	128.8
Germany	92.3	107.2	99.9	103.1	102.1	104.4	105.6	106.6	113.9	115.8	113.4	114.2	118.3	120.0	127.0	135.0
Italy	74.7	92.6	89.9	95.9	100.5	101.5	102.4	102.2	106.5	106.2	105.0	102.2	103.0	102.5	103.7	104.8
Netherlands	70.5	89.2	90.2	95.0	98.6	101.4	104.8	108.7	116.0	115.8	115.9	114.6	118.5	120.9	124.1	128.1
Norway	96.7	92.9	93.2	95.7	96.1	104.3	103.6	103.5	102.9	102.2	101.6	105.0	111.0	115.9	123.9	129.3
Spain	75.5	94.6	92.4	94.0	97.6	106.4	112.9	119.3	124.6	128.6	128.4	130.0	130.9	132.4	134.8	138.6
Sweden	67.1	80.4	74.1	85.5	96.8	107.8	116.7	127.6	138.1	134.9	143.4	150.4	164.2	171.8	180.6	185.2
United Kingdom	80.3	96.9	93.4	97.8	99.3	101.8	102.4	103.4	105.8	104.5	101.7	101.9	104.0	102.8	104.4	105.0
Total hours																
United States	103.3	100.7	97.3	99.5	100.2	101.8	101.5	100.9	99.6	93.0	86.5	82.2	81.8	80.9	81.5	80.1
Canada	107.0	104.1	93.3	95.1	98.3	101.6	101.9	105.9	109.9	107.9	107.1	105.9	106.7	104.4	103.5	100.3
Australia	110.5	102.2	96.4	98.7	99.7	100.1	98.1	96.3	95.4	92.3	92.7	92.6	91.4	90.4	88.7	88.9
Japan	107.6	115.9	106.7	103.5	100.4	99.1	92.9	90.2	90.1	87.0	82.6	81.4	80.6	79.6	81.5	81.4
Korea, Rep. of	–	109.0	99.5	101.6	103.3	93.0	76.8	84.1	90.7	93.3	91.5	90.2	89.9	89.5	88.2	86.4
Taiwan	94.5	103.7	101.9	104.0	102.2	101.6	99.9	101.0	102.9	91.1	91.1	92.9	97.1	96.5	96.8	98.3
Belgium	130.9	114.1	103.5	102.8	101.0	98.6	98.9	100.0	100.6	99.6	95.7	92.2	91.4	88.5	88.9	89.2
Denmark	113.7	104.8	98.1	96.7	101.4	100.2	101.5	100.8	100.8	100.7	97.2	90.7	87.1	83.5	83.7	86.5
France	146.3	115.8	104.1	101.0	100.6	98.9	98.5	97.6	95.3	94.3	90.4	88.1	86.5	84.7	82.3	81.2
Germany	137.4	124.6	112.1	107.6	105.0	98.6	99.4	97.9	97.7	96.9	94.0	91.4	91.2	89.2	88.1	89.2
Italy	124.3	112.2	103.1	101.1	100.9	99.5	101.8	100.8	99.9	99.3	99.3	98.8	98.1	96.4	97.9	99.4
Netherlands	120.1	109.6	104.6	100.9	100.7	101.0	101.5	101.2	100.7	100.1	97.2	94.1	91.2	89.0	88.5	88.9
Norway	125.1	96.0	94.8	97.3	99.0	104.1	106.1	102.4	98.8	95.4	92.3	87.7	87.5	88.4	91.8	96.0
Spain	120.3	109.0	97.4	96.1	96.4	105.4	109.9	114.1	118.0	119.0	118.4	117.0	115.6	114.7	114.6	113.4
Sweden	111.8	108.8	89.7	93.9	100.0	98.8	100.9	101.1	102.4	103.0	98.7	95.7	94.4	93.0	92.4	93.9
United Kingdom	143.8	110.4	93.3	95.2	98.3	99.8	99.6	95.9	91.8	87.5	83.1	79.5	76.5	73.3	71.0	69.6
Hourly compensation (national currency basis)																
United States	51.2	82.7	93.3	96.3	98.1	102.6	108.6	112.9	123.2	126.1	135.2	144.7	147.7	150.5	156.7	162.2
Canada	43.8	82.4	93.5	96.2	98.5	102.4	107.7	110.0	113.6	116.7	120.6	125.5	129.1	135.4	138.0	143.2
Australia	–	79.5	89.3	90.4	95.7	103.0	107.3	111.7	116.3	123.6	129.3	134.5	141.6	150.7	160.3	169.9
Japan	53.7	83.0	94.1	96.0	99.2	103.3	105.9	105.7	105.1	106.5	107.2	104.9	105.9	106.8	105.3	105.0
Korea, Rep. of	–	36.1	61.6	70.8	85.9	108.7	118.4	119.0	127.1	131.1	144.4	151.5	173.0	186.8	202.9	218.6
Taiwan	23.1	66.5	82.6	86.6	93.8	103.1	107.0	108.9	111.0	118.1	114.4	116.3	118.2	122.8	125.2	127.2
Belgium	47.5	81.4	94.8	95.5	98.2	103.8	105.3	106.7	108.6	114.3	119.3	122.8	125.4	129.8	132.5	136.0
Denmark	39.5	83.1	90.9	94.1	96.0	103.4	106.1	108.8	110.9	116.2	121.2	129.4	134.4	143.6	148.0	150.5
France	34.6	78.9	91.8	95.3	98.1	102.9	103.7	107.0	112.8	115.8	122.8	125.7	129.7	134.4	140.9	145.0
Germany	43.3	72.3	86.7	90.6	95.5	102.0	103.4	105.8	111.3	114.7	117.5	120.2	120.9	122.4	127.5	129.7
Italy	22.6	70.5	85.1	89.6	94.9	104.7	102.8	105.4	108.1	111.8	115.0	119.3	123.4	127.4	129.9	132.7
Netherlands	52.4	79.0	91.7	95.7	98.3	102.3	106.7	110.5	116.1	121.4	128.4	133.5	139.0	141.1	145.0	149.3
Norway	34.3	81.2	89.2	91.9	96.0	104.5	110.6	116.9	123.5	130.9	138.8	144.5	149.2	156.2	165.1	172.9
Spain	23.1	65.9	90.3	93.6	97.6	102.4	103.2	102.9	104.5	108.7	111.8	117.4	121.5	127.3	132.7	139.2
Sweden	32.9	77.4	85.8	88.0	92.8	105.4	109.4	112.8	117.2	122.8	129.4	135.2	138.9	143.6	147.7	152.9
United Kingdom	33.4	82.8	96.2	98.6	100.3	104.4	112.3	118.9	126.2	131.8	139.1	146.1	153.7	159.7	171.0	175.3

See notes at end of table.

