

August 2008



M O N T H L Y L A B O R  
**REVIEW**

U.S. Department of Labor

U.S. Bureau of Labor Statistics

Addressing misconceptions about the

# GPI



*also  
in this  
issue:*

Undercounting  
workplace  
injuries and  
illnesses?

Who goes to  
college?

# MONTHLY LABOR REVIEW

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### The August Review

One important part of the mission of a statistical agency like the Bureau of Labor Statistics is to provide clear and complete documentation and discussion about its programs, methods, and data. Two articles this month, like others that appear regularly in the *Review*, are intended to help meet that goal.

The first, by John S. Greenlees and Robert B. McClelland, is in regard to the Consumer Price Index (CPI). The CPI is the Federal Government's principal measure of inflation at the retail level in the United States and, as such, is one of the most watched economic statistics in the world. Its publication each month is awaited closely by analysts, investors, securities traders, and policymakers around the world. Interest in the CPI is heightened by its use to adjust salaries and benefits, contracts, rents, government programs and other financial arrangements. Movements in prices as measured by the CPI therefore have enormous impact on real-world pocketbook issues, for governments, businesses, and individuals.

Due to its prominence, there have been a number of formal reviews of the index, its data, and its methodologies from the academic, public, and private sectors. Within the last few years, as the authors note, commentary on the CPI has extended well beyond the usual circle of economists and statisticians to include journalists, bloggers, and other writers publishing in forums targeted to more general audiences.

Accompanying this widening pool of commentary has been the continued circulation of some misconceptions about the CPI, a few of which are longstanding. The authors attempt to

improve public understanding of this most important statistic by providing detailed context, clarification or rebuttal to some claims about key aspects of the CPI that are erroneous or misunderstood. Topics include how adjustments are made in the measurement of prices of goods to account for changes in quality; how the costs of homeownership are reflected; and how the CPI accounts for consumer substitution of goods whose relative prices have changed.

Continuing the theme of transparency in program assessment, John W. Ruser examines evidence of undercounting in the Bureau's Survey of Occupational Injuries and Illnesses. As he acknowledges, there has been criticism of the survey for potentially missing some work-related injuries and illnesses, and he discusses how widely estimates differ on the possible scope of the problem. He also lays out an agenda for additional research that BLS plans to undertake and, where feasible, how the survey may be expanded to provide a more complete accounting of these sensitive cases.

In the final article in this issue, Alison Aughinbaugh analyzes estimates from the National Longitudinal Survey of Youth 1997 to see what evidence is available to answer a simple but powerful question: who goes to college?

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### BLS budget update

We have written previously in this space about the status of the budget of the Bureau of Labor Statistics, and, as the current fiscal year draws to a close, perhaps it's time for an update. As part of its budget submission for Fiscal Year 2009 (which begins October 1, 2008) to Congress, the Ad-

ministration requested about \$593 million in funding, some of which is intended to restore funds that had been requested for BLS for the current year but which, at the end of the Congressional appropriation cycle, were not received.

The 2009 budget request seeks funds for a project vitally important to updating the Consumer Price Index, an inflation measure discussed elsewhere in this issue. This initiative would substantially improve the accuracy of the CPI by allowing the statistical samples taken for housing and geographic areas to be continuously updated. An earlier effort at introducing continuous updating of other major components of the CPI also would be able to be completed.

Other key economic measures produced by BLS are national unemployment and labor force participation rates and earnings for different demographic groups. The expense of operating the Current Population Survey (CPS), which is the source of these and other important data, is rising. Without additional budgetary support, the size of the monthly sample may have to be curtailed, thereby deleteriously affecting the statistical quality of the estimates produced from the survey.

Additional information about the 2009 budget request for BLS can be found at [www.bls.gov/bls/budget2009.htm](http://www.bls.gov/bls/budget2009.htm). □

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## Addressing misconceptions about the Consumer Price Index

*A number of longstanding myths regarding the Consumer Price Index and its methods of construction continue to circulate; this article attempts to address some of the misconceptions, with an eye toward increasing public understanding of this key economic indicator*

John S. Greenlees  
and  
Robert B. McClelland

The Consumer Price Index (CPI), published by the Bureau of Labor Statistics (BLS), has generated controversy throughout its history. A soon-to-be-published article by Marshall Reinsdorf and Jack Triplett discusses the many past reviews of the methods and data used in the CPI's construction.<sup>1</sup> Beginning with an advisory committee appointed by the American Statistical Association in 1933,<sup>2</sup> and continuing through the recent National Research Council panel chaired by Charles Schultze,<sup>3</sup> panels and commissions have identified and discussed what is now a well-known set of issues affecting the measurement of consumer prices: consumer substitution behavior, change in the quality of products, the introduction of new types of goods and services, and the appearance of new categories of stores and new channels of product distribution. Given the large number of private and public uses of the CPI, and especially its important role in determining Federal Government revenues and payments, it is natural that each of those issues has been the subject of intense public attention.

Within the past several years, commentary on the CPI has extended well beyond the circle of economists, statisticians, and public officials. The strongest criticism of

BLS methodology has not been concentrated in a single profession, academic discipline, or political group, but comes instead from an array of investment advisers, bloggers, magazine writers, and others in the popular press. Also, whereas in the past the CPI frequently was held to be *overstating* inflation, recent criticism has focused on supposed *downward* biases.

Appearing as they do in national media and in the age of the Internet, these criticisms probably have been more widely quoted and circulated than most academic journal articles and panel reports on CPI issues. Although the BLS welcomes comments and regularly discusses and debates measurement issues with its advisory committees and at professional meetings of researchers in economic measurement, the recent criticisms of the CPI have been directed not so much to the BLS itself as to the public at large. This article is an attempt to correct some of the misunderstandings underlying those criticisms.

The article begins with a brief background section on what the CPI is, how it is used, and what some of its major methodological changes have been. Three measurement issues that have been the subject of greatest misunderstanding—consumer substitution, quality adjustment, and homeownership costs—are

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then discussed, followed by reviews of two issues that relate to almost all current commentary on the CPI: the specification of a “core” index and the differences between the CPI and perceived inflation. The penultimate section specifically addresses a widely cited estimate of presumed upward bias resulting from BLS methods, and the article ends with some summary remarks.

Along the way, special attention is paid to four common misperceptions, or myths, about the CPI: (1) that the BLS lowers the CPI to reflect consumers’ substitutions of hamburger for steak; (2) that the use of hedonic quality adjustment has substantially decreased the growth rate of the CPI; (3) that the 1983 change in the way the BLS measures homeownership costs lowered the rate of increase of the CPI; and (4) that Social Security payments are indexed to a CPI that does not include food or energy. The analysis demonstrates that the improvements to the CPI described in this article are consistent with international standards and guidelines for the construction of price indexes.

## Background

As stated in the BLS fact sheet *Understanding the Consumer Price Index: Answers to Some Questions*, the CPI is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services.<sup>4</sup> In simple terms, when prices change, the goal of the CPI is to measure the percentage by which consumers would have to increase their spending to be as well off with the new prices as they were with the old prices. For example, if the price of every product went up by 5 percent, consumers would have to increase their spending by 5 percent to remain at the same standard of living, assuming that everything else stayed the same. To deal with practical questions that arise in the construction of the CPI, the BLS uses the economic theory of the cost-of-living index as a framework.<sup>5</sup> Among those practical questions are how to compute the overall CPI when not all prices change at the same rate and how to deal with the introduction of new types or models of products.

The all-items CPI is constructed from approximately 8,000 basic indexes, which correspond to 38 geographic areas and 211 item categories. Apples in Chicago and gasoline in San Francisco are examples of these basic CPIs. Since 1978, the BLS has published CPI series that reflect the inflation experiences of two different population groups. The *CPI for all urban consumers (CPI-U)* and the *CPI for urban wage earners and clerical workers (CPI-W)* differ only in the relative weights that are attached to the basic item-area index components. For example, the

CPI-W has a somewhat higher weight for gasoline than does the CPI-U, because the population of urban wage earners and clerical workers allocates a higher share of its consumption to gasoline than do urban consumers as a whole.

To construct each of the basic CPIs, the BLS periodically asks consumers where they shop, picks specific items from those “outlets,” and then tracks the prices of those items over time. Implementing that process requires a number of surveys. The Census Bureau administers a Telephone Point-of-Purchase Survey in which consumers are asked where they recently purchased goods and services. The BLS uses data from this survey to select a sample of grocery stores, service stations, doctors’ offices, and other locations at which to collect prices. At each of these “outlets,” the BLS uses probability sampling methods to select a representative sample of particular items. Once the sample is selected, prices of those items are collected regularly by BLS staff, usually on a monthly or bimonthly basis. Separately, rental prices are collected from a sample of houses and apartments to measure prices of shelter services. The individual item-area indexes are averaged together with the use of weights created from the Consumer Expenditure Survey (CE), which, like the Telephone Point-of-Purchase Survey, is conducted for the BLS by the Census Bureau. In the CE, consumers report how they allocate their spending across the 211 CPI categories of items, such as apples, gasoline, rent, and physicians’ services. All these categories are designed to make sure that the CPI reflects the inflation experiences of U.S. consumers as a whole.<sup>6</sup>

The all-items, or overall, CPI-U is the CPI that is reported most widely in the media each month when the index is released. Both the CPI-U and CPI-W, however, have important uses in indexation. The CPI-W is the index used in the determination of the annual Social Security and Federal retirement cost-of-living adjustments. It also is used extensively for periodic wage adjustments in collective bargaining agreements. The CPI-U is used for indexation of tax brackets, personal exemption amounts, and many other quantities in the Federal tax system. In addition, the CPI-U is used by the Federal Government to calculate adjustments to the principal values of Treasury Inflation-Protected Securities, also known as TIPS, which have been issued since 1997 to provide a constant inflation-adjusted return to investors.<sup>7</sup>

Another important use of CPI data is in the construction of the National Income and Product Accounts (NIPA), published by the Commerce Department’s Bureau of Economic Analysis (BEA). Numerous CPI component indexes are critical inputs into the NIPA Personal Consumption

Expenditures (PCE) price index and into the calculation of real, or constant-dollar, gross domestic product (GDP). Therefore, although the primary focus of the Federal Reserve's monetary policy is the PCE price series, rather than the CPI itself, the basic CPIs are important to anyone who follows Federal Reserve policy decisions.

In 2002, the BLS began publishing a third monthly CPI: the *chained Consumer Price Index for all urban consumers (C-CPI-U)*, created to more closely approximate a cost-of-living index by reflecting consumer substitution among item categories. The C-CPI-U applies to the same population group as the CPI-U, but employs a different formula to combine basic indexes. In part because C-CPI-U values are revised in each of the 2 calendar years following their initial publication, that index does not have any prominent uses in indexation. Consequently, those who criticize the CPI-U and CPI-W have paid relatively little attention to C-CPI-U methods, and accordingly, the focus in the discussion that follows is almost exclusively on the CPI-U and CPI-W.

It is important to recognize that the CPI is a measure of inflation as experienced by consumers; other price indexes may be appropriate for different purposes. Several other indexes, produced by the BLS or by other government agencies, measure different aspects of inflation. For example, the BLS Producer Price Index (PPI) measures price change at earlier stages of production and marketing, before consumers enter the picture, and the NIPA GDP price index measures inflation experienced by governments and businesses, as well as by consumers. These differences in purpose have important effects on what prices are included in the index; for instance, the PPI and the GDP index include steel, heavy trucks, and other nonconsumer-spending price categories that are not found in the CPI.

The BLS continuously reviews and enhances the data and methods used in generating the CPI. For the purposes of this article, three methodological changes have been especially significant. The first was a fundamental change in the measurement of the cost of shelter for homeowners. In late 1981, on the basis of considerable research, the BLS announced that it would change the treatment of homeownership in the CPI-U from an asset-based approach to rental equivalence, effective January 1983.<sup>8</sup> The same change was implemented in the CPI-W in January 1985. A second major change took effect in January 1999, when the BLS adopted a geometric mean formula in the calculation of most CPI basic indexes. The purpose was to reflect the demonstrated ability of consumers to shift away from products whose prices had increased relative to the prices of other products in the same basic CPI component—for

example, away from apples whose prices had increased more, or decreased less, than the prices of other apples in Chicago. The third change took place over a period of years beginning in 1998, as the CPI program expanded the use of hedonic regression models for quality adjustment, previously confined to housing and apparel, to a number of additional series, such as computers, televisions, and refrigerators. Each of these three methodological changes continues to generate criticism from outside the BLS.

## Substitution

Among all the criticisms leveled at the CPI, its use of the geometric mean formula to reflect consumer substitution behavior is undoubtedly the most frequently misunderstood and mischaracterized. Members of the general public are naturally concerned when critics charge that, in using the geometric mean, the BLS is subtracting from the CPI a certain amount of inflation that consumers can “live with” by reducing their standard of living. Some critics have incorrectly claimed, for example, that the BLS assumes that consumers are no worse off when they substitute hamburgers for steak. That is not, however, what the geometric mean does, and such an interpretation is hard to reconcile with the fact that the geometric mean is widely used by statistical agencies around the world. One of two formulas recommended by the International Monetary Fund<sup>9</sup> and approved by the Statistical Office of the European Communities (Eurostat) for use in those countries' Harmonized Indexes of Consumer Prices (HICP),<sup>10</sup> the geometric mean is used by 20 of 30 countries as a primary formula for computing the elementary indexes in their HICPs.<sup>11</sup> This section attempts to allay the public's concern by reviewing the general justification for the formula, as well as the impact of its use on the CPI.<sup>12</sup>

To begin, it must be stated unequivocally that the BLS does not assume that consumers substitute hamburger for steak. Neither the CPI-U, nor the CPI-W used for wage and benefit indexation, allows for substitution between steak and hamburger, which are in different CPI item categories.<sup>12</sup> Instead, the BLS uses a formula that implicitly assumes a degree of substitution *among the close substitutes within an item-area component of the index*. As an example, consumers are assumed to respond to price variations among the different items found within the category “apples in Chicago.” Other examples are “ground beef in Chicago,” “beefsteaks in Chicago,” and “eggs in Boston.”

There can be no doubt that consumers exhibit shifts in their purchasing patterns toward items that have fallen in relative price. This behavior is an observable feature of

everyday life, not just a theoretical economic principle. Consider a carton of orange juice, which is a typical product found within the CPI item category “nonfrozen non-carbonated juices and drinks.” Suppose that a store lowers the price of one brand of orange juice, while leaving all other prices the same. In response, some consumers will consume more orange juice; some will buy the affected brand of orange juice rather than other brands; some will buy orange juice at this store rather than other stores; some will purchase orange juice instead of grapefruit juice; and some will buy orange juice now rather than later, using the opportunity to stock their refrigerators with a larger-than-usual supply of orange juice. There will be some consumers who do not increase their consumption of that particular brand of orange juice, but almost certainly, the aggregate purchases by all consumers will rise.<sup>14</sup>

There is also no dispute among economists that the price index formula used in all of the basic CPIs prior to 1999 (called the Laspeyres formula) tends to overstate changes in the cost of living; specifically, the change in a Laspeyres index is an “upper bound” on the change in the cost of maintaining a standard of living.<sup>15</sup> This fundamental result is found throughout books on cost-of-living indexes, as well as in economics textbooks.<sup>16</sup> It long predates the BLS decision to switch to a geometric mean formula for computing most of the basic CPIs.<sup>17</sup>

A simple, if extreme, example suffices to get the point across. Suppose that a person buys four candy bars each week: two chocolate bars and two peanut bars. The bars cost \$1 each, so her total spending per week on candy bars is \$4. Now suppose that, for some reason, the price of chocolate bars quadruples to \$4, while peanut bars remain at \$1. The goal of the CPI is to measure how much the consumer needs to spend each week to consider herself just as well off as she was before the price increase. A Laspeyres price index calculates the cost of the original purchase quantities: two candy bars of each type. Therefore, the answer according to the Laspeyres formula is that the consumer would need \$10 to be as well off as before.<sup>18</sup>

The Laspeyres answer is correct, however, only if the consumer is completely unconcerned with changes in price and always chooses to purchase chocolate and peanut bars in equal numbers, regardless of which is cheaper. The Laspeyres answer is called an upper bound because the right answer cannot be greater than \$10; the consumer certainly will be at least as well off as she was before if she can continue to purchase two bars of each type. At the other extreme, the right answer cannot be lower than \$4. In the unlikely case that the consumer is entirely indiffer-

ent between types of candy bar, she could respond to the increase in the price of chocolate bars by buying four peanut bars instead of two of each type, and she would be no worse off than she was before, even if she still had only \$4 to spend. Of course, neither the Laspeyres upper-bound answer of \$10 nor the lower-bound answer of \$4 is realistic. In the real world, people make tradeoffs on the basis of both price and their preferences, and the actual answer lies in between the two bounds. With \$7, for example, our consumer could afford to buy seven peanut bars, one for every day of the week. Thus, \$7 might be sufficient to make her as satisfied at the new prices of candy as she was with \$4 at the old prices. Put another way, we can be confident that, for some consumers, the Laspeyres result of \$10 would overstate the amount they need to maintain their original level of candy satisfaction. The geometric mean formula adopted by the BLS for use in most CPIs gives a somewhat lower answer than the Laspeyres formula, because it puts less weight on the prices that have increased the most (in this case, the price of chocolate bars) and more weight on the prices that have increased less. As it turns out, the geometric mean would say that \$8 is the amount needed to keep the average consumer at the original satisfaction level. With \$8, the consumer could purchase one chocolate bar and four peanut bars, offsetting the reduced number of chocolate bars by an increase in the total number of candy bars.<sup>19</sup>

It is important to note two things about this example. First, the geometric mean estimate of required spending increased sharply, albeit by less than that of the Laspeyres index. Second, the objective is to calculate the amount of money necessary to maintain a *constant* level of satisfaction, or what one might term a constant standard of living. Critics of the BLS often erroneously assert that reflecting substitution behavior in the CPI amounts to tracking a *declining* standard of living. Their argument can be summarized as follows: “the BLS assumes that if steak becomes too expensive, consumers will shift to buying hamburger, so the CPI reflects a tradeoff of hamburger for steak, not steak for steak.” The trouble is that that logic fails to recognize the point made at the beginning of this section: that the BLS employs the geometric mean formula only within basic CPIs, such as the index for ground beef in Chicago. Still, despite the fact that it is wrong, the idea that the CPI’s use of the geometric mean reflects substitution between hamburger and steak has attained the status of a sort of urban legend, repeated by numerous bloggers and commentators.

When the price of a certain type of beefsteak rises, CPI-U and CPI-W methods allow only for substitution to other types

of beefsteak, not to hamburger or other, cheaper alternatives to steak. A 1998 article in the *Monthly Labor Review* emphasizes, “the geometric mean formula will not be used to combine the basic indexes in the CPI, such as those for ice cream products and apples, into the overall index.”<sup>20</sup> As mentioned earlier, those indexes are combined into the overall CPI-U or CPI-W under the assumption that there is no substitution between ice cream products and apples or between steak and hamburger.

In addition, the critics’ argument takes as its premise that steak, the more desirable product, is getting “too expensive.” As has been noted, the CPI’s assumption about substitution is that consumers shift their purchases toward items *whose prices are rising less* (or falling more), not necessarily toward less desirable goods. For example, within the CPI category “ice cream and related products,” the assumption is that if the price of premium ice cream falls relative to the prices of cheaper store brands, consumers will shift toward the premium brands. Within the beefsteak category, the CPI implicitly assumes that, on average, consumers would shift *up* from flank steak toward filet mignon if flank steak prices rose by a greater amount (or fell by a lesser amount) than filet mignon prices. If all prices change proportionately, then no substitution is assumed. So, if, for example, a rising cost of beef caused filet mignon and flank steak prices both to increase by 10 percent, the geometric mean formula would *not* assume any substitution toward flank steak.

The quantitative impact of the CPI’s use of the geometric mean formula also has been grossly overstated by some, with one estimate exceeding 3 percent per year.<sup>21</sup> It is difficult to identify real-world circumstances under which geometric mean and Laspeyres indexes could differ by such a large amount. The two index formulas will give the same answer whenever the prices used in an index all change by the same percentage. The bigger the differences in price changes, the more the Laspeyres index will tend to exceed the geometric mean. For the growth rate of the Laspeyres index to exceed the growth rate of a geometric mean index by 3 percentage points, however, the differences in individual price changes have to be quite large.

To see this point, consider another very simplified example. Suppose that the CPI sample for ice cream and related products in Boston consisted only of an equal number of prices for ice cream and frozen yogurt<sup>22</sup> and that, between one year and the next, all the prices of ice cream in Boston rose by 8.6 percent while all the frozen yogurt prices fell by 4.2 percent. In that case, the geometric mean estimate of overall annual price change would be 2.0 percent, only slightly less than the Laspeyres es-

timate of about 2.2 percent.<sup>23</sup> In order to come up with a difference of 3 index points, one has to assume a much more dramatic divergence between ice cream and frozen yogurt prices than the one hypothesized. For example, if ice cream prices rose *30 percent* in one year, while frozen yogurt prices fell by *20 percent*, the overall geometric mean index would still rise by 2 percent, but the Laspeyres index would rise 5 percent, for a difference of 3 index points. However, such a large annual divergence would be quite uncommon within CPI basic indexes—between ice cream and yogurt, between types of candy and gum, between types of noncarbonated juices, or between varieties of ground beef. Moreover, for a 3-percentage-point divergence to continue year after year, the divergence between the individual component prices would have to continue to widen. For example, if, by contrast, during the next year ice cream prices increased by the *same* amount as frozen yogurt prices, then the two index formulas would give the same inflation estimate for that year. Although such a divergence might plausibly occur in one component for 1 year, it is beyond belief that such sharply divergent price behavior would continue year after year across the whole range of CPI item-area components.

Finally, and most importantly, there is rigorous empirical evidence on the actual quantitative impact of the geometric mean formula, because the BLS has continued to calculate Laspeyres indexes for all CPI basic indexes on an experimental basis for comparison with the official index. These experimental indexes show that the geometric mean led to an overall decrease in CPI growth of about 0.28 percentage point per year over the period from December 1999 to December 2004,<sup>24</sup> close to the original BLS prediction that the impact would be approximately 0.20 percentage point per year.<sup>25</sup>

## Quality adjustments and hedonic models

The BLS has been faced with two types of criticisms, one general and one specific, of the way in which quality adjustment is carried out in the CPI. The first criticism argues, explicitly or implicitly, that no adjustment should be made for the difference in quality between an item that is no longer sold and its replacement. That position appears to be based on a misunderstanding of the purpose of the CPI, and it also is impractical, given the rapidly changing consumer marketplace. The second criticism is that, by expanding the use of hedonic quality adjustment over the past 10 years, the BLS has imposed arbitrary estimates of the “pleasure” consumers derive from new products, severely distorting the CPI as a result. This criticism is a



fundamental misunderstanding of the hedonic method, and it ignores the fact that the introduction of all hedonic quality adjustments since 1999 has had only a very small impact on the overall CPI.

Americans will be understandably concerned if they are told that the BLS bases the CPI on subjective and exaggerated assumptions about product quality improvements. They also will be suspicious if told that the BLS manipulates nonscientific models to estimate the value of quality change. On the contrary, in every aspect of CPI construction, the BLS goal is to use objective, rather than subjective, methods wherever possible. As stated in a 1998 paper coauthored by the Commissioner of the BLS,

For the BLS, the primary task is...to employ the most accurate methods available for dealing with quality change and with new goods and outlets. Those methods must be rigorous, objective and reproducible, minimizing the role of analyst judgment.<sup>26</sup>

Why does the BLS adjust for quality change at all? Many of the challenges associated with producing a CPI arise because the number and types of goods and services found in the market are constantly changing. Over time, the goods and services in the CPI samples are being replaced by new products or by new models of existing products. Consequently, if the BLS tried to maintain a fixed and unchanging sample for the CPI, that sample would quickly shrink to the point where it became unrepresentative of what consumers were purchasing. Each time an item in the CPI sample permanently disappears from the shelves, the BLS has to choose another item and then has to make some determination about the relative qualities of the old and replacement items. If it tried to avoid making such quality determinations and adjustments—for example, if it treated all new items as identical to those they replaced—significant upward or downward CPI biases would result. As stated in the international CPI manual published by the International Labor Office (ILO), “Statistical offices must pay close attention to the treatment of quality change and try to make explicit adjustments whenever possible.”<sup>27</sup>

To take the most straightforward example of quality adjustment, which the CPI handles automatically, suppose the maker of a 1.5-ounce candy bar selling for 75 cents replaces it by the same brand of candy bar, still selling for 75 cents, but weighing only 1.0 ounce. If the shrunken size is ignored, it looks like the price hasn’t changed. The CPI, however, prices candy and most other food items on a per-ounce basis and would automatically record a 50-percent increase in the quality-adjusted price of the item,

from 50 cents per ounce to 75 cents per ounce.

Another example of how the need for quality adjustment arises is a hypothetical (but plausible) situation in which the CPI has been tracking the price of a specific model of 32-inch standard-definition color television at a certain store. If the store no longer sells that model, the CPI data collector will find a replacement model to price each period thereafter. In the event that the store has decided to sell only high-definition televisions (HDTVs), one of those will necessarily be selected as the replacement. In that case, the replacement television may cost 4 times the price of the previous standard-definition model. It would be unreasonable to treat this rise in price as a sudden four-fold increase in cost, given that the HDTV model has a larger screen size, a higher resolution picture, and other enhanced features. The BLS must make *some* estimate of how much of the price difference is due to the improved quality associated with the HDTV model.

The BLS uses a number of methods for quality adjustment in the CPI, ranging from the simplest (for example, ignore the difference in quality if the new and old items are sufficiently similar), to the indirect (assume that the quality-adjusted price change is the same as the average change observed for other items in the sample), to the complex (for example, use manufacturers’ production cost information to adjust automobile prices each year when new models are introduced).<sup>28</sup> For a small number of CPI components, the BLS employs hedonic regression models in dealing with product replacements. Each method can and does lead to quality adjustments in either direction, because the new items in the sample can be of either higher or lower quality than the products they replace, as the aforementioned candy bar and television examples demonstrate.

Perhaps because of its name, hedonic regression modeling has received the fiercest criticism from outside the academic community. In attacking hedonics, however, some commentators seem actually to be objecting to the entire concept of quality adjustment in the CPI. That line of attack may be based on a false impression that, prior to the introduction of hedonic models, the BLS essentially ignored quality improvements and new goods.<sup>29</sup> The commentators do not aim their criticism at the hedonic method of estimating quality differences; instead, they criticize the BLS for taking estimated quality differences into account at all. When they object to the BLS “hedonic” adjustments, they usually make no reference to how the hedonic modeling is carried out, even in general terms.

To repeat, the difference in quality between old and new items must be addressed in producing a CPI, and he-

hedonic modeling is just one method that the BLS uses to determine what portion of a price difference is viewed by consumers as reflecting quality differences.

The concepts behind hedonic adjustment have been frequently misconstrued, and some authors seem to focus on the term “hedonic,” which is derived from the Greek word for pleasure. These authors associate the method with a sort of calculation of the pleasure arising from the use of a good. Certainly, when the hedonic method was developed in the 1930s, it would have been helpful if a more descriptive name had been chosen.<sup>30</sup>

In fact, hedonic regression has nothing to do with calculating or estimating the amount of pleasure a consumer receives by using an item. Actually, the term refers to the use of a statistical procedure called *multiple regression analysis*, in which the market valuation of a feature is estimated *by comparing the prices of items with and without that feature*. For example, the CPI hedonic analysis of television prices calculates, at a given point in time, the percent difference in market prices associated with an additional inch of screen size. Then, if a television is replaced by one with a larger screen, the CPI commodity analyst for televisions can adjust the observed price difference by estimating what the old television would have cost had it had the larger screen size. The process of estimating these market values is somewhat technical, and it can require a significant amount of work assembling and processing data on product prices and characteristics, but many of the dismissive reactions to the hedonic method probably are based on its name rather than on an understanding of the actual process. The ILO’s international CPI manual states, “The hedonic approach to quality adjustment can provide a powerful, *objective* and scientific method of evaluating changes in quality for certain kinds of products.”<sup>31</sup>

Moreover, quality adjustment, whether based on hedonic methods or not, adjusts prices between the old and new good *only to the degree that they differ in quality*. Contrary to what some have claimed, it does not amount to “zeroing out” a price change because quality increased. When prices are adjusted for quality, there is no reason to believe that the price change has been eliminated, and the quality-adjusted price change can be either less than or greater than the unadjusted price change, depending on whether quality increased or decreased. That statement holds true regardless of the method used to adjust for quality changes.

Critics often have dramatically misinterpreted both the extent and the impact of the CPI’s expansion of hedonic analysis over the last decade. The total CPI weight

for all products subject to hedonic adjustment is about 32 percent, but almost all of this total is accounted for by shelter and apparel items, for which the BLS has used hedonic models for roughly two decades. Personal computers, microwave ovens, televisions, and other commodities for which hedonic models were more recently introduced have a combined weight of only about 1 percent in the CPI.

It is also important to emphasize that the BLS makes hedonic adjustments for declines, as well as improvements, in quality. The CPI price indexes for shelter include hedonic adjustments for the gradual aging of the rental housing units in the CPI sample, and those adjustments regularly *increase* the rate of change of the indexes by at least 0.2 percentage point per year.<sup>32</sup> The hedonic adjustments in apparel have had both upward and downward impacts at different points in time and for different categories of clothing.<sup>33</sup> As discussed in an article in the *Monthly Labor Review*,<sup>34</sup> the BLS estimates that the hedonic quality adjustments introduced since 1998 have had an upward impact in five item categories and a downward impact in five. The overall impact of these newly introduced hedonic models has been quite modest and in an upward, not downward, direction. To be precise, the use of the models has increased the annual rate of change of the all-items CPI, but by only about 0.005 percent per year.<sup>35</sup> It is clear, therefore, that those who maintain that the BLS uses hedonic adjustment to keep the measured rate of inflation in an acceptably low range are wrong about the impacts, as well as the motives, of BLS actions.

One last criticism often heard is that hedonic quality adjustment is inappropriate when a consumer places no value on the enhanced features of a new product and would be equally happy with the old, disappearing good. This criticism, typically expressed in the context of personal computers,<sup>36</sup> might be stated as “The BLS adjusts the price of new computers because they are faster, but I don’t need the extra speed. So the BLS is adjusting the price for a supposed quality improvement that is worthless to me, but that I am forced to purchase.”

So long as new products are successful because they offer improvements that are valued by most consumers, it would be inappropriate for BLS simply to ignore those improvements. Some might argue, for example, that when an inexpensive black-and-white television disappears from the market, the CPI should treat the full difference between its price and the price of a color television as a price increase. This approach would be no more reasonable, however, than incorporating a large price *decrease* into the CPI when the Concorde supersonic transport

stopped flying and consumers were forced to switch to slower transatlantic flights.

The extreme case of a consumer who places no value on improvements does, however, point to a fundamental and unavoidable problem affecting the CPI of every nation. This problem results, not from hedonic modeling or any other type of quality adjustment, but from changes in the variety of products that are available to consumers. A hypothetical consumer who does not value any extra processing speed may prefer a computer with a slower and less expensive processor even if the new computer is cheaper than the old computer, because a new computer with the less expensive processor would be cheaper still. The inability to purchase that slower, cheaper computer is a loss to that consumer. The problem can be seen more clearly when a product is no longer sold and no easy replacement exists, thus reducing the variety of products that consumers may purchase. For example, when a soft drink such as Pepsi Edge or Coca-Cola C2 disappears from the market, purchasers are worse off than they would be if the product were still available, and this type of loss is not accounted for in any CPI.

By the same token, an increase in product variety is a benefit to consumers that also is not accounted for by any CPI. The Boskin commission pointed to the increased variety of restaurants as an example of a consumer benefit that does not enter into the calculation of the CPI. The introductions of new classes of products such as MP3 players or DVD players are additional examples. Consumer losses and consumer benefits do not occur only when the BLS makes quality adjustments; rather, they occur anytime the variety of available products increases or decreases. Whether the change in variety leads the CPI to overstate or understate changes in the cost of living depends on whether product variety, broadly defined, has decreased or increased.

## Rental equivalence

In 1983, the BLS shifted the treatment of homeownership in the CPI-U to rental equivalence. The rental equivalence method is grounded in economic theory, receives broad support from academic economists, and is the most widely used method among the member nations of the Organization for Economic Cooperation and Development (OECD).<sup>37</sup> The U.N. System of National Accounts 1993 guidelines recommend using the method for measuring household consumption, and it is also used in constructing international comparisons of living standards.<sup>38</sup> Nevertheless, on the surface, measuring homeowner costs by rental equivalence is somewhat counterintuitive, leading some to be concerned that the CPI is mismeasuring

shelter price inflation.

The CPI for owners' equivalent rent of primary residence (OER) is based on estimating the market rents for owner-occupied housing units.<sup>39</sup> The cost of homeownership is treated as what economists call an opportunity cost: the amount owner-occupants would receive if they did not consume the services of their homes, but instead rented the homes out. In essence, the BLS measures the value of shelter as the amount of money people give up by using it. For renters, that means the amount they pay for renting the home. For homeowners, it means the amount they lose by not renting out their house. Although most CPI critics of rental equivalence have not set forth alternatives for how the homeownership component should be constructed, they all object to the exclusion of house prices from the CPI.

Using house prices instead of rents to measure homeowner cost is known as the *asset*, or *acquisitions*, approach.<sup>40</sup> Such an approach has some intuitive appeal and is similar to the treatment of any other CPI commodity. Its long-recognized flaw, however, is that owner-occupied housing combines both consumption and investment elements—and does so to a much greater degree than it does other goods and services in the CPI. As has routinely been noted by magazine writers, creators of television commercials, and investment advisers, a house is frequently a family's major investment. The CPI is designed to exclude investment items, and real estate is one of these exclusions, along with stocks, bonds, and whole-life insurance. The logic behind excluding house prices from the CPI is suggested by the fact that homeowners are often pleased when the price of their housing assets increases, as they are when stock prices rise, whereas consumers are seldom pleased when the prices of food, energy, or other consumer goods rise. Currently, the squeeze many homeowners feel as home values decline while the prices of food and gasoline rise is evidence that simply inserting home prices in the CPI-U—which would lower the estimated rate of inflation—would be inappropriate.

Nearly a half-century ago, the Price Statistics Review Committee (commonly referred to as the Stigler Committee, in honor of its chair, Nobel Prize-winning economist George Stigler) of the National Bureau of Economic Research concluded, "If a satisfactory rent index for units comparable to those that are owner-occupied can be developed, this committee recommends its substitution in the CPI for the asset approach for prices of new houses and related expenses."<sup>41</sup>

Since then, rental equivalence has continued to be supported by each of the prominent panels and agencies that

have reviewed the CPI since the Stigler Committee. In 1996, the General Accounting Office (now the Government Accountability Office) wrote,

We asked 10 experts their views on whether the rental equivalence method made the CPI more [suitable] or less suitable as a cost-of-living index. All 10 were expert in measuring housing costs and were very familiar with the CPI housing component. All of the housing measurement experts agreed that the adoption of the rental equivalence method made the CPI more suitable for use as a measure of the cost of living.<sup>42</sup>

The 1996 “Boskin Commission” supported the rental equivalence approach to homeownership, even arguing that the CPI treatment of owner-occupied housing should be extended to automobiles and all other durable goods.<sup>43</sup> More recently, the 2002 report of the National Research Council panel states, “for long-lived items like automobiles or houses...one must use not the purchase price but the consumption price” and “as is the current practice with housing, we believe that using rental rates is probably the best option.”<sup>44</sup>

It is often incorrectly assumed that the introduction of OER lowered the growth rate of the shelter index in the CPI-U. Chart 1 compares the CPI-U with the CPI-W, which continued to employ the old homeownership approach until January 1985. Primarily because interest rates moved sharply downward during 1983 and 1984, the increase in the cost of homeownership as measured by rental equivalence in the CPI-U was *greater* than the increase as measured by the old approach used in the CPI-W.

Although no one can accurately reconstruct an index under the old approach, it is frequently asserted that the CPI series for OER understates the long-run growth of homeownership costs.<sup>45</sup> Evidence to the contrary is found in the National Association of Realtors (NAR) series on the monthly principal and interest payment required to purchase a median-priced existing home in the United States. That series is used in the construction of the NAR’s well-known *housing affordability index*. Like the pre-1983 BLS methodology, it goes beyond a simple house price measure by reflecting the powerful effect of interest rate movements.<sup>46</sup> Between the years 1983 and 2007, the NAR monthly payment series rose by 79 percent, much less than the CPI OER series increase of 140 percent. Of course, any series reflecting home prices will be more volatile than OER and likely will move differently from OER over any given period. In the long run, however, there is no evidence that OER is downwardly biased relative to some

reasonable alternatives for measuring the cost of shelter for homeowners.<sup>47</sup>

As mentioned in a later section of this article, some of the criticisms of the CPI may arise from a distinction between the express goals of that index and the uses that some critics wish to make of it. During periods such as the recent real-estate boom, commentators observed the rapid runup in housing prices relative to the prices of other investments, and some may have been frustrated that this asset’s inflation did not immediately or directly affect the CPI, which is the most closely followed overall measure of inflation. The fact that the rise and fall of house prices will affect the CPI only indirectly, through rents, is not an indication of a flaw in BLS methodology, however; rather, it flows from the CPI’s objective of measuring changes in the cost of living.

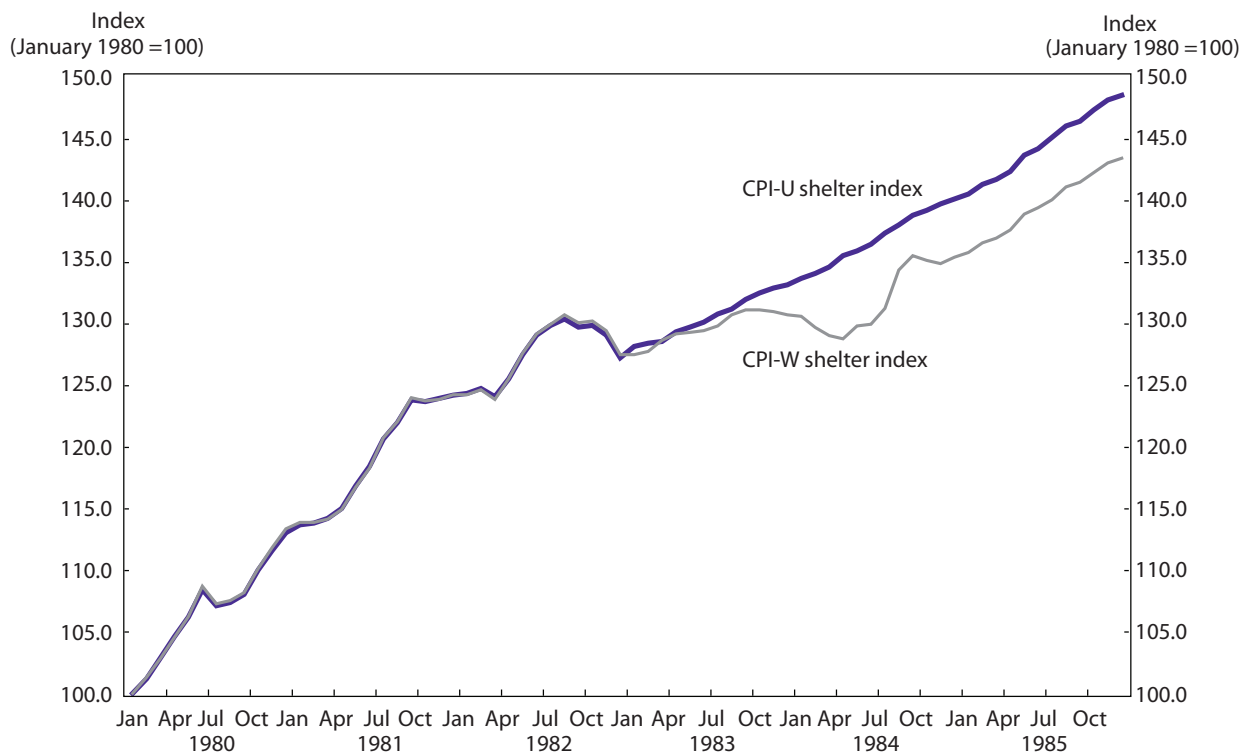
### Core inflation

The widely repeated idea that Social Security and other Federal Government benefits are updated by an index that does not include food and energy is simply not true. This misconception arises because of the heavy emphasis that policymakers, the media, and other economic observers place on the CPI-U for all items less food and energy, which has been published by the BLS since 1977. This index is widely referred to as the “core” CPI-U. For convenience, we will sometimes use that term here, but “core” is almost never employed by the BLS in its press releases and published tables. Although, as of March 2008, their long-run levels were almost identical, the core CPI-U rose by less than the all-items index in 7 of the 9 years beginning in 1999.<sup>48</sup>

The BLS publishes thousands of indexes each month, including the headline all-items index and the index for all items less food and energy. As stated earlier, it is the all-items index that is used in all significant Federal outlay and revenue programs, including Social Security cost-of-living adjustments and Federal income tax provisions. The Federal Reserve Board makes use of core inflation to predict future price changes under the belief that food and energy prices are volatile and are subject to price shocks that cannot be damped through monetary policy. Although some people question the value of the core index in times of rapidly increasing food and energy prices, it is nonetheless appropriate for the BLS to publish the data and let members of the public and agencies, including the Federal Reserve, decide which indexes are most useful for their purposes.<sup>49</sup>

Occasionally, someone will erroneously suggest that the core is meant to replace the all-items CPI-U or that the focus of reported inflation shifts back and forth between the two

**Chart 1. CPI-U shelter index and CPI-W shelter index, January 1980–December 1985**



NOTE: The OER measure of owner-occupied housing was introduced into the CPI-U in January 1983 and into the CPI-W in January 1985.

series, depending on which gives a more favorable reading. It is easy, however, to verify from the BLS Web site that the formats for CPI releases and tables vary only slightly from month to month. Page 1 of the CPI news release for March 2008 is typical.<sup>50</sup> After paragraphs on the monthly and annual movements of the all-items CPI-U, CPI-W, and C-CPI-U, respectively, a paragraph discusses the movements of three major aggregates—energy, food, and all items less food and energy—in the CPI-U. Energy, the cost of which increased 1.9 percent in March 2008, is mentioned first, followed by food and all items less food and energy, both of whose costs increased 0.2 percent. Table A on page 1 shows monthly, quarterly, and annual movements on the basis of the same three-way breakdown, as well as for eight major groups; that table’s format is identical each month. Obviously, then, the BLS does not “spotlight” one statistic or another each month in an attempt to suppress high or volatile inflation rates. Moreover, the relevant formats of CPI tables are the same as those used during periods such as 1991–98, when the all-items CPI usually rose less than the index for all items less food and energy.