54. Occupational injury and illness rates by industry,[1] United States

Industry and type of case[2]	Incidence rates per 100 full-time workers[3]												
	1989[1]	1990	1991	1992	1993[4]	1994[4]	1995[4]	1996[4]	1997[4]	1998[4]	1999[4]	2000[4]	2001[4]
PRIVATE SECTOR[5]													
Total cases	8.6	8.8	8.4	8.9	8.5	8.4	8.1	7.4	7.1	6.7	6.3	6.1	5.7
Lost workday cases	4.0	4.1	3.9	3.9	3.8	3.8	3.6	3.4	3.3	3.1	3.0	3.0	2.8
Lost workdays	78.7	84.0	86.5	93.8	–	–	–	–	–	–	–	–	–
Agriculture, forestry, and fishing[5]													
Total cases	10.9	11.6	10.8	11.6	11.2	10.0	9.7	8.7	8.4	7.9	7.3	7.1	7.3
Lost workday cases	5.7	5.9	5.4	5.4	5.0	4.7	4.3	3.9	4.1	3.9	3.4	3.6	3.6
Lost workdays	100.9	112.2	108.3	126.9	–	–	–	–	–	–	–	–	–
Mining													
Total cases	8.5	8.3	7.4	7.3	6.8	6.3	6.2	5.4	5.9	4.9	4.4	4.7	4.0
Lost workday cases	4.8	5.0	4.5	4.1	3.9	3.9	3.9	3.2	3.7	2.9	2.7	3.0	2.4
Lost workdays	137.2	119.5	129.6	204.7	–	–	–	–	–	–	–	–	–
Construction													
Total cases	14.3	14.2	13.0	13.1	12.2	11.8	10.6	9.9	9.5	8.8	8.6	8.3	7.9
Lost workday cases	6.8	6.7	6.1	5.8	5.5	5.5	4.9	4.5	4.4	4.0	4.2	4.1	4.0
Lost workdays	143.3	147.9	148.1	161.9	–	–	–	–	–	–	–	–	–
General building contractors:													
Total cases	13.9	13.4	12.0	12.2	11.5	10.9	9.8	9.0	8.5	8.4	8.0	7.8	6.9
Lost workday cases	6.5	6.4	5.5	5.4	5.1	5.1	4.4	4.0	3.7	3.9	3.7	3.9	3.5
Lost workdays	137.3	137.6	132.0	142.7	–	–	–	–	–	–	–	–	–
Heavy construction, except building:													
Total cases	13.8	13.8	12.8	12.1	11.1	10.2	9.9	9.0	8.7	8.2	7.8	7.6	7.8
Lost workday cases	6.5	6.3	6.0	5.4	5.1	5.0	4.8	4.3	4.3	4.1	3.8	3.7	4.0
Lost workdays	147.1	144.6	160.1	165.8	–	–	–	–	–	–	–	–	–
Special trades contractors:													
Total cases	14.6	14.7	13.5	13.8	12.8	12.5	11.1	10.4	10.0	9.1	8.9	8.6	8.2
Lost workday cases	6.9	6.9	6.3	6.1	5.8	5.8	5.0	4.8	4.7	4.1	4.4	4.3	4.1
Lost workdays	144.9	153.1	151.3	168.3	–	–	–	–	–	–	–	–	–
Manufacturing													
Total cases	13.1	13.2	12.7	12.5	12.1	12.2	11.6	10.6	10.3	9.7	9.2	9.0	8.1
Lost workday cases	5.8	5.8	5.6	5.4	5.3	5.5	5.3	4.9	4.8	4.7	4.6	4.5	4.1
Lost workdays	113.0	120.7	121.5	124.6	–	–	–	–	–	–	–	–	–
Durable goods:													
Total cases	14.1	14.2	13.6	13.4	13.1	13.5	12.8	11.6	11.3	10.7	10.1	–	8.8
Lost workday cases	6.0	6.0	5.7	5.5	5.4	5.7	5.6	5.1	5.1	5.0	4.8	–	4.3
Lost workdays	116.5	123.3	122.9	126.7	–	–	–	–	–	–	–	–	–
Lumber and wood products:													
Total cases	18.4	18.1	16.8	16.3	15.9	15.7	14.9	14.2	13.5	13.2	13.0	12.1	10.6
Lost workday cases	9.4	8.8	8.3	7.6	7.6	7.7	7.0	6.8	6.5	6.8	6.7	6.1	5.5
Lost workdays	177.5	172.5	172.0	165.8	–	–	–	–	–	–	–	–	–
Furniture and fixtures:													
Total cases	16.1	16.9	15.9	14.8	14.6	15.0	13.9	12.2	12.0	11.4	11.5	11.2	11.0
Lost workday cases	7.2	7.8	7.2	6.6	6.5	7.0	6.4	5.4	5.8	5.7	5.9	5.9	5.7
Lost workdays	–	–	–	128.4	–	–	–	–	–	–	–	–	–
Stone, clay, and glass products:													
Total cases	15.5	15.4	14.8	13.6	13.8	13.2	12.3	12.4	11.8	11.8	10.7	10.4	10.1
Lost workday cases	7.4	7.3	6.8	6.1	6.3	6.5	5.7	6.0	5.7	6.0	5.4	5.5	5.1
Lost workdays	149.8	160.5	156.0	152.2	–	–	–	–	–	–	–	–	–
Primary metal industries:													
Total cases	18.7	19.0	17.7	17.5	17.0	16.8	16.5	15.0	15.0	14.0	12.9	12.6	10.7
Lost workday cases	8.1	8.1	7.4	7.1	7.3	7.2	7.2	6.8	7.2	7.0	6.3	6.3	5.3
Lost workdays	168.3	180.2	169.1	175.5	–	–	–	–	–	–	–	–	11.1
Fabricated metal products:													
Total cases	18.5	18.7	17.4	16.8	16.2	16.4	15.8	14.4	14.2	13.9	12.6	11.9	11.1
Lost workday cases	7.9	7.9	7.1	6.6	6.7	6.7	6.9	6.2	6.4	6.5	6.0	5.5	5.3
Lost workdays	147.6	155.7	146.6	144.0	–	–	–	–	–	–	–	–	–
Industrial machinery and equipment:													
Total cases	12.1	12.0	11.2	11.1	11.1	11.6	11.2	9.9	10.0	9.5	8.5	8.2	11.0
Lost workday cases	4.8	4.7	4.4	4.2	4.2	4.4	4.4	4.0	4.1	4.0	3.7	3.6	6.0
Lost workdays	86.8	88.9	86.6	87.7	–	–	–	–	–	–	–	–	–
Electronic and other electrical equipment:													
Total cases	9.1	9.1	8.6	8.4	8.3	8.3	7.6	6.8	6.6	5.9	5.7	5.7	5.0
Lost workday cases	3.9	3.8	3.7	3.6	3.5	3.6	3.3	3.1	3.1	2.8	2.8	2.9	2.5
Lost workdays	77.5	79.4	83.0	81.2	–	–	–	–	–	–	–	–	–
Transportation equipment:													
Total cases	17.7	17.8	18.3	18.7	18.5	19.6	18.6	16.3	15.4	14.6	13.7	13.7	12.6
Lost workday cases	6.8	6.9	7.0	7.1	7.1	7.8	7.9	7.0	6.6	6.6	6.4	6.3	6.0
Lost workdays	138.6	153.7	166.1	186.6	–	–	–	–	–	–	–	–	–
Instruments and related products:													
Total cases	5.6	5.9	6.0	5.9	5.6	5.9	5.3	5.1	4.8	4.0	4.0	4.5	4.0
Lost workday cases	2.5	2.7	2.7	2.7	2.5	2.7	2.4	2.3	2.3	1.9	1.8	2.2	2.0
Lost workdays	55.4	57.8	64.4	65.3	–	–	–	–	–	–	–	–	–
Miscellaneous manufacturing industries:													
Total cases	11.1	11.3	11.3	10.7	10.0	9.9	9.1	9.5	8.9	8.1	8.4	7.2	6.4
Lost workday cases	5.1	5.1	5.1	5.0	4.6	4.5	4.3	4.4	4.2	3.9	4.0	3.6	3.2
Lost workdays	97.6	113.1	104.0	108.2	–	–	–	–	–	–	–	–	–

See footnotes at end of table.

54. Continued—Occupational injury and illness rates by industry[1], United States

Industry and type of case[2]	Incidence rates per 100 workers [3]												
	1989 [1]	1990	1991	1992	1993 [4]	1994 [4]	1995 [4]	1996 [4]	1997 [4]	1998 [4]	1999 [4]	2000 [4]	2001 [4]
Nondurable goods:													
Total cases	11.6	11.7	11.5	11.3	10.7	10.5	9.9	9.2	8.8	8.2	7.8	7.8	6.8
Lost workday cases	5.5	5.6	5.5	5.3	5.0	5.1	4.9	4.6	4.4	4.3	4.2	4.2	3.8
Lost workdays	107.8	116.9	119.7	121.8	–	–	–	–	–	-	–	–	–
Food and kindred products:													
Total cases	18.5	20.0	19.5	18.8	17.6	17.1	16.3	15.0	14.5	13.6	12.7	12.4	10.9
Lost workday cases	9.3	9.9	9.9	9.5	8.9	9.2	8.7	8.0	8.0	7.5	7.3	7.3	6.3
Lost workdays	174.7	202.6	207.2	211.9	–	–	–	–	–	-	–	–	–
Tobacco products:													
Total cases	8.7	7.7	6.4	6.0	5.8	5.3	5.6	6.7	5.9	6.4	5.5	6.2	6.7
Lost workday cases	3.4	3.2	2.8	2.4	2.3	2.4	2.6	2.8	2.7	3.4	2.2	3.1	4.2
Lost workdays	64.2	62.3	52.0	42.9	–	–	–	–	–	-	–	–	–
Textile mill products:													
Total cases	10.3	9.6	10.1	9.9	9.7	8.7	8.2	7.8	6.7	7.4	6.4	6.0	5.2
Lost workday cases	4.2	4.0	4.4	4.2	4.1	4.0	4.1	3.6	3.1	3.4	3.2	3.2	2.7
Lost workdays	81.4	85.1	88.3	87.1	–	–	–	–	–	–	–	–	–
Apparel and other textile products:													
Total cases	8.6	8.8	9.2	9.5	9.0	8.9	8.2	7.4	7.0	6.2	5.8	6.1	5.0
Lost workday cases	3.8	3.9	4.2	4.0	3.8	3.9	3.6	3.3	3.1	2.6	2.8	3.0	2.4
Lost workdays	80.5	92.1	99.9	104.6	–	–	–	–	–	-	–	–	–
Paper and allied products:													
Total cases	12.7	12.1	11.2	11.0	9.9	9.6	8.5	7.9	7.3	7.1	7.0	6.5	6.0
Lost workday cases	5.8	5.5	5.0	5.0	4.6	4.5	4.2	3.8	3.7	3.7	3.7	3.4	3.2
Lost workdays	132.9	124.8	122.7	125.9	–	–	–	–	–	–	–	–	–
Printing and publishing:													
Total cases	6.9	6.9	6.7	7.3	6.9	6.7	6.4	6.0	5.7	5.4	5.0	5.1	4.6
Lost workday cases	3.3	3.3	3.2	3.2	3.1	3.0	3.0	2.8	2.7	2.8	2.6	2.6	2.4
Lost workdays	63.8	69.8	74.5	74.8	–	–	–	–	–	–	–	–	–
Chemicals and allied products:													
Total cases	7.0	6.5	6.4	6.0	5.9	5.7	5.5	4.8	4.8	4.2	4.4	4.2	4.0
Lost workday cases	3.2	3.1	3.1	2.8	2.7	2.8	2.7	2.4	2.3	2.1	2.3	2.2	2.1
Lost workdays	63.4	61.6	62.4	64.2	–	–	–	–	–	–	–	–	–
Petroleum and coal products:													
Total cases	6.6	6.6	6.2	5.9	5.2	4.7	4.8	4.6	4.3	3.9	4.1	3.7	2.9
Lost workday cases	3.3	3.1	2.9	2.8	2.5	2.3	2.4	2.5	2.2	1.8	1.8	1.9	1.4
Lost workdays	68.1	77.3	68.2	71.2	–	–	–	–	–	–	–	–	–
Rubber and miscellaneous plastics products:													
Total cases	16.2	16.2	15.1	14.5	13.9	14.0	12.9	12.3	11.9	11.2	10.1	10.7	8.7
Lost workday cases	8.0	7.8	7.2	6.8	6.5	6.7	6.5	6.3	5.8	5.8	5.5	5.8	4.8
Lost workdays	147.2	151.3	150.9	153.3	–	–	–	–	–	–	–	–	–
Leather and leather products:													
Total cases	13.6	12.1	12.5	12.1	12.1	12.0	11.4	10.7	10.6	9.8	10.3	9.0	8.7
Lost workday cases	6.5	5.9	5.9	5.4	5.5	5.3	4.8	4.5	4.3	4.5	5.0	4.3	4.4
Lost workdays	130.4	152.3	140.8	128.5	–	–	–	–	–	–	–	–	–
Transportation and public utilities													
Total cases	9.2	9.6	9.3	9.1	9.5	9.3	9.1	8.7	8.2	7.3	7.3	6.9	6.9
Lost workday cases	5.3	5.5	5.4	5.1	5.4	5.5	5.2	5.1	4.8	4.3	4.4	4.3	4.3
Lost workdays	121.5	134.1	140.0	144.0	–	–	–	–	–	–	–	–	–
Wholesale and retail trade													
Total cases	8.0	7.9	7.6	8.4	8.1	7.9	7.5	6.8	6.7	6.5	6.1	5.9	6.6
Lost workday cases	3.6	3.5	3.4	3.5	3.4	3.4	3.2	2.9	3.0	2.8	2.7	2.7	2.5
Lost workdays	63.5	65.6	72.0	80.1	–	–	–	–	–	–	–	–	–
Wholesale trade:													
Total cases	7.7	7.4	7.2	7.6	7.8	7.7	7.5	6.6	6.5	6.5	6.3	5.8	5.3
Lost workday cases	4.0	3.7	3.7	3.6	3.7	3.8	3.6	3.4	3.2	3.3	3.3	3.1	2.8
Lost workdays	71.9	71.5	79.2	82.4	–	–	–	–	–	–	–	–	–
Retail trade:													
Total cases	8.1	8.1	7.7	8.7	8.2	7.9	7.5	6.9	6.8	6.5	6.1	5.9	5.7
Lost workday cases	3.4	3.4	3.3	3.4	3.3	3.3	3.0	2.8	2.9	2.7	2.5	2.5	2.4
Lost workdays	60.0	63.2	69.1	79.2	–	–	–	–	–	–	–	–	–
Finance, insurance, and real estate													
Total cases	2.0	2.4	2.4	2.9	2.9	2.7	2.6	2.4	2.2	.7	1.8	1.9	1.8
Lost workday cases	.9	1.1	1.1	1.2	1.2	1.1	1.0	.9	.9	.5	.8	.8	.7
Lost workdays	17.6	27.3	24.1	32.9	–	–	–	–	–	–	–	–	–
Services													
Total cases	5.5	6.0	6.2	7.1	6.7	6.5	6.4	6.0	5.6	5.2	4.9	4.9	4.6
Lost workday cases	2.7	2.8	2.8	3.0	2.8	2.8	2.8	2.6	2.5	2.4	2.2	2.2	2.2
Lost workdays	51.2	56.4	60.0	68.6	–	–	–	–	–	–	–	–	–

[1] Data for 1989 and subsequent years are based on the *Standard Industrial Classification Manual*, 1987 Edition. For this reason, they are not strictly comparable with data for the years 1985–88, which were based on the *Standard Industrial Classification Manual*, 1972 Edition, 1977 Supplement.

[2] Beginning with the 1992 survey, the annual survey measures only nonfatal injuries and illnesses, while past surveys covered both fatal and nonfatal incidents. To better address fatalities, a basic element of workplace safety, BLS implemented the Census of Fatal Occupational Injuries.

[3] The incidence rates represent the number of injuries and illnesses or lost workdays per 100 full-time workers and were calculated as (N/EH) X 200,000, where:
N = number of injuries and illnesses or lost workdays;
EH = total hours worked by all employees during the calendar year; and
200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

[4] Beginning with the 1993 survey, lost workday estimates will not be generated. As of 1992, BLS began generating percent distributions and the median number of days away from work by industry and for groups of workers sustaining similar work disabilities.

[5] Excludes farms with fewer than 11 employees since 1976.

NOTE: Dash indicates data not available.

55. Fatal occupational injuries by event or exposure, 1996-2005

Event or exposure[1]	1996-2000 (average)	2001-2005 (average)[2]	2005[3]	
			Number	Percent
All events	6,094	5,704	5,734	100
Transportation incidents	2,608	2,451	2,493	43
Highway	1,408	1,394	1,437	25
Collision between vehicles, mobile equipment	685	686	718	13
Moving in same direction	117	151	175	3
Moving in opposite directions, oncoming	247	254	265	5
Moving in intersection	151	137	134	2
Vehicle struck stationary object or equipment on side of road	264	310	345	6
Noncollision	372	335	318	6
Jack-knifed or overturned--no collision	298	274	273	5
Nonhighway (farm, industrial premises)	378	335	340	6
Noncollision accident	321	277	281	5
Overturned	212	175	182	3
Worker struck by vehicle, mobile equipment	376	369	391	7
Worker struck by vehicle, mobile equipment in roadway	129	136	140	2
Worker struck by vehicle, mobile equipment in parking lot or non-road area	171	166	176	3
Water vehicle	105	82	88	2
Aircraft	263	206	149	3
Assaults and violent acts	1,015	850	792	14
Homicides	766	602	567	10
Shooting	617	465	441	8
Suicide, self-inflicted injury	216	207	180	3
Contact with objects and equipment	1,005	952	1,005	18
Struck by object	567	560	607	11
Struck by falling object	364	345	385	7
Struck by rolling, sliding objects on floor or ground level	77	89	94	2
Caught in or compressed by equipment or objects	293	256	278	5
Caught in running equipment or machinery	157	128	121	2
Caught in or crushed in collapsing materials	128	118	109	2
Falls	714	763	770	13
Fall to lower level	636	669	664	12
Fall from ladder	106	125	129	2
Fall from roof	153	154	160	3
Fall to lower level, n.e.c.	117	123	117	2
Exposure to harmful substances or environments	535	498	501	9
Contact with electric current	290	265	251	4
Contact with overhead power lines	132	118	112	2
Exposure to caustic, noxious, or allergenic substances	112	114	136	2
Oxygen deficiency	92	74	59	1
Fires and explosions	196	174	159	3
Fires--unintended or uncontrolled	103	95	93	2
Explosion	92	78	65	1

[1] Based on the 1992 BLS Occupational Injury and Illness Classification Manual.
[2] Excludes fatalities from the Sept. 11, 2001, terrorist attacks.
[3] The BLS news release of August 10, 2006, reported a total of 5,702 fatal work injuries for calendar year 2005. Since then, an additional 32 job-related fatalities were identified, bringing the total job-related fatality count for 2005 to 5,734.

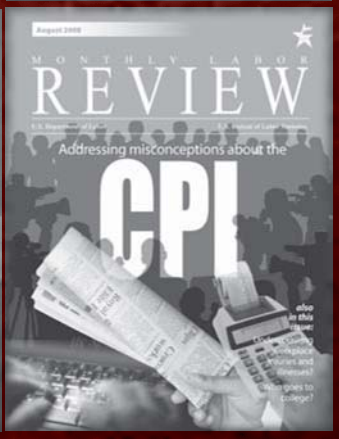
NOTE: Totals for all years are revised and final. Totals for major categories may include subcategories not shown separately. Dashes indicate no data reported or data that do not meet publication criteria. N.e.c. means "not elsewhere classified."

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, in cooperation with State, New York City, District of Columbia, and Federal agencies, Census of Fatal Occupational Injuries.

Monthly Labor Review

Index to Volume 131

JANUARY–DECEMBER 2008



Index to Volume 131
January 2008 to December 2008

American Time Use Survey

How high school students use time: a visual essay. 2008 Nov. 51–61.
Teachers' work patterns: when, where, and how much do U.S. teachers work? 2008 Mar. 52–59.
Time use of working parents: a visual essay. 2008 June 3–14.

Austria

Gender and nonstandard work hours in 12 European countries. 2008 Feb. 83–103.

Automobile industry

Price measures of new vehicles: a comparison. 2008 July 19–32.

Belgium

Gender and nonstandard work hours in 12 European countries. 2008 Feb. 83–103.

Benefits

Employers' health insurance cost burden, 1996–2005. 2008 June 28–44.

Business Employment Dynamics series

Births and deaths of business establishments in the United States, The. 2008 Dec. 3–18.
Studying the labor market using BLS labor dynamics data. 2008 Feb. 3–16.

Census

Micropolitan Statistical Areas: a few highlights. 2008 Apr. 40–42.

Childcare

Time use of working parents: a visual essay, The. 2008 June 3–14.
Timing of mothers' employment after childbirth, The. 2008 June 15–27.

Compensation costs

Employers' health insurance cost burden, 1996–2005. 2008 June 28–44.

Consumer Expenditure Survey

Expenditure patterns of young single adults: two recent generations compared. 2008 Dec. 19–50.

Consumer expenditures

An analysis of Southern energy expenditures and prices, 1984–2006. 2008 Apr. 3–18.
Expenditure patterns of young single adults: two recent generations compared. 2008 Dec. 19–50.

Consumer Price Index

A hedonic model for Internet access service in the Consumer Price Index. 2008 July 33–48.
Addressing misconceptions about the Consumer Price Index. 2008 Aug. 3–19.
An analysis of Southern energy expenditures and prices, 1984–2006. 2008 Apr. 3–18.
Experimental consumer price index for elderly Americans (CPI-E): 1982–2007, The. 2008 Apr. 19–24.
Price measures of new vehicles: a comparison. 2008 July 19–32.

Current Employment Statistics

Payroll employment in 2007: job growth slows. 2008 Mar. 19–31.

Current Population Survey

Household survey indicators weaken in 2007. 2008 Mar. 3–18.

Denmark

Gender and nonstandard work hours in 12 European countries. 2008 Feb. 83–103.

Disabilities

Employment rate of people with disabilities, The. 2008 Nov. 44–50.

Earnings and wages

401 (k) plans move away from employer stock as investment vehicle. 2008 Nov. 3–10.
Effect of business ownership change on occupational employment and wages, The. 2008 Sept. 3–23.
How widely do wages vary within jobs in the same establishment? 2008 Feb. 17–50.
Wage and productivity stability in U.S. manufacturing plants. 2008 May 24–36.

Economic development and growth

Effect of business ownership change on occupational employment and wages, The. 2008 Sept. 3–23.
Job openings, hires, and turnover decrease in 2007. 2008 May 14–23.
Births and deaths of business establishments in the United States, The. 2008 Dec. 3–18.

Education and training

How high school students use time: a visual essay. 2008 Nov. 51–61.
Who goes to college? Evidence from the NLSY97. 2008 Aug. 33–43.

Youth enrollment and employment during the school year. 2008 Feb. 51–63.

Elderly

Experimental consumer price index for elderly Americans (CPI-E): 1982–2007, The. 2008 Apr. 19–24.

Older workers: increasing their labor force participation and hours of work. 2008 Jan. 41–54.

Employment (See also Labor force, Labor market, and Unemployment.)

Business Processes and Business Functions: a new way of looking at employment. 2008 Dec. 51–70.
Effect of business ownership change on occupational employment and wages, The. 2008 Sept. 3–23.
Employment characteristics of Gulf War-era II veterans in 2006: a visual essay. 2008 May 3–13.
Employment programs for recipients of unemployment insurance. 2008 Oct. 17–27.
Employment rate of people with disabilities, The. 2008 Nov. 44–50.
Household survey indicators weaken in 2007. 2008 Mar. 3–18.
Multiple jobholding in States in 2007. 2008 Sept. 52–53.
Occupational employment in the not-for-profit sector. 2008 Nov. 11–43.
Payroll employment in 2007: job growth slows. 2008 Mar. 19–31.
Takeoff and descent of airline employment. 2008 Oct. 3–16.
Youth enrollment and employment during the school year. 2008 Feb. 51–61.

Employment Cost Index

Employers' health insurance cost burden, 1996–2005. 2008 June 28–44.
Transitional Employment Cost Indexes for seasonal adjustment. 2008 Apr. 25–39.