Although the CPI-U for all items less food and energy has been the subject of numerous books and of many arti-

cles in academic journals, one crucial point to recognize is that the BLS makes no claims about the predictive or analytical value of that index.<sup>51</sup> It is just one of many special indexes published by the BLS each month, such as indexes for all items less medical care, commodities less food, and services less rent of shelter. Each of these indexes likely serves the needs of some CPI users, but the BLS has no position on which of its published indexes, if any, serves as the best measure of underlying inflation or the best predictor of future movements in the CPI-U.

Finally, it must again be emphasized strongly that none of the prominent legislated uses of the CPI excludes food or energy: each year, Social Security and Federal retirement benefits are updated for inflation by the all-items CPI-W. Individual income tax parameters and TIPS returns are indexed by the all-items CPI-U.

### The CPI and perceived inflation

The previous sections have attempted to clear up some misconceptions about the methods employed in constructing the CPI. However, criticism often appears to arise primarily from a writer’s perception that movements in the CPI are

inconsistent with his or her own observation of inflation. This section examines several reasons for these apparent inconsistencies between the index and people's perceptions.

Some commentators have complained that measured inflation is lower in the United States than in other countries, offering this difference as evidence that the growth rate of the U.S. CPI is understated. On its face, the argument that one can gauge the accuracy of U.S. inflation measures by comparing the change in the U.S. CPI with inflation rates in other countries seems wrong because each nation's inflation experience is the result of its unique economic circumstances. Still, for argument's sake, the very assertion that U.S. rates are unreasonably low compared with those of other developed countries is wrong. In fact, as shown in the following tabulation, between 1997 and 2007 the U.S. CPI-U rose faster than the CPIs of 16 of the other 29 OECD nations and faster than the CPIs of all of the other G-7 nations:<sup>52</sup>

<i>Country</i>	<i>Inflation rate</i>
Total.....	2.9
G-7 nations.....	1.9
Organization for Economic Cooperation and Development.....	3.7
Turkey .....	33.5
Hungary .....	7.5
Mexico.....	7.3
Slovak Republic.....	6.5
Poland.....	4.5
Iceland.....	4.2
Ireland .....	3.6
Greece .....	3.4
Czech Republic .....	3.3
Korea .....	3.2
Spain .....	3.0
Portugal .....	2.9
Australia .....	2.8
United States .....	2.6
Italy .....	2.2
New Zealand .....	2.2
Netherlands .....	2.2
Luxembourg .....	2.2
Canada .....	2.1
Denmark .....	2.1
Norway.....	1.9
Belgium .....	1.9
Austria.....	1.8
United Kingdom .....	1.6
France.....	1.6
Finland .....	1.5
Germany.....	1.4
Sweden .....	1.2
Switzerland.....	.8
Japan.....	-2

Similarly, between the first quarters of 2007 and 2008 the U.S. CPI-U rose by more than the CPIs of 20 of the other 29 OECD nations and by more than all of the other G-7 nations.<sup>53</sup>

Earlier, it was mentioned that the CPI is just one of many indexes that can be used to measure different aspects of inflation. As a measure of the change in consumer prices, the CPI by design excludes many products from its scope, such as industrial goods and investment assets. Also, the CPI's fundamental purpose is to measure current price change and not to measure underlying or incipient inflationary pressure. Consequently, the CPI does not reflect all inflation signals, such as may be found in futures market prices or public announcements of planned price increases. Finally, the CPI is based on average consumer expenditures, and no single index can meet every need or provide a totally accurate measure of the inflation faced by every individual. Often, criticism of the CPI implicitly relates to these aspects of the index's design, rather than to the ways in which the BLS collects or processes price data.

Many consumers feel that their personal inflation experiences are not reflected in the movements of the CPI-U. These experiences can actually be borne out because some consumers spend more than others on items with rapidly increasing prices. The CPI-U is constructed from expenditures averaged over many consumers; as a consequence, some consumers will face a lower rate of inflation than that indicated by the CPI-U, and others will face a higher rate of inflation. For example, earlier it was noted that the wage earner and clerical worker families represented in the CPI-W allocate a higher-than-average share of their expenditures to gasoline. Partly for this reason, the CPI-W rose 4.3 percent over the 12 months ending March 2008, compared with 4.0 percent for the CPI-U. Further, BLS data from the CE show that low-income households spend a greater-than-average percentage of their expenditures on food at home and on gasoline and motor oil. By income quintile, from lowest to highest, 15.3 percent, 14.1 percent, 13.0 percent, 12.1 percent, and 9.2 percent of expenditures are devoted to food at home and to gasoline and motor oil.<sup>54</sup> These statistics provide some evidence that the typical household in one of the lower income quintiles may be more adversely affected by current inflation than a typical household in one of the upper quintiles.<sup>55</sup>

Another reason for the potential difference between the CPI-U and a consumer's experience of inflation is that the prices of many frequently purchased items, especially necessities such as food and gasoline, recently have been rising more rapidly than the CPI as a whole. Because the

CPI is an average of the inflation rates of many different items, if some prices are growing more rapidly than the CPI, then other prices must be growing more slowly. In many cases, the most slowly rising prices are in the categories of consumer durable goods and apparel. In fact, the CPI for durables, which include such items as televisions and computers, fell slightly over the year ending March 2008, as did the index for apparel. Of course, by their nature, those items are purchased less frequently than food and energy items. For a family that had no immediate plans to purchase a new television or computer in March 2008, the price declines of those products over the previous 12 months probably would be less important than the 26.0-percent increase in the price of gasoline, the 48.4-percent rise in the price of fuel oil, the 14.7-percent price increase for bread, and the 13.3-percent price rise for milk. Similarly, although most families purchase apparel during any given year, in many weeks their purchases will be concentrated in food and fuel, and in those weeks they probably experienced price increases higher than the increases reported for the all-items CPI. Nevertheless, the BLS cannot exclude items from the CPI simply because they are purchased infrequently: *all* goods and services contribute to the CPI in proportion to consumer spending on them, as described earlier.

Another possibility explaining individual differences in the experience of inflation is “loss aversion,” described succinctly by David Leonhardt in a recent *New York Times* editorial:

Price increases are simply more noticeable—more salient, as psychologists would say—than price decreases. Part of this comes from the notion of loss aversion: human beings dislike a loss more than they like a gain of equivalent size. If you have to sell your house for less than you bought it for, you’re really unhappy. You hate that ground chuck now costs \$2.83 a pound, but you didn’t notice that oranges are 31 percent cheaper than they were a year ago.<sup>56</sup>

Leonhardt’s account seems possible, although a search of the literature failed to turn up any research specifically addressing the degree to which perceptions about the CPI are affected by loss aversion.

### Does the CPI understate inflation?

Up to now, this article has addressed each of the major recent criticisms of the CPI and has argued that those criticisms are based on misunderstandings of the methods

used to construct the index. Each of the improvements made to the CPI over the years is based on sound economic theory and years of research by academicians and BLS economists. The methods continue to be reviewed by outside commissions and advisory panels, and they are widely used by statistical agencies of other nations.

This section examines the large quantitative impacts that some writers have attributed to the changes in CPI methodology that have been adopted over the years. One widely cited alternative index is based on an estimate that changes to the CPI since 1983 have lowered its growth rate by at least 7 percentage points per year. The use of the geometric mean alone is stated to have lowered the CPI growth rate by 3 percentage points, and other BLS changes, such as the use of hedonic models and OER, supposedly have lowered the growth rate by an additional 4 percentage points.<sup>57</sup>

Each of these estimates of the impact of BLS changes is inconsistent with the empirical evidence. As noted earlier, the BLS has computed indexes showing that the use of the geometric mean formula has reduced the growth rate of the geometric mean of the CPI by only -0.28 percentage point per year, not 3 percentage points. Also discussed earlier, BLS analyses have shown that if the implementation of hedonic adjustment models since 1999 has had any net downward effect, it is very small. Hedonic adjustment models implemented subsequent to 1983, but prior to 1999, have almost certainly had an upward effect. Among the methodological changes examined in this article, that leaves only the shift to rental equivalence, and it is entirely implausible that its impact could be as large as 4 percentage points per year. Earlier, it was shown that from 1983 to 2007 the CPI for OER rose *faster* than an alternative index that, like the pre-1983 BLS homeownership index, is based on both house prices and interest rates. Another piece of evidence comes from an analysis published in the *Monthly Labor Review* in 1999 in which BLS economists Kenneth J. Stewart and Stephen Reed compared the historical published CPI-U with an index created in accordance with current BLS methodologies.<sup>58</sup> For the years 1978–82, a period that witnessed very rapid increases in both house prices and interest rates, Stewart and Reed estimated that the use of rental equivalence would have had an average annual impact on the CPI-U of only -0.86 percentage point. Moreover, with house prices now declining in many parts of the country, one would expect that if the BLS were using the pre-1983 homeownership method, it would yield a *lower*, not higher, current measure of shelter inflation.

Another way of evaluating the purported 7-percent difference is by comparing it with other information. If the

CPI were understated by 7 percentage points annually, then, from April 1998 to April 2008, prices would have risen by 155 percent, not 32 percent as reported by the CPI-U. Table 1 shows that a 7-percent difference implies unrealistic changes in price and income. First, the table presents examples of average prices published by the BLS from each of the six CPI grocery store food groups, along with four energy series. For example, the average price of a gallon of whole milk was \$2.67 in April 1998 and \$3.80 in April 2008. If the price had increased by 155 percent over that period, it would now be \$6.81 per gallon. Similarly, if the average price of 2 liters of nondiet cola had increased by 155 percent over those 10 years, it would now be \$2.72, more than twice as high as the actual April 2008 average price of \$1.33. Of the 10 average prices listed in table 1, only two—gasoline and fuel oil—increased by such a large percentage.

Unfortunately, similar price comparisons cannot be made in other sectors, because the BLS publishes average price levels only for food and energy. Nevertheless, while no one would claim that *all* consumer goods and services increased by 155 percent between 1998 and 2008, the validity of the purported 7-percent difference is called into question by the fact that most prices actually rose by much less than 155 percent, even within the food and energy components, in regard to which inflation recently has been a major public concern.

Table 1 also examines the growth rate of two measures of homeowner costs: the NAR measures of median single-family house prices and the monthly principal and interest payment on the median house. The table shows that both measures rose by much less than 155 percent. That is, although some have cited the fact that the CPI does not reflect rapidly rising house prices as a major flaw in CPI methodology, the alternative index *for goods and services as a whole* rises much faster than the NAR measures of both house prices and mortgage cost.

Finally, table 1 presents two measures of real, inflation-adjusted incomes in the United States: the BLS measure of real average weekly earnings of production and nonsupervisory workers, and the BEA measure of real per-capita personal disposable income. The last column shows the hypothetical effect of deflating that income by 155 percent.<sup>59</sup> The implied result is an extremely severe decline in real income between 1998 and 2008. For example, one would conclude that real per-capita personal disposable income declined by more than 40 percent over the 10 years examined. This is an entirely unrealistic conclusion; by comparison, the BEA reports that real per-capita personal disposable income declined by just 26 percent during the Great Depression.

IT IS HOPED THAT THIS ARTICLE HAS PUT TO REST some of the misconceptions and myths about the CPI. It is a myth that the BLS reduced the growth rate of the CPI by assuming that hamburger is substituted for steak. It is a myth that the use of hedonic quality adjustment has substantially reduced the growth rate of the CPI. It is a myth that the 1983 adoption of owner's equivalent rent systematically reduced the growth rate of the CPI shelter index. Finally, it is a myth that Social Security payments are updated by a CPI that does not include food or energy.

A number of other points also can be made. First, the sizes and effects of the changes implemented by the BLS have been overestimated by critics. The introduction of the geometric mean formula to account for product substitution has decreased the rate of change of the CPI by less than 0.3 percentage point annually, not by 3 percentage points annually as some have claimed. In the case of owner's equivalent rent, it is not at all clear that the long-run impact has even been in a downward direction. Hedonic quality adjustments introduced in the last 10 years have had a very small impact on the all-items CPI.

Second, the changes implemented by the BLS that some critics construe to be a response to short-term political pressure were, in fact, the result of analysis and recommendations made over a period of decades, and those changes are consistent with international standards for statistics. The problem of how to adjust for quality differences when new goods appear was recognized by the BLS Commissioner when consumer price indexes were first published.<sup>60</sup> The solution known as hedonic estimation was developed no later than 1939, and its use in the CPI was recommended in 1961. Five of the G-7 nations use hedonic estimation, as do at least 11 of the OECD nations.<sup>61</sup> The BLS approach is consistent with guidelines developed by the OECD.<sup>62</sup> The geometric mean price index was developed in 1865, was recommended by the International Labor Office, and was being evaluated for use in the U.S. CPI well before the Boskin Commission was formed.<sup>63</sup> It is widely used by Eurostat and OECD countries. The use of owner's equivalent rent was recommended in 1961 by the Stigler Committee and later by the General Accounting Office; according to the OECD, owner's equivalent rent is the most common method that its member countries use to measure the cost of shelter for homeowners.

Third, the BLS routinely publishes details about its methods and about changes to those methods. In the *BLS Handbook of Methods*, the chapter on the CPI contains information on the index's methods of construction, as well as on its history, uses, limitations, precision, and other top-



**Table 1. Comparisons of prices and incomes, April 1998 and April 2008**

Price and income	Reported values		April 2008 updates of 1998 values, assuming a 155-percent price increase
	April 1998	April 2008	
<b>BLS average food prices:</b>			
Bread, white, pan, <sup>1</sup> per lb. ....	\$0.863	\$1.373	\$2.20
Milk, fresh, whole, fortified, per gal. ....	2.668	3.799	6.81
Tomatoes, field grown, per lb. ....	1.398	1.773	3.57
Peanut butter, creamy, all sizes, per lb. ....	1.808	1.980	4.62
Cola, nondiet, per 2 liters.....	1.065	1.329	2.72
All uncooked beefsteaks, per lb. ....	3.665	5.283	9.36
<b>BLS average energy prices:</b>			
Gasoline, all types, per gal. ....	1.106	3.491	2.82
Fuel oil #2, per gal. ....	.915	3.875	2.34
Utility (piped) gas, 100 therms .....	65.874	142.727	168.25
Electricity, per 500 kwh.....	45.739	62.149	116.82
<b>National Association of Realtors housing costs:<sup>2</sup></b>			
Median price of single-family house.....	132,300	200,700	337,907
Principal and interest payment on median-priced house.....	719	966	1,836
<b>Real incomes:<sup>2</sup></b>			
Bureau of Economic Analysis disposable personal income per capita, quarter 1, 1998, dollars (1998 and 2008 figures are for quarter 1) .....	22,753	27,530	13,532
BLS average weekly earnings, April 1998 dollars .....	441	454	236

<sup>1</sup> Bread baked in a pan for a specific shape of loaf (for example, sandwich bread).  
<sup>2</sup> All 2008 values are preliminary and subject to revision.

SOURCES: Bureau of Labor Statistics, National Association of Realtors, and Bureau of Economic Analysis publications and authors' calculations.

ics. In addition, the CPI Web site includes a wide variety of specialized information, such as articles on hedonic regression models in apparel, guidelines for new-vehicle quality adjustment, fact sheets on the methods used to generate selected CPI components, details about the use of intervention analysis in seasonal adjustment, and a comparison of the CPI and the PCE price index. The BLS also maintains information offices at both its national and regional offices in order to respond to questions from the public.

Finally, the CPI is not, and can never be, a perfect index. Moreover, all of the topics raised in the recent commen-

tary on the CPI—including the methods for dealing with consumer substitution, quality change, and owner-occupied housing—are critically important to the accuracy of the index. The very existence of the CPI methodological changes discussed here attests to the fact that the BLS must always be working to enhance the index. The BLS benefits from the work of academics and others who identify ways in which the CPI can be improved. The BLS also benefits when the public understands how the CPI is constructed and what the index's strengths and limitations are. It is hoped that this article will help increase that public understanding. □

**Notes**

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<sup>1</sup> Marshall Reinsdorf and Jack Triplett, "A Review of Reviews—Ninety Years of Professional Thinking About the Consumer Price Index," in Erwin Diewert, John Greenlees, and Charles Hulten, eds., *Price Index Concepts and Measurement* (Chicago, University of Chicago Press, forthcoming).

<sup>2</sup> See, for example, Margaret H. Hogg, "Revising the Wage Earn-

ers' Cost-of-Living Index," *Journal of the American Statistical Association*, March 1934, pp. 120–24.

<sup>3</sup> The Panel on Conceptual, Measurement, and Other Statistical Issues in Developing Cost-of-Living Indexes. Part of the Committee on National Statistics of the National Research Council, the panel produced the volume *At What Price? Conceptualizing and Measuring Cost-of-Living and Price Indexes*, edited by Charles L. Schultze and Christopher Mackie (Washington, DC, National Academy Press, 2002).

<sup>4</sup> The publication is on the Internet at [www.bls.gov/cpi/cpifaq.htm](http://www.bls.gov/cpi/cpifaq.htm) (visited Aug. 28, 2008).

<sup>5</sup> See *BLS Handbook of Methods* (Bureau of Labor Statistics, June 2007), chapter 17, pp. 2–3, on the Internet at [www.bls.gov/opub/hom/pdf/homch17.pdf](http://www.bls.gov/opub/hom/pdf/homch17.pdf) (visited Aug. 28, 2008).

<sup>6</sup> The description in this paragraph necessarily ignores certain exceptions and special cases. The CPI sample for airline fares, for example, is selected with data from the Department of Transportation, not the Telephone Point-of-Purchase Survey.

<sup>7</sup> A description of the TIPS program can be found at [www.treasurydirect.gov/instit/anncceresult/tipsdpi/tipsdpi.htm](http://www.treasurydirect.gov/instit/anncceresult/tipsdpi/tipsdpi.htm) (visited Aug. 28, 2008).

<sup>8</sup> BLS research on this topic is reported by, for example, Robert Gillingham, “Measuring the Cost of Shelter for Homeowners: Theoretical and Empirical Considerations,” *Review of Economics and Statistics*, May 1983, pp. 254–65, and Robert Gillingham and Walter Lane, “Changing the treatment of shelter costs for homeowners in the CPI,” *Monthly Labor Review*, June 1982, pp. 9–14, on the Internet at [www.bls.gov/opub/mlr/1982/06/contents.htm](http://www.bls.gov/opub/mlr/1982/06/contents.htm) (visited Aug. 28, 2008).

<sup>9</sup> *Data Quality Assessment Framework* (International Monetary Fund, August 2006), on the Internet at [dsbb.imf.org/vgn/images/pdfs/dqrs\\_cpi.pdf](http://dsbb.imf.org/vgn/images/pdfs/dqrs_cpi.pdf) (visited Aug. 29, 2008); see especially p. 20.

<sup>10</sup> *Compendium of HICP reference documents* (Luxembourg, Eurostat, February 2001), p. 59, on the Internet at [epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-AO-01-005/EN/KS-AO-01-005-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-AO-01-005/EN/KS-AO-01-005-EN.PDF) (visited Aug. 28, 2008). Many European nations produce both a CPI and an HICP, with some differences in scope and methodology. Notably, HICP coverage excludes owner-occupied housing.

<sup>11</sup> The 30 countries are the 27 members of the European Union, plus Iceland, Norway, and Turkey. The national HICP practices are available on the Eurostat Web site, on the Internet at [epp.eurostat.ec.europa.eu/portal/page?\\_pageid=2714,1,2714\\_61582099&\\_dad=portal&\\_schema=PORTAL#SDDS](http://epp.eurostat.ec.europa.eu/portal/page?_pageid=2714,1,2714_61582099&_dad=portal&_schema=PORTAL#SDDS) (visited Aug. 28, 2008). A 2002 study of 27 countries from the Organization for Economic Cooperation and Development (OECD) showed that, at that time, 12 (including the United States) used the geometric mean as the exclusive or primary formula in their national CPIs. (See *Comparative Methodological Analysis: Consumer and Producer Price Indices*, Volume 2002, Supplement 2 (OECD, 2002), pp. 42–43, on the Internet at [www.oecd.org/dataoecd/60/61/1947731.pdf](http://www.oecd.org/dataoecd/60/61/1947731.pdf) (visited Aug. 28, 2008).)

<sup>12</sup> The focus here is on the BLS’s primary justification that the geometric mean takes into account consumer substitution behavior. There are, however, other statistical justifications for the formula that do not involve substitution. (See, for example, Brent R. Moulton, “Basic components of the CPI: estimation of price changes,” *Monthly Labor Review*, December 1993, pp. 13–24; on the Internet at [www.bls.gov/opub/mlr/1993/12/contents.htm](http://www.bls.gov/opub/mlr/1993/12/contents.htm) (visited Aug. 28, 2008).)

<sup>13</sup> As discussed in the previous section, it is the C-CPI-U that reflects observed substitution across CPI item categories, but critics have focused their attention on the CPI-U and CPI-W.

<sup>14</sup> For more examples of substitution, see “Planned Change In The Consumer Price Index Formula April 16, 1998” (Bureau of Labor Statistics, Oct. 16, 2001), on the Internet at [www.bls.gov/cpi/cpigm02.htm](http://www.bls.gov/cpi/cpigm02.htm) (visited Aug. 28, 2008).

<sup>15</sup> Due to data constraints, the formula used in the CPI prior to 1999, and still used within some item categories, is a modified version of the textbook Laspeyres formula.

<sup>16</sup> Two examples are Robert Pollak, *The Theory of the Cost of Living Index* (New York, Oxford University Press, 1989), p. 13, and P. R. G. Layard and A. A. Walters, *Micro-Economic Theory* (New York, McGraw-Hill, 1978), p. 157. For a more recent statement of the result in an introductory textbook, see Paul A. Samuelson and William D. Nordhaus,

*Economics*, 18th ed. (New York, McGraw-Hill/Irwin, 2005), p. 441.

<sup>17</sup> The geometric mean price index was first described in 1865 by William Stanley Jevons in “On the Variation of Prices and the Value of the Currency since 1782,” *Journal of the Statistical Society of London*, June, pp. 294–320, appendix pp. 1–4. Studies of the bias that is introduced into a price index by not considering substitution include Marilyn E. Manser and Richard J. Macdonald, “An Analysis of Substitution Bias in Measuring Inflation, 1959–85,” *Econometrica*, July 1988, pp. 909–30; Steven D. Braithwait, “The Substitution Bias of the Laspeyres Price Index: An Analysis Using Estimated Cost-of-Living Indexes,” *American Economic Review*, vol. 70, no. 1, 1980, pp. 64–77; and Nicholas N. Noe and George M. von Furstenberg, “The Upward Bias in the Consumer Price Index Due to Substitution,” *Journal of Political Economy*, vol. 80, no. 4, 1972, pp. 1280–86.

<sup>18</sup> Expressed as an index set originally at 100, the Laspeyres index after the price increase would equal  $100 \times (10/4)$ , or 250.

<sup>19</sup> The geometric mean index in this example would be  $100 \times (8/4)$ , or 200. Implicitly, the geometric mean formula assumes no change in the shares of spending on the different items. Thus, both before and after the price change, the consumer spends half of her funds on chocolate bars and half on peanut bars.

<sup>20</sup> Kenneth V. Dalton, John S. Greenlees, and Kenneth J. Stewart, “Incorporating a Geometric Mean Formula into the CPI,” *Monthly Labor Review*, October 1998, pp. 3–7; on the Internet at [www.bls.gov/opub/mlr/1998/10/contents.htm](http://www.bls.gov/opub/mlr/1998/10/contents.htm) (visited Aug. 28, 2008). That article also discusses the CPI components for which the BLS did not adopt the geometric mean formula. The judgment was made that, within those components, such as hospital services and utility natural gas, consumers were less likely to shift their purchases in response to price changes.

<sup>21</sup> See subsequent section “Does the CPI understate inflation.”

<sup>22</sup> This component of the CPI actually includes many other products, such as sherbet, sorbet, and popsicles. The example also ignores many computational details, such as the sample weighting of individual prices.

<sup>23</sup> Assuming that the base value of the index is 100, the Laspeyres index for the second period will be one-half the sum (the arithmetic average) of  $(100 + 8.6)$  and  $(100 - 4.2)$ , or 102.2. The geometric mean index would be the square root of the product of  $(100 + 8.6)$  and  $(100 - 4.2)$ , or 102.0.

<sup>24</sup> David S. Johnson, Stephen B. Reed, and Kenneth J. Stewart, “Price measurement in the United States: a decade after the Boskin Report,” *Monthly Labor Review*, May 2006, pp. 10–19; on the Internet at [www.bls.gov/opub/mlr/2006/05/contents.htm](http://www.bls.gov/opub/mlr/2006/05/contents.htm) (visited Aug. 28, 2008). Unpublished results for the longer period from December 1998 to December 2007 show an average difference of 0.27 percentage point per year.

<sup>25</sup> *Ibid.*, p. 3.

<sup>26</sup> Katharine G. Abraham, John S. Greenlees, and Brent R. Moulton, “Working to Improve the Consumer Price Index,” *Journal of Economic Perspectives*, winter 1998, pp. 27–36.

<sup>27</sup> *Consumer Price Index Manual: Theory and Practice* (Geneva, International Labor Office, 2004), paragraph 1.255, on the Internet at [www.ilo.org/public/english/bureau/stat/guides/cpi/index.htm](http://www.ilo.org/public/english/bureau/stat/guides/cpi/index.htm) (visited Aug. 28, 2008).

<sup>28</sup> For a detailed description of BLS quality adjustment procedures, see Brent Moulton and Karin E. Moses, “Addressing the Quality Change Issue in the Consumer Price Index,” *Brookings Papers on Economic Activity*, vol. 28, no. 1, 1997, pp. 305–49; or John S. Greenlees, “Consumer Price Indexes: Methods for Quality and Variety Change,” *Statistical Journal of the United Nations Economic Commission for Europe*, vol. 17, no. 1, 2000, pp. 59–74.

<sup>29</sup> This particular misconception has been frequent in the history of commentary on the CPI, as discussed, for example, by Jack E. Triplett,

“Quality Bias in Price Indexes and New Methods of Quality Measurement,” in Zvi Griliches, ed., *Price Indexes and Quality Change: Studies in New Methods of Measurement* (Cambridge, MA, Harvard University Press, 1971), pp. 180–214.

<sup>30</sup> The term apparently was introduced by Andrew Court, “Hedonic Price Indexes with Automotive Examples,” in *The Dynamics of Automobile Demand* (New York, The General Motors Corporation, 1939), pp. 99–117.

<sup>31</sup> International Labor Office, *Consumer Price Index Manual*, paragraph 1.253, emphasis added.

<sup>32</sup> Louise L. Campbell, *Updating the Housing Age-Bias Regression Model in the Consumer Price Index*, CPI Detailed Report (Bureau of Labor Statistics, November 2006), on the Internet at [www.bls.gov/cpi/cpiagebias.pdf](http://www.bls.gov/cpi/cpiagebias.pdf) (visited Aug. 28, 2008); and Robert Poole, Frank Ptacek, and Randal Verbrugge, *Treatment of Owner-Occupied Housing in the CPI* (Bureau of Labor Statistics, December 2005), on the Internet at [www.bls.gov/bls/fesacp1120905.pdf](http://www.bls.gov/bls/fesacp1120905.pdf) (visited Aug. 28, 2008).

<sup>33</sup> Craig Brown and Anya Stockburger, “Item replacement and quality change in apparel price indexes,” *Monthly Labor Review*, December 2006, pp. 35–45; on the Internet at [www.bls.gov/opub/mlr/2006/12/contents.htm](http://www.bls.gov/opub/mlr/2006/12/contents.htm) (visited Aug. 28, 2008).

<sup>34</sup> Johnson, Reed, and Stewart, “Price measurement in the United States.”

<sup>35</sup> *Ibid.*, p. 15. This estimate excludes personal computers; in 2003, the CPI program implemented a new approach that derives the values of computer attributes from information on the Internet, rather than from estimated hedonic regressions. (See “How BLS Measures Price Change for Personal Computers and Peripheral Equipment in the Consumer Price Index,” on the Internet at [www.bls.gov/cpi/cpifacomp.htm](http://www.bls.gov/cpi/cpifacomp.htm) (visited Aug. 28, 2008).)

<sup>36</sup> As noted earlier, the BLS stopped using hedonic quality adjustments for new computers in the CPI in 2003.

<sup>37</sup> The OECD, which is composed mainly of industrialized, developed countries, recently reported that 13 of its 30 members use rental equivalence in their national CPIs. The next-most-frequent alternative is simply leaving owner-occupied housing out of the index (8 countries). (See Ane-Kathrine Christensen, Julien Dupont, and Paul Schreyer, “International Comparability of the Consumer Price Index: Owner-occupied housing,” paper prepared for the OECD seminar “Inflation measures: too high—too low—internationally comparable?” Paris, June 21–22, 2005, p. 9, on the Internet at [www.oecd.org/dataoecd/14/18/34987270.pdf](http://www.oecd.org/dataoecd/14/18/34987270.pdf) (visited Aug. 28, 2008).)

<sup>38</sup> International Labor Office, *Consumer Price Index Manual*, paragraph 10.14.

<sup>39</sup> An alternative to rental equivalence is the user cost of capital, defined by the OECD as “the unit cost for the use of a capital asset for one period—that is, the price for employing or obtaining one unit of capital services. The user cost of capital is also referred to as the ‘rental price’ of a capital good, or the ‘capital service price.’” (See “Annex 1: Glossary of Technical Terms Used in the Manual,” *Measuring Capital: OECD Manual* (Paris, OECD, 2001), p. 96, on the Internet at [www.oecd.org/dataoecd/61/57/1876369.pdf](http://www.oecd.org/dataoecd/61/57/1876369.pdf) (visited Aug. 28, 2008).)

<sup>40</sup> This approach also would include the costs of additions and alterations, as well as other costs.

<sup>41</sup> *The Price Statistics of the Federal Government* (Cambridge, MA, National Bureau of Economic Research, 1961), p. 48.

<sup>42</sup> *Consumer Price Index: Cost-of-Living Concepts and the Housing and Medical Care Components*, GAO report GGD-96-166, August 1996, p. 17, on the Internet at [www.gao.gov/archive/1996/gg96166.pdf](http://www.gao.gov/archive/1996/gg96166.pdf) (visited Aug. 28, 2008).

<sup>43</sup> *Final Report of the Advisory Commission to Study the Consumer Price Index*, Print 104-72, 104 Cong., 2 sess. (U.S. Senate, Committee on Finance, 1996), p. 53.

<sup>44</sup> Panel on Conceptual, Measurement, and Other Statistical Issues in Developing Cost-of-Living Indexes, *At What Price?* p. 72.

<sup>45</sup> The previous method had several widely recognized problems. (See, for example, “Measurement of Homeownership Costs in the Consumer Price Index Should Be Changed,” PAD-81-12 (General Accounting Office, 1981), on the Internet at [archive.gao.gov/f0202/114922.pdf](http://archive.gao.gov/f0202/114922.pdf) (visited Aug. 28, 2008).)

<sup>46</sup> For recent values of the affordability index, see [rodolino.realtor.org/Research.nsf/Pages/HousingInx](http://rodolino.realtor.org/Research.nsf/Pages/HousingInx) (visited Aug. 28, 2008).

<sup>47</sup> For recent comparisons of rental equivalence and other alternative homeowner cost indexes, see Randal Verbrugge, “The Puzzling Divergence of U.S. Rents and User Costs,” manuscript; and Thesia I. Garner and Randal Verbrugge, “The Puzzling Divergence of U.S. Rents and User Costs, 1980–2004: Summary and Extensions,” BLS Working Paper 409, on the Internet at [www.bls.gov/ore/abstract/ec/ec070080.htm](http://www.bls.gov/ore/abstract/ec/ec070080.htm) (visited Aug. 28, 2008).

<sup>48</sup> The comparison of yearly movements uses December-to-December changes. The levels for the all-items and core CPI-U's in March 2008 were 213.528 and 214.866, respectively, on a 1982–84 = 100 basis.

<sup>49</sup> The Federal Reserve Board also makes use of food and energy prices in its deliberations. See, for example, Ben S. Bernanke, “Inflation Expectations and Inflation Forecasting” (Board of Governors of the Federal Reserve System, July 10, 2007), on the Internet at [www.federalreserve.gov/newsevents/speech/Bernanke20070710a.htm](http://www.federalreserve.gov/newsevents/speech/Bernanke20070710a.htm) (visited Aug. 28, 2008).

<sup>50</sup> Visit [www.bls.gov/news.release/archives/cpi\\_04162008.pdf](http://www.bls.gov/news.release/archives/cpi_04162008.pdf) (visited Aug. 28, 2008).

<sup>51</sup> Examples of such research include Otto Eckstein, *Core Inflation* (Englewood Cliffs, NJ, Prentice-Hall, 1981); Mick Silver, “Core Inflation: Measurement and Statistical Issues in Choosing among Alternative Measures,” *IMF Staff Papers*, vol. 54, June 2007, pp. 163–90; and Theodore M. Crone, N. Neil K. Khettry, Loretta J. Mester, and Jason A. Novak, “Core Measures of Inflation as Predictors of Total Inflation,” Federal Reserve Bank of Philadelphia Working Paper 08–9, May 2008.

<sup>52</sup> The list of nations whose CPIs rose more slowly than the U.S. CPI includes Canada, America’s largest trading partner, whose average annual inflation rate over the 1997–2007 period was 2.1 percent, compared with 2.6 percent for the United States.

<sup>53</sup> Historical CPI data are available on the OECD Web site, on the Internet at [stats.oecd.org/wbos/Index.aspx?querytype=view&queryname=221](http://stats.oecd.org/wbos/Index.aspx?querytype=view&queryname=221) (visited Aug. 28, 2008).

<sup>54</sup> Derived from Consumer Expenditure Survey, Table 1, “Quintiles of income before taxes: Average annual expenditures and characteristics, 2006,” on the Internet at [www.bls.gov/cex/2006/standard/quintile.pdf](http://www.bls.gov/cex/2006/standard/quintile.pdf) (visited Aug. 28, 2008).

<sup>55</sup> This evidence cannot be taken as conclusive, however. For example, high- and low-income households may shop at outlets with different patterns of price changes. Also, the shares of spending on other products with high recent inflation, such as airline fares and college tuition, may be positively correlated with income.

<sup>56</sup> David Leonhardt, “Seeing Inflation Only in the Prices That Go Up,” *The New York Times*, May 7, 2008; on the Internet at [www.nytimes.com/2008/05/07/business/07leonhardt.html](http://www.nytimes.com/2008/05/07/business/07leonhardt.html) (visited Aug. 28, 2008).

<sup>57</sup> Visit the Web site [www.shadowstats.com/alternate\\_data](http://www.shadowstats.com/alternate_data) (visited Aug. 28, 2008).

<sup>58</sup> Kenneth J. Stewart and Stephen Reed, "CPI research series using current methods, 1978–98," *Monthly Labor Review*, June 1999, pp. 29–38; on the Internet at [www.bls.gov/opub/mlr/1999/06/contents.htm](http://www.bls.gov/opub/mlr/1999/06/contents.htm) (visited Aug. 28, 2008). The BLS periodically updates that research index, which also is available on the Internet, at [www.bls.gov/cpi/cpirdc.htm](http://www.bls.gov/cpi/cpirdc.htm) (visited Aug. 28, 2008).

<sup>59</sup> The BEA deflates per-capita disposable personal income by its PCE price index, whereas the BLS deflates average weekly earnings by the CPI-W. However, the differences in measured price change among the CPI-U, CPI-W, and PCE index are very small in comparison to a price movement of 155 percent.

<sup>60</sup> Royal Meeker, "The Possibility of Compiling an Index of the Cost of Living," *American Economic Review*, March 1919, pp. 108–17.

<sup>61</sup> Information on the use of hedonics was obtained primarily from the International Monetary Fund's dissemination standards bulletin

board, on the Internet at [dsbb.imf.org/Applications/web/sddshome](http://dsbb.imf.org/Applications/web/sddshome) (visited Aug. 28, 2008).

<sup>62</sup> *The Handbook on Hedonic Indexes, and Quality Adjustments in Price Indexes: Special Application to Information Technology Products*, Science, Technology and Industry Working Paper 2004/9 (Paris: Organization for Economic Cooperation and Development, Oct. 8, 2004), on the Internet at [www.sourceoecd.org/10.1787/643587187107](http://www.sourceoecd.org/10.1787/643587187107) (visited Aug. 28, 2008).

<sup>63</sup> The geometric mean is compared with other computational formulas in Ralph Turvey, *Consumer Price Indexes: an ILO manual* (Geneva: International Labor Office, 1989), pp. 88–92 and Appendix 7. Some of the advantages and disadvantages of the geometric mean price index were described from a BLS perspective in 1993 by Moulton, "Basic components of the CPI," available on the Internet, at [www.bls.gov/cpi/cpirdc.htm](http://www.bls.gov/cpi/cpirdc.htm) (visited Aug. 28, 2008).

## Examining evidence on whether BLS undercounts workplace injuries and illnesses

*The BLS Survey of Occupational Injuries and Illnesses offers many advantages over other data systems, and BLS has been working on improvements to increase its accuracy and scope; nevertheless, there is a debate about whether the survey undercounts injuries and illnesses to any significant extent*

John W. Ruser

**T**he BLS Survey of Occupational Injuries and Illnesses (SOII or Survey) has come under criticism for undercounting the number of injury and illness incidents in the workplace. Estimates of the undercount range widely from 20 percent to 70 percent of all cases in some research. However, other research and analysis concludes that the size of the undercount is small. This article summarizes and critiques some of these studies and describes BLS efforts to better understand and address the undercount issue.

SOII produces annual estimates of counts and rates (number of cases per worker) of new workplace injuries and illnesses. The survey data are provided by responding employers, who draw information from Occupational Safety and Health Administration (OSHA) logs and supplementary materials maintained by employers throughout the year. SOII is separate from other systems for recording workplace injuries and illnesses, (hereinafter referred to as “data systems”) including workers’ compensation, trauma registries and other administrative and survey data sources.

Four dimensions of a potential undercount that can be identified are the failure to count

1. most occupational illnesses that have a long latency period;
2. occupational injuries and illnesses

incurred by out-of-scope workers (public-sector workers, the self-employed, and workers in households and on small farms);

3. some occupational injuries and illnesses that are reported in other data systems such as workers’ compensation; and
4. some occupational injuries and illnesses that are not reported in any data system.