Energy

An analysis of Southern energy expenditures and prices, 1984–2006. 2008 Apr. 3–18.
Producer inflation accelerates in 2007 due to rising prices for energy and foods. 2008 July 3–18.

Entrepreneurship

Births and deaths of business establishments in the United States, The, 2008 Dec. 3–18.

Europe

Gender and nonstandard work hours in 12 European countries. 2008 Feb. 83–103.

Expenditures

An analysis of Southern energy expenditures and prices, 1984–2006. 2008 Apr. 3–18.
Expenditure patterns of young single adults: two recent generations compared. 2008 Dec. 19–50.

Finland

Gender and nonstandard work hours in 12 European countries. 2008 Feb. 83–103.

France

Gender and nonstandard work hours in 12 European countries. 2008 Feb. 83–103.

Health and insurance plans

Employers' health insurance cost burden, 1996–2005. 2008 June 28–44.

Hours of work

Gender and nonstandard work hours in 12 European countries. 2008 Feb. 83–103.
Teachers' work patterns: when, where, and how much do U.S. teachers work? 2008 Mar. 52–59.

Hurricane Katrina

Hurricane Katrina evacuees: who they are, where they are, and how they are faring. 2008 Mar. 32–51.

Industry (General)

Labor productivity trends since 2000, by sector and industry. 2008 Feb. 64–82.
Takeoff and descent of airline employment. 2008 Oct. 3–16.

Inflation

Producer inflation accelerates in 2007 due to rising prices for energy and foods. 2008 July 3–18.

Injuries (See Work injuries and illnesses.)

Insurance (See Health and insurance plans.)

International Price Program (IPP)

Price measures of new vehicles: a comparison. 2008 July 19–32.

Internet

A hedonic model for Internet access service in the Consumer Price Index. 2008 July 33–48.

Ireland

Gender and nonstandard work hours in 12 European countries. 2008 Feb. 83–103.

Italy

Gender and nonstandard work hours in 12 European countries. 2008 Feb. 83–103.

Job creation

The births and deaths of business establishments in the United States. 2008 Dec. 3–18.

Job Openings and Labor Turnover Survey (JOLTS)

Job openings, hires, and turnover decrease in 2007. 2008 May 14–23.
Studying the labor market using BLS labor dynamics data. 2008 Feb. 3–16.

Labor force (See also Employment and Unemployment.)

Household survey indicators weaken in 2007. 2008 Mar. 3–18.

Knowing younger workers better: information from the NLSY97. 2008 Sept. 42–51.
Older workers: increasing their labor force participation and hours of work. 2008 Jan. 41–54.
The timing of mothers' employment after childbirth. 2008 June 15–27.
Union members in 2007: a visual essay. 2008 Oct. 28–39.

Labor law

Changes in State unemployment insurance legislation in 2007. 2008 Jan. 32–40.
State labor legislation enacted in 2007. 2008 Jan. 3–31.

Labor market

Job openings, hires, and turnover decrease in 2007. 2008 May 14–23.
Service occupations, offshoring, and the labor market. 2008 Dec. 71–86.
Studying the labor market using BLS labor dynamics data. 2008 Feb. 3–16.

Labor turnover

Job openings, hires, and turnover decrease in 2007. 2008 May 14–23.

Layoffs (See Mass layoffs statistics.)

Local Area Unemployment Statistics (LAUS)

Micropolitan Statistical Areas: a few highlights. 2008 Apr. 40–42.

Manufacturing

Wage and productivity stability in U.S. manufacturing plants. 2008 May 24–36.

Mass layoff statistics

Business processes and business functions: a new way of looking at employment. 2008 Dec. 51–70.
Extended mass layoffs after 2001: a comparison of New York and the Nation. 2008 Sept. 24–41.

Multiple jobholders

Multiple jobholding in States in 2007. 2008 Sept. 52–53.

National Compensation Survey

Transitional Employment Cost Indexes for seasonal adjustment. 2008 Apr. 25–39.

National Longitudinal Survey of Youth

Knowing younger workers better: information from the NLSY97. 2008 Sept. 42–51.
Who goes to college? Evidence from the NLSY97. 2008 Aug. 33–43.

Netherlands

Gender and nonstandard work hours in 12 European countries. 2008 Feb. 83–103.

Norway

Gender and nonstandard work hours in 12 European countries. 2008 Feb. 83–103.

Occupational Employment Statistics survey

Occupational employment in the not-for-profit sector. 2008 Nov. 11–43.

Occupational Safety and Health (See Work injuries and illnesses.)

Occupations

How widely do wages vary within jobs in the same establishment? 2008 Feb. 17–50.
Occupational employment in the not-for-profit sector. 2008 Nov. 11–43.
Service occupations, offshoring, and the labor market. 2008 Dec. 71–86.

Older workers (See also Elderly.)

Older workers: increasing their labor force participation and hours of work. 2008 Jan. 41–54.

Pensions

401(k) plans move away from employer stock as investment vehicle. 2008 Nov. 3–10.

Prices

Addressing misconceptions about the Consumer Price Index. 2008 Aug. 3–19.
Price measures of new vehicles: a comparison. 2008 July 19–32.
Producer inflation accelerates in 2007 due to rising prices for energy and foods. 2008 July 3–18.

Producer Price Index

Price measures of new vehicles: a comparison. 2008 July 19–32.
Producer inflation accelerates in 2007 due to rising prices for energy and foods. 2008 July 3–18.

Productivity

Labor productivity trends since 2000, by sector and industry. 2008 Feb. 64–82.
Wage and productivity stability in U.S. manufacturing plants. 2008 May 24–36.

Regional comparisons

Extended mass layoffs after 2001: a comparison of New York and the Nation. 2008 Sept. 24–41.
Multiple jobholding in States in 2007. 2008 Sept. 52–53.

Regional economics

An analysis of Southern energy expenditures and prices, 1984–2006. 2008 Apr. 3–18.

Retirement

401(k) plans move away from employer stock as investment vehicle. 2008 Nov. 3–10.

Safety and health (See Work injuries and illness.)

Small business

The births and deaths of business establishments in the United States. 2008 Dec. 3–18.

State government

Changes in State unemployment insurance legislation in 2007. 2008 Jan. 32–40.

State labor legislation enacted in 2007. 2008 Jan. 3–31.

Statistical programs and methods

Addressing misconceptions about the Consumer Price Index. 2008 Aug. 3–19.
Developing a hedonic model for Internet access service in the Consumer Price Index. 2008 July 33–48.
Examining evidence on whether BLS undercounts workplace injuries and illnesses. 2008 Aug. 20–32.
Micropolitan Statistical Areas: a few highlights. 2008 Apr. 40–42.
Transitional Employment Cost Indexes for seasonal adjustment. 2008 Apr. 25–39.

Survey methods

Examining evidence on whether BLS undercounts workplace injuries and illnesses. 2008 Aug. 20–32.

Survey of Occupational Injuries and Illnesses

Examining evidence on whether BLS undercounts workplace injuries and illnesses. 2008 Aug. 20–32.

Sweden

Gender and nonstandard work hours in 12 European countries. 2008 Feb. 83–103.

Time use

How high school students use time: a visual essay. 2008 Nov. 51–61.
Time use of working parents: a visual essay. 2008 June 3–14.

Unemployment (See also Labor force and Labor market.)

Business processes and business functions: a new way of looking at employment. 2008 Dec. 51–70.
Employment programs for recipients of unemployment insurance. 2008 Oct. 17–27.
Extended mass layoffs after 2001: a comparison of New York and the Nation. 2008 Sept. 24–41.
Household survey indicators weaken in 2007. 2008 Mar. 3–18.

Unemployment insurance

Changes in State unemployment insurance legislation in 2007. 2008 Jan. 32–40.
Employment programs for recipients of unemployment insurance. 2008 Oct. 17–27.

Unions

Union members in 2007: a visual essay. 2008 Oct. 28–39.

United Kingdom

Gender and nonstandard work hours in 12 European countries. 2008 Feb. 83–103.

Veterans

Employment characteristics of Gulf War-era II veterans in 2006: a visual essay. 2008 May 3–13.

Women

The timing or mothers' employment after childbirth. 2008 June 15–27.

Work injuries and illnesses

Examining evidence on whether BLS undercounts workplace injuries and illnesses. 2008 Aug. 20–32.

Youth

Expenditure patterns of young single adults: two recent generations compared. 2008 Dec. 19–50.
How high school students use time: a visual essay. 2008 Nov. 51–61.
Knowing younger workers better: information from the NLSY97. 2008 Sept. 42–51.
Who goes to college? Evidence from the NLSY97. 2008 Aug. 33–43.
Youth enrollment and employment during the school year. 2008 Feb. 51–63.

DEPARTMENTS

Book Reviews. Each issue except July and Nov.

Conference report. Sept. issue.

Current Labor Statistics. Each issue.

Errata. May issue (to correct tables 3, 4, and appendix in Nov. 2007 article, "Industry output and employment projections to 2016.").

Labor month in review. Each issue.

Précis. Each issue except Feb. and Nov.

Publications received. Oct. issue.

Regional trends. Apr. and Sept. issues.

Visual essays. Mar., May, June, Oct., and Nov. issues.

BOOK REVIEWS (Listed by author of book)

Agell, Jonas and Peter Birch Sorensen. *Tax Policy and Labor Market Performance*. 2008 Feb. 104–5.
Bartik, Timothy J. and Susan N. Houseman. *A Future of Good Jobs? America's Challenge in the Global Economy*. 2008 Sept. 55–56.
Greenhouse, Steven. *The Big Squeeze*. 2008 Dec. 87.
Houseman, Susan N. and Timothy J. Bartik. *A Future of Good Jobs? America's Challenge in the Global Economy*. 2008 Sept. 55–56.
Kletzer, Lori G. *Imports, Exports, and Jobs: What Does Trade Mean for Employment and Job Loss*? 2008 Apr. 44.
Kohl, Heribert and Hans-Wolfgang Platzer. *Industrial relations in Central and Eastern Europe/Transformation and Integration/A Comparison of the eight new EU member states.* 2008 Oct. 41–42.
Lichtenstein, Nelson. *American Capitalism: Social Thought and Political Economy in the Twentieth Century.* 2008 May 38–39.
Mishkin, Frederic S. *The Next Great Globalization: How Disadvantaged Nations Can Harness Their Financial Systems to Get Rich.* 2008 Mar. 61–62.
Munnell, Alicia H. and Steven A. Sass. *Social Security and the Stock Market: How the Pursuit of Market Magic Shapes the System.* 2008 June 45–46.
Peoples, James and Wayne K. Talley. *Transportation Labor Issues and Regulatory Reform*. 2008 Aug. 45–46.
Platzer, Hans-Wolfgang and Heribert Kohl. *Industrial relations in Central and Eastern Europe/Transformation and Integration/A Comparison of the eight new EU member states.* 2008 Oct. 41–42.
Sass, Steven A. and Alicia H. Munnell. Social Security and the Stock

Market: *How the Pursuit of Market Magic Shapes the System*. 2008 June 45–46.
Schwab, Abraham B. and Matthew K. Wynia. *Ensuring Fairness in Health Care Coverage*. 2008 Jan. 56–57.
Sorenson, Peter Birch and Jonas Agell. *Tax Policy and Labor Market Performance*. 2008 Feb. 104–5.
Tally, Wayne K. and James Peoples. *Transportation Labor Issues and Regulatory Reform*. 2008 Aug. 45–46.
Wynia, Matthew K. and Abraham P. Schwab. *Ensuring Fairness in Health Care Coverage.* 2008 Jan. 56–57.

AUTHORS

Abbot, Cheryl. An analysis of Southern energy expenditures and prices, 1984–2006. 2008 Apr. 3–18.
Allard, Mary Dorinda. How high school students use time: a visual essay. 2008 Nov. 51–61.
— and Marianne Janes. Time use of working parents: a visual essay. 2008 June 3–14.
Aughinbaugh, Alison. Who goes to college? Evidence from the NLSY97. 2008 Aug. 33–43.
Baldwin, Stephen E. Book review. 2008 Sept. 55–56.
Barnow, Burt S. The employment rate of people with disabilities. 2008 Nov. 44–50.
Bergman, Bruce. Book review. 2008 Aug. 45–46.
— Extended mass layoffs after 2001: a comparison of New York and the Nation. 2008 Sept. 24–41.
Black, Dan, Robert Michael, and Charles Pierret. Knowing younger workers better: information from the NLSY97. 2008 Sept. 42–51.
Boon, Zhi. Job openings, hires, and turnover decrease in 2007. 2008 May 14–23.
— Charles M. Carson, R. Jason Faberman, and Randy E. Ilg. Studying the labor market using BLS labor dynamics data. 2008 Feb. 3–16.
Borberly, James Marschall. Household survey indicators weaken in 2007. 2008 Mar. 3–18.
Branch, E. Raphael, James A. Buszuwski, Albert E. Schwenk, and Mark Gough. Transitional employment cost indexes for seasonal adjustment. 2008 Apr. 25–39.
Brand, Horst. Book review. 2008 May 38–39.
Brown, Sharon. Business Processes and Business Functions: a new way of looking at employment. 2008 Dec. 51–70.
Bustinza, Maria, Daniel Chow, Thaddious Foster, Tod Reese, and David Yochum. Price measures of new vehicles: a comparison. 2008 July 19–32.
Buszuwski, James A., E. Ralphael Branch, Albert E. Schwenk, and Mark Gough. Transitional employment cost indexes for seasonal adjustment. 2008 Apr. 25–39.
Campbell, James. Multiple jobholding in States in 2007. 2008 Sept. 52–53.
Carson, Charles M., Zhi Boon, R. Jason Faberman, and Randy E. Ilg. Studying the labor market using BLS labor dynamics data. 2008 Feb. 3–16.
Chow, Daniel, Maria Bustinza, Thaddious Foster, Tod Reese, and David Yochum. Price measures of new vehicles: a comparison. 2008 July 19–32.
Couch, Arielle. Book review. 2008 Apr. 44.
Dziezek, Kristen M., Mark C. Long, Daniel D. Luria, and Edith A. Wiarda. Wage and productivity stability in U.S. manufacturing plants. 2008 May 24–36.
Eibner, Christine and M. Susan Marquis. Employers' health insurance cost burden, 1996–2005. 2008 June 28–44.
Faberman, R. Jason, Zhi Boon, Charles M. Carson, and Randy Ilg. Studying the labor market using BLS labor dynamics data. 2008 Feb. 3–16.
Faluszczak, Mary. Book review. 2008 Mar. 61–62.
—and Peter Meyer. Book review. 2008 Oct. 41–42.
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Occupational Injuries and Illnesses in the U.S. Caribbean Territories, 1992-2006

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Data from the Bureau of Labor Statistics shed light on what distinguishes the economies of the U.S. Caribbean territories and on what differentiates their safety and health experiences. Despite having relatively low injury rates, the two territories have a number of safety and health concerns, including case severity, workplace violence, and repetitive motion incidents.

In the Caribbean, Puerto Rico and the U.S. Virgin Islands are only separated by about 60 miles, but they can hardly be characterized as similar. Aside from being popular tourist destinations, these semi-autonomous organized territories have distinct economies with differing workplace safety issues. Employers in both areas are subject to the same Federal safety laws and standards as their counterparts on the mainland, including the requirement to log worker injuries and illnesses. These logs provide the basis for occupational safety and health statistics, which Puerto Rico and the U.S. Virgin Islands produce as part of the BLS Injuries, Illnesses, and Fatalities (IIF) program, a Federal-State Cooperative Program.[1] Data from that program provide insights into what distinguishes these territories from each other and from the United States in terms of occupational safety and health.

Occupational Safety And Health In Puerto Rico

With a land mass slightly greater than that of Delaware and Rhode Island combined, Puerto Rico now has more than twice the combined population of those two States. Compared with much of the Caribbean region in 2006, the economy of Puerto Rico was diverse. The territorys workers--more than 1 million strong--were employed in a wide range of industries. Government employment was substantial, accounting for more than 275,000 jobs.[2] Almost a quarter of the territorys private-sector labor force was employed in construction and manufacturing. Outside of goods-producing industries, the largest sector was retail trade, followed by health care and social assistance and accommodation and food services. These three sectors accounted for half of service-providing employment. Besides these industries, the only other sector to have at least 50,000 jobs in Puerto Rico was administrative and waste services.

Within construction, residential building construction accounted for 1 in 3 jobs in 2006, a greater concentration than in the United States.[3] Industrial building and commercial building construction were also relatively strong. Within manufacturing, pharmaceutical and medicine manufacturing accounted for about 1 in 4 jobs in 2006. Employment was also found in large numbers among apparel and footwear manufacturers.

In terms of compensation, pay in Puerto Rico was notably lower than on the U.S. mainland. In the fourth quarter of 2006, the average weekly wage in Puerto Rico was 43 percent less than the average in the United States, and it was 20 percent less than the lowest-ranked State. Although labor costs tend to be lower in the Caribbean, the size of the disparity in average wages was partly due to the industry and occupation mix of the area. That mix also helps explain the nature and frequency of job accidents and work illnesses.

In Puerto Rico, during the years 1993 through 2006,[4] more than 700 workers, or an average of about 50 each year, died from work-related injuries. During most of those years, private sector employers also reported between 23,000 and 26,000 incidents of nonfatal injury and illness related to work. The corresponding incidence rate for total recordable cases tended to be less than that of the United States. The gap in nonfatal incidence rates, however, has diminished over time, as the rate in the United States has declined steadily. (See chart 1a and chart 1b.)

Job fatalities. Since the inception of the Census of Fatal Occupational Injuries in Puerto Rico,[5] workplace fatalities ranged from a high of 85 in 1995 to a low of 29 in 2003. Prior to 1998, Puerto Rico averaged 63 work deaths per year. From 2003 to 2006, Puerto Rico averaged 49 on-the-job fatalities per year, 23.5 percent fewer than the previous time span. In the United States, the average number of fatalities declined by 9.3 percent between the same two periods.

Of the 194 fatal work injuries that occurred during the 200306 period, about 65 percent of the fatalities occurred to employees in the prime working ages 25 to 54, which is a similar proportion to that in the United States. However, less similarity existed among the oldest and youngest age groups--15 percent of all work-related fatalities involved workers aged 24 years or younger in Puerto Rico, compared with 10 percent in the United States, and 4 percent of the job deaths claimed lives of workers aged 65 years and older, compared with 10 percent in the United States. This difference, however, may be partly attributable to the generally younger population in Puerto Rico.[6]

Fatal events. The most frequent fatal injury event from 2003 to 2006 was assaults and violent acts, with 71 fatalities (37 percent of the total). Homicides, accounting for most of the fatal assaults, were often gun-related--62 workers died during the 2003-06 period from bullet wounds, including 24 who were shot during robberies.

The second most frequent category of events was transportation incidents, with 51 fatalities (26 percent of the 4-year total). These included 27 fatal highway incidents and 13 workers who were fatally struck by vehicles. After transportation incidents, falls were the third most prevalent event, accounting for 36 worker fatalities (19 percent). By comparison, in the United States during the same 4-year period, transportation incidents accounted for 43 percent of all work fatalities, followed by contact with objects and equipment (17 percent). The two categories, falls and assaults and violent acts, each accounted for an additional 14 percent of job deaths in the United States. (See chart 2a and chart 2b.)

The occupational group with the greatest number (46) of on-the-job fatalities from 2003 to 2006 was construction and extraction. Protective service occupations, primarily police and security guards, had the second highest number (38) of workplace fatalities. Transportation and material moving occupations followed, with 31 fatalities. These three occupational groups accounted for 59 percent of all workplace fatalities in Puerto Rico. In the United States, the same three groups accounted for 51 percent of the Nations fatal workplace injuries during the 4-year period.

Nonfatal incidents, 2003-06. From 2003 to 2006, about one-third of all nonfatal occupational injury and illness cases in Puerto Rico occurred in State and local government, a greater proportion than State and local governments share of total employment (about 28 percent). Five industry sectors accounted for at least 70 percent of all private-industry work-related injuries and illnesses during the 2003-06 period: construction, manufacturing, retail trade, health care and social assistance, and accommodation and food services. These sectors accounted for about 63 percent of private-industry employment in Puerto Rico.

In 2006, among large private industry sectors employing at least 50,000 workers, the rate of total cases reported per 200,000 hours worked (the equivalent of 100 full-time workers) ranged from 3.4 in administrative and waste services to 6.2 in health care and social assistance. Since 2003, health care and social services have consistently ranked above goods-producing industries in case rates. (See chart 3.) For more severe cases, those involving days away from work, the injury and illness rate ranged from 2.6 in administrative and waste services to 4.1 in accommodation and food services in 2006.