The Bureau of Labor Statistics takes the allegations of underreporting seriously and has instituted a number of activities to understand and, where possible, address the issue. First, in 2007 BLS conducted a quality assurance survey which indicated that SOII data collection processes did not result in an undercount along any of the four dimensions listed earlier. Second, BLS is extending the scope of SOII to include all public-sector workers.

Third, BLS has instituted a program of research to examine and extend previous research into the undercount. The aim is to determine whether certain types of cases and respondents display greater evidence of apparent undercounting and to identify the factors that might be responsible for the undercount findings. The latter factors include legitimate differences among data systems and methodological

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aspects of undercount research that might provide biased estimates of the SOII undercount. Fourth, BLS is undertaking focused interviews of employers to learn about decisions made to report injuries and illnesses on OSHA logs and to other data systems. Finally, BLS is exploring partnerships with other organizations, including the National Institute for Occupational Safety and Health, to research the use of alternative data sources to complement the data available from SOII.

Although BLS will make progress in addressing the undercount issue, it must be conceded that some aspects of this issue cannot be addressed within the framework of the BLS Survey. Estimating the number of long-latent occupational illnesses is not possible with an employer-based recording mechanism. Self-employed, household and small-farm workers remain outside the scope of SOII because they are not part of the SOII sample frame nor are they covered by the Occupational Safety and Health Act of 1970. In addition, there are a variety of incentives that affect the reporting of workplace injuries and illness to SOII and other data systems. These incentives are outside of BLS control. Estimating cases that are outside the scope of SOII (either because they are not OSHA recordable or are incurred by out-of-scope workers) may be feasible using other data sources.

This article discusses the SOII undercount issue. After providing a brief overview of SOII and some alternative data systems, it describes in depth the four different dimensions of the potential undercount. Some of the key papers in the undercount literature are summarized. The article then discusses a variety of possible reasons for the undercount findings, including methodological issues, incentives for reporting, and differences in various data systems. Finally, the article summarizes BLS activities aimed at addressing the undercount issue.

## Data collection

SOII is a Federal and State program in which employers' reports are collected annually from about 176,000 private-industry establishments.<sup>1</sup> Data are collected starting in January after the end of the survey reference year. Responding employers provide information on the number of workplace injuries and illnesses by copying the data from their Occupational Safety and Health Administration (OSHA) recordkeeping logs to the SOII questionnaire. Employers also provide the number of employee hours worked (needed in the calculation of incidence rates) as well as the establishments' average employment.

Besides reporting injury and illness counts, survey re-

spondents are asked to provide additional information for a subset of the most serious nonfatal cases logged, namely, those which involved at least 1 day away from work beyond the day of injury or onset of illness. Employers answer several questions about these cases, including the demographics of the worker disabled, the nature of the disabling condition, and the event and source producing the condition.

Most employers use information from supplementary recordkeeping forms and State workers' compensation claims to fill out the Survey's "case form"; some, however, attach those forms when their narratives answer questions on the case form, an option the Bureau offers to help reduce respondent burden. Also, to minimize the burden on many larger employers, sampled establishments that are projected to have numerous cases involving days away from work are instructed to report on a sample of those cases. These employers are assigned a range of dates and are instructed to provide information only on the cases with days away from work for which the date of injury or onset falls within the assigned range of dates.

SOII receives occupational injury and illness data from the U.S. Department of Labor Mine Safety and Health Administration for establishments in the coal, metal, and nonmetal mining industries and data from the U.S. Department of Transportation Federal Railroad Administration for railroad incidents. The Survey excludes all work-related fatalities, as well as nonfatal work injuries and illnesses, to the self-employed; to workers on farms with 10 or fewer employees; to private household workers; and, nationally, to Federal, State, and local government workers.

Injuries and illnesses logged by employers conform to definitions and recordkeeping guidelines set by the Occupational Safety and Health Administration, U.S. Department of Labor (see box). Under these guidelines, nonfatal cases are recordable if they are work-related illnesses or injuries that involve lost worktime, medical treatment other than first aid, the restriction of work, loss of consciousness, a transfer to another job, or other specific conditions. Employers keep counts of injuries separate from counts of illnesses. They also identify whether each injury or illness involved any days away from work, days of restricted work activity, or both that occurred after the day of injury or onset of illness. All employers with 11 or more employees in OSHA-designated high-hazard industries are required by OSHA regulation 29 Code of Federal Regulations (CFR) 1904 to maintain logs throughout the year and to complete a summary based on the log at the end of the year. Other employers also are required to maintain

logs according to OSHA regulation 29 CFR 1904.42 in the event that they are asked to participate in SOII. BLS draws a sample of employers for SOII from both OSHA-designated high hazard industries and other industries.

### OSHA case recordability criteria

OSHA guidelines for recording cases are codified in 29 CFR (Code of Federal Regulations) 1904. In general, recordable cases include new work-related cases of injuries and illnesses or the significant work-related aggravation of preexisting non-work-related conditions. Cases are recordable if they result in

- death
- loss of consciousness
- days away from work
- restricted work activity or job transfer
- medical treatment (beyond first aid)
- significant work-related injuries or illnesses that are diagnosed by a physician or other licensed health care professional, including cancer, chronic irreversible disease, a fractured or cracked bone, and a punctured eardrum

Cases also are recordable if they meet additional criteria for special cases; cases that qualify include those involving needlesticks and “sharps” injuries, occupational hearing loss, and tuberculosis. The regulations provide definitions of many key concepts, explaining how to determine whether a case is work related, what is a new case, what is involved in a significant aggravation of a preexisting condition, what is restricted work, and so forth.

Occupational injuries, such as sprains, cuts, and fractures, account for the vast majority of all cases that employers log and report to the BLS survey. Occupational illnesses are new cases recognized, diagnosed, and reported during the year. Overwhelmingly, those cases which are reported are easier to relate directly to workplace activity (for example, contact dermatitis or carpal tunnel syndrome) than are long-latent illnesses, such as cancers.

SOII provides estimates that are based on a scientifically selected sample of establishments, some of which represent only themselves but most of which also represent other employers of like industry and workforce size that were not chosen in a given survey year. For each survey, the sample used is one of many possible samples, each of which could have produced different estimates. The data also are subject to nonsampling errors that are not measured. These errors include the unavailability of characteristic data for some cases, mistakes in recording or coding the data, and definitional difficulties. To minimize nonsampling errors, the Bureau conducts a rigorous train-

ing program for survey coders and continues to encourage survey participants to respond fully and accurately to all survey elements.

There are other data systems that provide estimates of occupational injuries and illnesses. An important advantage of SOII is that it is a large system that affords the most complete occupational injury and illness counts for the Nation and does so consistently across States. While it is beyond the scope of this article to discuss other systems in detail, a brief summary of some of them is necessary, because it is comparisons between SOII and the other systems that provide the basis for the undercount estimates.

Each State has its own workers’ compensation system to cover injured and ill workers. The systems vary somewhat but have the same general characteristics. With the exception of Texas, all States mandate coverage of nearly all private-sector workers. Some States exempt from coverage workers in very small companies, certain agricultural workers, and some other categories of workers.<sup>2</sup> All State laws require that employers cover nearly 100 percent of an injured or ill worker’s medical expenses and further require that workers who are off work longer than a specified “waiting period” be paid cash benefits related to lost earnings.<sup>3</sup> States differ in the durations of their waiting periods, which range from 2 days to 7 days, and also differ to a small extent regarding which cases are compensable. Recently, for example, a number of States passed legislation requiring that work be a major or predominant cause of the disability or legislation eliminating compensation for the aggravation of a preexisting condition or for a condition related to the aging process.

Despite the fact that there is a workers’ compensation system in each State, national estimates of occupational injuries and illnesses are difficult to derive from workers’ compensation records because of incomparabilities across States. For example, some workers’ compensation databases can provide estimates only of cases for which workers are off work for longer than the particular State’s waiting period. There are differences in scope between workers’ compensation and SOII data with which researchers must contend in trying to reconcile estimates between the two systems. This issue will be discussed later.

Another data system against which SOII estimates have been compared is the National Health Interview Survey (NHIS), the principal source of information on the health of the civilian noninstitutionalized population of the United States and one of the major data collection programs of the National Center for Health Statistics. The NHIS is an annual cross-sectional household interview survey of about 35,000 households and 87,500 people.<sup>4</sup>

Among many questions it asks are whether an injury occurred while the individual was working at a paid job, what type of medical care was sought, the external cause or nature of the injury, what the person was doing when the injury occurred, the date and place the injury occurred, and whether the person missed days of work.

There are a variety of advantages and disadvantages of the NHIS for estimating workplace injuries and illnesses. An advantage is that the scope of the survey is broader than that of SOII, encompassing all civilian workers, including public-sector workers and the self-employed. Further, Leigh and colleagues argue that economic incentives for workers not to report injuries in the NHIS are weak to nonexistent. (See discussion of reporting incentives in a later section.) However, the sample of injury episodes collected by the NHIS is quite small (fewer than 2,000), so the NHIS cannot publish the amount of detail that SOII can. Further, the NHIS relies on proxy respondents—that is, individuals who respond to questions on behalf of other household members and who may not be aware of some work injuries and illnesses. In addition, workers tend to forget less severe injury episodes, so “recall bias” is a problem for injury cases that occurred further away from the time of the interview. Beginning with 2004, data were collected on injury episodes occurring within 3 months of the interview. However, the National Center for Health Statistics tabulates data only for injury cases that occurred within 5 weeks of the interview.<sup>5</sup> Finally, any comparison of NHIS and SOII estimates is complicated by the fact that cases in NHIS are not necessarily OSHA recordable (as defined in the box on page 22).

Other data sources used to track workplace injuries and illnesses and to compare against SOII include data from hospital discharges and emergency room visits. Three of the 19 occupational health indicators identified by the Council of State and Territorial Epidemiologists (CSTE) are based on the National Hospital Discharge Survey.<sup>6</sup> As noted by CSTE,

[S]tate hospital discharge data are useful for surveillance of serious health conditions. While these state data sets do not include explicit information about “work-relatedness” of the health conditions for which a patient is hospitalized, they do include information about the payer for the hospital stay. The designation of workers’ compensation as primary payer is a good proxy for the work-relatedness of hospitalized injuries.<sup>7</sup>

Another source of hospital data that can serve to track workplace injuries and illnesses is the National Electronic Injury Surveillance System (NEISS). Data from this source are collected for the National Institute for Occupational

Safety and Health from a small sample of U.S. hospital emergency departments. In each hospital, a staff member reads the emergency room charts and identifies work-related cases.

An advantage of using data from hospitals is that all workers are potentially in scope, as opposed to the more limited scope of SOII. (See later.) However, the cases that appear in hospitals are typically more severe than a typical OSHA-recordable case. Hospitalizations account for only a small percentage of all workplace injuries and illnesses—3 percent, according to CSTE. Identifying cases by means of the payer implies that the cases counted by hospital discharge data may or may not be OSHA recordable. Indeed, in the case of the CSTE indicators, these cases would be workers’ compensation claims. Similarly, NEISS data pertain only to cases treated in emergency departments, while the scope of the OSHA-recordable cases counted by SOII is both broader and potentially different. Finally, the relatively small sample size of the NEISS limits the availability of detailed estimates. All of the data sources just described should be viewed as providing estimates that are complementary to SOII.

## Dimensions of the SOII undercount

Some have viewed SOII with misgivings over its failure to count all workplace injuries and illnesses. Their comments can be classified into four separate categories: underrecording of illnesses, incomplete scope in the coverage of workers, incomplete capture of injury and illness cases that are reported in other systems, and unreported cases.

*Underrecording of illnesses.* It is well known and acknowledged by BLS that SOII does not capture all occupational illnesses. In its press release for SOII, BLS notes that

The survey measures the number of new work-related illness cases that 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 measures. In contrast, the overwhelming majority of the reported new illnesses are those that are easier to directly relate to workplace activity (for example, contact dermatitis or carpal tunnel syndrome).<sup>8</sup>

A central problem is that many work-related illnesses take years to develop and may be difficult to attribute to the workplace. Thus, a recording mechanism based on employer records, as is SOII, will generally fail to capture these illnesses.



*SOII scope restrictions.* Because of restrictions on the scope of the workers covered, SOII does not enumerate all nonfatal workplace injuries and illnesses incurred by U.S. workers. Specifically, SOII excludes the self-employed; farms with fewer than 11 employees; private households; Federal Government agencies; and, for national estimates, employees in State and local government agencies. SOII does collect data on State and local government workers in 27 States.

To address this shortcoming, BLS is expanding the collection of data to all government workers. Starting with the 2008 survey year, BLS has extended the SOII sample to include the 23 States for which State and local government data are not currently collected. Sampled State and local government agencies have been asked to record their workplace injuries and illnesses on OSHA logs, just as the current SOII sample members do. BLS intends to publish data for State and local government workers at the national level and for each State. In addition, together with OSHA, BLS is exploring ways to collect data for Federal agencies. Currently, Federal agencies are required to record their workplace injuries and illnesses on OSHA logs, but they are not required to report these data to OSHA.

Collecting data on other workers who are outside the scope of SOII (the self-employed, private household workers, and workers on small farms) is problematic, because these workers are outside of the scope of the Occupational Safety and Health Act of 1970 and therefore are not required to record injuries and illnesses on the OSHA logs that form the basis for SOII. In addition, sample frames are not available to BLS to capture data on these workers. A couple of different approaches might be pursued to collect such data.

One approach would be to obtain data through a household survey such as the NHIS. Workers in the out-of-scope groups could be asked about their workplace injury and illness experience during a period prior to the interview. To obtain estimates consistent with SOII, questions would need to be structured so that the injuries and illnesses that are identified are OSHA-recordable cases. As with the current NHIS, one potential shortcoming of using household interviews is recall bias. Whereas OSHA instructs employers to record injuries and illnesses on a flow basis throughout the year, a survey questionnaire would elicit information only for a specified period prior to the interview.<sup>9</sup> Because workers have been found to forget about minor injuries that occurred 6 or more weeks prior to the interview,<sup>10</sup> the period for which injury and illness information would be obtained would need to be kept short. This short retrospective period would limit the

number of cases captured and reduce the reliability of the estimates.

Another approach to estimating injury and illness rates for the self-employed, household workers, and small farms would be to capture data from various other sources, including insurance claims, emergency room visits, and hospital discharges. This multisource approach is employed by the BLS data program for fatal injuries, the Census of Fatal Occupational Injuries (CFOI), though the CFOI sources are not the same as those just listed.<sup>11</sup> Nonfatal workplace injuries and illnesses that are captured in these other systems might differ from OSHA-recordable cases. Further, as noted in the previous section, hospital data are likely to include only more severe cases. Utilizing the aforementioned sources to capture data on nongovernmental workers who are currently outside the scope of SOII would be quite resource intensive.

Absent the collection of data through methods such as those just described, some researchers have generated estimates for out-of-scope workers. Estimates for some groups of workers are obtained from alternative data sources that are adjusted to conform to the OSHA-recordability concept underlying SOII. In other cases, estimates are produced by extrapolating from the known injury or fatality data on other groups of workers.

J. Paul Leigh, James P. Marcin, and Ted R. Miller estimated that in 1999 1.76 million injuries were incurred by out-of-scope workers,<sup>12</sup> in addition to 5.335 million injuries reported in SOII. Thus, Leigh and colleagues estimate that, because of restrictions in scope, SOII did not capture 24.8 percent of all workplace injuries and illnesses. For some out-of-scope groups (agricultural and Federal Government workers), Leigh and colleagues were able to obtain other estimates of injuries. For self-employed, State and local government, and “other” workers, they generated injury and illness estimates by multiplying the SOII estimate of injuries by both employment ratios and measures of relative risk. (Details appear in their paper.) The SOII sample expansion to cover public-sector workers will narrow the number of cases incurred by out-of-scope workers.

*Incomplete SOII capture of injuries and illnesses that are reported in other systems.* Another strand of the undercount literature argues that SOII fails to capture some cases that are within the scope of the survey, but that are captured in other work-related injury and illness data systems. At least three approaches have been taken to establish whether or not SOII and the OSHA logs underlying it are complete: OSHA audits of employer recordkeeping, aggregate com-

parisons of SOII estimates with estimates generated from other data systems, and microlevel matches of cases in SOII with cases in other data systems.

OSHA conducts onsite audits of employer injury and illness records to verify the overall accuracy of source records and to estimate the extent of employer compliance with OSHA recordkeeping requirements. Annually, OSHA draws a small sample of establishments that have responded to its Data Initiative, and within those establishments, OSHA draws a sample of employees.<sup>13</sup> The sample is restricted to establishments with 40 or more employees in the high-hazard industries (excluding construction) covered by the initiative. Further, the establishments must be located in States under Federal OSHA jurisdiction or in a State Plan State that has decided to participate in the initiative. Auditors compare entries on the OSHA logs with other records in the establishment.

For calendar year 2004, OSHA found that 95.7 percent of establishments had “accurate” recordkeeping (at or above the 95-percent threshold) for total recordable injury and illness cases and that 95.3 percent of establishments had “accurate” recordkeeping for cases with days away from work, work restrictions, or transfers (DART). Among the recordable cases identified by auditors, 10.0 percent were not recorded, 6.4 percent were DART cases recorded as less severe non-DART cases, and 0.9 percent were non-DART cases recorded as more severe DART cases. In 2004, recordkeeping accuracy, according to the 95-percent criterion, was not statistically significantly different from previous years’ accuracy.

One additional issue uncovered by the OSHA audits is overrecording. The audits found instances where employers recorded non-OSHA recordable cases. These were almost exclusively non-DART cases and, as a result, were out of the scope of the microdata studies of underreporting to be discussed subsequently. Overrecording of these minor cases increases the count of total workplace injuries and illnesses and partially compensates for the effects of any undercounting of more severe cases.

Aggregate studies of the undercount involve comparing estimates from SOII with estimates produced from other data systems. To the extent that these other data systems have different scopes from that of SOII, the estimates need to be adjusted to comparable scopes.

As an example of an aggregate comparison, Leigh and colleagues compared SOII estimates with those from the National Health Interview Survey (NHIS).<sup>14</sup> The SOII estimate of 6.3 million injuries and illnesses in 1994 was 28.2 percent below the NHIS estimate of 8.8 million injuries and illnesses. Leigh and colleagues note that economic in-

centives for workers not to report in SOII might be weak or nonexistent in the NHIS, explaining at least part of the estimated undercount.

Not all aggregate comparisons of estimates conclude that SOII undercounts injuries and illnesses. Arthur Oleinick and Brian Zaidman compare counts of workers’ compensation cases with counts of days-away-from-work cases in SOII for Minnesota over the period from 1992 to 2000.<sup>15</sup> For cases lasting 4 or more days away from work—the cases for which data were available in the Minnesota workers’ compensation data set—Oleinick and Zaidman conclude that there is 92- to 97-percent concordance between the two estimates of injury and illness counts and that the BLS survey has “high sensitivity” for workplace injuries with 4 or more days away from work.

There are some limitations of aggregate comparisons. Most fundamentally, even if an estimate from another data system is close to the SOII estimate, it does not mean that underreporting is not present in SOII (or in the other system). It is possible that SOII captures some cases that are not in the other system, while the other system captures some cases that are not in SOII. In such a circumstance, there is underreporting in both SOII and the other system. Indeed, that is what appears to occur in the microlevel studies described shortly. Note, however, that Oleinick and Zaidman, who obtained close concordance between SOII and workers’ compensation counts, dismissed the possibility that offsetting biases resulted in the close concordance that they found.<sup>16</sup>

Another limitation of aggregate comparisons is that it may be difficult to ensure that the estimates from SOII and the other data system are for cases within the same scope. The researchers must make careful adjustments to ensure scope comparability. The Oleinick and Zaidman study is an example in which their adjustments draw the SOII and workers’ compensation count estimates together.

To address these purported limitations of aggregate comparisons, recent studies have matched individual cases in SOII with cases in other systems.<sup>17</sup> These studies attempt to restrict the data in SOII and other systems to the same scope and then to match cases on a variety of characteristics, including those of the worker, employer, and case. The studies are able to document the number of cases that are in another system but not in SOII, the number that are in SOII but not in the other system, and the number that are in both SOII and the other system.

Kenneth D. Rosenman and colleagues match case-level SOII data to workers’ compensation cases for the State of Michigan in 1999, 2000, and 2001.<sup>18</sup> Because Michigan has a waiting period of 7 days before workers’ compen-

sation benefits are paid (hence, only cases that surpass the 7-day waiting period are captured in the Michigan database), the scope of the data-set comparison was restricted to cases with more than 7 days away from work. The researchers estimated that, on average each year from 1999 to 2001, a total of 79,379 injury and illness cases was reported in only SOII, in only workers' compensation, or in both systems. Of these more-than 79,000 cases, SOII captured 30,800, or 38.8 percent, whereas workers' compensation captured 62,264, or 78.4 percent. Focusing on specific types of injuries, the researchers found that SOII was more likely to capture certain types of injuries that are easier to observe and relate to the workplace, such as surface and open wounds, burns, and traumatic injuries to bones. In contrast, SOII was less likely to capture traumatic injuries to muscles, tendons, and the like, which include sprains and strains. These injuries are quite frequent both in SOII and in workers' compensation.

Subsequent analysis by Leslie I. Boden and Al Ozonoff provides undercount estimates that are considerably smaller than those of Rosenman and colleagues.<sup>19</sup> Boden and Ozonoff match SOII and workers' compensation data from 1998 to 2001 for six States: Minnesota, New Mexico, Oregon, Washington, West Virginia, and Wisconsin. The undercount estimates differ by State, but they indicate that on average SOII may be picking up only about 69 percent of the injuries and illnesses appearing in SOII, in workers' compensation, or in both systems. SOII did best at capturing cases in West Virginia (79.4 percent) and worst in the State of Washington (55.7 percent). Similarly, the researchers find widely varying estimates of the extent to which workers' compensation captures injuries that appear in SOII, workers' compensation, or both systems—from 72.4 percent in Minnesota to 96.9 percent in Washington State.

It is difficult to gauge the reason for the difference in the findings of Rosenman and colleagues, on the one hand, and Boden and Ozonoff, on the other. The difference may be due to differences in the methodologies used, or it may be due to State-by-State variation. However, the Rosenman SOII-capture estimate of 38.8 percent is lower than the results found by Boden and Ozonoff for any State, suggesting that differences in methodology play a role.

*Unreported cases.* Cases that are unreported in multiple data systems constitute another group of undercounted cases. In the context of the BLS survey, this means that cases not reported in SOII may also not be reported elsewhere. Applying some assumptions, it is possible to estimate the number of such cases by means of a technique

called capture-recapture. This technique was first applied to the estimation of animal populations in the wild, but it has been adapted to generate improved estimates in a wide variety of situations, such as drug use, homelessness, infectious diseases, and occupational injury and illness.<sup>20</sup>

Without going into too many technical details,<sup>21</sup> capture-recapture uses probability theory and multiple overlapping, but incomplete, data sources to make inferences about the size of a partially unobserved population. Whereas the most straightforward application of the capture-recapture method uses basic probability theory, more sophisticated analyses rely on multivariate models. The latter analyses identify all unique cases recorded in at least one source and then use log-linear or logistic models to estimate the number of cases unrecorded by any source.<sup>22</sup> Capture-recapture is a natural extension of the matching of data sources described in the previous section.

After matching individual cases in SOII and workers' compensation data for Michigan from 1999 to 2001, Rosenman and colleagues used capture-recapture to estimate that although the data sources together included a total of 79,379 cases on average each year, an additional 15,654 were not captured in either data system.<sup>23</sup> The latter cases bring the annual average total of cases to 95,033. Thus, 16.5 percent of cases went unreported. Further, when the SOII estimate of 30,800 was compared with the total, including unreported cases, Rosenman and colleagues estimated that SOII captured only 32.4 percent of all cases.

Boden and Ozonoff applied capture-recapture to the data for the six States in their study.<sup>24</sup> They found that cases unrecorded in either SOII or workers' compensation ranged from 13 percent of all cases in Minnesota and New Mexico to 3 percent in Washington State and West Virginia. The researchers' estimate of the total SOII undercount after utilizing capture-recapture was also smaller than that of Rosenman and colleagues, ranging from 46 percent in Washington to 22 percent in West Virginia. On average, SOII is estimated to capture about 60 percent of all cases across the six States. As previously mentioned, capture-recapture has been used for a variety of purposes. In an interesting non-U.S. example, Anton W. Moll Van Charante and Paul G. Mulder found that employers reported only 35.6 percent of injuries to the government in the Netherlands.<sup>25</sup>

Capture-recapture is a sophisticated technique for making inferences about unreported cases. However, the methodology does rely on some assumptions to generate results. One important assumption, termed "source independence," is that the recording of cases in one system is

independent of the recording of cases in another system. In fact, sources could be positively or negatively source dependent, meaning that a case recorded in one system is, respectively, more likely or less likely to be recorded in another system. For a variety of reasons, Boden and Ozonoff expect that SOII and workers' compensation are positively source dependent. Some of these reasons are that the same person might record a case in both systems; if a worker does not report a case, it is not likely to be recorded in either system; and if an employer does not think a case is compensable, then he or she might erroneously believe that it also is not OSHA recordable.

If two sources are positively source dependent, then the estimate of the number of cases not captured in either system is biased downward; that is, underreporting is greater than when the number of cases is estimated under the assumption of independence. Without data from a third source or without additional assumptions, it is not possible to estimate the extent of source dependence. Still, Boden and Ozonoff conduct a sensitivity analysis by estimating the undercount under a couple of positive dependence scenarios.<sup>26</sup> Assuming different values for the odds ratio that a case is reported in SOII, given that it is reported in workers' compensation,<sup>27</sup> they show that the estimated coverage of both SOII and workers' compensation drops with positive source dependence—sometimes substantially. However, they concede that they do not know what the correct odds ratio is (although they believe it is greater than one), leaving the source dependence issue unresolved.

## Reasons for the undercount findings

The previous two sections summarize research which concludes that SOII misses some cases that are recorded in workers' compensation and other cases that do not appear in workers' compensation. Although willful underreporting might be one explanation for these findings, there are a variety of other explanations as well:

- SOII and workers' compensation are independent systems, so a case might be recordable in one system but not the other.
- Employers might have legitimate doubts about the recordability of some cases, particularly those being contested in the workers' compensation program.
- An aspect of SOII—its timeliness—may contribute in a modest way to the undercount, particularly when

updates to logs occur after data collection.

- The undercount research studies might be unable to overcome some methodological challenges that increase the estimated undercount.

These hypotheses are discussed next.

Because SOII and workers' compensation are technically independent systems for recording injuries and illnesses, there may be valid reasons that a case could appear in one system but not the other. For example, in the matching work previously described, cases with days away from work are matched. In SOII, a case with days away from work must involve at least 1 day away from work following the day of the incident. However, a workers' compensation insurer might capture a compensable case that involves permanent disability without days away from work or with only partial days away from work. As a result, as Eleni Messiou and Brian Zaidman note, some workers' compensation claims may not include enough days away from work to be classified as a days-away-from-work case in SOII.<sup>28</sup> Another area of concern is the treatment of multiple spells out of work associated with the same injury (the question being whether a recurring injury is treated as a new injury each time it recurs).<sup>29</sup>

Messiou and Zaidman,<sup>30</sup> as well as Nicole Nestoriak and Brooks Pierce,<sup>31</sup> point out that the timing of the compilation of different sources of occupational safety and health information may partially explain why some workers' compensation cases do not match to SOII cases. SOII is fielded soon after the end of the reference year in order to correspond to the time when OSHA requires the summary of injuries and illnesses to be posted in the workplace. In contrast, workers' compensation records are continuously updated, and the extracts from the workers' compensation database that are used for matching research are often drawn long after the end of the reference year. Some cases are noticed or reported with a lag, causing them not to get entered into the OSHA log before SOII is administered. Also, although employers are instructed to update their OSHA logs when new information is obtained, they may forget to do so or might do it after they respond to SOII. Thus, the workers' compensation information may be more up to date and more inclusive than the information available for SOII. This difference complicates the matching of cases and leads to nonmatches.

Consistent with the previous hypothesis, a reanalysis of Boden and Ozonoff's Wisconsin data by BLS found that SOII misses relatively more cases late in the survey year and also misses a large fraction of cases that are entered

into the workers' compensation database after the end of the survey year.<sup>32</sup> Cases that occur late in the survey year are less likely to have been entered into or updated in the log by the time the survey is administered. However, the fact that the yearend effect is apparent for December but not for November or earlier suggests that whatever effect is operating is a relatively short-window effect; consequently, it can explain relatively little of the year-round SOII undercount. Cases that are not entered into the workers' compensation database until the following year may not be recognized in time to be entered into OSHA logs and captured in SOII.

The issue of timing also may affect the matching of contested cases—that is, those cases which the employer does not recognize either as existing or as being work related. It is reasonable to expect that an employer might not record such a case on OSHA logs until the status of the workers' compensation case is resolved (if ever). Such a resolution might occur long after the data in SOII have been collected. Thus, a resolved contested case might appear in the workers' compensation files but not in the SOII files being matched.

The quality of the undercount estimates depends critically upon how well the SOII cases are matched to workers' compensation cases and how well the researchers can adjust for differences between the SOII and workers' compensation data. Missed matches are counted as undercounts in both data sets. There are aspects of SOII that create challenges for matching cases and for estimating an undercount with respect to workers' compensation.

Cases match only if the two lists of cases cover the same populations of injuries and illnesses (that is, if the lists have the same scope). If lists are not consistent, then a case might appear on one list but not the other. Some inconsistencies between lists can be corrected directly through exclusions. For example, an injury resulting in few days away from work may be OSHA-recordable but not compensable according to workers' compensation. It is important to recognize that the fields used for exclusion may be error prone and that any errors incurred can effectively lead to mismatch issues. For example, if a particular case is recorded as having 6 days away from work in SOII but has 8 days away according to workers' compensation, then excluding the case from SOII on the basis of a 7-day waiting period exclusion will make it appear as if SOII did not capture that case while workers' compensation did.<sup>33</sup> Mismatch bias depends on the matching technology used by the researcher, on the error rates in SOII data elements, on error rates in the workers' compensation data elements, and on whether the error rates in the workers' compensa-

tion and SOII data elements are positively correlated with each other.

In addition, there are aspects of SOII that create additional difficulties. SOII is an establishment survey in which only certain establishments are sampled. Workers' compensation reports cover all compensable cases and are frequently based on company records. In the case of a company with multiple establishments, it is possible that only certain establishments of that company are in SOII, whereas the workers' compensation data contain data on all of the company's establishments. Researchers conducting SOII-to-workers'-compensation matches have found it difficult to identify the establishment locations for workers' compensation cases; this in turn makes it difficult to determine whether a particular workers' compensation case should have a corresponding case in SOII. Boden and Ozonoff's solution to this problem is to use a universe file of establishments (the Quarterly Census of Employment and Wages) to determine the fraction of the total employment at the affiliated firm covered by the sampled BLS establishments. This fraction is then used to lower the weight applied to the workers' compensation unlinked cases (because these cases may be from an establishment not sampled for SOII). Although this solution makes good use of the available information, it does introduce additional nonsampling error.

Subsequent BLS analysis of Boden's Wisconsin sample abstracted from the multiestablishment problem by analyzing only matches for single-establishment companies. SOII misses relatively fewer cases in single-establishment firms, suggesting that it may be difficult to overcome matching problems for multiestablishment companies. However, it is also possible that establishments in single-establishment companies differ from establishments in multiestablishment companies in characteristics (for example, establishment size) that are associated with the likelihood of matching cases between SOII and workers' compensation. Future multivariate analysis may help determine the relative importance of factors responsible for the single-establishment result.

Another aspect of SOII that may cause a difficulty in matching is the fact that large establishments report only a sample of their cases. Specifically, a small number of large establishments are told to report cases that occur only during a particular timespan in the survey year. Inconsistencies between the date of onset of injury or illness for a SOII case and that of the corresponding workers' compensation case may lead to mismatches and measured underreporting both in SOII and in workers' compensation. For example, suppose that, according to

workers' compensation, a particular case occurs during the reporting timeframe for an establishment that subsamples cases in SOII. Suppose, however, that the case is recorded on the OSHA log as occurring outside the subsampling timeframe. Because it is recorded in this way, the case will not be reported to SOII, and it will appear that there is a SOII undercount. Similarly, if a case appears to occur outside the subsampling timeframe according to workers' compensation, but falls within that timeframe when recorded on the OSHA log, then the case will be reported to SOII and it will appear that there is a workers' compensation undercount.

There is some empirical evidence of the impact of case subsampling on the undercount estimates. Determining date of onset may be particularly difficult for some types of cases, such as carpal tunnel syndrome. Indeed, consistent with this explanation for potential underreporting was Boden and Ozonoff's finding that carpal tunnel syndrome cases had a higher incidence of underreporting than other cases. (Note, however, that differences in date of onset may make it difficult to match a case even if it appears in both systems.) Further, Nestoriak and Pierce found that SOII captures a slightly lower percentage of cases where subsampling occurs.<sup>34</sup> However, they also found that undercounting was greater, and that case subsampling arises, in larger establishments. Disentangling the various effects will require multivariate analysis; BLS plans to conduct such an analysis in the future.

This discussion points out that there are a number of features of workplace safety and health data that make it difficult to match cases. Although false positive matches may also occur, it seems likely that the preponderance of mismatches are false negatives—that is, failures to match cases that should be matched. Thus, matching errors seem to be biased in favor of an undercount.

The empirical work of Rosenman, Boden, and others utilizing capture-recapture methodology finds that a large number of cases go unreported in multiple data systems. Lenore S. Azaroff, Charles Levenstein, and David H. Wegman detail a variety of "filters" that may cause this to occur. Azaroff and colleagues hypothesize that workers who report health problems to supervisors may risk (or fear) a variety of adverse outcomes.<sup>35</sup> Supporting this hypothesis, Tim Morse, Laura Punnett, Nicholas Warren, Charles Dillon, and Andrew Warren found evidence that workers at unionized facilities were more likely than workers at nonunionized facilities to file workers' compensation claims for musculoskeletal disorders, despite rates of such disorders that were

comparable between the two groups of workers. These researchers hypothesized that unions protect workers reporting musculoskeletal disorders.<sup>36</sup> Other filters identified by Azaroff as discouraging workers from reporting include safety incentive programs that reward teams of workers who do not sustain and report injuries and the failure of workers (and employers) to perceive the work-relatedness of a particular health condition. For all these reasons, a workplace injury or illness could go unreported, and thus unrecorded, in any occupational injury and illness tracking system.

Even when workers do report injuries, argue Azaroff and colleagues, there may be incentives working against taking time off or reporting a case as work related. Among such incentives are the uncertainty of receiving workers' compensation benefits if a claim is contested, the waiting periods before partial wage-replacement workers' compensation benefits are paid, worker ignorance about workers' compensation, and employer and employee incentives that favor the use of health insurance in place of workers' compensation. Rosenman and colleagues,<sup>37</sup> as well as Jeff Biddle and Karen Roberts,<sup>38</sup> found that many Michigan workers who were diagnosed with work-related repeated-trauma injuries did not file workers' compensation claims. Factors that raised the probability of filing included the severity of the condition and the generosity of wage loss benefits. Thus, in some situations where an occupational injury or illness has arisen, either the worker does not report it as such, does not take time off work, or does not file a workers' compensation claim. These cases will not appear in SOII or workers' compensation.

Although the foregoing analysis has largely discussed employee incentives not to report injuries and illnesses, employers also may have underreporting incentives. Increasingly, injury and illness rates are used as an evaluation criterion in competitions for contract work. Lower rates improve a bidder's chances of winning a contract. In addition, it is alleged that some employers underreport to avoid OSHA scrutiny, because OSHA targets employers with higher rates for inspection.<sup>39</sup> It is important to note that, although commentators have advanced hypotheses regarding reporting disincentives faced by employers and workers, little research on the magnitudes of the impacts of these various disincentives on underreporting has been conducted.

## **Bureau of Labor Statistics activities**

BLS has initiated a variety of activities aimed at under-

standing and, to the extent possible, addressing the undercount issue:

1. *Expansion of SOII's scope.* As mentioned earlier, BLS is expanding the scope of SOII to include State and local government workers in all States. BLS also is exploring with OSHA ways to capture data for Federal Government workers. These expansions of the survey encompass all public sector workers for the first time, including those in high-hazard occupations, such as police officers, fire-fighters, and public health workers.

Collecting data for the self-employed and household workers requires a different data collection approach from the one utilized by SOII, because these workers are not covered by the Occupational Safety and Health Act and are not included in the SOII establishment-based sample frame. BLS has no plans to expand SOII to cover these workers, but it will work with other groups in exploring the use of alternate data systems that cover these workers.

2. *A quality assurance recontact survey.* In 2007, BLS conducted a quality assurance recontact survey which indicated that BLS survey processes were not responsible for an undercount. BLS recontacted a sample of 3,600 establishments that participated in the 2006 survey and asked them to submit their OSHA logs. The data on the logs were compared with data from SOII. There was no systematic evidence that SOII had undercounted cases recorded on the OSHA logs.

3. *Examination and extension of undercount research.* BLS is currently studying matched SOII data and workers' compensation data for Wisconsin that were previously assembled and analyzed by Boden and Ozonoff.<sup>40</sup> After that analysis concludes, BLS will analyze data for Kentucky and Maine. The goal is to determine whether certain types of cases and respondents display greater evidence of underreporting and to determine what factors other than willful underreporting might be responsible for any undercount finding. These factors include legitimate differences among different data systems and methodological aspects of undercount research that might provide biased estimates of the SOII undercount.

4. *Employer interviews.* In 2008, BLS is interviewing a small number of SOII respondents to learn the decisions they make about reporting cases to workers' compensation and reporting them on the OSHA log.

The purpose is to understand situations where workers' compensation cases are not recorded on OSHA logs and vice versa. The interviews are being conducted by a BLS cognitive survey methodologist. At the 2009 budget request level, BLS plans to expand the number of these interviews conducted in Fiscal Year 2009.

5. *Piloting the estimation of workplace injuries and illnesses from multiple sources.* The work of Rosenman and colleagues, Boden and Ozonoff, and others suggests that no single data source can measure the total burden of workplace injuries and illnesses. Using multiple data sources can improve completeness of coverage by including workers and cases that are outside the scope of any particular data source and by covering cases that, for a variety of possible reasons, do not appear in a particular data set. This, in fact, is the rationale for the BLS Census of Fatal Occupational Injuries. BLS hopes to work in partnership with the National Institute for Occupational Safety and Health, the Council of State and Territorial Epidemiologists, and some States to pilot the estimation of workplace injuries and illnesses using multiple data sources. This pilot would focus on two types of injury or illness—one acute, such as amputations, and one with a more gradual onset, such as carpal tunnel syndrome—each studied in a small number of States. Employer- and non-employer-based data sources might be explored. Such a pilot would provide information on the feasibility and cost of implementing a multiple-source data system for measuring the total burden of workplace injuries and illnesses in the United States.

SOII IS DESIGNED TO MEASURE THE NUMBER of OSHA-recordable cases of workplace injuries and illnesses. It covers most, but not all, sectors of the U.S. economy. This means that SOII does not capture some workplace injuries and illnesses that appear in other data systems, because of differences in the scope of cases captured and sectors covered. SOII also may be limited in completeness by incentives that affect worker and employer reporting of workplace injuries and illnesses. Further, with an employer-based system for counting workplace injuries and illnesses such as SOII, it is difficult to measure long-latent occupational illnesses. For all of these reasons, SOII does not measure the total burden of workplace injuries and illnesses.

However, SOII has advantages over other data systems. It efficiently and quickly produces detailed estimates that

are consistent in definition across all States and industries. For cases with days away from work, it provides rich information about the occupation and demographics of injured or ill workers and about case characteristics such as the number of days away from work, the nature of the case (for example, a fracture), the body part affected, the event (a fall, for instance), the source (the floor, for example) and the timing of the incident. In comparison with SOII, many other data systems are not consistent across States (workers' compensation is the prime example); cannot produce detailed estimates by State, industry, and case characteristics (NHIS is an example); do not exist for all States; or are very expensive to collect. These other systems also may have major scope limitations (for example, they measure only hospitalizations) or may be affected by various reporting incentives.