Cases with days away from work. Notably, injuries and illnesses in Puerto Rico tended to be more severe than in the 50 States. About 73 percent of all private-sector incidents occurring in 2006 resulted in at least a 1-day absence beyond the day of injury. The same year, in the United States, these “cases with days away from work” accounted for 29 percent of the total. Several industry sectors, including construction, manufacturing, and retail trade, had lower rates of *total recordable* cases in Puerto Rico, compared with the United States; but the incidence of cases that involved *days away from work* was higher in Puerto Rico.

Cases that involved days away from work tended to be not only more frequent, but lengthier as well. In 2006, the median absence duration was 21 days in private industry in Puerto Rico, which is 3 times the length of such cases in the United States.[7] Median days lost for State and local government workers in Puerto Rico also was high, at 26 days. While the length of private sector days-away-from work cases in the United States declined by 1 day between 2003 and 2006, in Puerto Rico, the median duration rose by 2 days. Although further research is necessary to fully explore these phenomena, a closer look at the characteristics of days-away-from-work cases may provide some explanation.

As in the United States, the nature or condition most often associated with absences from work in Puerto Rico was sprains. Contact with objects, as well as overexertion (lifting, pulling, pushing, etc.) and repetitive motion, were the most frequent events that led to days-away-from-work cases, depending on the industry sector. In 2006, contact with objects occurred more often than other disabling events in goods-producing industries, as well as in retail trade and accommodation and food services. In health care and social assistance, overexertion was the most frequent disabling event in health care and social assistance.

Repetitive motion factored into more than 15 percent of these days-away-from-work cases, compared with 3 percent in the United States. (See table 1.) In 2006, repetitive motion cases in Puerto Rico occurred at a rate of 51.6 incidents per 10,000 full-time equivalent workers in the private sector, compared with a rate of 4.1 in the United States. Repetitive motion was even more frequent in Puerto Ricos public sector--the State and local government rate was 96.1. Accompanying the high incidence rates were prolonged absences from work. The median number of days lost resulting from repetitive motion in Puerto Rico was 35; in the United States, these cases resulted in a median loss of 19 days.

Illnesses. During the 4-year period from 2003 to 2006, between 3,200 and 3,700 work-related illnesses were reported each year in private industry in Puerto Rico. The high incidence rate of repetitive motion contributed to an elevated illness rate--between 2003 and 2006, work-related illnesses occurred at a rate of 54.0 to 61.1 cases per 10,000 full-time equivalent workers. Among goods-producing industries, the rate ranged from 57.4 to 74.1, relatively close to the range of illness rates for service providers, 49.9 to 61.8. During the same period, the illness rate among service providers in the United States ranged from 18.8 to 21.6.

Puerto Ricos public sector reported a disproportionate two-thirds as many illnesses as the private sector during 2003 through 2006. The occupational illness rate in State and local government operations ranged from 142.6 to 162.7. (See chart 4.)

Occupational Safety And Health In The U.S. Virgin Islands

Acquired by the United States in 1917, the territory is less than half the area of New York City. The U.S. Virgin Islands had formerly been a Danish colony, Danish West Indies. The area consists of the islands of St. Thomas, St. Croix, and St. John, with about 50 islets. As in Puerto Rico, government enterprise accounted for a large proportion of total employment in 2006. In the U.S. Virgin Islands, State and local government constituted slightly more than 1 in 4 jobs.

The U.S. Virgin Islands has had a relatively low number of work-related injuries and illnesses, compared with the United States and Puerto Rico. Over the 1992-2006 period, 25 deaths--an average of less than 2 each year--occurred between 1992 and 2006. Between 800 and 1,000 nonfatal injuries and illnesses occurred in most years. The incidence rate for total nonfatal occupational injuries and illnesses occurring in private industry tended to be lower than that of the United States.

Workplace fatalities. During the 11-year period from 1992 to 2002, there were 20 employees killed while on the job. More than two-thirds (14) of those fatally injured were employed in nonmanufacturing industries in the private sector. Between 2003 and 2006, 5 workers died on the job, 3 of whom worked in the private service-providing sector. During both time periods, the nature of injury that was cited most frequently as contributing to death was open wounds, the category that includes gunshot wounds. Open wounds factored into 9 of the occupational fatalities prior to 2002 and 3 of those reported after 2002, or 48 percent of all workplace fatalities between 1992 and 2006. In contrast, open wounds factored into less than 15 percent of the United States 15-year total. (In Puerto Rico, gunshot wounds accounted for about 1 in 3 occupational deaths; open wounds accounted for 35 percent.)

Nonfatal incidents, 2003-06. In 2006, nearly a third of the injuries and illnesses in the U.S. Virgin Islands occurred in the public sector. About 22 percent (200 cases) of all recordable nonfatal job injuries and illnesses occurred in private sector leisure and hospitality industries. Construction and retail trade both had about 100 cases each.

Similar to the downward trend in the United States, the incidence rate of all private sector cases in the U.S. Virgin Islands declined steadily, from 2.8 cases per 100 full-time workers in 2003 to 2.1 in 2006, the latter is about half the level

experienced on the mainland. During this period, incidents occurred in the public sector of the U.S. Virgin Islands at a rate that hovered between 2.8 and 2.9 cases per 100 full-time workers. (See chart 1a and chart 1b.)

Between 2003 and 2006, the leisure and hospitality supersector had a relatively high rate of total injuries and illnesses. (See chart 5.) Within leisure and hospitality, incidents occurred in arts, entertainment, and recreation at a rate of 7.2 cases per 100 full-time equivalent workers and in accommodation at a rate of 5.9. In 2006, rates of at least 5 were also recorded in utilities (5.4); construction of buildings (5.2); and health care and social assistance (5.2).

For all industries, cases serious enough to require days away from work accounted for half of all cases, with an incidence rate of 1.2 in 2006. The median absence duration was 6 days. Industries with higher days away from work case rates in 2006 included utilities (3.5); accommodation (2.6); and construction of buildings (2.2). In the public sector, days-away-from-work cases occurred at a rate 1.4 per 100 full-time workers, with a median duration of 7 days.

As with occupational injuries, work-related illnesses in the U.S. Virgin Islands occurred relatively less frequently than in the United States. The rate of such workplace illnesses dropped to 7.6 cases per 10,000 full-time equivalent workers in 2006; the rate had been 15.9 in 2004 and 15.5 in 2005.

Puerto Rico And The U.S. Virgin Islands: The Occupational Health Picture

Data from the Bureau of Labor Statistics shed light on what distinguishes the economies of the Caribbean territories and on what differentiates their safety and health experiences. Looking at the overall injury and illness picture, rates have not declined as quickly as they have in the United States. This might be partly explained by the relatively low rates of total recordable injuries in the region; enforcement and special emphasis efforts have traditionally been targeted to industries and areas with high rates.

Despite having relatively low rates and an excellent safety record overall, the two territories do have a number of safety and health concerns. The severity of cases in Puerto Rico--as well as the frequency of repetitive motion incidents and the disparity between the private and public sectors--may prompt additional research into the nature of absences and their causes.

In Puerto Rico and the U.S. Virgin Islands, the service-providing sector continues to be plagued with on-the-job violence. Unlike in the United States, where work-related homicides decreased dramatically during the 1990s, workplace assaults continue to be relatively frequent in the two territories.

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Notes

1 Data from injury and illness logs from a sample of employers are used in the BLS Survey of Occupational Injuries and Illnesses to estimate the frequency of incidents at the national, State, and territory level. The BLS Federal-State Cooperative Program also produces the annual Census of Fatal Occupational Injuries, which provides national, State, and selected metropolitan area fatality counts by characteristic.

2 The State and local government category includes all public sector organizations, without regard to economic activity. In addition to public administration, government employment in both Puerto Rico and the U.S. Virgin Islands included utilities and educational and health services, among other industries. Public sector employees who are not Federal government workers are classified in “State and local government.”

3 Industry concentration was evaluated using location quotient data based on 2006 annual averages from the BLS Quarterly Census of Employment and Wages. The location quotient is the ratio of analysis-industry employment in the analysis area to base-industry employment in the analysis area divided by the ratio of analysis-industry employment in the base area to base-industry employment in the base area.

4 Effective January 1, 2002, the Occupational Safety and Health Administration (OSHA) revised its requirements for recording occupational injuries and illnesses. Due to the revised recordkeeping rule, the estimates from the 2002 survey are not comparable with those from previous years.

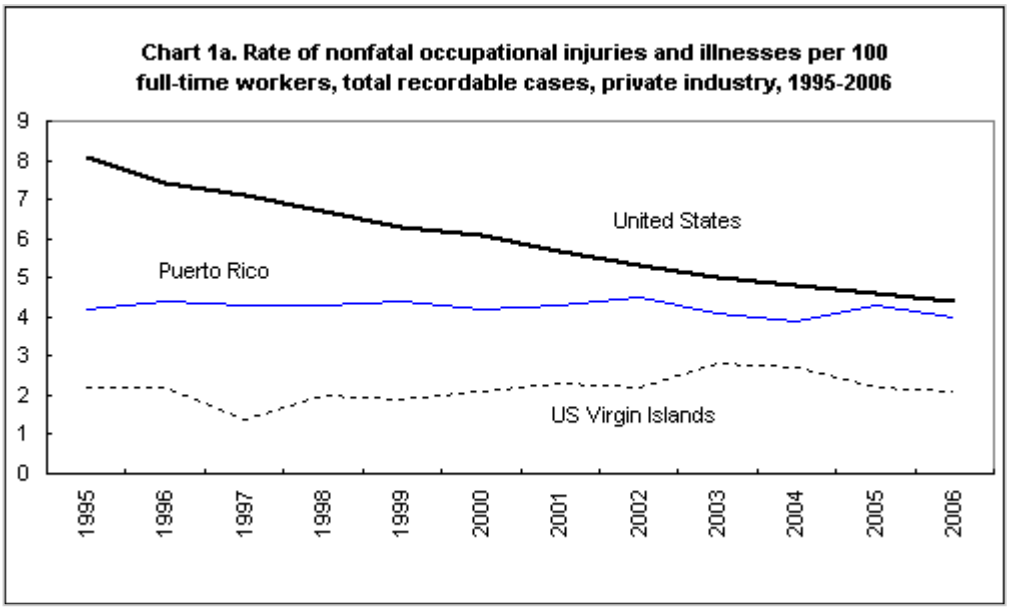
5 Although the first year of the BLS Census of Fatal Occupational Injuries was 1992, Puerto Rico did not participate in the Census until 1993.

6 According to the United States Census Bureau, only eight States had a lower median age than that of Puerto Rico.

7 Absence duration does not include the day of injury.

Table 1. Injuries and illnesses in Puerto Rico and the United States, 2006

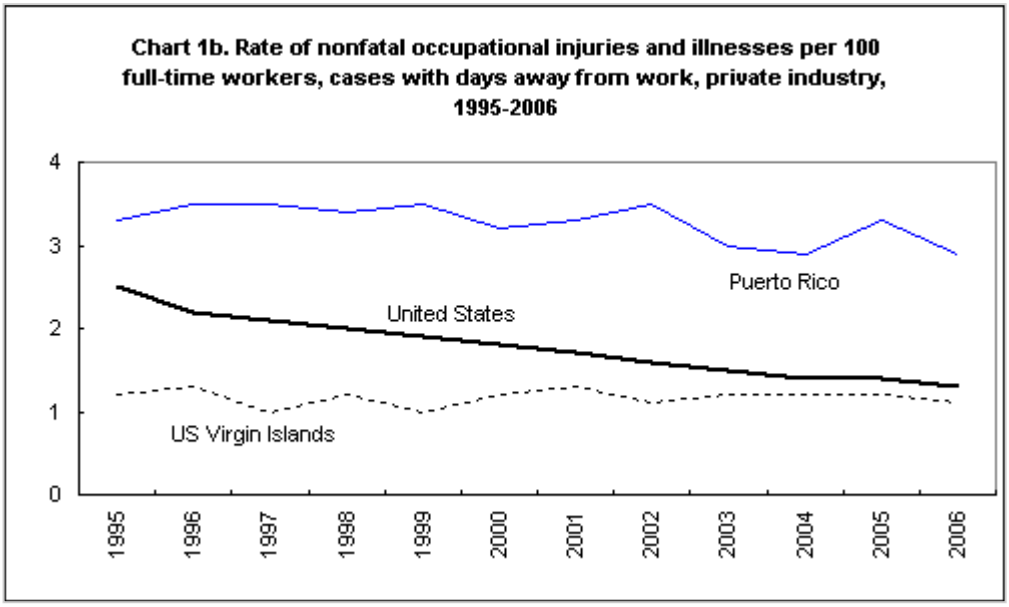
Measure	Puerto Rico			United States
	All industries	Private industry	State and local government	Private industry
Total Recordable Cases (TRC)	37,000	24,400	12,600	4,085,400
Cases with days away from work (CDAFW)	27,400	17,800	9,600	1,183,500
CDAFW as percent of TRC	74.1	73.0	76.2	29.0
Cases involving repetitive motion	4,680	3,160	1,520	38,310
Repetitve motion as a percent of CDAFW	17.1	17.8	15.8	3.2
Rate of repetitive motion incidents per 10,000 full-time workers	60.7	51.6	96.1	4.1
Median absence duration related to repetitive motion	35	35	36	19



Data for Chart 1a. Rate of nonfatal occupational injuries and illnesses per 100 full-time workers, total recordable cases, private industry, 1995-2006

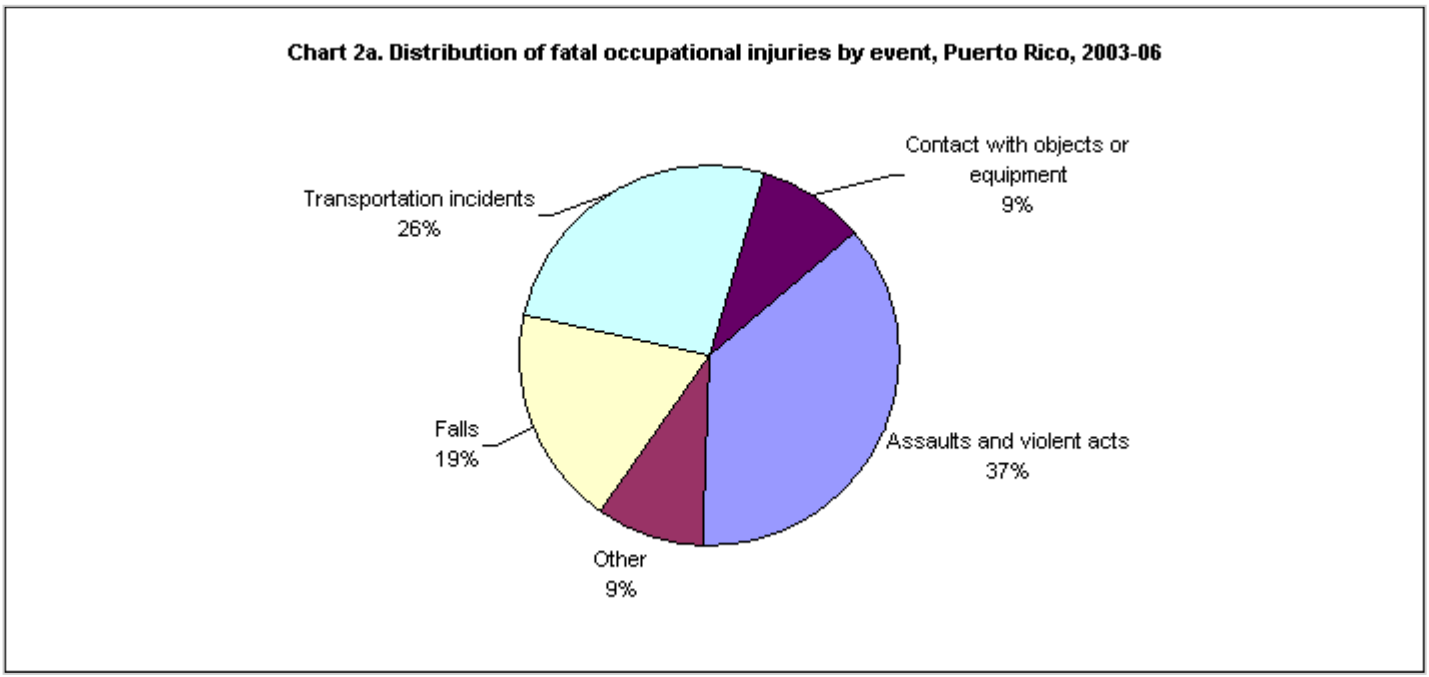
	United States	Puerto Rico	US Virgin Islands
1995	8.1	4.2	2.2
1996	7.4	4.4	2.2
1997	7.1	4.3	1.4
1998	6.7	4.3	2.0

	United States	Puerto Rico	US Virgin Islands
1999	6.3	4.4	1.9
2000	6.1	4.2	2.1
2001	5.7	4.3	2.3
2002	5.3	4.5	2.2
2003	5.0	4.1	2.8
2004	4.8	3.9	2.7
2005	4.6	4.3	2.2
2006	4.4	4.0	2.1



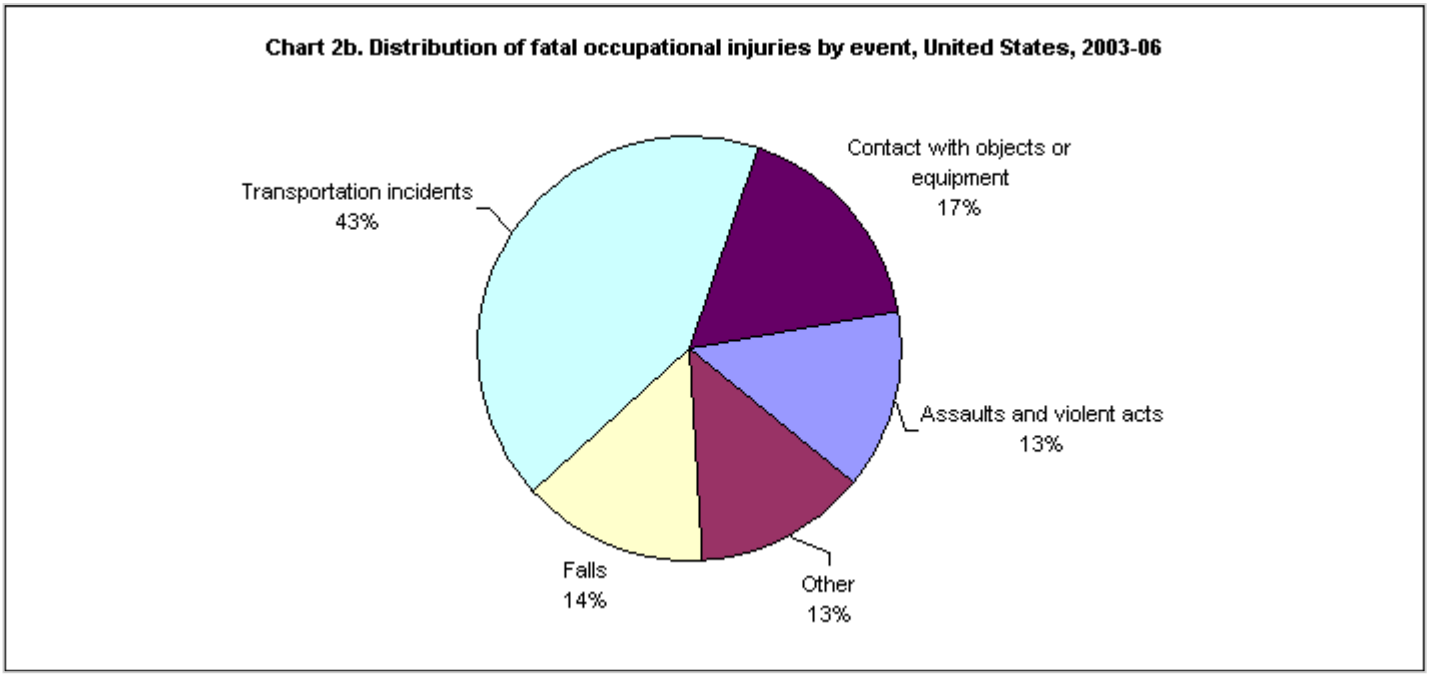
Data for Chart 1b. Rate of nonfatal occupational injuries and illnesses per 100 full-time workers, cases with days away from work, private industry, 1995-2006

	United States	Puerto Rico	US Virgin Islands
1995	2.5	3.3	1.2
1996	2.2	3.5	1.3
1997	2.1	3.5	1.0
1998	2.0	3.4	1.2
1999	1.9	3.5	1.0
2000	1.8	3.2	1.2
2001	1.7	3.3	1.3
2002	1.6	3.5	1.1
2003	1.5	3.0	1.2
2004	1.4	2.9	1.2
2005	1.4	3.3	1.2
2006	1.3	2.9	1.1