Some recent studies conclude that both SOII and other data systems undercount cases of workplace injuries and illnesses. Explanations other than willful underreporting—such as differences in the cases captured by various data systems and methodological aspects of the undercount research—may account for this finding. Some have argued that the gold standard for producing estimates of the total burden of workplace injuries and

illnesses is a multiple data source system. Indeed, BLS has implemented such an approach in collecting workplace fatal injury data. However, in 2006, there were 4.1 million OSHA-recordable nonfatal workplace injuries and illnesses in private industry according to SOII, in comparison with 5,840 workplace injury fatalities counted by CFOI in all sectors of the U.S. economy. The vastly greater number of nonfatal injuries and illnesses suggests that it would be quite costly to implement a multiple data source system uniformly across all States for all nonfatal occupational injuries and illnesses. However, BLS hopes to partner with States and other organizations in a pilot to assess the cost and feasibility of a multiple data source approach for nonfatal cases.

Within the constraints of its mission as a statistical agency, BLS will continue to work to ensure that SOII accurately measures in-scope workplace injuries and illnesses. As described in this article, BLS will undertake and publish additional research designed to understand and explain differences between its estimates and those of other systems. Finally, where feasible, BLS will expand SOII's coverage of the economy to give a more complete picture of the total burden of workplace injuries and illnesses. □

## Notes

<sup>1</sup> Under this Federal/State program, participating States perform many survey functions, such as sample refinement and data collection, coding, and keying information into a database. Participating States obtain their own estimates and select the industries for which they get these estimates. States match Federal funding for their data collection work in a 50–50 cost-sharing arrangement. For the 2007 survey year, 42 States and the District of Columbia participated in the SOII. BLS regional office staff collect data for nonparticipating States, and those data are used to produce national, but not State, estimates.

<sup>2</sup> Ishita Sengupta, Virginia Reno, and John F. Burton, Jr., *Workers' Compensation: Benefits, Coverage and Costs, 2005* (Washington, DC, National Academy of Social Insurance, 2007).

<sup>3</sup> States also have varying "retroactive periods." Workers who are off work longer than these retroactive periods are paid income benefits for the waiting period.

<sup>4</sup> *National Health Interview Survey*, National Center for Health Statistics, 2008. Documentation available at [www.cdc.gov/nchs/about/major/nhis/his-desc.htm](http://www.cdc.gov/nchs/about/major/nhis/his-desc.htm) (visited July 17, 2008).

<sup>5</sup> *Ibid.*

<sup>6</sup> The National Hospital Discharge Survey collects data from a sample of approximately 270,000 inpatient records acquired from a national sample of about 500 hospitals. For more information, see [www.cdc.gov/nchs/about/major/hdasd/nhdsdes.htm](http://www.cdc.gov/nchs/about/major/hdasd/nhdsdes.htm) (visited July 16, 2008).

<sup>7</sup> Quoted from [www.cste.org/dnn/ProgramsandActivities/OccupationalHealth/OccupationalHealthIndicators/Indicator2/tabid/97/Default.aspx](http://www.cste.org/dnn/ProgramsandActivities/OccupationalHealth/OccupationalHealthIndicators/Indicator2/tabid/97/Default.aspx) (visited July 16, 2008).

<sup>8</sup> *Workplace Injuries and Illnesses in 2006*, News Release number USDL 07–1562, (Bureau of Labor Statistics, 2007).

<sup>9</sup> OSHA instructs employers to record cases within 7 calendar days of learning that a recordable work-related injury or illness has occurred.

<sup>10</sup> M. Warner, N. Schenker, M. A. Heinen, and L.A. Fingerhut, "The effects of recall on reporting injury and poisoning episodes in the National Health Interview Survey," *Injury Prevention*, October 2005, pp. 282–87.

<sup>11</sup> CFOI uses a variety of data sources, including death certificates, workers' compensation reports, and Federal and State agency administrative reports. CFOI does not use data from private health insurance companies or hospital visits.

<sup>12</sup> J. Paul Leigh, James P. Marcin, and Ted R. Miller, "An estimate of the U.S. Government's undercount of nonfatal occupational injuries," *Journal of Occupational and Environmental Medicine*, January 2004, pp. 10–18.

<sup>13</sup> Through its OSHA Data Initiative survey, OSHA collects injury and illness data from larger establishments in historically high-rate industries. These data are used to target inspections under OSHA's Site-Specific Targeting (SST) program.

<sup>14</sup> Leigh and others, "An estimate of the U.S. Government's undercount."

<sup>15</sup> Arthur Oleinick and Brian Zaidman, "Methodological Issues in the Use of Workers' Compensation Databases for the Study of Work Injuries with Days Away from Work. I. Sensitivity of Case Ascertainment," *American Journal of Industrial Medicine*, March 2004, pp. 260–74.

<sup>16</sup> *Ibid.*, p. 268.

<sup>17</sup> All matching research involving SOII microdata was conducted at BLS under Memoranda of Understanding between BLS and the researchers' institutions, permitting access to SOII data only for the purpose of conducting the sta-



tistical matching studies. All analyses and tabulations that were removed from BLS were screened for confidentiality. All data sets containing confidential BLS information remained at BLS.

<sup>18</sup> Kenneth D. Rosenman, Alice Kalush, Mary Jo Reilly, Joseph C. Gardiner, Mathew Reeves, and Zhewui Luo, "How Much Work-Related Injury and Illness is Missed by the Current National Surveillance System?" *Journal of Occupational and Environmental Medicine*, April 2006, pp. 357–65.

<sup>19</sup> Leslie I. Boden and Al Ozonoff, "Capture-Recapture Estimates of Non-fatal Workplace Injuries and Illnesses," *Annals of Epidemiology*, June 2008, pp. 500–06.

<sup>20</sup> *Ibid.*

<sup>21</sup> For more technical information, see Ernest B. Hook and Ronald R. Regal, "Capture-recapture methods in epidemiology: methods and limitations," *Epidemiologic Reviews*, 1995, pp. 243–64.

<sup>22</sup> Boden and Ozonoff, "Capture-Recapture Estimates."

<sup>23</sup> Rosenman and others, "How Much Work-Related Injury and Illness is Missed."

<sup>24</sup> *Ibid.*

<sup>25</sup> Anton W. Moll Van Charante and Paul G. Mulder, "Reporting of Industrial Accidents in the Netherlands," *American Journal of Epidemiology*, July 15, 1998, pp. 182–190.

<sup>26</sup> Boden and Ozonoff, "Capture-Recapture Estimates."

<sup>27</sup> The odds ratio has a value of 1 if the two sources are independent. With positive source dependence, the odds ratio is greater than 1.

<sup>28</sup> Eleni Messiou and Brian Zaidman, "Comparing Workers' Compensation Claims and OSHA Data Initiative Cases." Mimeo, (Minnesota Department of Labor and Industry, 2005).

<sup>29</sup> An OSHA recordkeeping change in 2002 instructed employers not to count recurrent symptoms of the same injury or illness.

<sup>30</sup> Messiou and Zaidman, "Comparing Workers' Compensation Claims."

<sup>31</sup> Nicole Nestoriak and Brooks Pierce. *Preliminary Report on the Boden Undercount Study* (Bureau of Labor Statistics, 2008).

<sup>32</sup> *Ibid.*

<sup>33</sup> One possible source of error in the count of days away from work on the OSHA log arises from the fact that employers are required to record the number of days lost within 7 calendar days. Anecdotal evidence suggests that some employers may record the actual day count missed up to the point of recording, rather than estimating the number of days missed as they are instructed initially to do. Employers also are instructed to update the day count when the actual number of days is known.

<sup>34</sup> Nestoriak and Pierce. *Preliminary Report*.

<sup>35</sup> Lenore S. Azaroff, Charles Levenstein, and David H. Wegman, "Occupational injury and illness surveillance: Conceptual filters explain underreporting," *American Journal of Public Health*, September 2002, pp. 1421–29.

<sup>36</sup> Tim Morse, Laura Punnett, Nicholas Warren, Charles Dillon, and Andrew Warren, "The Relationship of Unions to Prevalence and Claim Filing for Work-Related Upper-Extremity Musculoskeletal Disorders," *American Journal of Industrial Medicine*, July 2003, pp. 83–93.

<sup>37</sup> K. D. Rosenman, J. C. Gardiner, J. Wang, J. Biddle, A. Hogan, M.J. Reilly, K. Roberts, and E. Welch, "Why Most Workers with Occupational Repetitive Trauma Do Not File for Workers' Compensation," *Journal of Occupational and Environmental Medicine*, January 2000, pp. 25–34.

<sup>38</sup> Jeff Biddle and Karen Roberts, "Claiming Behavior in Workers' Compensation," *The Journal of Risk and Insurance*, December 2003, pp. 759–80.

<sup>39</sup> Leigh, Marcin, and Miller, "An estimate of the U.S. Government's undercount."

<sup>40</sup> Boden and Ozonoff, "Capture-Recapture Estimates."

## Who goes to college? Evidence from the NLSY97

*Estimates from the National Longitudinal Survey of Youth 1997 show that sex, race, and ethnicity are unrelated to the student's decision to complete the first year of college, but are related to the decision to start college; high school grades, by contrast, affect both the decision to start college and the decision to stay in college for the first year*

Alison Aughinbaugh

Using the National Longitudinal Survey of Youth 1997 (NLSY97), this article examines two questions: (1) who attends college by age 20? and (2) of those who go to college, who completes the first year? Both the decision to go to college and attrition from college have attracted a great deal of attention from parents, policymakers, and colleges, in part because college graduates earn substantially more than those without a degree.

Over a lifetime, higher earnings from a college degree reflect differences in starting salaries and in earning trajectories. Using CPS data from March 1998, 1999, and 2000, Jennifer Cheeseman Day and Eric C. Newberger estimate that, over a worklife, individuals with a bachelor's degree working full time, year round, earn about one-third more than individuals who do not finish college and earn almost twice as much as individuals with a high school diploma.<sup>1</sup> A 1999 Department of Education report reviews studies that compare those who complete a college degree with those with a similar number of credits, but who have not earned a college degree.<sup>2</sup> On the whole, studies indicate that a bachelor's degree adds significantly to a man's earnings, and an associate's degree adds significantly to

a woman's earnings, over having a comparable number of college credits.

More than half of those who enter a 4-year college leave without earning a degree. Many of those who drop out from college do so in the first year. Dropout rates at the end of the freshman year at 4-year colleges are in the neighborhood of one-quarter to one-third, and the first-year dropout rate at 2-year colleges is more than 40 percent.<sup>3</sup> Not surprisingly, then, finishing the first year of college is associated with a higher probability of graduating: of those who complete their first year of college at either a 2-year or 4-year institution, at least 60 percent go on to complete their degree.<sup>4</sup>

### Data

The NLSY97 is a national sample of 8,984 youths aged 12 to 16 years on December 31, 1996, who were living in the United States at that time. Interviews with these youths have been conducted annually, starting in 1997. Although employment and labor market outcomes are the focus of the NLSY97, the survey covers a broad array of topics, including marriage, fertility, and training, as well as participation in government programs, thus per-

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mitting researchers to examine how different factors are related to labor market outcomes. On the topic of schooling, a term-by-term event history is collected in which the respondent reports information about all schools that he or she has attended since the last interview. The information collected includes the level and type of school, the dates of the respondent's attendance, the respondent's spells of attendance, characteristics of the school, and the reason the youth left the school. The NLSY97 assigns an identification code to each school that a respondent attends, so that data users can tell whether the respondent attends that same school in subsequent rounds of the survey. For colleges, characteristics such as the degree sought; credits required, taken, and earned; the student's grade point average; tuition; the student's major; and financial aid are collected for each term during which the youth is enrolled.

The analysis that follows uses data collected through Round 8 of the survey, at which time the respondents

ranged in age from 20 to 25 years. Because of the ages of the respondents, college-going youths are defined as those who attend college and are enrolled in a degree program by age 20. Obviously, some individuals enter college for the first time at an age older than 20. To capture the extent to which respondents start college after age 20, the respondents in the oldest two birth cohorts (those born in 1980 or 1981 and who were ages 25 and 24, respectively, at the last interview) are examined. In the 1980 and 1981 birth cohorts, 10.1 percent and 9.0 percent of the respondents were observed to have entered college for the first time after the month in which they turned 20.<sup>5</sup>

The sample for this article consists of the 6,580 respondents who were interviewed at age 21 or older, thus ensuring that respondents are observed at least 12 months after they start college. Throughout the analysis, all data are weighted by the sampling weights from Round 1.

Table 1 shows characteristics of the sample, as well as

**Table 1. Selected characteristics, by college attendance at age 20**

Variable	Entire sample	No college	College	Level of significance of t-test: no college versus college
Male.....	0.508	0.560	0.458	0.01
Race or ethnicity:				
Black.....	.158	.194	.125	.01
Hispanic.....	.132	.161	.105	.01
Mixed.....	.012	.011	.014	—
Age at last interview .....	22.917 (1.160)	22.936 (1.177)	22.898 (1.143)	—
Family background:				
Family income in 1996 <sup>1</sup> .....	\$52,750.80 (\$45,134.71)	\$39,806.18 (\$33,512.04)	\$65,133.41 (\$50,969.84)	.01
Mother's highest school grade completed <sup>1</sup> .....	12.935 (3.591)	12.108 (3.978)	13.690 (3.004)	.01
Father's highest school grade completed <sup>1</sup> .....	13.118 (4.326)	12.172 (5.308)	13.918 (3.054)	.01
Mother's age at birth of first child <sup>1</sup> .....	23.113 (4.794)	21.978 (4.644)	24.149 (4.694)	.01
Whether respondent lived with both parents at age 12 <sup>1</sup> .....	.433	.316	.544	.01
Education:				
High school grades (four-point scale) <sup>1</sup> .....	2.831 (.824)	2.472 (.814)	3.167 (.678)	.01
Math-language score on Armed Services Vocational Aptitude Battery (ASVAB) <sup>1</sup> .....	50.489 (29.014)	36.519 (26.522)	62.607 (25.410)	.01
Took Scholastic Aptitude Test (SAT) or ACT <sup>1</sup> .....	.538	.290	.773	.01
Attended a 2-year college.....	.250		.400	...
Attended a 4-year college.....	.323		.600	...
Sample size.....	6,580	3,426	3,154	...

<sup>1</sup> Variable not available to all respondents.

NOTE: Standard deviations are in parentheses. Data are weighted by sampling weights from Round 1. Dash indicates not significant.

of subsamples, based on whether the respondent attended college by age 20. Approximately 49 percent of the sample attended college by age 20. Of those who went to college, the weighted data show that 40 percent started at a 2-year college and 60 percent started at a 4-year college. Male, Black, and Hispanic respondents are overrepresented among those who did not go to college and underrepresented among those who did go to college. In addition, respondents who attended college by age 20 had parents who attained more schooling, had higher levels of family income, had mothers who were older at the birth of their

first child, and were more likely to have lived with both of their parents at age 12 than their counterparts who had not gone to college by age 20.

As one might expect, the high school grades of those who go to college differ from the grades of those who do not attend college. On a four-point scale where 4.0 corresponds to “mostly A’s,” the average high school grade of those who went to college by age 20 was 3.17, which corresponds to better than “mostly B’s.” By contrast, the average high school grade of respondents who did not attend college by age 20 was 2.47, or about “half C’s and half B’s.”

**Table 2. Selected means, by type of first college attended**

Variable	2-year college	4-year college	Level of significance of t-test: 2-year versus 4-year college
Male.....	0.474	0.447	—
Race or ethnicity:			
Black.....	.137	.117	—
Hispanic.....	.158	.070	.01
Mixed.....	.016	.012	—
Age at last interview .....	22.914 (1.141)	22.888 (1.144)	—
Family background:			
Family income in 1996 <sup>1</sup> .....	\$50,728.40 (\$39,596.13)	\$74,800.22 (\$55,285.43)	.01
Mother’s highest school grade completed <sup>1</sup> .....	12.811 (3.356)	14.273 (2.586)	.01
Father’s highest school grade completed <sup>1</sup> .....	12.860 (2.945)	14.576 (2.933)	.01
Mother’s age at first birth <sup>1</sup> .....	23.183 (4.725)	24.785 (4.563)	.01
Whether respondent lived with both parents at age 12 <sup>1</sup> .....	.443	.612	.01
Education:.....			
High school grades (four-point scale) <sup>1</sup> .....	2.850 (.700)	3.378 (.574)	.01
Math-language score on Armed Services Vocational Aptitude Battery (ASVAB) <sup>1</sup> .....	49.427 (24.394)	70.945 (22.323)	.01
Took Scholastic Aptitude Test (SAT) or ACT <sup>1</sup> .....	.560	.915	.01
Months in college .....	16.866 (13.404)	31.593 (17.871)	.01
Number of full-time terms.....	2.617 (2.211)	5.811 (3.350)	.01
Number of part-time terms.....	1.112 (1.834)	.450 (.972)	.01
Subsequently attended a 4-year college.....	.244		
Earned an associate’s degree.....	.142	.020	.01
Earned a bachelor’s degree .....	.035	.263	.01
Sample size.....	1,345	1,809	...

<sup>1</sup> Variable not available to all respondents.

NOTE: Standard deviations are in parentheses. Data are weighted by sampling weights from Round 1. Dash indicates not significant.

Similarly, the average percentile composite score from the language and math sections of the Armed Services Vocational Aptitude Battery (ASVAB) was 70 percent higher for those who went to college (62.6), compared with those who did not (36.5).

Similar differences emerge in table 2, which compares those who started college at a 2-year institution with those who started college at a 4-year institution. These statistics show that both the background characteristics and the high school achievement of students who initially entered 2-year colleges differ from those who initially entered 4-year colleges. Respondents who first went to a 4-year college were more apt to be female, and less apt to be Black or Hispanic, compared with those who began at a 2-year college. Those who started college at a 4-year school came from families that had higher levels of 1996 income, better educated parents, and mothers who, at the time of their first birth, were about 1½ years older than the mothers of those who started college at a 2-year school. In addition, they were about 35 percentage points more likely to have lived with both of their parents at age 12. High school grades were higher for respondents who initially entered a 4-year college (3.39), as opposed to those who started at a 2-year college (2.86). Similarly, the average math-language composite score on the ASVAB was 42 percent higher for those who started at a 4-year college (a score of 70.6), compared with those who started at a 2-year college (a score of 49.7).

Of those who first attended a 2-year college, 24 percent attended a 4-year college later. In addition, of the students who initially attended a 2-year college, 14 percent earned an associate's degree and 4 percent earned a bachelor's degree. Among respondents who began at a 4-year college, 2 percent earned an associate's degree and 26 percent earned a bachelor's degree.

Table 3 touches on the issue of college attrition by examining selected characteristics of respondents based on the length of time they are enrolled at the first college they attend. Spells of college attendance that are ongoing are examined separately. The first three columns of the table present the characteristics of those who go to a 2-year college, by length of enrollment; the first two columns present results for those whose spells at the initial college are completed, and the third column presents results for those whose spells are ongoing. The results for respondents who no longer are enrolled at the first college they attended are presented separately, based on whether the spell is less than 12 months long or is 12 or more months. The ongoing spells are not broken down on the basis of length, because very few (one respondent for 2-year colleges and three for

4-year colleges) are shorter than 12 months. The fourth through sixth columns of the table present parallel information for those who start college at a 4-year institution.

Among those who start college at a 2-year school, students who stay for less than 12 months are, on average, at the school for just under 6 months, while students who are at the school for 12 or more months stay at the college for about 24 months, on average. For those with ongoing spells of attendance that are at least 12 months, the number of months enrolled is longer—about 37 months, on average. Youths who have short spells at the 2-year college where they start are less likely to earn either an associate's or a bachelor's degree at any college, compared with those who remain at the 2-year college for a full year. With respect to basic demographics, family background, and high school grades, those who leave during their first year are similar to those who complete their first year and to those still enrolled at the initial 2-year college.

Among respondents who start college at a 4-year college by age 20, those who stay for at least 12 months are less likely to be male, Black, or Hispanic, compared with those who leave school in less than a year. Moreover, those who are enrolled at the college for at least a year are more advantaged in that their families had higher levels of income in 1996 and they were more apt to live with both biological parents. However, students who leave during their first year and those who complete their first year are similar with respect to the educational attainment of their parents and the ages of their mothers at first birth. Together, tables 1 through 3 demonstrate that the decision to go to college and the decision to remain for the first year in the school where one begins are related to a number of the respondent's characteristics.

## Regression results

To further examine how the respondent's characteristics are related to his or her decision to go to and remain in college, a series of logit equations is estimated. Let

$$C_i = X_i\alpha_1 + X_{fi}\alpha_2 + X_{hsi}\alpha_3 + \varepsilon_i,$$

where  $C_i = 1$  if  $C_i^* > 0$  and  $C_i = 0$  otherwise,  $C_i^*$  is a continuous latent variable underlying  $C_i$  that indicates the respondent's decision about college,  $X_i$  is a set of exogenous individual characteristics,  $X_{fi}$  is a set of family characteristics,  $X_{hsi}$  is a vector describing high school outcomes,  $\varepsilon_i$  is the individual error term, and the  $\alpha$ 's are the parameters

**Table 3. Selected characteristics, by time at first college**

Variable	2-year college			4-year college		
	Completed—		Ongoing	Completed—		Ongoing
	Less than 12 months	At least 12 months		Less than 12 months	At least 12 months	
Male.....	0.481	0.455	0.524	0.486	0.415	0.467
Race or ethnicity:						
Black.....	.141	.131	.146	.150	.101	.116
Hispanic.....	.165	.143	.200	.095	.057	.070
Family background:						
Family income in 1996 <sup>1</sup> .....	\$48,680.33 (\$41,394.66)	\$52,947.07 (\$37,878.00)	\$51,708.48 (\$35,852.12)	\$63,906.39 (\$45,595.79)	\$79,005.51 (\$56,269.78)	\$76,589.12 (\$59,371.76)
Mother's highest school grade completed <sup>1</sup> .....	12.941 (4.094)	12.742 (2.351)	12.423 (2.958)	13.961 (2.436)	14.254 (2.675)	14.545 (2.528)
Father's highest school grade completed <sup>1</sup> .....	12.836 (3.134)	12.946 (2.670)	12.562 (3.179)	14.125 (2.862)	14.599 (2.876)	14.884 (3.030)
Mother's age at first birth <sup>1</sup> .....	22.551 (4.355)	23.646 (4.913)	24.385 (5.214)	24.182 (4.454)	24.775 (4.539)	25.256 (4.628)
Whether respondent lived with both parents at age 12 <sup>1</sup> .....	.433	.450	.468	.519	.630	.655
Education:						
High school grades (four-point scale) <sup>1</sup> .....	2.736 (.709)	2.958 (.683)	2.964 (.612)	3.159 (.616)	3.440 (.557)	3.450 (.523)
Math-language score on Armed Services Vocational Aptitude Battery (ASVAB) <sup>1</sup> .....	47.567 (24.401)	52.686 (24.446)	43.174 (21.490)	65.379 (23.511)	73.097 (21.377)	71.785 (22.155)
Took Scholastic Aptitude Test (SAT) or ACT <sup>1</sup> .....	.520	.613	.522	.881	.943	.899
Months in college.....	5.912 (3.082)	24.570 (9.693)	37.238 (13.085)	6.553 (2.683)	37.096 (13.982)	41.912 (11.038)
Number of full-time terms.....	1.363 (1.318)	3.484 (2.202)	3.983 (2.577)	2.063 (1.931)	6.702 (3.167)	7.029 (2.408)
Number of part-time terms.....	.725 (1.345)	1.291 (1.990)	1.976 (2.426)	.281 (.673)	.505 (1.022)	.483 (1.052)
Earned an associate's degree.....	.057	.242	.123	.037	.025	.000
Earned a bachelor's degree.....	.018	.061	.001	.117	.477	.040
Sample size.....	636	593	115	434	821	554

<sup>1</sup> Variable not available for all respondents.

NOTE: Standard deviations are in parentheses. Data are weighted by sampling weights from Round 1. Among 2-year-college students, only one respondent was in an ongoing spell shorter than 12 months. Among 4-year college students, only three respondents were in ongoing spells shorter than 12 months.

to be estimated. Four specifications are estimated for each outcome: the first controls only for  $X_i$ , the second controls for  $X_i$  and  $X_{fi}$ , the third for  $X_i$  and  $X_{bsi}$ , and the fourth for  $X_i$ ,  $X_{fi}$ , and  $X_{bsi}$ .

Four dependent variables, each of which measures an aspect of going to college, are examined: (1) whether the respondent attends college by age 20, (2) whether the respondent goes to a 2-year college, a 4-year college, or no

college, by age 20, (3) for those who go to a 2-year college, whether the respondent remains at that school for at least 12 months, and (4) for those who go to a 4-year college, whether the respondent remains at that school for at least 12 months.

*The decision to go to college.* Table 4 presents estimates of college attendance by age 20. For each of the four speci-

**Table 4. Estimates of college attendance by age 20**

Variable	Specification 1		Specification 2		Specification 3		Specification 4	
	Estimate	Marginal effect	Estimate	Marginal effect	Estimate	Marginal effect	Estimate	Marginal effect
Male.....	<sup>1</sup> -0.413 (.056)	<sup>1</sup> -0.103 (.014)	<sup>1</sup> -0.503 (.061)	<sup>1</sup> -0.125 (.015)	<sup>1</sup> -0.183 (.064)	<sup>1</sup> -0.046 (.016)	<sup>1</sup> -0.268 (.066)	<sup>1</sup> -0.067 (.017)
Race or ethnicity:								
Black.....	<sup>1</sup> -.621 (.069)	<sup>1</sup> -.153 (.017)	-.006 (.081)	-.002 (.020)	<sup>2</sup> .185 (.080)	<sup>2</sup> .046 (.020)	<sup>1</sup> .461 (.089)	<sup>1</sup> .113 (.021)
Hispanic.....	<sup>1</sup> -.595 (.078)	<sup>1</sup> -.147 (.019)	.120 (.095)	.030 (.024)	-.063 (.093)	-.016 (.023)	<sup>1</sup> .322 (.107)	<sup>1</sup> .080 (.026)
Family background:								
Mother's highest school grade completed.....	—	—	<sup>1</sup> .135 (.016)	<sup>1</sup> .034 (.004)	—	—	<sup>1</sup> .090 (.017)	<sup>1</sup> .022 (.004)
Father's highest school grade completed.....	—	—	<sup>1</sup> .123 (.014)	<sup>1</sup> .031 (.004)	—	—	<sup>1</sup> .082 (.015)	<sup>1</sup> .020 (.004)
Log(family income in 1996).....	—	—	<sup>1</sup> .292 (.047)	<sup>1</sup> .073 (.012)	—	—	<sup>1</sup> .203 (.047)	<sup>1</sup> .051 (.012)
Mother's age at first birth.....	—	—	<sup>1</sup> .042 (.007)	<sup>1</sup> .011 (.002)	—	—	<sup>1</sup> .027 (.008)	<sup>1</sup> .007 (.002)
Whether respondent lived with both parents at age 12 ...	—	—	<sup>1</sup> .572 (.070)	<sup>1</sup> .141 (.017)	—	—	<sup>1</sup> .394 (.076)	<sup>1</sup> .098 (.019)
Education:								
Grades in high school:								
Mostly D's and below.....	—	—	—	—	<sup>1</sup> -2.905 (.305)	<sup>1</sup> -.477 (.019)	<sup>1</sup> -2.545 (.310)	<sup>1</sup> -.454 (.025)
Half C's and half D's.....	—	—	—	—	<sup>1</sup> -2.357 (.194)	<sup>1</sup> -.448 (.021)	<sup>1</sup> -2.116 (.200)	<sup>1</sup> -.423 (.025)
Mostly C's.....	—	—	—	—	<sup>1</sup> -1.417 (.141)	<sup>1</sup> -.323 (.027)	<sup>1</sup> -1.243 (.146)	<sup>1</sup> -.290 (.030)
Half B's and half C's.....	—	—	—	—	<sup>1</sup> -1.119 (.125)	<sup>1</sup> -.269 (.028)	<sup>1</sup> -.943 (.132)	<sup>1</sup> -.229 (.030)
Mostly B's.....	—	—	—	—	<sup>1</sup> -.521 (.130)	<sup>1</sup> -.129 (.032)	<sup>1</sup> -.408 (.137)	<sup>1</sup> -.102 (.034)
Half A's and half B's.....	—	—	—	—	-.238 (.126)	-.060 (.032)	-.126 (.131)	-.031 (.033)
Math-language score on Armed Services Vocational Aptitude Battery (ASVAB).....	—	—	—	—	<sup>1</sup> .027 (.001)	<sup>1</sup> .007 (.000)	<sup>1</sup> .021 (.002)	<sup>1</sup> .005 (.000)

Sample size = 6,580

<sup>1</sup> Significant at the 0.01 level.

<sup>2</sup> Significant at the 0.05 level.

NOTE: Standard errors are in parentheses. Variables included in the esti-

mation, but not shown in the tables, are year of birth, whether the respondent lived in an urban area at age 12, and region of the country where the respondent lived at age 12. Data are weighted by sampling weights used in Round 1. Dash indicates covariate not included in specification.

estimations, both coefficient estimates from the relevant logit equation and the corresponding marginal-effect estimates are presented. In the first specification, being male, Black, or Hispanic reduces the probability of going to college by at least 10 percentage points. After family background is controlled for, the estimated effects of race and ethnicity are indistinguishable from zero. Once controls for high

school achievement are included, the indicator for Black becomes positive and significantly related to college attendance. With the full set of controls included in the estimation, the estimated effects of race increase further and indicate that Blacks and Hispanics are 11 percentage points and 8 percentage points more likely to attend college by age 20 than their white counterparts. Across

all four specifications, the estimates indicate that being male lowers the probability of attending college, although the estimated marginal effect falls by roughly 35 percent from specification 1 to specification 4. After the full set of regressors is controlled for, men are estimated to be 7 percentage points less likely than women to go to college.

The regression results show that youths from more advantaged family backgrounds are more likely to go to college. The probability of attending college by age 20 increases with the educational attainment of both the respondent's mother and the respondent's father. In the fourth specification, an additional grade attained by one's mother is associated with a 2.2-percentage-point increase in the probability of going to college and an additional grade attained by one's father is associated with a 2.0-percentage-point increase. A 1-percent increase in level of family income is associated with about a 5-percentage-point increase in the probability of attending college. In addition, the older the respondent's mother was at the time of her first birth, the more likely the respondent is to have attended college by age 20. Those respondents who lived with both of their parents at age 12 are 10 percentage points more likely to attend college, after measures of the youth's achievement during high school are included.

Not surprisingly, the likelihood of attending college is strongly related to high school outcomes. The chance that a respondent goes to college by age 20 increases with his or her high school grades. For instance, those who report having earned "mostly B's" in high school are about 10 percentage points less likely to go to college by age 20 than students who report having earned "mostly A's." For those who earn "mostly C's," the differential is greater: students who earn "mostly C's" in high school are 29 percentage points less likely to attend college than those with "mostly A's." In addition, higher scores on the math and language sections of the ASVAB are associated with a greater probability of going to college. Specifically, for every percentage point that one's ASVAB score increases, the probability of going to college increases by about 0.5 percentage point. For the average youth, a one-standard-deviation increase in ASVAB score (29.0 points) translates into more than a 14-percentage-point increase in the probability of going to college.

Table 5 presents estimates of marginal effects from a multinomial logit equation where attending a 2-year college and attending a 4-year college are separate categories. The results shown are consistent with those listed in table 4, but demonstrate in general that the estimated effects of the control variables are larger for 4-year college at-

tendance than for 2-year college attendance.

In the first specification, the impact of each independent variable is larger for the probability of going to a 4-year college than for the probability of going to a 2-year college. For example, men are 8 percentage points less likely to go to a 4-year college and 3 percentage points less likely to go to a 2-year college than women are. With the full set of controls, men are about equally less likely than women to attend a 2-year and a 4-year college, with estimated marginal effects of being male in the neighborhood of 3 percentage points to 4 percentage points. In contrast, the impact of being Hispanic is positive and significant for attending a 2-year college in every specification. When the probability of attending a 4-year college is estimated in the first and third specifications, the effect of being Hispanic is negative and significant. However, after controlling for family background, the effect of being Hispanic on the probability of attending a 4-year college is indistinguishable from zero.

Parental characteristics affect the decision to attend a 4-year college. As with the bivariate logit estimates, the probability of attending a 4-year college increases with the mother's education, the father's education, family income, the mother's age at first birth, and the family structure at age 12. The estimated marginal effects of family background characteristics are larger for 4-year schools than for 2-year schools. Moreover, none of the variables describing family background are statistically significant in explaining the decision to attend a 2-year college.

Low high school grades ("mostly D's or lower," "half C's and half D's") decrease the probability of going to either a 2-year or a 4-year college. In contrast, higher high school grades (earning "half A's and half B's" and "mostly B's"), compared with the omitted category of "mostly A's," are associated with a higher probability that one attends a 2-year college, and a lower probability that one attends a 4-year college, by age 20. The magnitude of the estimates of high school grades is essentially unchanged between specifications 3 and 4 when the controls for family background are added. Although ASVAB scores are significantly related to attending a 2-year college and attending a 4-year college, the estimated effects are quite small for 2-year college attendance (0.001), but significantly larger for 4-year college attendance (0.005).

*Completing the first year of college.* Table 6 presents estimates of whether a student who starts college at a 2-year institution is enrolled at the initial school for at least 12 months. Leaving a 2-year college less than a year after starting is unrelated to the sex and race of the student. Of



**Table 5. Estimates of whether one attends no college, a 2-year college, or a 4-year college by age 20, multinomial logit, marginal effects**

Variable	Specification 1		Specification 2		Specification 3		Specification 4	
	2-year college	4-year college	2-year college	4-year college	2-year college	4-year college	2-year college	4-year college
Male.....	<sup>1</sup> -0.029 (.011)	<sup>1</sup> -0.074 (.013)	<sup>1</sup> -0.034 (.012)	<sup>1</sup> -0.092 (.013)	<sup>1</sup> -0.035 (.013)	-0.012 (.013)	<sup>1</sup> -0.040 (.014)	<sup>2</sup> -0.028 (.012)
Race or ethnicity:								
Black.....	<sup>2</sup> -.030 (.013)	<sup>1</sup> -.121 (.014)	-.023 (.016)	.026 (.020)	<sup>2</sup> -.038 (.016)	<sup>1</sup> .090 (.019)	<sup>2</sup> -.036 (.018)	<sup>1</sup> .166 (.024)
Hispanic.....	<sup>2</sup> .038 (.016)	<sup>1</sup> -.182 (.014)	<sup>2</sup> .052 (.020)	<sup>2</sup> -.043 (.021)	<sup>2</sup> .045 (.019)	<sup>1</sup> -.067 (.017)	<sup>2</sup> .049 (.022)	.015 (.022)
Family background:								
Mother's highest school grade completed .....	—	—	-.001 (.003)	<sup>1</sup> .037 (.004)	—	—	.000 (.003)	<sup>1</sup> .022 (.003)
Father's highest school grade completed .....	—	—	.000 (.003)	<sup>1</sup> .030 (.003)	—	—	.003 (.003)	<sup>1</sup> .016 (.003)
Log(family income in 1996).....	—	—	-.003 (.009)	<sup>1</sup> .084 (.012)	—	—	-.002 (.010)	<sup>1</sup> .058 (.010)
Mother's age at first birth.....	—	—	.002 (.001)	<sup>1</sup> .008 (.002)	—	—	.003 (.002)	<sup>1</sup> .004 (.001)
Whether respondent lived with both parents at age 12.....	—	—	.016 (.015)	<sup>1</sup> .121 (.016)	—	—	.026 (.016)	<sup>1</sup> .066 (.015)
Education:								
Grades in high school:								
Mostly D's and below.....	—	—	—	—	<sup>1</sup> -.145 (.031)	<sup>1</sup> -.252 (.009)	<sup>1</sup> -.133 (.037)	<sup>1</sup> -.231 (.009)
Half C's and half D's .....	—	—	—	—	<sup>1</sup> -.103 (.029)	<sup>1</sup> -.246 (.011)	<sup>1</sup> -.098 (.033)	<sup>1</sup> -.223 (.011)
Mostly C's .....	—	—	—	—	.032 (.034)	<sup>1</sup> -.231 (.012)	.039 (.036)	<sup>1</sup> -.209 (.012)
Half B's and half C's.....	—	—	—	—	.043 (.031)	<sup>1</sup> -.208 (.015)	.049 (.033)	<sup>1</sup> -.179 (.015)
Mostly B's .....	—	—	—	—	<sup>2</sup> .078 (.034)	<sup>1</sup> -.116 (.015)	<sup>2</sup> .080 (.036)	<sup>1</sup> -.096 (.016)
Half A's and half B's .....	—	—	—	—	<sup>1</sup> .095 (.032)	<sup>1</sup> -.079 (.016)	<sup>1</sup> .101 (.033)	<sup>1</sup> -.060 (.017)
Math-language score on Armed Services Vocational Aptitude Battery (ASVAB).....	—	—	—	—	<sup>1</sup> .001 (.000)	<sup>1</sup> .006 (.000)	<sup>2</sup> .001 (.000)	<sup>1</sup> .005 (.000)

Sample size = 6,580

<sup>1</sup> Significant at the 0.01 level.

<sup>2</sup> Significant at the 0.05 level.

NOTE: Standard errors are in parentheses. Variables included in the esti-

mation, but not shown in the tables, are year of birth, whether the respondent lived in an urban area at age 12, and region of the country where the respondent lived at age 12. Data are weighted by sampling weights used in Round 1. Dash indicates covariate not included in specification.

the regressors included to control for family background, only family income and mother's age at first birth are significantly related to the decision to stay at the initial 2-year college, with increases in either raising the chance of remaining in school.

High school grades also are associated with the prob-

ability of remaining at a 2-year college a year after beginning there. The estimates show that, compared with grades of mostly A's, grades of half B's and half C's or lower decrease the probability of remaining enrolled at the school a year later by 15 percentage points to 30 percentage points. The specification that controls for basic

**Table 6. Estimates of whether one remains at a 2-year college for at least 12 months**

Variable	Specification 1		Specification 2		Specification 3		Specification 4	
	Coefficient estimate	Marginal effect	Coefficient estimate	Marginal effect	Coefficient estimate	Marginal effect	Coefficient estimate	Marginal effect
Male.....	-0.056 (.122)	-0.014 (.031)	-0.086 (.125)	-0.021 (.031)	0.047 (.127)	0.012 (.032)	0.024 (.130)	0.006 (.032)
Race or ethnicity:								
Black.....	-.095 (.156)	-.024 (.039)	.151 (.176)	.037 (.044)	.115 (.175)	.029 (.043)	.350 (.191)	.087 (.046)
Hispanic.....	-.110 (.160)	-.028 (.040)	-.108 (.183)	-.027 (.046)	-.005 (.167)	-.012 (.042)	-.003 (.190)	-.001 (.047)
Family background:								
Mother's highest school grade completed .....	—	—	-.060 (.030)	-.015 (.008)	—	—	-.056 (.031)	-.014 (.008)
Father's highest school grade completed .....	—	—	.005 (.029)	.001 (.007)	—	—	-.005 (.030)	-.001 (.007)
Log(family income in 1996).....	—	—	<sup>1</sup> .165 (.080)	<sup>1</sup> .041 (.020)	—	—	<sup>1</sup> .176 (.083)	<sup>1</sup> .044 (.021)
Mother's age at first birth.....	—	—	<sup>2</sup> .059 (.015)	<sup>2</sup> .015 (.040)	—	—	<sup>2</sup> .056 (.015)	<sup>2</sup> .014 (.004)
Whether respondent lived with both parents at age 12.....	—	—	-.030 (.141)	-.008 (.035)	—	—	-.079 (.144)	-.020 (.036)
Education:								
Grades in high school:								
Mostly D's and below.....	—	—	—	—	<sup>1</sup> -1.409 (.635)	<sup>2</sup> -.311 (.106)	<sup>1</sup> -1.454 (.667)	<sup>1</sup> -.318 (.109)
Half C's and half D's .....	—	—	—	—	<sup>1</sup> -1.092 (.403)	<sup>2</sup> -.255 (.080)	<sup>2</sup> -1.113 (.393)	<sup>2</sup> -.259 (.078)
Mostly C's .....	—	—	—	—	<sup>2</sup> -.793 (.300)	<sup>2</sup> -.193 (.069)	<sup>2</sup> -.837 (.299)	<sup>2</sup> -.203 (.068)
Half B's and half C's .....	—	—	—	—	<sup>1</sup> -.628 (.273)	<sup>1</sup> -.155 (.066)	<sup>1</sup> -.666 (.270)	<sup>1</sup> -.165 (.065)
Mostly B's .....	—	—	—	—	-.319 (.281)	-.080 (.070)	-.390 (.281)	-.097 (.069)
Half A's and half B's .....	—	—	—	—	-.143 (.267)	-.036 (.067)	-.144 (.264)	-.036 (.066)
Math-language score on Armed Services Vocational Aptitude Battery (ASVAB).....	—	—	—	—	.004 (.003)	.001 (.001)	.004 (.003)	.001 (.001)

Sample Size = 1,345

<sup>1</sup> Significant at the 0.05 level.

<sup>2</sup> Significant at the 0.01 level.

NOTE: Standard errors are in parentheses. Variables included in the esti-

mation, but not shown in the tables, are year of birth, whether the respondent lived in an urban area at age 12, and region of the country where the respondent lived at age 12. Data are weighted by sampling weights used in Round 1. Dash indicates covariate not included in specification.

demographic characteristics, family background, and high school grades indicates that ASVAB scores are *not* related to the probability of remaining at a 2-year college for at least 1 year.

Table 7 presents estimates of whether a student who

starts college at a 4-year institution stays at the initial school for at least 12 months. In contrast to table 6, which analyzes remaining at a 2-year college, table 7 indicates that race is significantly related to the probability of remaining at an initial 4-year college. (See specification 1.)

**Table 7. Estimates of whether one remains at a 4-year college for at least 12 months**

Variable	Specification 1		Specification 2		Specification 3		Specification 4	
	Estimate of coefficient	Marginal effect	Estimate of coefficient	Marginal effect	Estimate of coefficient	Marginal effect	Estimate of coefficient	Marginal effect
Male.....	-0.207 (.121)	-0.037 (.022)	<sup>1</sup> -0.265 (.123)	<sup>1</sup> -0.046 (.022)	-0.084 (.126)	-0.014 (.022)	-0.136 (.127)	-0.023 (.022)
Race or ethnicity:								
Black.....	<sup>2</sup> -.467 (.155)	<sup>2</sup> -.090 (.032)	-.195 (.184)	-.035 (.034)	-.104 (.167)	-.018 (.030)	.075 (.193)	.013 (.032)
Hispanic.....	<sup>1</sup> -.515 (.205)	<sup>1</sup> -.102 (.044)	-.325 (.228)	-.061 (.046)	-.288 (.200)	-.053 (.039)	-.187 (.218)	-.033 (.040)
Family background:								
Mother's highest school grade completed.....	—	—	.012 (.029)	.002 (.005)	—	—	.008 (.029)	.001 (.005)
Father's highest school grade completed.....	—	—	.024 (.027)	.004 (.005)	—	—	.007 (.027)	.001 (.005)
Log(family income in 1996).....	—	—	<sup>1</sup> .218 (.092)	<sup>1</sup> .038 (.016)	—	—	<sup>1</sup> .217 (.095)	<sup>1</sup> .037 (.016)
Mother's age at first birth.....	—	—	.015 (.015)	.003 (.003)	—	—	.014 (.015)	.002 (.002)
Whether respondent lived with both parents at age 12.....	—	—	<sup>1</sup> .375 (.145)	<sup>1</sup> .067 (.026)	—	—	<sup>1</sup> .312 (.145)	<sup>1</sup> .054 (.026)
Education:								
Grades in high school:								
Mostly D's and below.....	—	—	—	—	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )	( <sup>3</sup> )
Half C's and half D's.....	—	—	—	—	<sup>2</sup> -.2408 (.847)	<sup>2</sup> -.538 (.156)	<sup>2</sup> -.2423 (.897)	<sup>1</sup> -.540 (.166)
Mostly C's.....	—	—	—	—	<sup>2</sup> -.1477 (.325)	<sup>2</sup> -.329 (.079)	<sup>2</sup> -.1499 (.338)	<sup>2</sup> -.332 (.082)
Half B's and half C's.....	—	—	—	—	<sup>2</sup> -.1117 (.226)	<sup>2</sup> -.232 (.053)	<sup>2</sup> -.1078 (.230)	<sup>2</sup> -.221 (.053)
Mostly B's.....	—	—	—	—	<sup>2</sup> -.775 (.198)	<sup>2</sup> -.150 (.042)	<sup>2</sup> -.763 (.203)	<sup>2</sup> -.146 (.042)
Half A's and Half B's.....	—	—	—	—	<sup>2</sup> -.625 (.177)	<sup>2</sup> -.113 (.033)	<sup>2</sup> -.621 (.179)	<sup>2</sup> -.111 (.033)
Math-language score on Armed Services Vocational Aptitude Battery (ASVAB).....	—	—	—	—	.005 (.003)	.001 (.001)	.003 (.003)	.001 (.001)
Sample size = 1,808								
<sup>1</sup> Significant at the 0.05 level.			NOTE: Standard errors are in parentheses. Variables included in the estimation, but not shown in the tables, are year of birth, whether the respondent lived in an urban area at age 12, and region of the country where the respondent lived at age 12. Data are weighted by sampling weights used in Round 1. Dash indicates covariate not included in specification.					
<sup>2</sup> Significant at the 0.01 level.								
<sup>3</sup> Sample size too small for publication standards.								

Although the standard errors in the two tables are comparable, the estimates of the marginal effects are at least 3 times larger in table 7 than in table 6. In particular, Black and Hispanic students are, respectively, 10 percentage points and 9 percentage points less likely to be at the 4-year college a year later. These estimated marginal effects of being Black and of being Hispanic fall by more than 80 percent between specification 1 and specification 4 and

can no longer be distinguished from zero after the first specification.

As is the case with attrition from 2-year colleges, most of the variables describing family background are unrelated to remaining at a 4-year college a year later. The two exceptions are family income in 1996 and living with both parents at age 12. The third and fourth specifications show that lower high school grades are

associated with a lower probability of being enrolled at the 4-year college a year after starting. For 4-year college attrition, any report of high school grades lower than mostly A's is associated with a lower chance of being enrolled a year after entering. The estimated effects of grades on completing a first year at a 4-year college are larger and have smaller standard errors, compared with the effect of high school grades on completing the first year at a 2-year college. By contrast, a student's ASVAB score has no significant effect on whether he or she completes a year of college. In other words, whereas ASVAB scores are associated with the *decision* to go to college, they are unrelated to whether one *completes* the first year of college.

COMPARISONS OF MEAN CHARACTERISTICS across groups, as well as regression results, indicate that college decisions are related to observable characteristics of respondents. As many recent studies have shown, compared with their female counterparts, males are less likely to go to college and less likely to go to 4-year colleges. In addi-

tion, respondents from more advantaged backgrounds and those who performed better in high school are more likely to go to college and to start college at a 4-year school.

These estimates indicate that the basic demographic characteristics of sex, race, and ethnicity, in addition to family background characteristics and scores on the ASVAB, affect the decision to start college, but are unrelated to the probability of finishing one's first year. By contrast, high school grades explain both the decision to go to college and the decision to stay in college during one's first year.

Admittedly, the dependent variables examined here do not measure the concept of most interest: who goes to college and who completes college. These outcomes are not yet observed because the youngest NLSY97 respondents are not yet old enough to have completed college and in some cases will not even have begun college. However, who attends college by age 20 is a good proxy for who goes to college, based on both the older birth years in the NLSY97 and the results of past research. Similarly, who stays in college for a year is a good indication of who will go on to complete the degree. □

## Notes

ACKNOWLEDGMENT: I thank Chuck Pierret and Donna Rothstein for helpful comments.

<sup>1</sup> Jennifer Cheeseman Day and Eric C. Newburger, "The Big Payoff: Educational Attainment and Synthetic Estimates of Work-Life Earnings," *Current Populations Reports* P23-210 (U. S. Census Bureau, 2002).

<sup>2</sup> *College for All: Is There Too Much Emphasis on Getting a 4-Year College Degree?* (U.S. Department of Education, January 1999).

<sup>3</sup> *Ibid.*; see also Laura J. Horn, *Stopouts or Stayouts? Undergraduates Who Leave College in Their First Year* (U.S. Department of Education,

National Center for Education Statistics, 1998).

<sup>4</sup> Horn, *Stopouts or Stayouts?*

<sup>5</sup> Stephen V. Cameron and James J. Heckman, "The Dynamics of Educational Attainment for Black, Hispanic, and White Males," *Journal of Political Economy*, June 2001, pp. 455-99, note that, in the NLSY79, a data set composed of individuals born from 1957 to 1964, most college entry occurs immediately after the completion of high school: "Among high school graduates 82% of whites and Hispanics and 73% of blacks who ever enter college do so within a year of high school graduation" (p. 42).

## Competing in a global economy

For many years, it has been noted that American teenagers do not generally perform as well on standardized tests as teenagers in some other countries. But how does the intellectual performance of young American adults in the workforce compare with that of their counterparts in other nations? In “Can Americans Compete in a Global Economy?” (*Economic Letter*, Federal Reserve Bank of San Francisco, July 18, 2008), Elizabeth Cascio delineates research on this topic that she conducted along with Damon Clark and Nora Gordon. Their research utilized data from the International Adult Literacy Survey (IALS), a 1990s study of the intellectual performance of people ages 16–17 and 26–30.

The questions on the IALS were intended to measure “general skills” and “literacy,” as opposed to occupation-specific knowledge. On a one-to-five scale, respondents who attained a score of four or five were deemed “highly skilled.” Out of a group of 13 developed countries, the United States had a smaller percentage of highly skilled 16- to 17-year olds than any other country in the group, with only 4.7 percent achieving a score of four or five. This contrasts strongly with Sweden, the highest ranking country, where more than 35 percent of respondents attained at least level-four proficiency.

However, 23 percent of American adults ages 26–30 scored a four or five, giving the United States a rank of 7 out of 13 (in the middle of the pack) in this age category. Because most American students are not placed on a university or vocational “track” early on, and because of the United States’ relatively large number of private universities in addition to its public universities, explains Cascio, Ameri-

can students have greater access to higher education than students in most other countries.

To corroborate this theory, Cascio, Clark, and Gordon conducted a correlation analysis, the results of which suggest that a country’s percentage of highly skilled people rises when more of the nation’s individuals complete a bachelor’s degree. Nevertheless, it is possible that U.S. adults ages 26–30 will not maintain their solid ranking in the distribution of skills throughout developed countries, because several countries invested more money in public funding for universities during the 1980s and 1990s and have since seen their university graduation rates rise to levels comparable to that of the United States.

## International price differences

Prices for the same goods can differ markedly from country to country, and prices are generally positively related to income—that is, the price of a basket of goods is higher in countries with greater per capita income. In seeking to understand this relationship, economists have tended to focus on differences in prices among countries for either tradable goods (goods that are easily or frequently traded) or nontradable goods (goods that are too costly to trade frequently among countries). One of the leading theories suggests that countries wanting to raise their per capita income should concentrate on producing tradable goods more efficiently. But in “Why Are Goods So Cheap in Some Countries?” (*Business Review*, Federal Reserve Bank of Philadelphia, second quarter 2008), economists George Alessandria and Joseph Kaboski take

a more balanced approach, suggesting a model of economic growth in which workers become more efficient at producing all goods, both tradable and nontradable, in order to increase their country’s per capita income.

Alessandria and Kaboski analyze some of the evidence that large price differences exist across countries for a wide basket of goods. Using data from the International Comparison Program and the Penn World Tables (international statistical programs sponsored by the World Bank and the Organization for Economic Cooperation and Development), they demonstrate that a clear positive relationship exists between prices in a given country and the country’s per capita income—for all goods and for tradable goods. Part of these differences can be attributed to the higher costs of retail and wholesale distribution in the wealthier countries. But even when the authors adjust the data to account for these differences, they find that consumers in the wealthier countries still pay more for the same set of goods. They conclude that exporters charge higher prices in the higher income countries, especially for consumer goods, regardless of their distribution and other costs.

According to Alessandria and Kaboski, traditional models of price differences between countries have focused on the differences in prices for nontradable goods. As a result, such models tend to attribute differences in income among countries to different levels of productivity in the tradables sectors of respective countries. This article, however, presents evidence that large price differences exist in the tradables sector as well, which suggests that policymakers in less wealthy countries should enact policies designed to improve productivity in all areas of the economy, not just in the tradables sector.

## The deregulation transformation

*Transportation Labor Issues and Regulatory Reform*. Edited by James Peoples and Wayne K. Talley, San Diego, CA, Elsevier, 2004, 234 pp., \$97.95 /hardback.

Deregulation's effect on compensation and working conditions is still a subject of debate, largely because of difficulties in data analysis. Beyond simply increasing competition, the industry deregulation that began in the late 1970s would have an impact on transportation employees for the next 30 years. In *Transportation Labor Issues and Regulatory Reform*, James Peoples and Wayne Talley present nine studies that try to evaluate the impact of deregulation in the face of technological advances and structural change.

This is the tenth volume in a series on research in transportation economics. Though a number of years have passed since the first volume was first published, the editors have provided a valuable resource that presents a wide range of analyses both in terms of scope and depth. With much historical information, this book provides a rich backdrop to understanding all the forces that have shaped the recent evolution of the transportation sector.

In the first study, a researcher examines BLS workplace injury data in the railroad, trucking, and commercial aviation industries. Noting limitations inherent in the available data, the author also cites a major obstacle caused by SIC coding changes: "The haphazard growth of the courier business over the past 30 years, with some major firms developing from an aviation base and some from a trucking

base, led to a major continuity break in 1996." Beyond an analysis of published BLS numbers, this study examines alternative measures of safety conditions, such as injuries per unit of output. These measures are viewed against various determinations of productivity. Among the findings are that the railroad rate of injuries per ton mile was less in the 1990s than in the 1970s. And, when the other transportation industries are compared with manufacturing, the data suggest that "safety outcomes have not worsened." The author concludes, "Only in railroads does there appear to be any linkage between deregulation and workplace safety." The safety picture in that industry had already started deteriorating in the 1960s, explains the author. Deregulation led to a "financial renaissance" of sorts, improving productivity and working conditions to an extent.

"Determinants of driver safety are not limited to driver compensation, driver attributes and occupational demands of drivers," claim the authors of the second study in this collection. They add another factor—financial performance of trucking firms. In addition to BLS data, this study uses data from the Signpost National Survey of Driver Wages, the Department of Transportation (DOT) Motor Carrier Management Information System, and Motor Carrier Financial and Operating Statistics (MCFOS). Although they found no systematic differences in crash rates based on financial performance, the authors did find a relationship between safety and small-firm liquidity.

In determining the impact of technology in the motor freight industry, the authors of the third study describe the work life of an over-the-road driver. The authors use data

from the Sloan Foundation Trucking Industry Program (TIP) Driver Survey: "We investigate these possibilities by examining the relationship between these factors and effective mileage rates, annual miles, and apropos of work intensification, hours worked per week and violations of the hours of service regulations." Included in this analysis is information about variation in wages, work hours, fatigue, turnover and quit rates, as well as union affiliation. The overall conclusion of this study is that technology has improved productivity and earnings but intensified and lengthened the workday.

How did airlines try to beat the competition in the face of deregulation? To lower costs, they increased employment of part-time workers, increased workloads, and increased hours, according to a different study in this collection. These moves helped delay significant wage declines until the 1990s—quite a few years after deregulation began in the industry in 1978. This study summarizes key air transportation economic indicators, and it supplies a lengthy list of carrier bankruptcies. With an in-depth analysis of pilots, flight attendants, and mechanics, the study demonstrates that "Deregulation has not affected occupational employment equally." The authors also point out some of the less-obvious effects of deregulation; for example, layoffs led to cockpit crew assignment variation, a factor that can increase pilot error. The authors additionally examine productivity measures, including revenue passenger miles (RPM) per employee (the number of miles flown by revenue generating passengers divided by the number of employees). In discussing working conditions, the study authors note that air trans-

portation has always had “fairly high injury rates relative to manufacturing, but, in recent years, airline rates have risen over time to relatively high levels while manufacturing has been steadily declining.” The authors note that increased productivity has come at a price of safety, but the findings leave a number of questions. They conclude: “In many ways, the seas of deregulation still appear as uncharted today as they did 25 years ago.”

Another study describes how technologies helped redistribute employment opportunities among occupations and among industries. This change has implications for productivity measurement. Looking at occupational employment, the author notes a decline in truckdrivers employed by manufacturing and retail trade and an increase in air transportation and business services (third party logistics). This shift leads the author to suggest, “It may be more appropriate to consider productivity in transportation not in industry-specific terms but in the context of supply chain performance.”

Did deregulation create a stronger link between compensation and firm performance? In an analysis of the earnings of trucking executives,

researchers use MCFOS data to test theoretical models. “The responsiveness of pay to profitability and to firm size remained as it was before deregulation.” Nevertheless, the authors note an increase in executives’ earnings alongside a “steady slide in drivers’ earnings.” A separate analysis of low- to mid-level managers’ pay finds no significant change in earnings resulting from deregulation. The authors of that study hypothesize that managerial quality has increased. Though the data also suggest the improvement of some quality measures, such as education and experience, this reviewer was left asking, what about other measures, such as employee turnover or staff sentiment?

In the final study of this volume, the editors examine truckdriver earnings and employment in port cities. To help the reader understand why shipping deregulation stimulated container cargo growth at port cities, Peoples and Talley provide a concise history of modern cargo transport. In 1955, with the creation of SeaLand came the first international voyage of a container ship: “Containerization radically altered cargo handling tasks as capital was substituted for labor,” explain the editors. Dock

workers, as a result, faced reduced demand. Deregulation allowed for intermodal, rather than just port-to-port, rates, and it increased the demand for intermodal truckdrivers. Thus, deregulation helped stimulate growth in port cities by realizing the positives of containerization—efficiencies, lower rates, and quality improvements: “Shipping deregulation has not only led to an increase in the wages of owner-operators at port cities, but also to an increase in their employment at these cities.”

This collection demonstrates that capturing the effect of deregulation on airline transportation is a much different challenge than capturing its effect on the trucking or maritime industries; logistics, management structures, technologies, productivity measurements, and major occupations vary significantly among the transportation industries. Despite this diversity, labor issues, with compensation and working conditions first and foremost, have provided the common fuel for the deregulation debate.

—Bruce Bergman  
New York Office  
Bureau of Labor Statistics

**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>



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# 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 ( $\$3/150 \times 100 = \$2$ ). 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/](http://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/](http://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/](http://www.bls.gov/lpc/)

For additional information on international comparisons data, see *Internation-*

*tional 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](http://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](http://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** information 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 supplemental 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 combined 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 conversion 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/](http://www.bls.gov/ect/)

ADDITIONAL INFORMATION on the Employment Cost Index is available at [www.bls.gov/ncs/ect/home.htm](http://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](http://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](http://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 measured 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 manu-

factures, 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, con-

tact 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 compensa-

tion 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 organization 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](http://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](http://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](http://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](http://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](mailto: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.

### 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 King-

dom are essentially identical to their indexes of industrial production.

For the 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 fixed-year weights that are periodically updated.

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). For the United States and Canada, it is defined according to the North American Industry Classification System (NAICS 97).

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.

**Unit labor costs** are defined as the costs 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

In general, the measures relate to total manufacturing as defined by the International Standard Industrial Classification. However, the measures for France include parts of mining as well.

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 these series, go to [www.bls.gov/news.release/prod4.toc.htm](http://www.bls.gov/news.release/prod4.toc.htm) or contact the Division of Foreign Labor Statistics: (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/](http://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/](http://www.bls.gov/iif/)

**1. Labor market indicators**

Selected indicators	2006	2007	2006			2007				2008	
			II	III	IV	I	II	III	IV	I	II
<b>Employment data</b>											
Employment status of the civilian noninstitutional population (household survey): <sup>1</sup>											
Labor force participation rate.....	66.2	66.0	66.2	66.2	66.3	66.2	66.0	66.0	66.0	66.0	66.1
Employment-population ratio.....	63.1	63.0	63.1	63.1	63.4	63.2	63.0	62.9	62.8	62.7	62.6
Unemployment rate.....	4.6	4.6	4.7	4.7	4.4	4.5	4.5	4.7	4.8	4.9	5.3
Men.....	4.6	4.7	4.7	4.6	4.5	4.6	4.6	4.8	4.9	5.0	5.5
16 to 24 years.....	11.2	11.6	11.2	11.4	11.0	10.8	11.5	11.8	12.2	12.7	13.3
25 years and older.....	3.5	3.6	3.6	3.5	3.3	3.6	3.5	3.6	3.7	3.8	4.2
Women.....	4.6	4.5	4.6	4.7	4.4	4.4	4.4	4.6	4.7	4.8	5.1
16 to 24 years.....	9.7	9.4	9.3	10.1	9.7	9.0	9.0	9.8	9.9	10.0	11.0
25 years and older.....	3.7	3.6	3.8	3.8	3.5	3.5	3.6	3.7	3.8	3.9	4.1
Employment, nonfarm (payroll data), in thousands: <sup>1</sup>											
Total nonfarm.....	136,086	137,626	135,910	136,528	136,982	137,310	137,625	137,837	138,078	137,831	137,640
Total private.....	114,113	115,423	113,996	114,472	114,899	115,167	115,423	115,610	115,759	115,454	115,181
Goods-producing.....	22,531	22,221	22,570	22,564	22,436	22,362	22,267	22,138	21,976	21,737	21,505
Manufacturing.....	14,155	13,883	14,200	14,138	14,033	13,953	13,890	13,822	13,772	13,644	13,537
Service-providing.....	113,556	115,405	113,340	113,964	114,546	114,948	115,358	115,699	116,102	116,094	116,135
Average hours:											
Total private.....	33.9	33.8	33.9	33.8	33.9	33.9	33.9	33.8	33.8	33.8	33.7
Manufacturing.....	41.1	41.2	41.2	41.3	41.1	41.2	41.4	41.4	41.1	41.2	40.8
Overtime.....	4.4	4.2	4.5	4.4	4.2	4.1	4.1	4.2	4.0	4.0	3.9
<b>Employment Cost Index<sup>1, 2, 3</sup></b>											
Total compensation:											
Civilian nonfarm <sup>4</sup> .....	3.3	3.3	.9	1.1	.6	.9	.8	1.0	.6	.8	.7
Private nonfarm.....	3.2	3.0	.9	.8	.7	.8	.9	.8	.6	.9	.7
Goods-producing <sup>5</sup> .....	2.5	2.4	1.0	.7	.5	.4	1.0	.5	.6	1.0	.7
Service-providing <sup>5</sup> .....	3.4	3.2	.8	.9	.7	.9	.9	.9	.6	.9	.7
State and local government.....	4.1	4.1	.4	2.3	.9	1.0	.6	1.8	.7	.5	.5
Workers by bargaining status (private nonfarm):											
Union.....	3.0	2.0	1.3	.6	.6	-.3	1.2	.5	.7	.8	.8
Nonunion.....	3.2	3.2	.8	.9	.6	1.0	.9	.8	.6	.9	.7

<sup>1</sup> Quarterly data seasonally adjusted.

<sup>2</sup> Annual changes are December-to-December changes. Quarterly changes are calculated using the last month of each quarter.

<sup>3</sup> 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.

<sup>4</sup> Excludes Federal and private household workers.

<sup>5</sup> 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	
			II	III	IV	I	II	III	IV	I	II
<b>Compensation data<sup>1,2,3</sup></b>											
Employment Cost Index—compensation:											
Civilian nonfarm.....	3.3	3.3	0.9	1.1	0.6	0.9	0.8	1.0	0.6	0.8	0.7
Private nonfarm.....	3.2	3.0	.9	.8	.7	.8	.9	.8	.6	.9	.7
Employment Cost Index—wages and salaries:											
Civilian nonfarm.....	3.2	3.4	.8	1.1	.6	1.1	.7	1.0	.7	.8	.7
Private nonfarm.....	3.2	3.3	1.0	.8	.7	1.1	.8	.9	.6	.9	.7
<b>Price data<sup>1</sup></b>											
Consumer Price Index (All Urban Consumers): All Items.....	3.2	2.8	1.6	.0	-.5	1.8	1.5	.1	.7	1.7	2.5
Producer Price Index:											
Finished goods.....	3.0	3.9	1.7	-.9	.1	2.2	1.9	.1	1.8	2.9	4.0
Finished consumer goods.....	3.5	4.5	2.1	-1.3	-.2	2.8	2.5	.2	1.9	3.5	5.2
Capital equipment.....	1.6	1.8	.2	.0	1.3	.3	-.1	-.1	1.2	.9	.4
Intermediate materials, supplies, and components.....	6.5	4.0	3.0	-.4	-.8	1.5	3.2	.1	2.0	4.8	7.0
Crude materials.....	1.4	12.2	1.8	1.2	4.0	5.7	3.8	-2.4	11.9	16.0	14.9
<b>Productivity data<sup>4</sup></b>											
Output per hour of all persons:											
Business sector.....	1.0	1.6	.8	-1.5	1.2	.2	3.6	6.4	.9	2.2	2.3
Nonfarm business sector.....	1.0	1.6	.8	-1.6	1.8	.7	2.2	6.0	1.8	2.6	2.2
Nonfinancial corporations <sup>5</sup> .....	1.3	-	-1.8	3.1	1.3	.7	2.1	2.9	.9	1.0	-

<sup>1</sup> 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.

<sup>2</sup> Excludes Federal and private household workers.

<sup>3</sup> 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.

<sup>4</sup> 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.

<sup>5</sup> Output per hour of all employees.

## 3. Alternative measures of wage and compensation changes

Components	Quarterly change					Four quarters ending—					
	2007			2008		2007			2008		
	II	III	IV	I	II	II	III	IV	I	II	
Average hourly compensation: <sup>1</sup>											
All persons, business sector.....	1.9	3.6	4.4	5.0	3.8	4.4	4.8	3.7	3.7	4.2	
All persons, nonfarm business sector.....	.8	3.3	5.4	5.2	3.6	4.2	4.6	3.6	3.6	4.3	
Employment Cost Index—compensation: <sup>2</sup>											
Civilian nonfarm <sup>3</sup> .....	.8	1.0	.6	.8	.7	3.3	3.3	3.3	3.3	3.1	
Private nonfarm.....	.9	.8	.6	.9	.7	3.1	3.1	3.0	3.2	3.0	
Union.....	1.2	.5	.7	.8	.8	2.1	2.0	2.0	3.1	2.7	
Nonunion.....	.9	.8	.6	.9	.7	3.3	3.2	3.2	3.2	3.0	
State and local government.....	.6	1.8	.7	.5	.5	4.8	4.3	4.1	3.6	3.5	
Employment Cost Index—wages and salaries: <sup>2</sup>											
Civilian nonfarm <sup>3</sup> .....	.7	1.0	.7	.8	.7	3.4	3.3	3.4	3.2	3.2	
Private nonfarm.....	.8	.9	.6	.9	.7	3.3	3.4	3.3	3.2	3.1	
Union.....	.9	.7	.3	.8	1.1	2.5	2.7	2.3	2.6	2.9	
Nonunion.....	.8	.9	.7	.9	.7	3.4	3.4	3.5	3.3	3.2	
State and local government.....	.5	1.7	.7	.6	.5	3.8	3.5	3.5	3.5	3.4	

<sup>1</sup> Seasonally adjusted. "Quarterly average" is percent change from a quarter ago, at an annual rate.

<sup>2</sup> 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.

<sup>3</sup> Excludes Federal and private household workers.





#### 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	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
<b>Hispanic or Latino ethnicity</b>															
Civilian noninstitutional population <sup>1</sup> .....	30,103	31,383	31,329	31,423	31,520	31,617	31,714	31,809	31,903	31,643	31,732	31,820	31,911	31,998	32,087
Civilian labor force.....	20,694	21,602	21,460	21,613	21,781	21,872	21,778	21,872	21,888	21,698	21,755	21,775	21,917	22,102	22,131
Participation rate.....	68.7	68.8	68.5	68.8	69.1	69.2	68.7	68.8	68.6	68.6	68.6	68.4	68.7	69.1	69.0
Employed.....	19,613	20,382	20,245	20,345	20,578	20,619	20,554	20,623	20,517	20,320	20,401	20,269	20,404	20,573	20,420
Employment-population ratio <sup>2</sup> .....	65.2	64.9	64.6	64.7	65.3	65.2	64.8	64.8	64.3	64.2	64.3	63.7	63.9	64.3	63.6
Unemployed.....	1,081	1,220	1,216	1,269	1,204	1,253	1,224	1,249	1,371	1,378	1,354	1,507	1,512	1,529	1,711
Unemployment rate.....	5.2	5.6	5.7	5.9	5.5	5.7	5.6	5.7	6.3	6.3	6.2	6.9	6.9	6.9	7.7
Not in the labor force.....	9,409	9,781	9,869	9,809	9,738	9,745	9,936	9,938	10,016	9,946	9,977	10,045	9,994	9,896	9,956

<sup>1</sup> The population figures are not seasonally adjusted.

<sup>2</sup> Civilian employment as a percent of the civilian noninstitutional population.

<sup>3</sup> 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	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
<b>Characteristic</b>															
Employed, 16 years and older..	144,427	146,047	146,087	146,045	145,753	146,260	146,016	146,647	146,211	146,248	145,993	145,969	146,331	146,046	145,891
Men.....	77,502	78,254	78,243	78,237	78,066	78,229	78,177	78,604	78,260	78,157	78,113	77,948	78,038	77,954	77,794
Women.....	66,925	67,792	67,845	67,808	67,687	68,030	67,838	68,043	67,951	68,091	67,880	68,021	68,293	68,092	68,097
Married men, spouse present.....	45,700	46,314	46,448	46,307	46,193	46,235	46,189	46,339	46,213	46,063	46,136	45,961	45,964	45,862	45,911
Married women, spouse present.....	35,272	35,832	36,111	35,938	35,794	35,712	35,449	35,689	35,565	35,536	35,648	35,749	36,177	36,171	36,270
<b>Persons at work part time<sup>1</sup></b>															
All industries:															
Part time for economic reasons.....	4,162	4,401	4,311	4,332	4,517	4,499	4,401	4,513	4,665	4,769	4,884	4,914	5,220	5,233	5,416
Slack work or business conditions.....	2,658	2,877	2,803	2,751	2,955	2,991	2,788	3,008	3,174	3,247	3,291	3,323	3,558	3,595	3,816
Could only find part-time work.....	1,189	1,210	1,197	1,210	1,175	1,166	1,215	1,223	1,236	1,163	1,222	1,362	1,323	1,281	1,336
Part time for noneconomic reasons.....	19,591	19,756	20,076	19,957	19,779	19,812	19,337	19,539	19,526	19,613	19,348	19,409	19,809	19,428	19,496
Nonagricultural industries:															
Part time for economic reasons.....	4,071	4,317	4,210	4,259	4,466	4,397	4,302	4,453	4,577	4,677	4,790	4,797	5,125	5,164	5,308
Slack work or business conditions.....	2,596	2,827	2,736	2,711	2,916	2,922	2,745	2,981	3,120	3,174	3,231	3,238	3,513	3,531	3,744
Could only find part-time work.....	1,178	1,199	1,198	1,205	1,152	1,153	1,207	1,205	1,219	1,149	1,216	1,354	1,331	1,288	1,328
Part time for noneconomic reasons.....	19,237	19,419	19,734	19,569	19,469	19,451	19,157	19,224	19,225	19,296	19,019	19,072	19,456	19,047	19,106

<sup>1</sup> 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	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
<b>Characteristic</b>															
Total, 16 years and older.....	4.6	4.6	4.6	4.7	4.7	4.7	4.8	4.7	5.0	4.9	4.8	5.1	5.0	5.5	5.5
Both sexes, 16 to 19 years.....	15.4	15.7	16.0	15.3	16.2	16.0	15.7	16.4	17.1	18.0	16.6	15.8	15.4	18.7	18.1
Men, 20 years and older.....	4.0	4.1	4.1	4.2	4.1	4.3	4.3	4.1	4.4	4.4	4.3	4.6	4.6	4.9	5.1
Women, 20 years and older.....	4.1	4.0	3.9	4.1	4.1	4.1	4.1	4.1	4.4	4.2	4.2	4.6	4.3	4.8	4.7
White, total <sup>1</sup> .....	4.0	4.1	4.1	4.2	4.2	4.2	4.2	4.2	4.4	4.4	4.3	4.5	4.4	4.9	4.9
Both sexes, 16 to 19 years.....	13.2	13.9	14.2	13.8	14.4	14.3	14.0	14.7	14.4	15.6	14.4	13.2	13.8	16.4	16.6
Men, 16 to 19 years.....	14.6	15.7	16.3	15.5	16.5	16.4	15.9	17.8	16.8	19.0	17.1	14.7	15.2	17.7	17.8
Women, 16 to 19 years.....	11.7	12.1	12.0	12.0	12.2	12.2	12.0	11.8	12.1	12.3	11.8	11.7	12.4	14.9	15.3
Men, 20 years and older.....	3.5	3.7	3.6	3.8	3.8	3.9	3.8	3.7	3.9	3.9	3.9	4.1	4.1	4.4	4.5
Women, 20 years and older.....	3.6	3.6	3.5	3.6	3.7	3.5	3.6	3.7	4.0	3.8	3.8	4.1	3.7	4.1	4.2
Black or African American, total <sup>1</sup> .....	8.9	8.3	8.4	8.1	7.7	8.2	8.5	8.4	9.0	9.2	8.3	9.0	8.6	9.7	9.2
Both sexes, 16 to 19 years.....	29.1	29.4	31.0	27.0	31.2	28.9	27.9	29.7	34.7	35.7	31.7	31.3	24.5	32.3	29.6
Men, 16 to 19 years.....	32.7	33.8	33.5	31.1	33.2	33.9	36.0	34.6	39.5	41.3	32.6	38.9	27.9	40.1	35.5
Women, 16 to 19 years.....	25.9	25.3	28.7	23.5	29.4	24.2	20.1	24.9	30.1	28.5	30.9	25.4	21.9	25.2	23.9
Men, 20 years and older.....	8.3	7.9	8.3	7.6	6.8	7.5	8.2	7.9	8.4	8.3	7.9	8.4	8.4	8.9	9.3
Women, 20 years and older.....	7.5	6.7	6.4	6.9	6.5	7.1	7.1	7.0	7.0	7.3	6.5	7.5	7.4	8.2	7.4
Hispanic or Latino ethnicity.....	5.2	5.6	5.7	5.9	5.5	5.7	5.6	5.7	6.3	6.3	6.2	6.9	6.9	6.9	7.7
Married men, spouse present.....	2.4	2.5	2.4	2.7	2.5	2.5	2.6	2.6	2.7	2.7	2.7	2.8	2.8	2.9	3.0
Married women, spouse present.....	2.9	2.8	2.7	2.9	3.1	2.9	2.9	3.0	3.1	3.1	3.1	3.3	3.0	3.1	3.3
Full-time workers.....	4.5	4.6	4.5	4.6	4.6	4.7	4.7	4.6	4.9	4.8	4.8	5.0	5.0	5.5	5.5
Part-time workers.....	5.1	4.9	4.7	5.1	4.9	4.7	5.0	5.0	5.6	5.4	5.0	5.3	4.9	5.5	5.4
<b>Educational attainment<sup>2</sup></b>															
Less than a high school diploma.....	6.8	7.1	6.8	7.2	6.7	7.5	7.4	7.6	7.6	7.7	7.3	8.2	7.8	8.3	8.7
High school graduates, no college <sup>3</sup> .....	4.3	4.4	4.1	4.5	4.4	4.6	4.6	4.5	4.7	4.6	4.7	5.1	5.0	5.2	5.1
Some college or associate degree.....	3.6	3.6	3.5	3.6	3.7	3.4	3.5	3.3	3.7	3.6	3.7	3.8	3.9	4.3	4.2
Bachelor's degree and higher <sup>4</sup> .....	2.0	2.0	2.0	2.1	2.1	2.0	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.2	2.3

<sup>1</sup> 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.