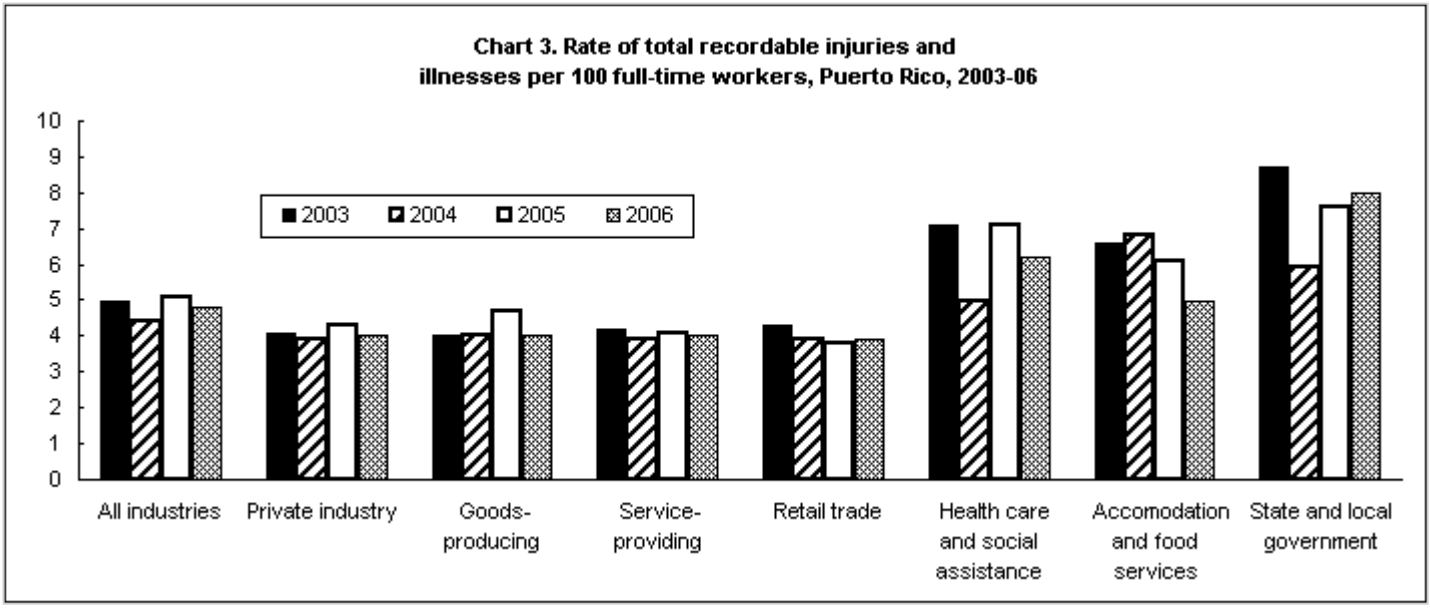
Data for Chart 2a. Distribution of Fatal Occupational Injuries by Event, Puerto Rico, 2003-06

Event	Percent of fatal injuries attributed to event
Assaults and violent acts	37
Falls	19
Transportation incidents	26
Contact with objects or equipment	9
Other	9



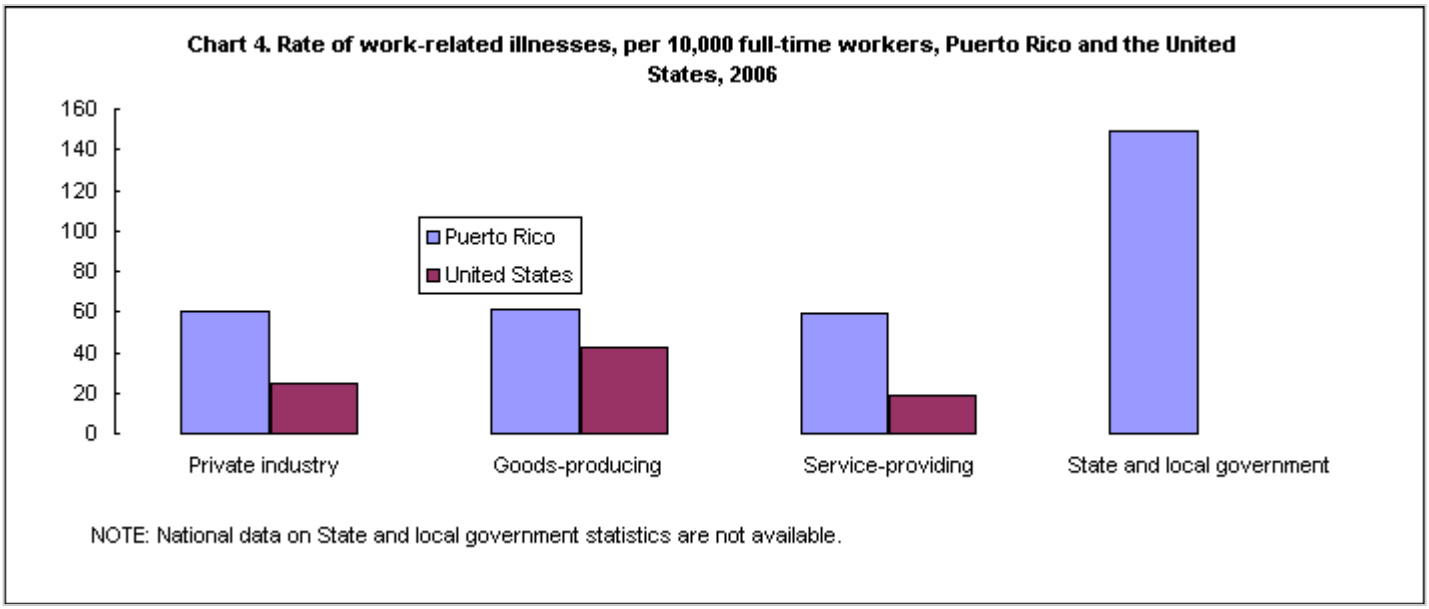
Data for Chart 2b. Distribution of Fatal Occupational Injuries by Event, United States, 2003-06

Event	Percent of fatal injuries attributed to event
Assaults and violent acts	13
Falls	14
Transportation incidents	43
Contact with objects or equipment	17
Other	13



Data for Chart 3. Rate of total recordable injuries and illnesses, per 100 full-time workers, Puerto Rico, 2003-06

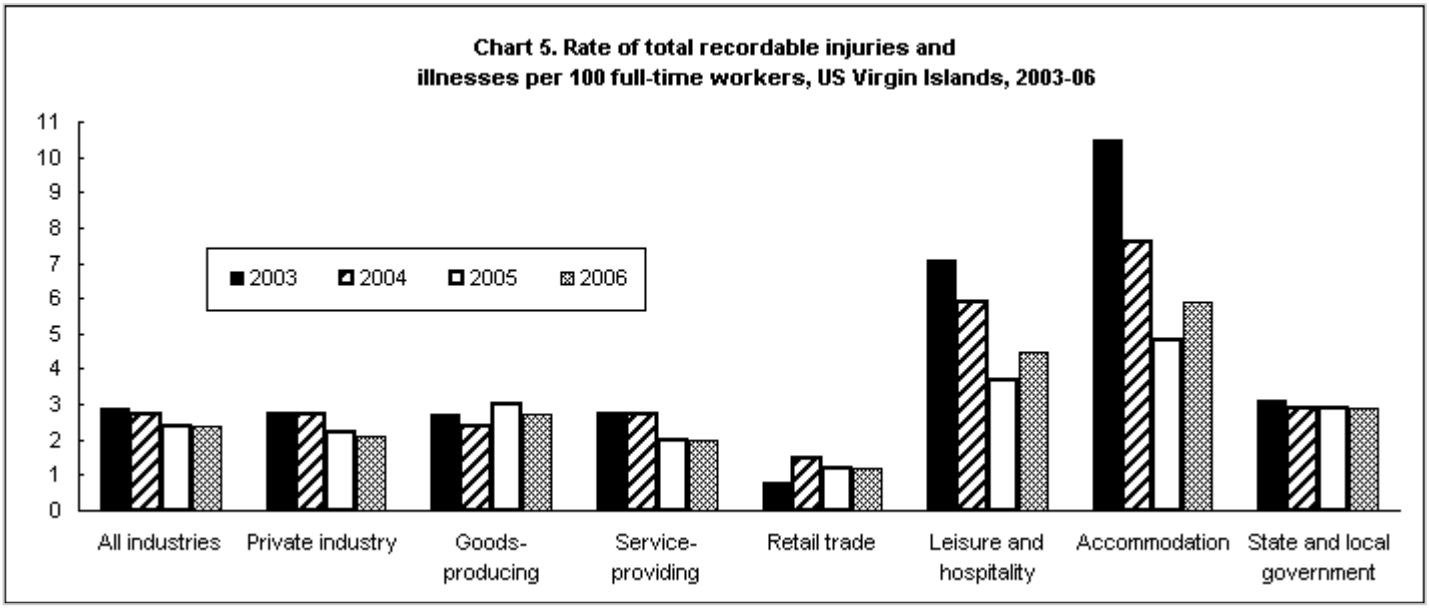
	2003	2004	2005	2006
All industries	5.0	4.4	5.1	4.8
Private industry	4.1	3.9	4.3	4.0
Goods-producing	4.0	4.0	4.7	4.0
Service-providing	4.2	3.9	4.1	4.0
Retail trade	4.3	3.9	3.8	3.9
Health care and social assistance	7.1	5.0	7.1	6.2
Accommodation and food services	6.6	6.8	6.1	5.0
State and local government	8.7	5.9	7.6	8.0



Data for Chart 4. Rate of work-related illnesses, per 10,000 full-time workers, Puerto Rico and the United States, 2006

	Puerto Rico	United States
Private industry	59.9	24.6
Goods-producing	61.4	42.6
Service-providing	59.3	18.8
State and local government	148.8	

NOTE: National data for State and local government unavailable.



Data for Chart 5. Rate of total recordable injuries and illnesses, Virgin Islands, 2003-06

	2003	2004	2005	2006
All industries	2.9	2.7	2.4	2.4
Private industry	2.8	2.7	2.2	2.1
Goods-producing	2.7	2.4	3.0	2.7
Service-providing	2.8	2.7	2.0	2.0
Retail trade	0.8	1.5	1.2	1.2
Leisure and hospitality	7.1	5.9	3.7	4.5
Accommodation	10.5	7.6	4.8	5.9
State and local government	3.1	2.9	2.9	2.9