<sup>2</sup> 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	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
Less than 5 weeks.....	2,614	2,542	2,505	2,496	2,610	2,537	2,508	2,633	2,793	2,634	2,639	2,767	2,484	3,244	2,712
5 to 14 weeks.....	2,121	2,232	2,140	2,220	2,201	2,330	2,454	2,157	2,330	2,396	2,396	2,525	2,495	2,469	2,999
15 weeks and over.....	2,266	2,303	2,296	2,402	2,375	2,392	2,367	2,398	2,520	2,503	2,377	2,400	2,626	2,773	2,916
15 to 26 weeks.....	1,031	1,061	1,136	1,091	1,124	1,112	1,052	1,014	1,182	1,124	1,079	1,118	1,272	1,223	1,328
27 weeks and over.....	1,235	1,243	1,159	1,311	1,252	1,280	1,315	1,384	1,338	1,380	1,299	1,282	1,353	1,550	1,587
Mean duration, in weeks.....	16.8	16.8	16.8	17.3	16.9	16.6	17.0	17.2	16.6	17.5	16.8	16.2	16.9	16.6	17.5
Median duration, in weeks.....	8.3	8.5	8.3	8.9	8.6	8.9	8.7	8.7	8.4	8.8	8.4	8.1	9.3	8.3	10.0

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	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
Job losers <sup>1</sup> .....	3,321	3,515	3,418	3,629	3,632	3,622	3,731	3,609	3,857	3,796	3,854	4,154	4,014	4,282	4,370
On temporary layoff.....	921	976	862	983	981	963	1,064	979	975	1,040	971	1,056	1,099	1,113	1,077
Not on temporary layoff.....	2,400	2,539	2,555	2,646	2,652	2,660	2,668	2,630	2,882	2,756	2,883	3,098	2,915	3,169	3,292
Job leavers.....	827	793	810	823	794	839	790	783	798	830	769	781	850	870	833
Reentrants.....	2,237	2,142	2,125	2,082	2,076	2,154	2,103	2,160	2,343	2,201	2,112	2,117	2,134	2,460	2,498
New entrants.....	616	627	628	602	603	685	709	669	697	667	648	681	624	828	748
<b>Percent of unemployed</b>															
Job losers <sup>1</sup> .....	47.4	49.7	49.0	50.8	51.1	49.6	50.9	50.0	50.1	50.7	52.2	53.7	52.7	50.7	51.7
On temporary layoff.....	13.2	13.8	12.4	13.8	13.8	13.2	14.5	13.6	12.7	13.9	13.2	13.7	14.4	13.2	12.7
Not on temporary layoff.....	34.3	35.9	36.6	37.1	37.3	36.4	36.4	36.4	37.5	36.8	39.0	40.1	38.2	37.5	39.0
Job leavers.....	11.8	11.2	11.6	11.5	11.2	11.5	10.8	10.4	11.1	10.4	10.1	11.2	11.2	10.3	9.9
Reentrants.....	32.0	30.3	30.4	29.2	29.2	29.5	28.7	29.9	30.4	29.4	28.6	27.4	28.0	29.1	29.6
New entrants.....	8.8	8.9	9.0	8.4	8.5	9.4	9.7	9.3	9.1	8.9	8.8	8.8	8.2	9.8	8.9
<b>Percent of civilian labor force</b>															
Job losers <sup>1</sup> .....	2.2	2.3	2.2	2.4	2.4	2.4	2.4	2.3	2.5	2.5	2.5	2.7	2.6	2.8	2.8
On temporary layoff.....	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.6	.6	.5
Not on temporary layoff.....	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.4	1.4	1.4	1.4	1.6	1.6
Job leavers.....	.4	.4	.4	.4	.4	.4	.5	.4	.5	.4	.4	.4	.4	.5	.5

<sup>1</sup> 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	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
Total, 16 years and older.....	4.6	4.6	4.6	4.7	4.7	4.7	4.8	4.7	5.0	4.9	4.8	5.1	5.0	5.5	5.5
16 to 24 years.....	10.5	10.5	10.6	10.6	10.8	11.0	10.8	10.7	11.8	11.7	11.3	11.3	11.0	13.0	12.6
16 to 19 years.....	15.4	15.7	16.0	15.3	16.2	16.0	15.7	16.4	17.1	18.0	16.6	15.8	15.4	18.7	18.1
16 to 17 years.....	17.2	17.5	17.0	17.0	18.6	18.6	17.5	19.0	19.6	20.4	18.3	18.6	19.7	21.2	23.3
18 to 19 years.....	14.1	14.5	15.7	14.0	14.6	14.3	14.3	14.4	15.4	15.9	15.5	14.0	13.2	17.5	15.6
20 to 24 years.....	8.2	8.2	8.1	8.5	8.4	8.8	8.6	8.0	9.4	8.7	8.9	9.3	8.9	10.4	10.1
25 years and older.....	3.6	3.6	3.5	3.7	3.6	3.7	3.7	3.7	3.9	3.8	3.8	4.0	3.9	4.1	4.3
25 to 54 years.....	3.8	3.7	3.6	3.8	3.8	3.8	3.8	3.8	4.1	3.9	3.9	4.2	4.2	4.4	4.5
55 years and older.....	3.0	3.1	3.1	3.2	3.2	3.1	3.1	3.0	3.2	3.2	3.2	3.4	3.0	3.3	3.3
Men, 16 years and older.....	4.6	4.7	4.7	4.7	4.7	4.9	4.9	4.7	5.1	5.1	4.9	5.2	5.1	5.6	5.7
16 to 24 years.....	11.2	11.6	11.9	11.5	11.6	12.2	12.0	11.8	12.8	13.1	12.5	12.5	12.0	14.1	13.8
16 to 19 years.....	16.9	17.6	18.0	16.9	18.0	18.3	18.1	19.5	19.8	21.8	18.7	17.8	16.9	20.7	19.9
16 to 17 years.....	18.6	19.4	18.5	19.3	21.7	21.9	19.0	21.4	22.1	24.0	20.5	22.0	22.2	23.3	26.2
18 to 19 years.....	15.7	16.5	18.5	15.4	15.2	16.2	16.8	17.8	18.4	19.5	18.0	15.2	14.5	19.6	17.1
20 to 24 years.....	8.7	8.9	9.3	9.2	8.9	9.5	9.3	8.6	9.8	9.4	9.9	10.3	9.9	11.0	11.2
25 years and older.....	3.5	3.6	3.4	3.6	3.6	3.7	3.7	3.6	3.8	3.8	3.7	4.0	4.0	4.2	4.3
25 to 54 years.....	3.6	3.7	3.5	3.7	3.7	3.8	3.8	3.7	4.0	4.0	3.8	4.1	4.3	4.4	4.6
55 years and older.....	3.0	3.2	3.1	3.4	3.4	3.3	3.1	3.1	3.2	3.2	3.2	3.3	3.0	3.4	3.4
Women, 16 years and older.....	4.6	4.5	4.4	4.6	4.6	4.5	4.6	4.6	4.9	4.7	4.7	5.0	4.8	5.3	5.2
16 to 24 years.....	9.7	9.4	9.2	9.6	10.0	9.8	9.6	9.4	10.7	10.1	9.9	10.0	9.8	11.9	11.2
16 to 19 years.....	13.8	13.8	13.9	13.6	14.4	13.7	13.3	13.4	14.4	14.2	14.5	13.8	14.0	16.6	16.3
16 to 17 years.....	15.9	15.7	15.6	14.8	15.5	15.6	16.1	17.1	17.3	17.2	16.2	15.5	17.5	19.0	20.3
18 to 19 years.....	12.4	12.5	12.6	12.6	13.9	12.3	11.6	10.7	12.3	12.1	12.8	12.8	11.8	15.2	13.9
20 to 24 years.....	7.6	7.3	6.8	7.7	7.9	7.9	7.7	7.4	8.8	8.0	7.7	8.1	7.7	9.6	8.8
25 years and older.....	3.7	3.6	3.6	3.8	3.7	3.7	3.7	3.8	3.9	3.8	3.8	4.1	3.9	4.1	4.2
25 to 54 years.....	3.9	3.8	3.7	3.9	3.9	3.8	3.9	4.0	4.1	3.9	4.0	4.2	4.0	4.4	4.4
55 years and older <sup>1</sup> .....	2.9	3.0	3.2	3.5	3.4	3.0	3.0	2.8	2.9	3.4	3.3	3.4	2.8	2.8	3.4

<sup>1</sup> 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	May 2007	Apr. 2007 <sup>P</sup>	May 2008 <sup>P</sup>	State	May 2007	Apr. 2007 <sup>P</sup>	May 2008 <sup>P</sup>
Alabama.....	3.5	4.0	4.7	Missouri.....	4.8	5.2	6.0
Alaska.....	6.1	6.6	6.9	Montana.....	3.1	3.8	4.2
Arizona.....	3.6	3.9	4.4	Nebraska.....	3.1	3.1	3.2
Arkansas.....	5.4	4.7	5.1	Nevada.....	4.7	5.7	6.2
California.....	5.3	6.2	6.8	New Hampshire.....	3.6	3.8	4.0
Colorado.....	3.7	4.4	4.9	New Jersey.....	4.3	4.9	5.4
Connecticut.....	4.4	4.7	5.4	New Mexico.....	3.6	3.5	3.8
Delaware.....	3.4	3.7	4.1	New York.....	4.5	4.7	5.2
District of Columbia.....	5.7	6.0	6.6	North Carolina.....	4.8	5.4	5.9
Florida.....	3.9	5.0	5.6	North Dakota.....	3.2	3.1	3.3
Georgia.....	4.4	5.3	5.7	Ohio.....	5.6	5.6	6.3
Hawaii.....	2.5	3.3	3.6	Oklahoma.....	4.5	3.2	3.5
Idaho.....	2.7	3.1	3.6	Oregon.....	5.1	5.4	5.6
Illinois.....	4.9	5.4	6.4	Pennsylvania.....	4.3	5.0	5.2
Indiana.....	4.4	4.8	5.3	Rhode Island.....	5.0	6.1	7.2
Iowa.....	3.8	3.5	3.9	South Carolina.....	5.6	5.9	6.5
Kansas.....	4.2	4.0	4.6	South Dakota.....	3.0	2.6	2.9
Kentucky.....	5.6	5.6	6.2	Tennessee.....	4.7	5.4	6.4
Louisiana.....	4.1	4.1	4.0	Texas.....	4.4	4.1	4.5
Maine.....	4.7	4.7	5.4	Utah.....	2.6	3.1	3.2
Maryland.....	3.5	3.6	4.0	Vermont.....	3.8	4.4	4.9
Massachusetts.....	4.5	4.1	4.9	Virginia.....	3.0	3.5	3.9
Michigan.....	7.1	6.9	8.5	Washington.....	4.5	4.7	5.3
Minnesota.....	4.6	4.8	5.4	West Virginia.....	4.6	5.0	5.3
Mississippi.....	6.2	5.9	6.9	Wisconsin.....	4.9	4.3	4.4
				Wyoming.....	3.2	2.6	2.9

<sup>P</sup> = preliminary

**11. Employment of workers on nonfarm payrolls by State, seasonally adjusted**

State	May 2007	Apr. 2007 <sup>P</sup>	May 2008 <sup>P</sup>	State	May 2007	Apr. 2007 <sup>P</sup>	May 2008 <sup>P</sup>
Alabama.....	2,181,915	2,204,064	2,206,959	Missouri.....	3,025,036	3,011,857	3,031,728
Alaska.....	351,788	358,408	360,020	Montana.....	501,071	504,689	503,998
Arizona.....	3,016,946	3,063,765	3,068,807	Nebraska.....	983,916	994,675	996,099
Arkansas.....	1,366,865	1,372,525	1,383,946	Nevada.....	1,330,938	1,387,381	1,394,653
California.....	18,159,313	18,386,553	18,446,229	New Hampshire.....	737,816	746,047	745,382
Colorado.....	2,693,358	2,766,345	2,765,873	New Jersey.....	4,466,132	4,511,868	4,516,789
Connecticut.....	1,859,209	1,878,210	1,886,487	New Mexico.....	941,949	951,024	949,666
Delaware.....	442,077	446,742	446,064	New York.....	9,514,563	9,579,215	9,590,326
District of Columbia.....	325,894	332,430	331,839	North Carolina.....	4,519,743	4,556,974	4,561,644
Florida.....	9,121,629	9,230,108	9,263,932	North Dakota.....	365,015	370,711	373,012
Georgia.....	4,803,698	4,901,170	4,901,799	Ohio.....	5,976,732	5,996,475	6,005,619
Hawaii.....	650,271	662,706	663,369	Oklahoma.....	1,734,482	1,723,558	1,735,085
Idaho.....	753,916	753,153	755,212	Oregon.....	1,924,403	1,948,481	1,945,592
Illinois.....	6,680,663	6,812,673	6,824,185	Pennsylvania.....	6,284,700	6,370,068	6,405,503
Indiana.....	3,205,560	3,218,708	3,229,677	Rhode Island.....	577,761	573,241	571,560
Iowa.....	1,660,023	1,675,438	1,679,525	South Carolina.....	2,126,444	2,139,049	2,150,865
Kansas.....	1,479,396	1,485,051	1,494,578	South Dakota.....	442,449	445,772	444,744
Kentucky.....	2,045,024	2,045,644	2,047,456	Tennessee.....	3,031,041	3,068,363	3,062,538
Louisiana.....	1,996,704	2,019,333	2,008,102	Texas.....	11,472,596	11,675,906	11,712,220
Maine.....	703,627	708,753	708,936	Utah.....	1,355,317	1,384,786	1,388,270
Maryland.....	2,973,842	3,003,939	3,017,148	Vermont.....	354,153	352,161	352,292
Massachusetts.....	3,410,566	3,404,114	3,391,913	Virginia.....	4,045,215	4,116,639	4,125,326
Michigan.....	5,029,395	4,981,639	5,007,445	Washington.....	3,399,107	3,466,809	3,451,292
Minnesota.....	2,928,146	2,948,103	2,951,882	West Virginia.....	808,415	817,836	816,375
Mississippi.....	1,309,558	1,336,807	1,341,915	Wisconsin.....	3,087,597	3,096,698	3,089,857
				Wyoming.....	287,644	291,045	290,173

NOTE: Some data in this table may differ from data published elsewhere because of the continual updating of the database.

<sup>P</sup> = preliminary



12. Continued—Employment of workers on nonfarm payrolls by industry, monthly data seasonally adjusted  
[in thousands]

Industry	Annual average		2007								2008					
	2006	2007	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May <sup>P</sup>	June <sup>P</sup>	
Building material and garden supply stores.....	1,324.1	1,305.3	1,313.7	1,307.3	1,315.6	1,291.9	1,285.4	1,279.9	1,271.6	1,266.0	1,258.5	1,250.8	1,240.5	1,239.1	1,235.2	
Food and beverage stores.....	2,821.1	2,848.5	2,845.3	2,847.1	2,852.2	2,856.0	2,859.6	2,871.9	2,871.9	2,880.1	2,885.7	2,890.1	2,882.4	2,881.1	2,881.9	
Health and personal care stores.....	961.1	988.6	987.7	985.6	989.4	990.1	991.0	998.6	999.9	1,000.6	993.5	993.9	993.4	992.5	993.8	
Gasoline stations.....	864.1	861.2	862.2	861.5	860.8	864.2	862.0	859.1	850.5	853.8	854.2	852.6	847.4	841.1	844.6	
Clothing and clothing accessories stores.....	1,450.9	1,500.4	1,489.7	1,496.7	1,501.5	1,502.4	1,500.9	1,524.5	1,508.6	1,498.2	1,496.3	1,498.9	1,495.4	1,494.4	1,495.3	
Sporting goods, hobby, book, and music stores.....	645.5	658.2	656.2	660.5	661.8	665.1	664.0	664.0	661.6	667.2	661.9	658.6	651.5	654.3	652.0	
General merchandise stores <sup>1</sup> .....	2,935.0	2,984.6	2,987.6	2,987.0	2,978.9	2,976.5	2,975.8	2,968.2	2,976.7	2,971.1	2,955.7	2,943.9	2,939.0	2,927.3	2,936.2	
Department stores.....	1,557.2	1,576.7	1,581.0	1,580.1	1,573.0	1,570.5	1,568.5	1,560.6	1,568.4	1,564.3	1,543.3	1,534.3	1,528.1	1,514.6	1,514.0	
Miscellaneous store retailers.....	881.0	868.7	869.8	871.3	869.7	873.3	869.0	868.3	866.3	869.4	865.3	862.8	863.3	860.6	858.6	
Nonstore retailers.....	432.8	437.6	435.8	437.5	435.8	435.5	435.1	440.1	446.5	441.4	443.1	442.7	441.5	441.0	437.4	
<b>Transportation and warehousing.....</b>	<b>4,469.6</b>	<b>4,536.0</b>	<b>4,531.8</b>	<b>4,533.0</b>	<b>4,535.4</b>	<b>4,551.2</b>	<b>4,548.7</b>	<b>4,549.0</b>	<b>4,539.9</b>	<b>4,534.5</b>	<b>4,535.5</b>	<b>4,537.7</b>	<b>4,538.3</b>	<b>4,527.4</b>	<b>4,526.7</b>	
Air transportation.....	487.0	492.6	493.0	493.4	494.6	494.5	495.2	503.0	502.1	504.7	508.2	507.5	504.5	502.7	501.9	
Rail transportation.....	227.5	234.4	233.8	234.4	234.4	234.6	234.0	233.8	232.5	233.8	233.7	233.7	233.5	233.2	233.0	
Water transportation.....	62.7	64.3	64.5	65.0	65.1	65.0	64.9	65.0	64.4	63.8	62.5	61.6	62.3	62.0	63.6	
Truck transportation.....	1,435.8	1,441.2	1,445.2	1,437.4	1,438.2	1,440.6	1,433.6	1,428.7	1,423.1	1,422.5	1,417.4	1,420.4	1,415.2	1,411.6	1,404.2	
Transit and ground passenger transportation.....	399.3	410.0	405.3	411.0	413.3	417.8	417.4	411.5	411.8	411.9	413.5	412.9	418.3	412.2	416.2	
Pipeline transportation.....	38.7	40.1	39.9	40.0	40.1	40.1	40.3	40.6	40.8	40.6	40.9	41.2	41.3	42.3	42.8	
Scenic and sightseeing transportation.....	27.5	29.4	28.6	28.9	29.3	29.8	30.3	30.9	31.3	31.0	31.5	31.7	31.3	31.2	31.0	
Support activities for transportation.....	570.6	582.9	583.0	583.7	583.7	586.5	589.9	589.2	587.1	584.9	585.9	586.3	588.2	587.0	587.8	
Couriers and messengers.....	582.4	582.5	579.8	580.1	579.2	580.3	577.9	584.4	588.1	585.5	586.0	585.3	585.0	586.8	587.1	
Warehousing and storage.....	638.1	658.7	658.7	659.1	657.5	662.0	665.2	661.9	658.7	655.8	655.9	657.1	658.7	658.4	659.1	
<b>Utilities.....</b>	<b>548.5</b>	<b>553.4</b>	<b>554.5</b>	<b>554.3</b>	<b>555.1</b>	<b>554.8</b>	<b>556.1</b>	<b>555.5</b>	<b>557.1</b>	<b>557.1</b>	<b>557.0</b>	<b>558.2</b>	<b>557.7</b>	<b>557.5</b>	<b>558.8</b>	
<b>Information.....</b>	<b>3,038</b>	<b>3,029</b>	<b>3,033</b>	<b>3,027</b>	<b>3,024</b>	<b>3,031</b>	<b>3,027</b>	<b>3,022</b>	<b>3,018</b>	<b>3,014</b>	<b>3,016</b>	<b>3,013</b>	<b>3,007</b>	<b>3,004</b>	<b>3,000</b>	
Publishing industries, except Internet.....	902.4	898.2	899.4	898.7	897.0	893.7	894.6	892.2	889.7	889.2	886.8	882.9	882.8	879.5	877.2	
Motion picture and sound recording industries.....	375.7	380.0	384.4	377.9	376.3	384.3	380.5	376.3	376.3	372.9	380.1	383.0	382.5	382.5	382.7	
Broadcasting, except Internet.....	328.3	326.4	326.4	325.1	325.2	327.0	324.8	325.0	321.9	323.0	322.1	322.5	320.8	321.1	319.7	
Internet publishing and broadcasting.....	1,047.6	1,028.3	1,027.1	1,026.6	1,025.1	1,024.4	1,023.6	1,026.4	1,026.8	1,025.3	1,022.0	1,020.1	1,018.0	1,018.3	1,018.5	
ISPs, search portals, and data processing.....	263.2	270.5	270.3	272.8	272.3	273.1	273.2	272.6	273.5	273.0	274.2	272.3	272.2	272.2	272.0	
Other information services.....	120.8	125.7	125.7	126.3	127.6	128.8	130.0	129.5	129.3	130.5	131.2	131.9	130.7	130.1	130.2	
<b>Financial activities.....</b>	<b>8,328</b>	<b>8,308</b>	<b>8,317</b>	<b>8,331</b>	<b>8,312</b>	<b>8,294</b>	<b>8,283</b>	<b>8,260</b>	<b>8,252</b>	<b>8,244</b>	<b>8,231</b>	<b>8,231</b>	<b>8,229</b>	<b>8,226</b>	<b>8,216</b>	
Finance and insurance.....	6,156.0	6,146.6	6,153.0	6,165.8	6,148.4	6,136.0	6,124.5	6,115.5	6,111.2	6,106.2	6,102.2	6,103.4	6,103.8	6,099.7	6,089.6	
Monetary authorities—central bank.....	21.2	21.1	21.4	20.8	21.1	20.9	20.8	20.7	20.7	20.7	20.9	20.9	21.1	21.0	20.9	
Credit intermediation and related activities <sup>1</sup> .....	2,924.9	2,881.6	2,886.4	2,892.3	2,870.4	2,856.7	2,844.8	2,834.3	2,829.2	2,825.0	2,820.4	2,811.8	2,807.9	2,801.7	2,796.5	
Depository credit intermediation <sup>1</sup> .....	1,802.0	1,822.5	1,818.2	1,823.8	1,825.8	1,831.0	1,829.3	1,823.4	1,824.6	1,821.5	1,823.3	1,821.6	1,822.9	1,821.2	1,820.1	
Commercial banking.....	1,322.9	1,345.8	1,343.0	1,346.7	1,347.3	1,350.1	1,350.1	1,344.7	1,345.9	1,342.2	1,344.9	1,343.4	1,344.2	1,344.3	1,345.0	
Securities, commodity contracts, investments.....	818.3	847.9	849.5	851.2	852.6	853.2	855.0	856.9	856.7	859.2	862.5	865.8	867.2	866.9	866.3	
Insurance carriers and related activities.....	2,303.7	2,308.1	2,308.4	2,314.2	2,315.4	2,317.0	2,315.3	2,315.6	2,316.8	2,313.9	2,311.1	2,318.4	2,319.7	2,322.6	2,318.1	
Funds, trusts, and other financial vehicles.....	87.9	87.8	87.3	87.3	88.9	88.2	88.6	88.0	87.8	87.4	87.3	86.5	87.9	87.5	87.8	
Real estate and rental and leasing.....	2,172.5	2,161.7	2,163.8	2,165.4	2,163.3	2,157.7	2,158.6	2,144.7	2,140.6	2,138.0	2,128.6	2,127.8	2,124.9	2,126.4	2,125.9	
Real estate.....	1,499.0	1,491.9	1,494.7	1,493.8	1,493.9	1,489.8	1,489.1	1,477.1	1,476.4	1,471.4	1,466.0	1,465.0	1,465.7	1,466.9	1,466.6	
Rental and leasing services.....	645.5	640.3	639.2	641.4	638.9	637.8	639.7	637.4	633.6	635.2	631.0	631.1	627.4	628.2	627.7	
Lessors of nonfinancial intangible assets.....	28.1	29.5	29.9	30.2	30.5	30.1	29.8	30.2	30.6	31.4	31.6	31.7	31.8	31.3	31.6	
<b>Professional and business services.....</b>	<b>17,566</b>	<b>17,962</b>	<b>17,935</b>	<b>17,958</b>	<b>17,979</b>	<b>18,000</b>	<b>18,070</b>	<b>18,079</b>	<b>18,131</b>	<b>18,101</b>	<b>18,073</b>	<b>18,014</b>	<b>18,031</b>	<b>17,982</b>	<b>17,931</b>	
Professional and technical services <sup>1</sup> .....	7,356.7	7,662.0	7,645.4	7,664.2	7,688.0	7,729.7	7,759.3	7,784.8	7,820.5	7,819.2	7,829.2	7,823.5	7,845.6	7,840.0	7,854.8	
Legal services.....	1,173.2	1,176.4	1,178.5	1,173.7	1,174.2	1,178.6	1,179.7	1,175.2	1,173.9	1,173.0	1,174.9	1,172.6	1,172.5	1,172.0	1,172.3	
Accounting and bookkeeping services.....	889.0	947.2	938.6	947.8	954.0	964.5	971.3	979.4	993.3	992.3	991.9	983.3	986.1	975.4	979.2	
Architectural and engineering services.....	1,385.7	1,436.0	1,433.6	1,436.5	1,439.0	1,443.2	1,451.1	1,453.9	1,460.4	1,460.5	1,463.0	1,461.8	1,464.9	1,464.3	1,467.3	
See notes at end of table.																



**13. Average weekly hours of production or nonsupervisory workers<sup>1</sup> on private nonfarm payrolls, by industry, monthly data seasonally adjusted**

Industry	Annual average		2007							2008					
	2006	2007	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May <sup>p</sup>	June <sup>p</sup>
<b>TOTAL PRIVATE</b> .....	33.9	33.8	33.9	33.8	33.8	33.8	33.8	33.8	33.8	33.7	33.7	33.8	33.8	33.7	33.7
<b>GOODS-PRODUCING</b> .....	40.5	40.6	40.7	40.6	40.6	40.6	40.6	40.7	40.5	40.4	40.4	40.5	40.4	40.2	40.3
<b>Natural resources and mining</b> .....	45.6	45.9	46.0	45.9	45.7	46.2	46.0	46.2	45.8	45.7	45.7	46.2	44.9	44.8	45.0
<b>Construction</b> .....	39.0	39.0	39.1	38.9	38.8	38.9	39.0	39.1	39.0	38.8	38.7	38.9	38.9	38.6	38.8
<b>Manufacturing</b> .....	41.1	41.2	41.4	41.4	41.3	41.4	41.2	41.3	41.1	41.1	41.1	41.2	41.0	40.9	40.8
Overtime hours.....	4.4	4.2	4.3	4.2	4.2	4.2	4.1	4.1	4.0	4.0	4.0	4.0	4.0	3.9	3.9
Durable goods.....	41.4	41.5	41.6	41.6	41.7	41.6	41.5	41.5	41.3	41.4	41.4	41.5	41.3	41.2	41.1
Overtime hours.....	4.4	4.2	4.4	4.2	4.2	4.2	4.1	4.1	4.0	4.1	4.1	4.0	4.0	3.9	3.9
Wood products.....	39.8	39.4	39.7	39.9	39.6	39.7	39.5	39.0	39.2	39.0	39.0	38.7	38.8	39.0	39.0
Nonmetallic mineral products.....	43.0	42.3	42.4	42.6	42.8	42.7	42.6	42.9	41.5	42.2	42.1	43.1	42.2	42.1	41.1
Primary metals.....	43.6	42.9	43.3	43.2	43.0	42.6	42.6	42.7	42.2	42.5	42.4	42.9	42.4	42.2	42.6
Fabricated metal products.....	41.4	41.6	41.6	41.7	41.7	41.9	41.7	41.7	41.6	41.6	41.7	41.7	41.6	41.4	41.1
Machinery.....	42.4	42.6	42.6	42.5	42.6	42.7	42.9	42.9	42.9	43.1	43.0	42.7	42.5	42.2	42.1
Computer and electronic products.....	40.5	40.6	40.5	40.3	40.6	40.6	40.6	40.9	40.5	40.4	40.5	41.0	41.1	41.0	41.2
Electrical equipment and appliances.....	41.0	41.2	41.6	41.4	41.2	41.2	40.7	41.2	41.6	41.4	41.1	41.3	41.1	41.1	41.1
Transportation equipment.....	42.7	42.8	43.4	43.3	43.1	42.8	42.7	42.6	42.1	42.6	42.9	42.3	42.3	42.0	42.0
Furniture and related products.....	38.8	39.2	39.1	39.2	39.7	39.4	39.1	38.9	39.1	38.3	38.2	38.7	38.7	38.9	38.9
Miscellaneous manufacturing.....	38.7	38.9	39.1	39.2	39.4	39.7	39.0	38.8	38.8	39.0	38.8	39.3	39.3	39.2	39.0
Nondurable goods.....	40.6	40.8	40.9	40.9	40.8	40.9	40.8	40.9	40.8	40.6	40.6	40.7	40.5	40.5	40.4
Overtime hours.....	4.4	4.1	4.2	4.1	4.1	4.1	4.1	4.1	4.0	3.9	3.9	3.9	3.9	3.9	3.9
Food manufacturing.....	40.1	40.7	40.6	40.8	40.6	40.7	40.8	40.6	40.4	40.5	40.6	40.7	40.8	40.8	40.7
Beverage and tobacco products.....	40.8	40.8	40.9	40.7	41.0	40.8	40.6	40.5	40.8	40.5	40.1	40.4	39.6	39.8	38.7
Textile mills.....	40.6	40.3	40.5	40.2	39.9	40.4	40.2	39.9	40.2	38.7	38.8	38.8	38.4	38.9	39.0
Textile product mills.....	39.8	39.7	40.4	40.8	39.9	39.9	39.2	39.1	39.9	38.6	39.3	39.3	38.3	38.7	39.1
Apparel.....	36.5	37.2	37.8	37.5	37.2	37.2	36.6	36.9	37.5	36.7	36.8	36.7	36.6	36.1	36.1
Leather and allied products.....	38.9	38.1	38.0	37.5	37.7	37.9	37.7	38.1	39.1	38.2	38.2	38.7	38.6	38.5	38.4
Paper and paper products.....	42.9	43.2	43.0	43.0	43.1	43.2	43.3	43.7	44.0	44.0	43.9	43.6	43.3	42.6	43.0
Printing and related support activities.....	39.2	39.1	39.1	38.8	39.1	38.9	38.8	39.0	38.8	38.4	38.2	38.6	38.5	38.4	37.9
Petroleum and coal products.....	45.0	44.2	44.4	44.0	43.7	43.4	42.9	43.8	44.0	43.8	43.6	43.5	43.2	44.0	44.0
Chemicals.....	42.5	41.9	42.0	42.2	42.1	42.0	41.7	42.1	41.5	41.6	41.4	41.9	41.3	41.2	41.4
Plastics and rubber products.....	40.6	41.3	41.5	41.5	41.3	41.6	41.7	42.1	41.4	41.1	41.2	41.1	41.0	41.0	41.1
<b>PRIVATE SERVICE-PROVIDING</b> .....	32.5	32.4	32.5	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.3	32.4	32.4	32.4	32.4
<b>Trade, transportation, and utilities</b> .....	33.4	33.3	33.4	33.2	33.3	33.3	33.2	33.3	33.3	33.4	33.3	33.4	33.4	33.3	33.3
Wholesale trade.....	38.0	38.2	38.3	38.1	38.2	38.2	38.1	38.1	38.3	38.4	38.2	38.4	38.3	38.3	38.2
Retail trade.....	30.5	30.2	30.2	30.1	30.1	30.2	30.1	30.2	30.1	30.2	30.1	30.2	30.2	30.1	30.1
Transportation and warehousing.....	36.9	36.9	36.9	36.8	36.9	36.9	36.7	36.8	36.8	36.6	36.7	36.7	36.7	36.5	36.8
Utilities.....	41.4	42.4	42.5	42.6	42.4	42.5	42.2	42.5	42.8	43.1	42.8	43.3	42.6	42.5	42.6
<b>Information</b> .....	36.6	36.5	36.3	36.6	36.4	36.5	36.2	36.2	36.3	36.3	36.2	36.6	36.5	36.6	36.6
<b>Financial activities</b> .....	35.7	35.9	36.0	35.9	35.8	35.7	35.7	35.8	35.8	35.8	35.8	35.8	35.9	36.0	36.0
<b>Professional and business services</b> .....	34.6	34.8	34.8	34.8	34.7	34.8	34.8	34.7	34.8	34.7	34.6	34.8	34.8	34.8	34.8
<b>Education and health services</b> .....	32.5	32.6	32.6	32.6	32.6	32.6	32.6	32.6	32.6	32.6	32.6	32.7	32.6	32.7	32.6
<b>Leisure and hospitality</b> .....	25.7	25.5	25.6	25.3	25.4	25.4	25.4	25.3	25.3	25.3	25.3	25.3	25.4	25.4	25.4
<b>Other services</b> .....	30.9	30.9	30.9	30.9	30.8	30.9	30.8	30.9	30.8	30.8	30.8	30.9	30.8	30.8	30.7

<sup>1</sup> 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<sup>1</sup> on private nonfarm payrolls, by industry, monthly data seasonally adjusted**

Industry	Annual average		2007							2008					
	2006	2007	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May <sup>p</sup>	June <sup>p</sup>
<b>TOTAL PRIVATE</b>															
Current dollars.....	\$16.76	\$17.42	\$17.41	\$17.47	\$17.51	\$17.57	\$17.59	\$17.64	\$17.70	\$17.75	\$17.81	\$17.87	\$17.89	\$17.95	\$18.01
Constant (1982) dollars.....	8.24	8.32	8.32	8.33	8.35	8.35	8.34	8.27	8.27	8.26	8.29	8.28	8.27	8.24	8.17
<b>GOODS-PRODUCING.....</b>	18.02	18.67	18.68	18.69	18.73	18.78	18.77	18.84	18.90	18.98	19.04	19.12	19.12	19.17	19.24
<b>Natural resources and mining.....</b>	19.90	20.96	20.89	20.95	21.09	20.99	21.05	21.02	21.54	21.75	21.69	22.01	21.61	21.64	21.88
<b>Construction.....</b>	20.02	20.95	20.94	20.94	21.01	21.12	21.07	21.20	21.30	21.38	21.47	21.56	21.60	21.69	21.72
<b>Manufacturing.....</b>	16.81	17.26	17.28	17.30	17.33	17.34	17.34	17.40	17.41	17.49	17.55	17.61	17.62	17.66	17.73
Excluding overtime.....	15.96	16.43	16.43	16.46	16.49	16.50	16.52	16.58	16.60	16.68	16.74	16.79	16.80	16.86	16.92
Durable goods.....	17.68	18.19	18.23	18.23	18.27	18.28	18.28	18.31	18.33	18.41	18.49	18.54	18.58	18.61	18.69
Nondurable goods.....	15.33	15.67	15.65	15.70	15.71	15.74	15.73	15.85	15.86	15.92	15.94	16.03	15.99	16.05	16.12
<b>PRIVATE SERVICE-PROVIDING.....</b>	16.42	17.10	17.08	17.15	17.19	17.26	17.28	17.33	17.39	17.44	17.50	17.55	17.58	17.64	17.71
<b>Trade, transportation, and utilities.....</b>	15.39	15.79	15.77	15.82	15.85	15.90	15.94	15.93	16.00	16.02	16.07	16.11	16.11	16.17	16.18
Wholesale trade.....	18.91	19.59	19.55	19.58	19.66	19.72	19.77	19.86	19.93	19.97	20.00	20.03	20.05	20.06	20.09
Retail trade.....	12.57	12.76	12.75	12.79	12.80	12.83	12.86	12.81	12.81	12.80	12.84	12.86	12.85	12.89	12.87
Transportation and warehousing.....	17.28	17.73	17.73	17.78	17.79	17.86	17.86	17.93	18.07	18.10	18.21	18.25	18.33	18.42	18.49
Utilities.....	27.40	27.87	27.75	27.82	27.99	28.14	28.32	28.18	28.52	28.61	28.58	28.77	28.56	28.87	29.08
<b>Information.....</b>	23.23	23.94	23.94	23.92	23.97	24.01	24.10	24.11	24.18	24.33	24.41	24.53	24.50	24.66	24.71
<b>Financial activities.....</b>	18.80	19.64	19.67	19.67	19.75	19.76	19.78	19.87	19.91	20.00	20.05	20.11	20.16	20.22	20.23
<b>Professional and business services.....</b>	19.13	20.13	20.11	20.19	20.25	20.36	20.31	20.42	20.46	20.53	20.63	20.74	20.84	20.90	21.11
<b>Education and health services.....</b>	17.38	18.11	18.06	18.14	18.20	18.29	18.34	18.43	18.48	18.54	18.59	18.61	18.64	18.70	18.75
<b>Leisure and hospitality.....</b>	9.75	10.41	10.39	10.46	10.50	10.55	10.60	10.61	10.65	10.67	10.73	10.74	10.79	10.83	10.88
<b>Other services.....</b>	14.77	15.42	15.40	15.46	15.51	15.55	15.59	15.66	15.71	15.74	15.76	15.77	15.79	15.82	15.86

<sup>1</sup> 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<sup>1</sup> on private nonfarm payrolls, by industry**

Industry	Annual average		2007							2008					
	2006	2007	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May <sup>P</sup>	June <sup>P</sup>
<b>TOTAL PRIVATE</b> .....	\$16.76	\$17.42	\$17.32	\$17.44	\$17.42	\$17.64	\$17.60	\$17.63	\$17.75	\$17.80	\$17.85	\$17.92	\$17.91	\$17.90	\$17.98
Seasonally adjusted.....	-	-	17.41	17.47	17.51	17.57	17.59	17.64	17.70	17.75	17.81	17.87	17.89	17.95	18.01
<b>GOODS-PRODUCING</b> .....	18.02	18.67	18.70	18.72	18.81	18.91	18.86	18.88	18.96	18.90	18.94	19.03	19.06	19.13	19.25
<b>Natural resources and mining</b> .....	19.90	20.96	20.80	20.87	20.97	20.93	21.02	20.99	21.68	21.96	21.87	22.26	21.77	21.51	21.77
<b>Construction</b> .....	20.02	20.95	20.92	21.02	21.13	21.32	21.25	21.26	21.38	21.24	21.35	21.43	21.48	21.59	21.65
<b>Manufacturing</b> .....	16.81	17.26	17.28	17.22	17.31	17.39	17.34	17.42	17.51	17.53	17.55	17.60	17.63	17.64	17.73
Durable goods.....	17.68	18.19	18.23	18.10	18.27	18.35	18.30	18.36	18.46	18.43	18.50	18.53	18.56	18.58	18.70
Wood products .....	13.39	13.67	13.71	13.62	13.61	13.65	13.81	13.82	13.88	13.90	13.82	13.89	13.96	14.08	14.11
Nonmetallic mineral products .....	16.59	16.93	17.15	17.04	16.88	16.94	16.94	17.05	16.94	16.99	16.86	16.80	17.12	16.89	17.09
Primary metals .....	19.36	19.66	19.70	19.85	19.72	19.83	19.81	19.69	19.73	20.04	19.99	20.21	20.20	20.23	20.15
Fabricated metal products .....	16.17	16.53	16.46	16.52	16.58	16.61	16.69	16.70	16.82	16.77	16.78	16.85	16.81	16.84	16.96
Machinery .....	17.20	17.72	17.60	17.82	17.69	17.79	17.68	17.74	17.95	17.72	17.81	17.85	17.88	18.00	17.91
Computer and electronic products .....	18.94	19.95	19.96	20.08	20.06	20.20	20.28	20.22	20.33	20.51	20.60	20.80	20.90	21.06	21.16
Electrical equipment and appliances .....	15.54	15.94	16.10	16.09	16.03	16.10	15.80	15.68	15.73	15.70	15.73	15.66	15.76	15.71	15.77
Transportation equipment .....	22.41	23.02	23.17	22.67	23.33	23.42	23.20	23.41	23.46	23.34	23.48	23.46	23.52	23.53	23.77
Furniture and related products .....	13.80	14.32	14.40	14.36	14.31	14.36	14.36	14.35	14.50	14.38	14.37	14.42	14.45	14.46	14.50
Miscellaneous manufacturing .....	14.36	14.66	14.74	14.82	14.77	14.78	14.70	14.72	15.00	14.91	14.95	15.08	14.97	14.97	15.16
Nondurable goods.....	15.33	15.67	15.64	15.74	15.69	15.77	15.71	15.83	15.90	15.99	15.93	16.01	16.03	16.04	16.10
Food manufacturing .....	13.13	13.54	13.52	13.57	13.61	13.65	13.61	13.63	13.70	13.87	13.74	13.83	13.86	13.89	13.93
Beverages and tobacco products .....	18.18	18.49	18.20	18.61	17.78	18.40	18.69	19.54	19.69	19.55	19.64	19.59	19.26	19.24	18.73
Textile mills .....	12.55	13.00	12.98	13.13	13.21	13.16	12.93	13.06	13.13	13.29	13.35	13.45	13.45	13.50	13.57
Textile product mills .....	11.86	11.78	11.83	11.89	11.74	11.73	11.75	11.67	11.75	11.68	11.62	11.78	11.78	11.85	11.99
Apparel .....	10.65	11.05	10.96	11.15	11.12	11.17	11.16	11.20	11.28	11.43	11.46	11.35	11.51	11.42	11.42
Leather and allied products .....	11.44	12.04	11.98	12.18	12.10	12.24	12.10	12.50	12.12	12.78	12.68	12.81	12.63	13.05	12.80
Paper and paper products .....	18.01	18.43	18.47	18.68	18.30	18.54	18.50	18.47	18.71	18.78	18.61	18.66	18.58	18.70	18.79
Printing and related support activities.....	15.80	16.15	16.00	16.19	16.28	16.37	16.48	16.33	16.65	16.51	16.49	16.65	16.64	16.65	16.90
Petroleum and coal products .....	24.11	25.26	24.54	25.12	25.43	25.95	24.92	26.95	25.52	26.55	26.51	27.22	27.12	26.99	26.91
Chemicals .....	19.60	19.56	19.62	19.70	19.47	19.52	19.35	19.52	19.57	19.46	19.40	19.35	19.39	19.37	19.40
Plastics and rubber products .....	14.97	15.38	15.40	15.31	15.45	15.45	15.41	15.49	15.65	15.56	15.58	15.69	15.77	15.72	15.73
<b>PRIVATE SERVICE-PROVIDING</b> .....	16.42	17.10	16.96	17.10	17.05	17.31	17.27	17.31	17.45	17.52	17.58	17.65	17.62	17.59	17.66
<b>Trade, transportation, and utilities</b> .....	15.39	15.79	15.74	15.89	15.81	16.00	15.94	15.84	15.89	16.02	16.08	16.16	16.16	16.14	16.20
Wholesale trade .....	18.91	19.59	19.44	19.70	19.58	19.85	19.75	19.89	20.10	20.01	20.03	20.08	20.01	19.92	20.04
Retail trade .....	12.57	12.76	12.75	12.84	12.78	12.91	12.85	12.70	12.64	12.78	12.82	12.90	12.90	12.90	12.87
Transportation and warehousing .....	17.28	17.73	17.74	17.90	17.84	17.96	17.89	17.94	18.04	18.08	18.14	18.19	18.28	18.35	18.55
Utilities .....	27.40	27.87	27.47	27.70	27.73	28.27	28.44	28.17	28.61	28.62	28.61	28.88	28.69	28.84	28.92
<b>Information</b> .....	23.23	23.94	23.71	23.77	23.85	24.22	24.15	24.11	24.34	24.44	24.44	24.58	24.52	24.62	24.69
<b>Financial activities</b> .....	18.80	19.64	19.53	19.66	19.65	19.88	19.79	19.83	19.97	19.96	20.07	20.18	20.22	20.20	20.22
<b>Professional and business services</b> .....	19.13	20.13	19.96	20.26	20.01	20.34	20.19	20.33	20.67	20.65	20.77	20.93	20.84	20.81	21.18
<b>Education and health services</b> .....	17.38	18.11	18.02	18.18	18.20	18.33	18.33	18.42	18.51	18.61	18.58	18.62	18.63	18.63	18.69
<b>Leisure and hospitality</b> .....	9.75	10.41	10.30	10.33	10.39	10.53	10.61	10.67	10.77	10.73	10.82	10.76	10.80	10.83	10.79
<b>Other services</b> .....	14.77	15.42	15.36	15.39	15.43	15.58	15.55	15.61	15.75	15.74	15.78	15.84	15.82	15.85	15.86

<sup>1</sup> 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<sup>1</sup> on private nonfarm payrolls, by industry**

Industry	Annual average		2007							2008					
	2006	2007	June	July	Aug.	Sept.	Oct.	Nov.	Dec	Jan.	Feb.	Mar.	Apr.	May. <sup>p</sup>	June <sup>p</sup>
<b>TOTAL PRIVATE.....</b>	\$567.87	\$589.72	\$588.88	\$596.45	\$592.28	\$603.29	\$594.88	\$594.13	\$605.28	\$592.74	\$596.19	\$605.70	\$599.99	\$601.44	\$613.12
Seasonally adjusted.....	-	-	590.20	590.49	591.84	593.87	594.54	596.23	598.26	598.18	600.20	604.01	604.68	604.92	606.94
<b>GOODS-PRODUCING.....</b>	730.16	757.06	766.70	758.16	769.33	777.20	771.37	770.30	771.67	756.00	751.92	766.91	766.21	769.03	781.55
<b>Natural resources and mining.....</b>	907.95	961.78	963.04	957.93	962.52	979.52	981.63	969.74	992.94	988.20	986.34	1,017.28	970.94	955.04	988.36
<b>CONSTRUCTION</b>	781.21	816.06	830.52	828.19	836.75	842.14	841.50	829.14	825.27	805.00	800.63	825.06	824.83	833.37	853.01
<b>Manufacturing.....</b>	691.02	711.36	717.12	704.30	718.37	725.16	717.88	722.93	728.42	716.98	714.29	723.36	722.83	719.71	728.70
Durable goods.....	732.00	754.12	763.84	743.91	763.69	770.70	763.11	763.78	771.63	759.32	758.50	767.14	766.53	763.64	774.18
Wood products.....	532.99	539.10	553.88	546.16	543.04	548.73	548.26	534.83	546.87	530.98	523.78	531.99	538.86	550.53	560.17
Nonmetallic mineral products.....	712.71	716.79	737.45	729.31	732.59	735.20	730.11	731.45	696.23	696.59	686.20	715.68	722.46	717.83	712.65
Primary metals.....	843.59	843.28	853.01	849.58	844.02	848.72	841.93	842.73	844.44	851.70	847.58	869.03	852.44	849.66	866.45
Fabricated metal products.....	668.98	687.13	686.38	682.28	693.04	699.28	700.98	701.40	708.12	695.96	693.01	702.65	699.30	697.18	698.75
Machinery.....	728.84	753.99	749.76	753.79	750.06	761.41	762.01	762.82	780.83	763.73	762.27	763.98	761.69	759.60	755.80
Computer and electronic products.....	766.96	809.19	812.37	801.19	812.43	828.20	827.42	833.06	841.66	822.45	826.06	852.80	854.81	861.35	878.14
Electrical equipment and appliances.....	636.95	656.58	668.15	659.69	658.83	666.54	649.38	652.29	671.67	649.98	638.64	645.19	646.16	640.97	651.30
Transportation equipment.....	957.65	985.57	1,010.21	943.07	1,012.52	1,011.74	992.96	999.61	1,006.43	994.28	1,002.60	994.70	999.60	985.91	1,005.47
Furniture and related products.....	535.90	561.03	568.80	562.91	576.69	572.96	561.48	559.65	578.55	545.00	541.75	555.17	553.44	556.71	565.50
Miscellaneous manufacturing.....	555.90	569.98	580.76	573.53	581.94	588.24	574.77	571.14	589.50	580.00	575.58	594.15	586.82	583.83	592.76
Nondurable goods.....	621.97	639.99	639.68	639.04	641.72	651.30	644.11	653.78	656.67	646.00	638.79	648.41	647.61	646.41	653.66
Food manufacturing.....	525.99	550.65	547.56	552.30	556.65	566.48	560.73	562.92	561.70	556.19	546.85	555.97	559.94	565.32	566.95
Beverages and tobacco products.....	741.34	753.80	758.94	761.15	739.65	747.04	751.34	787.46	793.51	778.09	769.89	785.56	768.47	775.37	734.22
Textile mills.....	509.39	524.47	526.99	519.95	524.44	536.93	515.91	521.09	539.64	514.32	512.64	521.86	515.14	522.45	534.66
Textile product mills.....	472.24	467.96	481.48	477.98	468.43	468.03	457.08	457.46	478.23	449.68	454.34	464.13	450.00	452.67	477.20
Apparel.....	389.20	411.52	416.48	413.67	412.55	414.41	410.69	415.52	423.00	416.05	420.58	418.82	423.57	413.40	414.55
Leather and allied products.....	445.47	459.43	457.64	450.66	453.75	462.67	458.59	478.75	484.80	484.36	480.57	499.59	491.31	502.43	494.08
Paper and paper products.....	772.39	795.20	796.06	799.50	788.73	813.91	806.60	816.37	834.47	826.32	805.81	807.98	802.66	787.27	806.09
Printing and related support activities.....	618.92	632.08	620.80	621.70	638.18	644.98	644.37	640.14	654.35	630.68	629.92	644.36	640.64	636.03	633.75
Petroleum and coal products.....	1,085.50	1,115.24	1,099.39	1,117.84	1,106.21	1,144.40	1,074.05	1,204.67	1,099.91	1,157.58	1,134.63	1,165.02	1,163.45	1,190.26	1,205.57
Chemicals.....	833.67	819.99	822.08	823.46	819.69	821.79	801.09	823.74	818.03	809.54	801.22	810.77	800.81	792.23	807.04
Plastics and rubber products.....	608.41	635.15	642.18	624.65	635.00	647.36	642.60	652.13	657.30	639.52	637.22	644.86	646.57	644.52	654.37
<b>PRIVATE SERVICE- PROVIDING.....</b>	532.78	554.78	551.20	560.88	554.13	567.77	557.82	559.11	570.62	558.89	564.32	573.63	567.36	566.40	579.25
<b>Trade, transportation, and utilities.....</b>	514.34	526.38	527.29	535.49	529.64	542.40	529.21	525.89	535.49	525.46	529.03	538.13	534.90	534.23	547.56
Wholesale trade.....	718.63	748.90	744.55	758.45	747.96	768.20	752.48	757.81	779.88	758.38	759.14	775.09	764.38	760.94	777.55
Retail trade.....	383.02	385.20	387.60	392.90	388.51	396.34	386.79	382.27	385.52	379.57	380.75	387.00	385.71	387.00	392.54
Transportation and warehousing.....	636.97	654.83	656.38	664.09	663.65	668.11	656.56	661.99	678.30	650.88	654.85	667.57	663.56	666.11	693.77
Utilities.....	1,135.34	1,182.17	1,170.22	1,180.02	1,175.75	1,215.61	1,208.70	1,194.41	1,221.65	1,222.07	1,218.79	1,241.84	1,225.06	1,219.93	1,234.88
<b>Information.....</b>	850.42	873.63	858.30	884.24	870.53	896.14	874.23	872.78	893.28	877.40	879.84	902.09	887.62	891.24	918.47
<b>Financial activities.....</b>	672.21	705.29	699.17	717.59	699.54	721.64	702.55	705.95	726.91	708.58	716.50	730.52	721.85	721.14	740.05
<b>Professional and business services.....</b>	662.27	700.15	696.60	709.10	696.35	715.97	702.61	705.45	727.58	704.17	714.49	734.64	725.23	724.19	749.77
<b>Education and health services.....</b>	564.94	590.18	585.65	598.12	593.32	603.06	595.73	600.49	607.13	604.83	603.85	608.87	603.61	605.48	611.16
<b>Leisure and hospitality.....</b>	250.34	265.45	266.77	271.68	270.14	269.57	268.43	266.75	272.48	262.89	269.42	272.23	272.16	274.00	281.62
<b>Other services.....</b>	456.50	476.80	476.16	480.17	478.33	484.54	478.94	480.79	488.25	480.07	482.87	489.46	485.67	486.60	493.25

<sup>1</sup> 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.
<b>Private nonfarm payrolls, 278 industries</b>												
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	45.6	46.9						
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	42.3	41.6						
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	43.2	40.9						
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	47.3	47.4						
<b>Manufacturing payrolls, 84 industries</b>												
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	41.7	33.3						
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	27.4	31.0						
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	23.8	21.4						
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	26.2	26.8						

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 <sup>1</sup> (in thousands)							Percent							
	2007	2008						2007	2008						
	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>P</sup>	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>P</sup>	
Total <sup>2</sup> .....	3,972	3,974	3,889	3,799	3,672	3,612	3,626	2.8	2.8	2.7	2.7	2.6	2.6	2.6	
<b>Industry</b>															
Total private <sup>2</sup> .....	3,520	3,526	3,449	3,350	3,225	3,192	3,180	3.0	3.0	2.9	2.8	2.7	2.7	2.7	
Construction.....	138	140	133	123	102	99	118	1.8	1.8	1.8	1.6	1.4	1.3	1.6	
Manufacturing.....	303	305	286	239	251	244	236	2.2	2.2	2.0	1.7	1.8	1.8	1.7	
Trade, transportation, and utilities.....	648	667	643	598	562	550	603	2.4	2.4	2.4	2.2	2.1	2.0	2.2	
Professional and business services.....	685	706	752	699	714	676	601	3.7	3.7	4.0	3.7	3.8	3.6	3.2	
Education and health services.....	713	698	680	737	696	684	672	3.7	3.6	3.5	3.8	3.6	3.5	3.4	
Leisure and hospitality.....	591	574	515	530	501	491	518	4.2	4.0	3.6	3.7	3.5	3.5	3.6	
Government.....	454	446	439	450	441	422	453	2.0	2.0	1.9	2.0	1.9	1.8	2.0	
<b>Region<sup>3</sup></b>															
Northeast.....	629	644	662	576	602	618	617	2.4	2.4	2.5	2.2	2.3	2.3	2.3	
South.....	1,620	1,574	1,536	1,485	1,386	1,364	1,373	3.2	3.1	3.0	2.9	2.7	2.7	2.7	
Midwest.....	755	779	749	766	781	752	719	2.3	2.4	2.3	2.4	2.4	2.3	2.2	
West.....	957	988	966	954	918	883	919	3.0	3.1	3.0	3.0	2.9	2.8	2.9	

<sup>1</sup> Detail will not necessarily add to totals because of the independent seasonal adjustment of the various series.

<sup>2</sup> Includes natural resources and mining, information, financial activities, and other services, not shown separately.

<sup>3</sup> **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.

<sup>P</sup> = preliminary.

### 19. Hires levels and rates by industry and region, seasonally adjusted

Industry and region	Levels <sup>1</sup> (in thousands)							Percent							
	2007	2008						2007	2008						
	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>P</sup>	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>P</sup>	
Total <sup>2</sup> .....	4,672	4,717	4,639	4,586	4,569	4,715	4,301	3.4	3.4	3.4	3.3	3.3	3.4	3.1	
<b>Industry</b>															
Total private <sup>2</sup> .....	4,305	4,314	4,227	4,203	4,147	4,311	3,990	3.7	3.7	3.7	3.6	3.6	3.7	3.5	
Construction.....	351	335	319	349	350	385	300	4.7	4.5	4.3	4.7	4.8	5.3	4.1	
Manufacturing.....	353	350	326	285	309	300	274	2.6	2.5	2.4	2.1	2.3	2.2	2.0	
Trade, transportation, and utilities.....	946	970	916	882	884	943	835	3.5	3.6	3.4	3.3	3.3	3.6	3.2	
Professional and business services.....	902	851	897	780	893	858	799	5.0	4.7	5.0	4.3	5.0	4.8	4.4	
Education and health services.....	527	460	516	522	501	510	499	2.8	2.5	2.8	2.8	2.7	2.7	2.7	
Leisure and hospitality.....	846	880	824	868	801	841	884	6.2	6.4	6.0	6.4	5.9	6.1	6.4	
Government.....	349	390	394	387	429	407	388	1.6	1.7	1.8	1.7	1.9	1.8	1.7	
<b>Region<sup>3</sup></b>															
Northeast.....	761	770	767	713	715	743	697	3.0	3.0	3.0	2.8	2.8	2.9	2.7	
South.....	1,828	1,802	1,814	1,769	1,703	1,725	1,591	3.7	3.6	3.6	3.6	3.4	3.5	3.2	
Midwest.....	1,027	1,045	998	944	986	986	941	3.3	3.3	3.2	3.0	3.1	3.1	3.0	
West.....	1,018	1,067	1,058	1,186	1,170	1,246	1,149	3.3	3.4	3.4	3.8	3.8	4.0	3.7	

<sup>1</sup> Detail will not necessarily add to totals because of the independent seasonal adjustment of the various series.

<sup>2</sup> Includes natural resources and mining, information, financial activities, and other services, not shown separately.

<sup>3</sup> **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.

<sup>P</sup> = preliminary.

**20. Total separations levels and rates by industry and region, seasonally adjusted**

Industry and region	Levels <sup>1</sup> (in thousands)							Percent							
	2007	2008						2007	2008						
	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>P</sup>	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>P</sup>	
Total <sup>2</sup> .....	4,640	4,408	4,477	4,503	4,390	4,404	4,381	3.4	3.2	3.2	3.3	3.2	3.2	3.2	
<b>Industry</b>															
Total private <sup>2</sup> .....	4,367	4,107	4,188	4,224	4,100	4,112	4,084	3.8	3.5	3.6	3.7	3.6	3.6	3.5	
Construction.....	322	331	311	329	367	378	400	4.3	4.4	4.2	4.5	5.0	5.2	5.5	
Manufacturing.....	400	325	348	350	304	390	362	2.9	2.4	2.5	2.6	2.2	2.9	2.7	
Trade, transportation, and utilities.....	1,065	981	1,005	957	941	1,003	885	4.0	3.7	3.8	3.6	3.5	3.8	3.3	
Professional and business services.....	878	814	790	861	806	739	718	4.9	4.5	4.4	4.8	4.5	4.1	4.0	
Education and health services.....	423	417	447	459	449	429	417	2.3	2.2	2.4	2.5	2.4	2.3	2.2	
Leisure and hospitality.....	799	803	800	854	776	722	831	5.9	5.9	5.9	6.2	5.7	5.3	6.1	
Government.....	286	295	290	278	291	295	294	1.3	1.3	1.3	1.2	1.3	1.3	1.3	
<b>Region<sup>3</sup></b>															
Northeast.....	860	635	697	770	737	709	750	3.3	2.5	2.7	3.0	2.9	2.8	2.9	
South.....	1,709	1,712	1,699	1,673	1,617	1,666	1,627	3.4	3.4	3.4	3.4	3.3	3.4	3.3	
Midwest.....	974	980	975	902	918	949	931	3.1	3.1	3.1	2.9	2.9	3.0	3.0	
West.....	1,117	1,117	1,107	1,167	1,101	1,094	1,064	3.6	3.6	3.6	3.8	3.6	3.5	3.4	

<sup>1</sup> Detail will not necessarily add to totals because of the independent seasonal adjustment of the various series.

<sup>2</sup> Includes natural resources and mining, information, financial activities, and other services, not shown separately.

<sup>3</sup> **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.

**21. Quits levels and rates by industry and region, seasonally adjusted**

Industry and region	Levels <sup>1</sup> (in thousands)							Percent							
	2007	2008						2007	2008						
	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>P</sup>	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>P</sup>	
Total <sup>2</sup> .....	2,501	2,494	2,493	2,522	2,375	2,444	2,344	1.8	1.8	1.8	1.8	1.7	1.8	1.7	
<b>Industry</b>															
Total private <sup>2</sup> .....	2,361	2,358	2,355	2,384	2,258	2,301	2,209	2.0	2.0	2.0	2.1	2.0	2.0	1.9	
Construction.....	116	119	113	133	111	127	120	1.5	1.6	1.5	1.8	1.5	1.7	1.6	
Manufacturing.....	187	182	183	187	157	182	167	1.4	1.3	1.3	1.4	1.2	1.3	1.2	
Trade, transportation, and utilities.....	572	590	598	532	535	550	499	2.1	2.2	2.2	2.0	2.0	2.1	1.9	
Professional and business services.....	398	367	351	492	386	385	380	2.2	2.0	1.9	2.7	2.1	2.1	2.1	
Education and health services.....	269	258	276	271	279	270	230	1.5	1.4	1.5	1.5	1.5	1.4	1.2	
Leisure and hospitality.....	557	561	525	539	529	516	546	4.1	4.1	3.8	3.9	3.9	3.8	4.0	
Government.....	140	137	138	135	126	144	134	.6	.6	.6	.6	.6	.6	.6	
<b>Region<sup>3</sup></b>															
Northeast.....	367	312	358	410	334	368	352	1.4	1.2	1.4	1.6	1.3	1.4	1.4	
South.....	996	1,008	1,045	1,021	996	1,001	948	2.0	2.0	2.1	2.1	2.0	2.0	1.9	
Midwest.....	529	521	502	475	491	500	477	1.7	1.6	1.6	1.5	1.6	1.6	1.5	
West.....	607	632	583	632	568	575	564	2.0	2.0	1.9	2.0	1.8	1.9	1.8	

<sup>1</sup> Detail will not necessarily add to totals because of the independent seasonal adjustment of the various series.

<sup>2</sup> Includes natural resources and mining, information, financial activities, and other services, not shown separately.

<sup>3</sup> **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.

<sup>P</sup> = preliminary.

22. Quarterly Census of Employment and Wages: 10 largest counties, third quarter 2007.

County by NAICS supersector	Establishments, third quarter 2007 (thousands)	Employment		Average weekly wage <sup>1</sup>	
		September 2007 (thousands)	Percent change, September 2006-07 <sup>2</sup>	Third quarter 2007	Percent change, third quarter 2006-07 <sup>2</sup>
United States <sup>3</sup> .....	9,012.8	136,246.9	0.9	\$818	4.3
Private industry .....	8,721.6	114,790.8	.9	810	4.5
Natural resources and mining .....	124.7	1,931.5	1.7	820	7.8
Construction .....	895.5	7,774.4	-1.0	876	5.7
Manufacturing .....	361.4	13,845.4	-2.2	987	4.3
Trade, transportation, and utilities .....	1,916.9	26,299.2	1.2	707	3.2
Information .....	144.3	3,033.1	.0	1,274	4.6
Financial activities .....	871.8	8,123.2	-.7	1,200	5.9
Professional and business services .....	1,484.6	18,017.6	1.7	998	6.4
Education and health services .....	825.8	17,506.6	2.9	775	3.6
Leisure and hospitality .....	726.7	13,562.6	1.9	348	4.2
Other services .....	1,162.9	4,433.8	1.2	531	4.1
Government .....	291.2	21,456.1	1.0	859	3.2
Los Angeles, CA .....	401.9	4,191.6	.4	925	3.4
Private industry .....	397.9	3,626.2	.1	901	3.1
Natural resources and mining .....	.5	12.7	5.0	1,095	-8.3
Construction .....	14.3	160.4	-.9	945	5.4
Manufacturing .....	15.2	444.7	( <sup>4</sup> )	961	( <sup>4</sup> )
Trade, transportation, and utilities .....	55.3	811.9	-.1	765	2.0
Information .....	8.8	216.3	8.5	1,520	-.3
Financial activities .....	25.2	243.7	-2.6	1,483	( <sup>4</sup> )
Professional and business services .....	43.4	608.9	-.3	1,051	6.3
Education and health services .....	28.2	480.4	1.8	851	( <sup>4</sup> )
Leisure and hospitality .....	27.1	401.1	1.8	518	2.8
Other services .....	179.8	246.0	.0	439	5.8
Government .....	4.0	565.4	2.3	1,080	( <sup>4</sup> )
Cook, IL .....	138.0	2,541.5	.0	961	3.3
Private industry .....	136.6	2,232.8	.2	958	3.6
Natural resources and mining .....	.1	1.3	-7.7	1,063	3.5
Construction .....	12.1	98.2	-1.6	1,207	5.5
Manufacturing .....	7.1	237.2	-1.9	981	3.0
Trade, transportation, and utilities .....	27.6	472.2	-.9	776	-.5
Information .....	2.5	58.4	.6	1,402	9.1
Financial activities .....	15.8	215.4	-1.5	1,547	7.8
Professional and business services .....	28.2	441.6	.9	1,179	3.1
Education and health services .....	13.6	369.2	1.6	843	3.7
Leisure and hospitality .....	11.6	240.0	2.2	430	4.6
Other services .....	13.8	95.0	.7	691	3.0
Government .....	1.4	308.7	-.9	985	2.3
New York, NY .....	118.0	2,350.3	2.0	1,544	8.7
Private industry .....	117.7	1,906.7	2.3	1,667	9.6
Natural resources and mining .....	.0	.1	-1.9	1,749	11.8
Construction .....	2.3	35.8	6.9	1,461	5.3
Manufacturing .....	3.1	37.5	-4.7	1,158	3.0
Trade, transportation, and utilities .....	22.1	248.2	1.7	1,124	4.3
Information .....	4.4	135.6	1.0	1,916	4.5
Financial activities .....	18.7	380.0	2.0	3,047	16.3
Professional and business services .....	24.6	482.2	2.3	1,769	8.6
Education and health services .....	8.6	283.3	2.0	1,011	4.8
Leisure and hospitality .....	11.2	208.5	3.3	728	6.1
Other services .....	17.4	87.2	1.5	889	3.7
Government .....	.3	443.5	.7	1,014	1.5
Harris, TX .....	95.1	2,028.0	3.8	1,015	6.7
Private industry .....	94.5	1,783.4	4.3	1,027	7.1
Natural resources and mining .....	1.5	78.4	( <sup>4</sup> )	2,580	( <sup>4</sup> )
Construction .....	6.6	151.5	5.5	968	6.1
Manufacturing .....	4.6	182.2	3.5	1,290	7.7
Trade, transportation, and utilities .....	21.7	424.7	3.9	901	6.0
Information .....	1.3	32.8	2.6	1,258	9.1
Financial activities .....	10.5	120.7	2.0	1,256	7.3
Professional and business services .....	18.9	341.2	4.9	1,156	7.5
Education and health services .....	10.0	214.7	5.4	824	1.7
Leisure and hospitality .....	7.3	176.2	3.2	366	2.2
Other services .....	11.0	58.4	3.9	595	7.6
Government .....	.5	244.6	.6	922	3.1
Maricopa, AZ .....	99.3	1,825.1	.2	822	3.8
Private industry .....	98.6	1,605.3	-.1	811	4.1
Natural resources and mining .....	.5	8.5	2.9	723	6.0
Construction .....	10.6	165.8	-7.6	834	3.9
Manufacturing .....	3.6	132.2	-3.7	1,116	3.2
Trade, transportation, and utilities .....	21.6	374.9	2.0	777	3.5
Information .....	1.6	30.4	-.7	1,030	.4
Financial activities .....	12.7	148.6	-2.4	1,024	.0
Professional and business services .....	21.8	316.8	-.3	825	9.1
Education and health services .....	9.7	198.9	4.4	879	5.5
Leisure and hospitality .....	7.2	177.6	1.4	387	5.7
Other services .....	7.2	50.1	2.2	570	5.2
Government .....	.7	219.9	2.8	908	1.2

See footnotes at end of table.

22. Continued—Quarterly Census of Employment and Wages: 10 largest counties, second quarter 2007.

County by NAICS supersector	Establishments, second quarter 2007 (thousands)	Employment		Average weekly wage <sup>1</sup>	
		June 2007 (thousands)	Percent change, June 2006-07 <sup>2</sup>	Second quarter 2007	Percent change, second quarter 2006-07 <sup>2</sup>
Orange, CA	94.7	1,519.5	-1.0	\$952	3.4
Private industry	93.3	1,363.2	-1.3	939	2.8
Natural resources and mining	.2	6.2	-6.8	588	10.7
Construction	7.1	105.6	-3.5	1,016	7.2
Manufacturing	5.4	177.1	( <sup>4</sup> )	1,150	( <sup>4</sup> )
Trade, transportation, and utilities	17.8	278.2	.4	892	( <sup>4</sup> )
Information	1.4	30.1	-2.2	1,340	7.5
Financial activities	11.4	128.1	-7.7	1,445	( <sup>4</sup> )
Professional and business services	19.2	274.6	( <sup>4</sup> )	1,000	( <sup>4</sup> )
Education and health services	9.8	139.6	2.9	833	3.3
Leisure and hospitality	7.0	175.1	1.7	410	5.1
Other services	14.0	48.4	-.4	561	4.1
Government	1.4	156.3	1.1	1,062	6.7
Dallas, TX	67.6	1,492.6	3.2	1,011	5.4
Private industry	67.1	1,330.0	3.2	1,022	5.4
Natural resources and mining	.6	7.1	-4.7	2,879	-1.1
Construction	4.4	84.1	4.4	935	1.4
Manufacturing	3.2	144.2	-.4	1,202	8.1
Trade, transportation, and utilities	15.0	307.2	2.3	974	6.1
Information	1.7	48.6	-4.6	1,371	7.3
Financial activities	8.7	145.7	2.8	1,331	5.2
Professional and business services	14.4	274.3	5.9	1,108	5.8
Education and health services	6.6	144.7	6.6	968	6.8
Leisure and hospitality	5.2	131.2	3.6	430	2.6
Other services	6.4	40.6	1.2	602	2.9
Government	.5	162.5	2.9	920	5.0
San Diego, CA	91.7	1,334.7	.2	890	4.8
Private industry	90.4	1,108.8	-.1	868	4.7
Natural resources and mining	.8	11.6	-4.1	540	4.0
Construction	7.2	90.9	-6.5	916	6.3
Manufacturing	3.2	102.4	( <sup>4</sup> )	1,190	6.6
Trade, transportation, and utilities	14.6	219.8	.3	730	5.8
Information	1.3	37.5	.5	1,873	1.7
Financial activities	9.9	81.5	-3.3	1,108	3.5
Professional and business services	16.4	217.9	.6	1,076	6.0
Education and health services	8.0	127.1	( <sup>4</sup> )	812	4.1
Leisure and hospitality	6.9	163.6	2.8	389	3.5
Other services	22.1	56.6	1.1	482	2.8
Government	1.3	225.9	1.7	996	4.8
King, WA	75.9	1,182.2	2.9	1,028	3.8
Private industry	75.4	1,027.6	3.3	1,033	3.5
Natural resources and mining	.4	3.3	3.4	1,224	1.4
Construction	6.8	72.9	11.0	1,002	6.5
Manufacturing	2.5	112.0	1.9	1,386	.8
Trade, transportation, and utilities	14.8	219.5	2.0	903	6.1
Information	1.8	75.8	5.0	1,829	4.1
Financial activities	7.0	76.4	-1.0	1,272	3.3
Professional and business services	12.9	188.1	4.4	1,180	1.1
Education and health services	6.3	120.6	2.7	812	4.5
Leisure and hospitality	6.0	113.7	3.9	427	2.4
Other services	16.7	45.4	.9	571	7.9
Government	.5	154.6	.6	995	6.0
Miami-Dade, FL	85.9	1,002.1	1.0	814	3.8
Private industry	85.6	868.2	.8	788	3.7
Natural resources and mining	.5	9.2	.3	496	6.0
Construction	6.2	53.5	1.5	841	-1.1
Manufacturing	2.6	48.0	-1.7	735	1.9
Trade, transportation, and utilities	23.1	252.6	.9	747	2.3
Information	1.5	20.7	-.7	1,163	4.6
Financial activities	10.4	71.6	-.9	1,161	5.6
Professional and business services	17.3	136.4	-1.5	949	7.5
Education and health services	8.9	135.4	3.1	796	4.6
Leisure and hospitality	5.7	101.8	1.3	458	2.5
Other services	7.6	35.7	1.9	525	5.8
Government	.3	133.9	2.4	969	4.8

<sup>1</sup> Average weekly wages were calculated using unrounded data.

Virgin Islands.

<sup>2</sup> Percent changes were computed from quarterly employment and pay data adjusted for noneconomic county reclassifications. See Notes on Current Labor Statistics.

<sup>4</sup> Data do not meet BLS or State agency disclosure standards.

<sup>3</sup> Totals for the United States do not include data for Puerto Rico or the

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, second quarter 2007.**

State	Establishments, second quarter 2007 (thousands)	Employment		Average weekly wage <sup>1</sup>	
		June 2007 (thousands)	Percent change, June 2006-07	Second quarter 2007	Percent change, second quarter 2006-07
United States <sup>2</sup> .....	8,945.9	137,018.2	1.2	\$820	4.6
Alabama .....	120.1	1,965.4	1.1	697	3.6
Alaska .....	21.1	325.8	-.5	832	5.6
Arizona .....	158.9	2,612.4	1.2	786	4.4
Arkansas .....	82.7	1,186.5	.3	639	4.2
California .....	1,291.3	15,832.5	.8	935	5.4
Colorado .....	179.4	2,326.9	2.2	832	4.8
Connecticut .....	112.5	1,714.2	.9	1,033	6.4
Delaware .....	29.1	430.2	.0	870	2.2
District of Columbia .....	31.9	683.2	.8	1,357	4.3
Florida .....	604.8	7,894.2	.2	743	3.2
Georgia .....	270.4	4,091.5	1.4	792	6.5
Hawaii .....	38.6	631.2	1.4	736	4.2
Idaho .....	57.1	679.1	3.0	626	2.3
Illinois .....	358.6	5,956.3	.8	874	4.4
Indiana .....	158.2	2,933.4	.5	702	2.6
Iowa .....	93.4	1,518.6	.9	664	3.9
Kansas .....	85.7	1,370.7	2.0	702	4.8
Kentucky .....	109.8	1,828.2	1.7	700	4.2
Louisiana .....	119.9	1,880.2	3.2	711	4.1
Maine .....	50.0	619.6	.6	658	4.1
Maryland .....	164.0	2,584.9	.7	899	5.3
Massachusetts .....	210.1	3,300.7	1.2	1,008	4.8
Michigan .....	257.1	4,252.9	-1.4	807	2.9
Minnesota .....	170.7	2,730.9	.0	834	5.6
Mississippi .....	69.7	1,137.4	.9	609	3.6
Missouri .....	174.7	2,764.6	.8	727	3.4
Montana .....	42.3	449.8	1.7	611	6.3
Nebraska .....	58.7	930.9	1.6	654	3.5
Nevada .....	74.7	1,297.9	1.0	776	3.7
New Hampshire .....	49.0	643.7	.7	823	6.3
New Jersey .....	278.1	4,066.7	.4	989	4.3
New Mexico .....	53.7	833.3	1.1	686	5.2
New York .....	576.8	8,688.8	1.3	1,020	5.9
North Carolina .....	251.0	4,090.5	3.0	718	4.1
North Dakota .....	25.1	347.7	1.5	619	4.7
Ohio .....	290.5	5,384.6	-.1	740	3.4
Oklahoma .....	99.1	1,538.5	1.6	665	4.1
Oregon .....	130.8	1,761.6	1.7	742	4.5
Pennsylvania .....	338.7	5,740.3	1.1	802	4.6
Rhode Island .....	36.1	492.9	.3	774	2.5
South Carolina .....	115.8	1,917.4	3.0	665	2.9
South Dakota .....	30.1	404.3	2.1	590	4.8
Tennessee .....	140.7	2,768.7	.7	729	3.6
Texas .....	548.7	10,296.1	3.4	827	5.9
Utah .....	86.3	1,233.7	4.4	698	6.6
Vermont .....	24.7	306.6	-.5	698	5.0
Virginia .....	227.4	3,731.5	1.0	859	4.4
Washington .....	216.7	2,989.8	2.7	835	4.6
West Virginia .....	48.7	717.1	.3	659	3.6
Wisconsin .....	158.2	2,845.8	.4	709	3.7
Wyoming .....	24.4	288.3	3.3	739	8.0
Puerto Rico .....	56.9	1,020.7	-1.6	460	6.0
Virgin Islands .....	3.4	46.9	3.4	707	4.1

<sup>1</sup> Average weekly wages were calculated using unrounded data.

NOTE: Includes workers covered by Unemployment Insurance (UI) and Unemployment Compensation for Federal Employees (UCFE) programs. Data are preliminary.

<sup>2</sup> Totals for the United States do not include data for Puerto Rico or the Virgin Islands.

**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
<b>Total covered (UI and UCFE)</b>					
1997	7,369,473	121,044,432	\$3,674,031,718	\$30,353	\$584
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
<b>UI covered</b>					
1997	7,317,363	118,233,942	\$3,553,933,885	\$30,058	\$578
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
<b>Private industry covered</b>					
1997	7,121,182	102,175,161	\$3,071,807,287	\$30,064	\$578
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
<b>State government covered</b>					
1997	65,352	4,214,451	\$137,057,432	\$32,521	\$625
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
<b>Local government covered</b>					
1997	130,829	11,844,330	\$345,069,166	\$29,134	\$560
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
<b>Federal government covered (UCFE)</b>					
1997	52,110	2,810,489	\$120,097,833	\$42,732	\$822
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

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 2006**

Industry, establishments, and employment	Total	Size of establishments								
		Fewer than 5 workers <sup>1</sup>	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
<b>Total all industries<sup>2</sup></b>										
Establishments, first quarter .....	8,413,125	5,078,506	1,392,481	919,182	636,264	216,815	123,061	30,375	10,965	5,476
Employment, March .....	111,001,540	7,540,432	9,219,319	12,406,793	19,195,647	14,903,811	18,408,166	10,383,792	7,421,575	11,522,005
<b>Natural resources and mining</b>										
Establishments, first quarter .....	123,076	69,188	23,230	15,106	9,842	3,177	1,783	516	175	59
Employment, March .....	1,631,257	111,354	153,676	203,446	296,339	216,952	267,612	177,858	115,367	88,653
<b>Construction</b>										
Establishments, first quarter .....	861,030	558,318	141,743	84,922	52,373	15,118	6,762	1,358	337	99
Employment, March .....	7,299,087	823,891	929,155	1,140,245	1,565,409	1,027,718	994,696	454,918	220,788	142,267
<b>Manufacturing</b>										
Establishments, first quarter .....	362,959	137,311	61,852	55,135	53,364	25,712	19,573	6,423	2,469	1,120
Employment, March .....	14,098,486	240,304	415,575	757,991	1,662,309	1,798,423	3,006,794	2,207,979	1,668,696	2,340,415
<b>Trade, transportation, and utilities</b>										
Establishments, first quarter .....	1,880,255	999,688	380,100	245,926	158,053	53,502	33,590	7,071	1,796	529
Employment, March .....	25,612,515	1,663,203	2,529,630	3,293,292	4,772,401	3,695,250	5,001,143	2,419,416	1,166,322	1,071,858
<b>Information</b>										
Establishments, first quarter .....	142,974	81,209	21,094	16,356	13,313	5,553	3,568	1,141	512	228
Employment, March .....	3,037,124	113,399	140,632	223,171	411,358	384,148	544,418	392,681	355,421	471,896
<b>Financial activities</b>										
Establishments, first quarter .....	836,365	541,333	151,952	80,853	40,558	12,146	6,245	1,890	928	460
Employment, March .....	8,102,371	874,114	1,002,449	1,068,474	1,206,411	832,505	936,343	655,392	641,926	884,757
<b>Professional and business services</b>										
Establishments, first quarter .....	1,403,142	948,773	192,581	121,585	80,222	30,997	20,046	5,849	2,169	920
Employment, March .....	17,162,560	1,333,479	1,265,155	1,639,285	2,431,806	2,148,736	3,038,221	1,995,309	1,469,170	1,841,399
<b>Education and health services</b>										
Establishments, first quarter .....	787,747	375,326	175,191	112,455	72,335	26,364	18,400	4,106	1,832	1,738
Employment, March .....	16,838,748	684,886	1,163,519	1,512,272	2,177,055	1,835,664	2,754,731	1,400,469	1,282,903	4,027,249
<b>Leisure and hospitality</b>										
Establishments, first quarter .....	699,767	270,143	118,147	128,663	131,168	38,635	10,459	1,602	648	302
Employment, March .....	12,633,387	430,588	796,935	1,802,270	3,945,588	2,583,745	1,475,115	540,014	437,645	621,487
<b>Other services</b>										
Establishments, first quarter .....	1,121,269	912,768	118,306	56,724	24,734	5,570	2,629	418	99	21
Employment, March .....	4,326,368	1,087,667	771,276	747,842	718,557	377,961	388,231	139,473	63,337	32,024

<sup>1</sup> Includes establishments that reported no workers in March 2006.

NOTE: Data are final. Detail may not add to total due to rounding.

<sup>2</sup> Includes data for unclassified establishments, not shown separately.

**26. Average annual wages for 2005 and 2006 for all covered workers<sup>1</sup> by metropolitan area**

Metropolitan area <sup>2</sup>	Average annual wages <sup>3</sup>		
	2005	2006	Percent change, 2005-06
Metropolitan areas <sup>4</sup> .....	\$42,253	\$44,165	4.5
Abilene, TX .....	27,876	29,842	7.1
Aguadilla-Isabela-San Sebastian, PR .....	18,717	19,277	3.0
Akron, OH .....	37,471	38,088	1.6
Albany, GA .....	31,741	32,335	1.9
Albany-Schenectady-Troy, NY .....	39,201	41,027	4.7
Albuquerque, NM .....	35,665	36,934	3.6
Alexandria, LA .....	30,114	31,329	4.0
Allentown-Bethlehem-Easton, PA-NJ .....	38,506	39,787	3.3
Altoona, PA .....	29,642	30,394	2.5
Amarillo, TX .....	31,954	33,574	5.1
Ames, IA .....	33,889	35,331	4.3
Anchorage, AK .....	41,712	42,955	3.0
Anderson, IN .....	31,418	32,184	2.4
Anderson, SC .....	29,463	30,373	3.1
Ann Arbor, MI .....	45,820	47,186	3.0
Anniston-Oxford, AL .....	31,231	32,724	4.8
Appleton, WI .....	34,431	35,308	2.5
Asheville, NC .....	30,926	32,268	4.3
Athens-Clarke County, GA .....	32,512	33,485	3.0
Atlanta-Sandy Springs-Marietta, GA .....	44,595	45,889	2.9
Atlantic City, NJ .....	36,735	38,018	3.5
Auburn-Opelika, AL .....	29,196	30,468	4.4
Augusta-Richmond County, GA-SC .....	34,588	35,638	3.0
Austin-Round Rock, TX .....	43,500	45,737	5.1
Bakersfield, CA .....	34,165	36,020	5.4
Baltimore-Towson, MD .....	43,486	45,177	3.9
Bangor, ME .....	30,707	31,746	3.4
Barnstable Town, MA .....	35,123	36,437	3.7
Baton Rouge, LA .....	34,523	37,245	7.9
Battle Creek, MI .....	37,994	39,362	3.6
Bay City, MI .....	33,572	35,094	4.5
Beaumont-Port Arthur, TX .....	36,530	39,026	6.8
Bellingham, WA .....	31,128	32,618	4.8
Bend, OR .....	31,492	33,319	5.8
Billings, MT .....	31,748	33,270	4.8
Binghamton, NY .....	33,290	35,048	5.3
Birmingham-Hoover, AL .....	39,353	40,798	3.7
Bismarck, ND .....	31,504	32,550	3.3
Blacksburg-Christiansburg-Radford, VA .....	32,196	34,024	5.7
Bloomington, IN .....	30,080	30,913	2.8
Bloomington-Normal, IL .....	39,404	41,359	5.0
Boise City-Nampa, ID .....	34,623	36,734	6.1
Boston-Cambridge-Quincy, MA-NH .....	54,199	56,809	4.8
Boulder, CO .....	49,115	50,944	3.7
Bowling Green, KY .....	31,306	32,529	3.9
Bremerton-Silverdale, WA .....	36,467	37,694	3.4
Bridgeport-Stamford-Norwalk, CT .....	71,095	74,890	5.3
Brownsville-Harlingen, TX .....	24,893	25,795	3.6
Brunswick, GA .....	30,902	32,717	5.9
Buffalo-Niagara Falls, NY .....	35,302	36,950	4.7
Burlington, NC .....	31,084	32,835	5.6
Burlington-South Burlington, VT .....	38,582	40,548	5.1
Canton-Massillon, OH .....	32,080	33,132	3.3
Cape Coral-Fort Myers, FL .....	35,649	37,065	4.0
Carson City, NV .....	38,428	40,115	4.4
Casper, WY .....	34,810	38,307	10.0
Cedar Rapids, IA .....	37,902	38,976	2.8
Champaign-Urbana, IL .....	33,278	34,422	3.4
Charleston, WV .....	35,363	36,887	4.3
Charleston-North Charleston, SC .....	33,896	35,267	4.0
Charlotte-Gastonia-Concord, NC-SC .....	43,728	45,732	4.6
Charlottesville, VA .....	37,392	39,051	4.4
Chattanooga, TN-GA .....	33,743	35,358	4.8
Cheyenne, WY .....	32,208	35,306	9.6
Chicago-Naperville-Joliet, IL-IN-WI .....	46,609	48,631	4.3
Chico, CA .....	30,007	31,557	5.2
Cincinnati-Middletown, OH-KY-IN .....	40,343	41,447	2.7
Clarksville, TN-KY .....	29,870	30,949	3.6
Cleveland, TN .....	32,030	33,075	3.3
Cleveland-Elyria-Mentor, OH .....	39,973	41,325	3.4
Coeur d'Alene, ID .....	28,208	29,797	5.6
College Station-Bryan, TX .....	29,032	30,239	4.2
Colorado Springs, CO .....	37,268	38,325	2.8
Columbia, MO .....	31,263	32,207	3.0
Columbia, SC .....	33,386	35,209	5.5
Columbus, GA-AL .....	31,370	32,334	3.1
Columbus, IN .....	38,446	40,107	4.3
Columbus, OH .....	39,806	41,168	3.4
Corpus Christi, TX .....	32,975	35,399	7.4
Corvallis, OR .....	39,357	40,586	3.1

See footnotes at end of table.

**26. Average annual wages for 2005 and 2006 for all covered workers<sup>1</sup> by metropolitan area — Continued**

Metropolitan area <sup>2</sup>	Average annual wages <sup>3</sup>		
	2005	2006	Percent change, 2005-06
Cumberland, MD-WV .....	\$28,645	\$29,859	4.2
Dallas-Fort Worth-Arlington, TX .....	45,337	47,525	4.8
Dalton, GA .....	32,848	33,266	1.3
Danville, IL .....	31,861	33,141	4.0
Danville, VA .....	28,449	28,870	1.5
Davenport-Moline-Rock Island, IA-IL .....	35,546	37,559	5.7
Dayton, OH .....	37,922	39,387	3.9
Decatur, AL .....	33,513	34,883	4.1
Decatur, IL .....	38,444	39,375	2.4
Deltona-Daytona Beach-Ormond Beach, FL .....	29,927	31,197	4.2
Denver-Aurora, CO .....	45,940	48,232	5.0
Des Moines, IA .....	39,760	41,358	4.0
Detroit-Warren-Livonia, MI .....	46,790	47,455	1.4
Dothan, AL .....	30,253	31,473	4.0
Dover, DE .....	33,132	34,571	4.3
Dubuque, IA .....	32,414	33,044	1.9
Duluth, MN-WI .....	32,638	33,677	3.2
Durham, NC .....	46,743	49,314	5.5
Eau Claire, WI .....	30,763	31,718	3.1
El Centro, CA .....	29,879	30,035	0.5
Elizabethtown, KY .....	30,912	32,072	3.8
Elkhart-Goshen, IN .....	35,573	35,878	0.9
Elmira, NY .....	32,989	33,968	3.0
El Paso, TX .....	28,666	29,903	4.3
Erie, PA .....	32,010	33,213	3.8
Eugene-Springfield, OR .....	32,295	33,257	3.0
Evansville, IN-KY .....	35,302	36,858	4.4
Fairbanks, AK .....	39,399	41,296	4.8
Fajardo, PR .....	20,011	21,002	5.0
Fargo, ND-MN .....	32,291	33,542	3.9
Farmington, NM .....	33,695	36,220	7.5
Fayetteville, NC .....	30,325	31,281	3.2
Fayetteville-Springdale-Rogers, AR-MO .....	34,598	35,734	3.3
Flagstaff, AZ .....	30,733	32,231	4.9
Flint, MI .....	37,982	39,409	3.8
Florence, SC .....	32,326	33,610	4.0
Florence-Muscle Shoals, AL .....	28,885	29,518	2.2
Fond du Lac, WI .....	32,634	33,376	2.3
Fort Collins-Loveland, CO .....	36,612	37,940	3.6
Fort Smith, AR-OK .....	29,599	30,932	4.5
Fort Walton Beach-Crestview-Destin, FL .....	32,976	34,409	4.3
Fort Wayne, IN .....	34,717	35,641	2.7
Fresno, CA .....	32,266	33,504	3.8
Gadsden, AL .....	28,438	29,499	3.7
Gainesville, FL .....	32,992	34,573	4.8
Gainesville, GA .....	33,828	34,765	2.8
Glens Falls, NY .....	31,710	32,780	3.4
Goldsboro, NC .....	28,316	29,331	3.6
Grand Forks, ND-MN .....	28,138	29,234	3.9
Grand Junction, CO .....	31,611	33,729	6.7
Grand Rapids-Wyoming, MI .....	36,941	38,056	3.0
Great Falls, MT .....	28,021	29,542	5.4
Greeley, CO .....	33,636	35,144	4.5
Green Bay, WI .....	35,467	36,677	3.4
Greensboro-High Point, NC .....	34,876	35,898	2.9
Greenville, NC .....	31,433	32,432	3.2
Greenville, SC .....	34,469	35,471	2.9
Guayama, PR .....	23,263	24,551	5.5
Gulfport-Biloxi, MS .....	31,688	34,688	9.5
Hagerstown-Martinsburg, MD-WV .....	33,202	34,621	4.3
Hanford-Corcoran, CA .....	29,989	31,148	3.9
Harrisburg-Carlisle, PA .....	39,144	39,807	1.7
Harrisonburg, VA .....	30,366	31,522	3.8
Hartford-West Hartford-East Hartford, CT .....	50,154	51,282	2.2
Hattiesburg, MS .....	28,568	30,059	5.2
Hickory-Lenoir-Morganton, NC .....	30,090	31,323	4.1
Hinesville-Fort Stewart, GA .....	30,062	31,416	4.5
Holland-Grand Haven, MI .....	36,362	36,895	1.5
Honolulu, HI .....	37,654	39,009	3.6
Hot Springs, AR .....	27,024	27,684	2.4
Houma-Bayou Cane-Thibodaux, LA .....	33,696	38,417	14.0
Houston-Baytown-Sugar Land, TX .....	47,157	50,177	6.4
Huntington-Ashland, WV-KY-OH .....	31,415	32,648	3.9
Huntsville, AL .....	42,401	44,659	5.3
Idaho Falls, ID .....	29,795	31,632	6.2
Indianapolis, IN .....	39,830	41,307	3.7
Iowa City, IA .....	34,785	35,913	3.2
Ithaca, NY .....	36,457	38,337	5.2
Jackson, MI .....	35,879	36,836	2.7
Jackson, MS .....	33,099	34,605	4.5

See footnotes at end of table.

**26. Average annual wages for 2005 and 2006 for all covered workers<sup>1</sup> by metropolitan area — Continued**

Metropolitan area <sup>2</sup>	Average annual wages <sup>3</sup>		
	2005	2006	Percent change, 2005-06
Jackson, TN .....	\$33,286	\$34,477	3.6
Jacksonville, FL .....	38,224	40,192	5.1
Jacksonville, NC .....	24,803	25,854	4.2
Janesville, WI .....	34,107	36,732	7.7
Jefferson City, MO .....	30,991	31,771	2.5
Johnson City, TN .....	29,840	31,058	4.1
Johnstown, PA .....	29,335	29,972	2.2
Jonesboro, AR .....	28,550	28,972	1.5
Joplin, MO .....	29,152	30,111	3.3
Kalamazoo-Portage, MI .....	36,042	37,099	2.9
Kankakee-Bradley, IL .....	31,802	32,389	1.8
Kansas City, MO-KS .....	39,749	41,320	4.0
Kennewick-Richland-Pasco, WA .....	38,453	38,750	0.8
Killeen-Temple-Fort Hood, TX .....	30,028	31,511	4.9
Kingsport-Bristol-Bristol, TN-VA .....	33,568	35,100	4.6
Kingston, NY .....	30,752	33,697	9.6
Knoxville, TN .....	35,724	37,216	4.2
Kokomo, IN .....	44,462	45,808	3.0
La Crosse, WI-MN .....	31,029	31,819	2.5
Lafayette, IN .....	35,176	35,380	0.6
Lafayette, LA .....	34,729	38,170	9.9
Lake Charles, LA .....	33,728	35,883	6.4
Lakeland, FL .....	32,235	33,530	4.0
Lancaster, PA .....	35,264	36,171	2.6
Lansing-East Lansing, MI .....	38,135	39,890	4.6
Laredo, TX .....	27,401	28,051	2.4
Las Cruces, NM .....	28,569	29,969	4.9
Las Vegas-Paradise, NV .....	38,940	40,139	3.1
Lawrence, KS .....	28,492	29,896	4.9
Lawton, OK .....	28,459	29,830	4.8
Lebanon, PA .....	30,704	31,790	3.5
Lewiston, ID-WA .....	29,414	30,776	4.6
Lewiston-Auburn, ME .....	31,008	32,231	3.9
Lexington-Fayette, KY .....	36,683	37,926	3.4
Lima, OH .....	32,630	33,790	3.6
Lincoln, NE .....	32,711	33,703	3.0
Little Rock-North Little Rock, AR .....	34,920	36,169	3.6
Logan, UT-ID .....	25,869	26,766	3.5
Longview, TX .....	32,603	35,055	7.5
Longview, WA .....	33,993	35,140	3.4
Los Angeles-Long Beach-Santa Ana, CA .....	46,592	48,680	4.5
Louisville, KY-IN .....	37,144	38,673	4.1
Lubbock, TX .....	30,174	31,977	6.0
Lynchburg, VA .....	32,025	33,242	3.8
Macon, GA .....	33,110	34,126	3.1
Madera, CA .....	29,356	31,213	6.3
Madison, WI .....	38,210	40,007	4.7
Manchester-Nashua, NH .....	45,066	46,659	3.5
Mansfield, OH .....	32,688	33,171	1.5
Mayaguez, PR .....	19,597	20,619	5.2
McAllen-Edinburg-Pharr, TX .....	25,315	26,712	5.5
Medford, OR .....	30,502	31,697	3.9
Memphis, TN-MS-AR .....	39,094	40,580	3.8
Merced, CA .....	30,209	31,147	3.1
Miami-Fort Lauderdale-Miami Beach, FL .....	40,174	42,175	5.0
Michigan City-La Porte, IN .....	30,724	31,383	2.1
Midland, TX .....	38,267	42,625	11.4
Milwaukee-Waukesha-West Allis, WI .....	40,181	42,049	4.6
Minneapolis-St. Paul-Bloomington, MN-WI .....	45,507	46,931	3.1
Missoula, MT .....	29,627	30,652	3.5
Mobile, AL .....	33,496	36,126	7.9
Modesto, CA .....	34,325	35,468	3.3
Monroe, LA .....	29,264	30,618	4.6
Monroe, MI .....	39,449	40,938	3.8
Montgomery, AL .....	33,441	35,383	5.8
Morgantown, WV .....	31,529	32,608	3.4
Morristown, TN .....	31,215	31,914	2.2
Mount Vernon-Anacortes, WA .....	31,387	32,851	4.7
Muncie, IN .....	32,172	30,691	-4.6
Muskegon-Norton Shores, MI .....	33,035	33,949	2.8
Myrtle Beach-Conway-North Myrtle Beach, SC .....	26,642	27,905	4.7
Napa, CA .....	40,180	41,788	4.0
Naples-Marco Island, FL .....	38,211	39,320	2.9
Nashville-Davidson--Murfreesboro, TN .....	38,753	41,003	5.8
New Haven-Milford, CT .....	43,931	44,892	2.2
New Orleans-Metairie-Kenner, LA .....	37,239	42,434	14.0
New York-Northern New Jersey-Long Island, NY-NJ-PA .....	57,660	61,388	6.5
Niles-Benton Harbor, MI .....	35,029	36,967	5.5
Norwich-New London, CT .....	42,151	43,184	2.5
Ocala, FL .....	30,008	31,330	4.4

See footnotes at end of table.

**26. Average annual wages for 2005 and 2006 for all covered workers<sup>1</sup> by metropolitan area — Continued**

Metropolitan area <sup>2</sup>	Average annual wages <sup>3</sup>		
	2005	2006	Percent change, 2005-06
Ocean City, NJ .....	\$31,033	\$31,801	2.5
Odessa, TX .....	33,475	37,144	11.0
Ogden-Clearfield, UT .....	31,195	32,890	5.4
Oklahoma City, OK .....	33,142	35,846	8.2
Olympia, WA .....	36,230	37,787	4.3
Omaha-Council Bluffs, NE-IA .....	36,329	38,139	5.0
Orlando, FL .....	36,466	37,776	3.6
Oshkosh-Neenah, WI .....	38,820	39,538	1.8
Owensboro, KY .....	31,379	32,491	3.5
Oxnard-Thousand Oaks-Ventura, CA .....	44,597	45,467	2.0
Palm Bay-Melbourne-Titusville, FL .....	38,287	39,778	3.9
Panama City-Lynn Haven, FL .....	31,894	33,341	4.5
Parkersburg-Marietta, WV-OH .....	30,747	32,213	4.8
Pascagoula, MS .....	34,735	36,287	4.5
Pensacola-Ferry Pass-Brent, FL .....	32,064	33,530	4.6
Peoria, IL .....	39,871	42,283	6.0
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD .....	46,454	48,647	4.7
Phoenix-Mesa-Scottsdale, AZ .....	40,245	42,220	4.9
Pine Bluff, AR .....	30,794	32,115	4.3
Pittsburgh, PA .....	38,809	40,759	5.0
Pittsfield, MA .....	35,807	36,707	2.5
Pocatello, ID .....	27,686	28,418	2.6
Ponce, PR .....	19,660	20,266	3.1
Portland-South Portland-Biddeford, ME .....	35,857	36,979	3.1
Portland-Vancouver-Beaverton, OR-WA .....	41,048	42,607	3.8
Port St. Lucie-Fort Pierce, FL .....	33,235	34,408	3.5
Poughkeepsie-Newburgh-Middletown, NY .....	38,187	39,528	3.5
Prescott, AZ .....	29,295	30,625	4.5
Providence-New Bedford-Fall River, RI-MA .....	37,796	39,428	4.3
Provo-Orem, UT .....	30,395	32,308	6.3
Pueblo, CO .....	30,165	30,941	2.6
Punta Gorda, FL .....	31,937	32,370	1.4
Racine, WI .....	37,659	39,002	3.6
Raleigh-Cary, NC .....	39,465	41,205	4.4
Rapid City, SD .....	28,758	29,920	4.0
Reading, PA .....	36,210	38,048	5.1
Redding, CA .....	32,139	33,307	3.6
Reno-Sparks, NV .....	38,453	39,537	2.8
Richmond, VA .....	41,274	42,495	3.0
Riverside-San Bernardino-Ontario, CA .....	35,201	36,668	4.2
Roanoke, VA .....	32,987	33,912	2.8
Rochester, MN .....	41,296	42,941	4.0
Rochester, NY .....	37,991	39,481	3.9
Rockford, IL .....	35,652	37,424	5.0
Rocky Mount, NC .....	30,983	31,556	1.8
Rome, GA .....	33,896	34,850	2.8
Sacramento-Arden-Arcade-Roseville, CA .....	42,800	44,552	4.1
Saginaw-Saginaw Township North, MI .....	36,325	37,747	3.9
St. Cloud, MN .....	31,705	33,018	4.1
St. George, UT .....	26,046	28,034	7.6
St. Joseph, MO-KS .....	30,009	31,253	4.1
St. Louis, MO-IL .....	39,985	41,354	3.4
Salem, OR .....	31,289	32,764	4.7
Salinas, CA .....	36,067	37,974	5.3
Salisbury, MD .....	32,240	33,223	3.0
Salt Lake City, UT .....	36,857	38,630	4.8
San Angelo, TX .....	29,530	30,168	2.2
San Antonio, TX .....	35,097	36,763	4.7
San Diego-Carlsbad-San Marcos, CA .....	43,824	45,784	4.5
Sandusky, OH .....	32,631	33,526	2.7
San Francisco-Oakland-Fremont, CA .....	58,634	61,343	4.6
San German-Cabo Rojo, PR .....	18,745	19,498	4.0
San Jose-Sunnyvale-Santa Clara, CA .....	71,970	76,608	6.4
San Juan-Caguas-Guaynabo, PR .....	23,952	24,812	3.6
San Luis Obispo-Paso Robles, CA .....	33,759	35,146	4.1
Santa Barbara-Santa Maria-Goleta, CA .....	39,080	40,326	3.2
Santa Cruz-Watsonville, CA .....	38,016	40,776	7.3
Santa Fe, NM .....	33,253	35,320	6.2
Santa Rosa-Petaluma, CA .....	40,017	41,533	3.8
Sarasota-Bradenton-Venice, FL .....	33,905	35,751	5.4
Savannah, GA .....	34,104	35,684	4.6
Scranton-Wilkes-Barre, PA .....	32,057	32,813	2.4
Seattle-Tacoma-Bellevue, WA .....	46,644	49,455	6.0
Sheboygan, WI .....	35,067	35,908	2.4
Sherman-Denison, TX .....	32,800	34,166	4.2
Shreveport-Bossier City, LA .....	31,962	33,678	5.4
Sioux City, IA-NE-SD .....	31,122	31,826	2.3
Sioux Falls, SD .....	33,257	34,542	3.9
South Bend-Mishawaka, IN-MI .....	34,086	35,089	2.9
Spartanburg, SC .....	35,526	37,077	4.4

See footnotes at end of table.

**26. Average annual wages for 2005 and 2006 for all covered workers<sup>1</sup> by metropolitan area — Continued**

Metropolitan area <sup>2</sup>	Average annual wages <sup>3</sup>		
	2005	2006	Percent change, 2005-06
Spokane, WA .....	\$32,621	\$34,016	4.3
Springfield, IL .....	39,299	40,679	3.5
Springfield, MA .....	36,791	37,962	3.2
Springfield, MO .....	30,124	30,786	2.2
Springfield, OH .....	30,814	31,844	3.3
State College, PA .....	34,109	35,392	3.8
Stockton, CA .....	35,030	36,426	4.0
Sumter, SC .....	27,469	29,294	6.6
Syracuse, NY .....	36,494	38,081	4.3
Tallahassee, FL .....	33,548	35,018	4.4
Tampa-St. Petersburg-Clearwater, FL .....	36,374	38,016	4.5
Terre Haute, IN .....	30,597	31,341	2.4
Texarkana, TX-Texarkana, AR .....	31,302	32,545	4.0
Toledo, OH .....	35,848	37,039	3.3
Topeka, KS .....	33,303	34,806	4.5
Trenton-Ewing, NJ .....	52,034	54,274	4.3
Tucson, AZ .....	35,650	37,119	4.1
Tulsa, OK .....	35,211	37,637	6.9
Tuscaloosa, AL .....	34,124	35,613	4.4
Tyler, TX .....	34,731	36,173	4.2
Utica-Rome, NY .....	30,902	32,457	5.0
Valdosta, GA .....	25,712	26,794	4.2
Vallejo-Fairfield, CA .....	38,431	40,225	4.7
Vero Beach, FL .....	32,591	33,823	3.8
Victoria, TX .....	34,327	36,642	6.7
Vineland-Millville-Bridgeton, NJ .....	36,387	37,749	3.7
Virginia Beach-Norfolk-Newport News, VA-NC .....	34,580	36,071	4.3
Visalia-Porterville, CA .....	28,582	29,772	4.2
Waco, TX .....	32,325	33,450	3.5
Warner Robins, GA .....	36,762	38,087	3.6
Washington-Arlington-Alexandria, DC-VA-MD-WV .....	55,525	58,057	4.6
Waterloo-Cedar Falls, IA .....	33,123	34,329	3.6
Wausau, WI .....	33,259	34,438	3.5
Weirton-Steubenville, WV-OH .....	30,596	31,416	2.7
Wenatchee, WA .....	27,163	28,340	4.3
Wheeling, WV-OH .....	29,808	30,620	2.7
Wichita, KS .....	35,976	38,763	7.7
Wichita Falls, TX .....	29,343	30,785	4.9
Williamsport, PA .....	30,699	31,431	2.4
Wilmington, NC .....	31,792	32,948	3.6
Winchester, VA-WV .....	33,787	34,895	3.3
Winston-Salem, NC .....	36,654	37,712	2.9
Worcester, MA .....	41,094	42,726	4.0
Yakima, WA .....	27,334	28,401	3.9
Yauco, PR .....	17,818	19,001	6.6
York-Hanover, PA .....	36,834	37,226	1.1
Youngstown-Warren-Boardman, OH-PA .....	32,176	33,852	5.2
Yuba City, CA .....	32,133	33,642	4.7
Yuma, AZ .....	27,168	28,369	4.4

<sup>1</sup> Includes workers covered by Unemployment Insurance (UI) and Unemployment Compensation for Federal Employees (UCFE) programs.

<sup>2</sup> Includes data for Metropolitan Statistical Areas (MSA) as defined by OMB Bulletin No. 04-03 as of February 18, 2004.

<sup>3</sup> Each year's total is based on the MSA definition for the specific year. Annual changes include differences resulting from changes in MSA definitions.

<sup>4</sup> 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 <sup>1</sup>	1999 <sup>1</sup>	2000 <sup>1</sup>	2001 <sup>1</sup>	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

<sup>1</sup> 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
<b>Private sector:</b>											
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
<b>Goods-producing:</b>											
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
<b>Natural resources and mining</b>											
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
<b>Construction:</b>											
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
<b>Manufacturing:</b>											
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
<b>Private service-providing:</b>											
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
<b>Trade, transportation, and utilities:</b>											
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
<b>Wholesale trade:</b>											
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
<b>Retail trade:</b>											
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
<b>Transportation and warehousing:</b>											
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
<b>Utilities:</b>											
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
<b>Information:</b>											
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
<b>Financial activities:</b>											
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
<b>Professional and business services:</b>											
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
<b>Education and health services:</b>											
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
<b>Leisure and hospitality:</b>											
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
<b>Other services:</b>											
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,<sup>1</sup> by occupation and industry group

[December 2005 = 100]

Series	2006			2007				2008		Percent change	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	3 months ended	12 months ended
	June 2008										
<b>Civilian workers<sup>2</sup></b> .....	101.6	102.7	103.3	104.2	105.0	106.1	106.7	107.6	108.3	0.7	3.1
<b>Workers by occupational group</b>											
Management, professional, and related.....	101.6	103.0	103.7	104.7	105.5	106.7	107.2	108.3	109.0	.6	3.3
Management, business, and financial.....	101.9	102.7	103.2	104.4	105.2	106.2	106.6	108.2	108.9	.6	3.5
Professional and related.....	101.4	103.2	104.0	104.9	105.7	107.0	107.6	108.4	109.0	.6	3.1
Sales and office.....	101.6	102.4	103.0	103.8	104.8	105.5	106.4	106.8	107.7	.8	2.8
Sales and related.....	101.1	101.7	102.3	102.4	103.6	104.1	105.2	105.0	106.1	1.0	2.4
Office and administrative support.....	101.9	102.8	103.5	104.7	105.5	106.4	107.1	108.0	108.6	.6	2.9
Natural resources, construction, and maintenance.....	102.0	103.0	103.6	104.1	105.1	106.1	106.8	107.7	108.4	.6	3.1
Construction and extraction.....	102.0	103.0	103.7	104.3	105.7	106.5	107.4	108.5	109.6	1.0	3.7
Installation, maintenance, and repair.....	102.0	103.0	103.6	103.7	104.4	105.6	106.2	106.7	107.0	.3	2.5
Production, transportation, and material moving.....	101.1	101.8	102.4	102.7	103.5	104.2	104.7	105.6	106.2	.6	2.6
Production.....	101.0	101.6	102.0	102.1	102.8	103.3	104.1	104.8	105.3	.5	2.4
Transportation and material moving.....	101.3	102.2	102.8	103.4	104.4	105.3	105.6	106.6	107.3	.7	2.8
Service occupations.....	101.4	102.5	103.5	104.8	105.5	106.9	107.7	108.4	109.1	.6	3.4
<b>Workers by industry</b>											
Goods-producing.....	101.3	102.0	102.5	102.9	103.9	104.4	105.0	106.1	106.8	.7	2.8
Manufacturing.....	101.0	101.4	101.8	102.0	102.9	103.2	103.8	104.7	105.1	.4	2.1
Service-providing.....	101.6	102.9	103.5	104.4	105.2	106.4	107.0	107.8	108.5	.6	3.1
Education and health services.....	101.3	103.5	104.2	104.9	105.5	107.2	107.9	108.6	109.2	.6	3.5
Health care and social assistance.....	102.0	103.5	104.3	105.4	106.1	107.1	107.9	108.9	109.6	.6	3.3
Hospitals.....	101.9	103.2	104.0	105.1	105.7	106.7	107.5	108.4	109.2	.7	3.3
Nursing and residential care facilities.....	101.4	102.6	103.7	104.5	105.0	105.6	106.3	107.3	108.2	.8	3.0
Education services.....	100.7	103.4	104.1	104.5	104.9	107.3	107.9	108.3	108.9	.6	3.8
Elementary and secondary schools.....	100.5	103.5	104.2	104.6	105.0	107.4	107.9	108.2	108.8	.6	3.6
Public administration <sup>3</sup> .....	101.2	102.4	103.8	105.6	106.6	108.0	109.1	109.7	110.1	.4	3.3
<b>Private industry workers</b> .....	101.7	102.5	103.2	104.0	104.9	105.7	106.3	107.3	108.0	.7	3.0
<b>Workers by occupational group</b>											
Management, professional, and related.....	101.9	102.9	103.5	104.6	105.5	106.4	106.8	108.1	108.9	.7	3.2
Management, business, and financial.....	102.0	102.7	103.1	104.3	105.1	106.0	106.3	108.0	108.7	.6	3.4
Professional and related.....	101.8	103.1	103.9	104.9	105.9	106.7	107.3	108.3	109.0	.6	2.9
Sales and office.....	101.6	102.3	102.9	103.7	104.7	105.3	106.1	106.6	107.5	.8	2.7
Sales and related.....	101.1	101.7	102.3	102.4	103.6	104.2	105.2	105.0	106.2	1.1	2.5
Office and administrative support.....	101.9	102.7	103.4	104.5	105.4	106.0	106.7	107.8	108.5	.6	2.9
Natural resources, construction, and maintenance.....	102.1	103.0	103.6	104.0	105.0	105.9	106.7	107.6	108.3	.7	3.1
Construction and extraction.....	102.2	103.1	103.7	104.4	105.7	106.5	107.4	108.6	109.7	1.0	3.8
Installation, maintenance, and repair.....	102.1	103.0	103.4	103.5	104.1	105.2	105.8	106.3	106.6	.3	2.4
Production, transportation, and material moving.....	101.1	101.7	102.3	102.5	103.3	103.9	104.5	105.5	106.0	.5	2.6
Production.....	101.0	101.6	102.0	102.1	102.8	103.2	104.0	104.8	105.2	.4	2.3
Transportation and material moving.....	101.2	102.0	102.6	103.1	104.1	104.9	105.3	106.4	107.2	.8	3.0
Service occupations.....	101.5	102.3	103.1	104.5	105.2	106.4	107.0	107.8	108.7	.8	3.3
<b>Workers by industry and occupational group</b>											
Goods-producing industries.....	101.3	102.0	102.5	102.9	103.9	104.4	105.0	106.1	106.8	.7	2.8
Management, professional, and related.....	100.7	101.6	102.0	102.7	103.8	104.3	104.4	106.1	106.6	.5	2.7
Sales and office.....	102.7	102.1	102.8	103.0	103.7	104.1	104.8	105.1	106.3	1.1	2.5
Natural resources, construction, and maintenance.....	101.9	102.7	103.3	104.0	105.3	106.1	107.0	108.1	109.0	.8	3.5
Production, transportation, and material moving.....	101.0	101.6	102.0	102.1	102.9	103.3	104.0	104.8	105.3	.5	2.3
Construction.....	101.9	103.0	103.6	104.7	105.9	106.9	107.6	108.9	110.1	1.1	4.0
Manufacturing.....	101.0	101.4	101.8	102.0	102.9	103.2	103.8	104.7	105.1	.4	2.1
Management, professional, and related.....	100.5	101.3	101.4	102.0	103.3	103.3	103.5	104.9	105.2	.3	1.8
Sales and office.....	102.8	101.3	102.1	102.4	103.2	103.5	104.3	105.0	106.1	1.0	2.8
Natural resources, construction, and maintenance.....	100.8	101.5	102.1	101.7	102.4	102.8	103.9	104.6	104.5	-.1	2.1
Production, transportation, and material moving.....	100.9	101.5	101.9	101.9	102.6	103.1	103.8	104.5	105.0	.5	2.3
Service-providing industries.....	101.8	102.7	103.4	104.3	105.2	106.1	106.7	107.7	108.5	.7	3.1
Management, professional, and related.....	102.2	103.2	103.8	105.0	105.9	106.8	107.3	108.5	109.3	.7	3.2
Sales and office.....	101.5	102.3	102.9	103.7	104.8	105.4	106.3	106.8	107.7	.8	2.8
Natural resources, construction, and maintenance.....	102.5	103.6	104.0	104.0	104.5	105.7	106.2	106.7	107.3	.6	2.7
Production, transportation, and material moving.....	101.3	101.9	102.6	103.0	104.0	104.7	105.2	106.4	107.0	.6	2.9
Service occupations.....	101.5	102.3	103.1	104.5	105.3	106.4	107.1	107.9	108.7	.7	3.2
Trade, transportation, and utilities.....	101.4	102.4	103.0	103.1	104.2	104.7	105.5	106.1	107.3	1.1	3.0

See footnotes at end of table.

**30. Continued—Employment Cost Index, compensation<sup>1</sup> by occupation and industry group**

[December 2005 = 100]

Series	2006			2007				2008		Percent change	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	3 months ended	12 months ended
	June 2008										
Wholesale trade.....	100.8	102.4	102.9	103.7	104.6	104.2	105.3	105.7	107.2	1.4	2.5
Retail trade.....	101.2	101.9	102.7	102.9	103.9	105.1	106.1	106.6	107.6	.9	3.6
Transportation and warehousing.....	101.0	101.6	102.2	102.8	104.0	104.5	104.5	105.6	106.4	.8	2.3
Utilities.....	109.3	110.1	110.4	102.8	104.7	105.0	105.6	106.5	108.1	1.5	3.2
Information.....	102.1	103.0	103.2	104.3	105.6	105.8	106.1	106.1	106.2	.1	.6
Financial activities.....	101.8	102.1	102.5	104.2	104.6	105.4	105.6	106.8	107.3	.5	2.6
Finance and insurance.....	102.4	102.6	102.9	104.6	104.9	105.7	106.1	107.0	107.7	.7	2.7
Real estate and rental and leasing.....	99.3	100.2	100.8	102.2	103.0	104.1	103.7	105.5	105.7	.2	2.6
Professional and business services.....	102.2	102.9	103.5	104.7	105.9	106.9	107.5	109.0	109.9	.8	3.8
Education and health services.....	101.8	103.2	104.1	105.1	105.7	106.9	107.7	108.6	109.4	.7	3.5
Education services.....	101.5	103.2	104.2	104.5	104.9	106.7	107.5	108.1	109.1	.9	4.0
Health care and social assistance.....	101.9	103.2	104.1	105.2	105.9	106.9	107.8	108.8	109.4	.6	3.3
Hospitals.....	102.0	103.2	103.9	105.0	105.6	106.5	107.3	108.2	109.1	.8	3.3
Leisure and hospitality.....	101.3	102.4	103.7	105.3	106.0	107.5	108.1	109.0	109.3	.3	3.1
Accommodation and food services.....	101.4	102.5	104.0	105.8	106.4	108.1	108.6	109.5	110.0	.5	3.4
Other services, except public administration.....	102.7	103.6	104.0	105.7	106.1	107.1	107.6	108.7	109.4	.6	3.1
<b>State and local government workers.....</b>	<b>100.9</b>	<b>103.2</b>	<b>104.1</b>	<b>105.1</b>	<b>105.7</b>	<b>107.6</b>	<b>108.4</b>	<b>108.9</b>	<b>109.4</b>	<b>.5</b>	<b>3.5</b>
Workers by occupational group											
Management, professional, and related.....	100.8	103.3	104.0	104.9	105.4	107.5	108.3	108.8	109.3	.5	3.7
Professional and related.....	100.8	103.4	104.0	104.8	105.3	107.5	108.2	108.6	109.1	.5	3.6
Sales and office.....	101.5	103.3	104.1	105.6	106.2	107.9	108.6	108.8	109.3	.5	2.9
Office and administrative support.....	101.6	103.5	104.2	105.7	106.4	108.2	108.9	109.3	109.8	.5	3.2
Service occupations.....	101.2	103.1	104.5	105.4	106.3	108.0	109.1	109.7	110.0	.3	3.5
Workers by industry											
Education and health services.....	100.8	103.7	104.3	104.8	105.3	107.5	108.2	108.6	109.1	.5	3.6
Education services.....	100.5	103.5	104.1	104.6	105.0	107.4	108.0	108.4	108.8	.4	3.6
Schools.....	100.5	103.5	104.1	104.6	104.9	107.4	108.0	108.4	108.8	.4	3.7
Elementary and secondary schools.....	100.5	103.6	104.2	104.7	105.0	107.4	108.0	108.3	108.8	.5	3.6
Health care and social assistance.....	102.9	105.1	105.7	107.1	107.6	108.6	109.3	110.1	111.1	.9	3.3
Hospitals.....	101.3	103.3	104.3	105.6	106.3	107.5	108.2	109.2	109.7	.5	3.2
Public administration <sup>3</sup> .....	101.2	102.4	103.8	105.6	106.6	108.0	109.1	109.7	110.1	.4	3.3

<sup>1</sup> Cost (cents per hour worked) measured in the Employment Cost Index consists of wages, salaries, and employer cost of employee benefits.

<sup>2</sup> Consists of private industry workers (excluding farm and household workers) and State and local government (excluding Federal Government) workers.

<sup>3</sup> 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	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	3 months ended	12 months ended
	June 2008										
<b>Civilian workers</b> <sup>1</sup>	101.5	102.6	103.2	104.3	105.0	106.0	106.7	107.6	108.4	0.7	3.2
Workers by occupational group											
Management, professional, and related	101.6	102.9	103.6	104.7	105.4	106.6	107.1	108.2	109.0	.7	3.4
Management, business, and financial	102.0	102.7	103.1	104.7	105.4	106.4	106.7	108.2	109.0	.7	3.4
Professional and related	101.4	103.1	103.8	104.7	105.3	106.7	107.4	108.3	109.0	.6	3.5
Sales and office	101.6	102.4	103.0	103.8	104.8	105.4	106.2	106.7	107.7	.9	2.8
Sales and related	101.3	102.0	102.5	102.7	103.9	104.3	105.5	105.2	106.6	1.3	2.6
Office and administrative support	101.8	102.6	103.3	104.5	105.3	106.1	106.8	107.8	108.5	.6	3.0
Natural resources, construction, and maintenance	101.8	102.7	103.4	104.3	105.1	106.3	107.1	108.1	109.0	.8	3.7
Construction and extraction	101.9	102.9	103.7	104.6	105.7	106.6	107.7	109.0	109.9	.8	4.0
Installation, maintenance, and repair	101.6	102.6	103.1	103.8	104.4	105.8	106.4	107.0	107.8	.7	3.3
Production, transportation, and material moving	101.2	101.9	102.5	103.2	103.9	104.7	105.1	106.1	106.9	.8	2.9
Production	101.2	101.8	102.3	103.2	103.6	104.3	104.7	105.7	106.5	.8	2.8
Transportation and material moving	101.2	102.1	102.7	103.3	104.2	105.1	105.5	106.6	107.3	.7	3.0
Service occupations	101.2	102.2	103.2	104.6	105.3	106.5	107.3	108.0	108.7	.6	3.2
Workers by industry											
Goods-producing	101.8	102.3	102.9	103.9	104.7	105.4	106.0	107.1	108.0	.8	3.2
Manufacturing	101.7	101.9	102.3	103.3	103.9	104.5	104.9	105.9	106.7	.8	2.7
Service-providing	101.5	102.7	103.3	104.3	105.1	106.2	106.8	107.7	108.5	.7	3.2
Education and health services	101.1	103.1	103.8	104.4	104.9	106.6	107.4	108.0	108.7	.6	3.6
Health care and social assistance	101.8	103.2	104.1	105.1	105.9	107.1	107.9	108.9	109.6	.6	3.5
Hospitals	101.7	102.9	103.8	104.8	105.6	106.7	107.4	108.4	109.4	.9	3.6
Nursing and residential care facilities	101.2	102.2	103.3	104.1	104.7	105.8	106.4	107.4	108.1	.7	3.2
Education services	100.5	103.0	103.5	103.7	104.0	106.2	106.9	107.3	107.9	.6	3.8
Elementary and secondary schools	100.3	102.9	103.4	103.6	103.8	106.0	106.6	107.0	107.5	.5	3.6
Public administration	101.1	102.0	103.5	104.5	105.2	106.4	107.4	108.2	108.6	.4	3.2
<b>Private industry workers</b>	101.7	102.5	103.2	104.3	105.1	106.0	106.6	107.6	108.4	.7	3.1
Workers by occupational group											
Management, professional, and related	102.0	103.0	103.6	104.9	105.8	106.7	107.2	108.5	109.3	.7	3.3
Management, business, and financial	102.2	102.8	103.1	104.7	105.5	106.3	106.6	108.2	109.0	.7	3.3
Professional and related	101.8	103.1	104.0	105.1	106.0	107.0	107.6	108.7	109.5	.7	3.3
Sales and office	101.6	102.4	103.0	103.8	104.8	105.3	106.2	106.7	107.7	.9	2.8
Sales and related	101.3	102.0	102.6	102.8	104.0	104.4	105.5	105.3	106.6	1.2	2.5
Office and administrative support	101.9	102.6	103.3	104.5	105.4	106.0	106.7	107.7	108.5	.7	2.9
Natural resources, construction, and maintenance	101.8	102.8	103.4	104.2	105.1	106.2	107.1	108.1	109.0	.8	3.7
Construction and extraction	102.0	103.0	103.7	104.7	105.8	106.7	107.8	109.2	110.1	.8	4.1
Installation, maintenance, and repair	101.6	102.6	103.0	103.7	104.2	105.6	106.1	106.8	107.6	.7	3.3
Production, transportation, and material moving	101.2	101.8	102.4	103.1	103.8	104.5	105.0	106.0	106.8	.8	2.9
Production	101.2	101.7	102.2	103.1	103.6	104.2	104.6	105.6	106.4	.8	2.7
Transportation and material moving	101.2	102.0	102.6	103.2	104.1	105.0	105.4	106.5	107.4	.8	3.2
Service occupations	101.3	102.0	102.9	104.6	105.3	106.5	107.1	107.9	108.8	.8	3.3
Workers by industry and occupational group											
Goods-producing industries	101.8	102.3	102.9	103.9	104.7	105.4	106.0	107.1	108.0	.8	3.2
Management, professional, and related	101.7	102.4	102.8	104.4	105.3	105.9	106.0	107.7	108.4	.6	2.9
Sales and office	103.4	102.2	103.1	103.4	104.1	104.7	105.5	105.8	107.2	1.3	3.0
Natural resources, construction, and maintenance	101.9	102.7	103.4	104.4	105.6	106.5	107.6	108.8	109.6	.7	3.8
Production, transportation, and material moving	101.3	101.9	102.4	103.2	103.7	104.4	104.8	105.7	106.6	.9	2.8
Construction	102.0	102.9	103.7	104.9	106.0	107.0	107.8	109.0	110.0	.9	3.8
Manufacturing	101.7	101.9	102.3	103.3	103.9	104.5	104.9	105.9	106.7	.8	2.7
Management, professional, and related	101.5	102.2	102.3	103.8	104.6	105.0	105.3	106.7	107.2	.5	2.5
Sales and office	103.8	101.1	102.0	102.4	103.2	103.9	104.7	105.5	106.9	1.3	3.6
Natural resources, construction, and maintenance	101.7	102.3	103.0	103.8	104.3	105.0	105.9	106.8	107.1	.3	2.7
Production, transportation, and material moving	101.3	101.8	102.3	103.1	103.6	104.2	104.5	105.4	106.3	.9	2.6
Service-providing industries	101.7	102.6	103.3	104.4	105.3	106.1	106.8	107.7	108.6	.8	3.1
Management, professional, and related	102.0	103.1	103.7	105.0	105.9	106.8	107.4	108.6	109.4	.7	3.3
Sales and office	101.4	102.4	102.9	103.8	104.9	105.4	106.3	106.8	107.7	.8	2.7
Natural resources, construction, and maintenance	101.8	103.0	103.4	103.9	104.3	105.7	106.3	106.9	108.0	1.0	3.5
Production, transportation, and material moving	101.0	101.7	102.4	103.0	104.0	104.6	105.2	106.3	107.1	.8	3.0
Service occupations	101.3	102.0	102.9	104.6	105.3	106.6	107.2	108.0	108.8	.7	3.3
Trade, transportation, and utilities	100.9	102.1	102.7	103.2	104.3	104.6	105.5	105.9	107.2	1.2	2.8

See footnotes at end of table.

**31. Continued—Employment Cost Index, wages and salaries, by occupation and industry group**

[December 2005 = 100]

Series	2006			2007				2008		Percent change	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	3 months ended	12 months ended
	June 2008										
Wholesale trade.....	100.7	102.7	103.0	103.8	104.8	104.0	105.2	105.2	107.2	1.9	2.3
Retail trade.....	100.9	101.9	102.8	103.1	104.2	105.1	106.1	106.4	107.6	1.1	3.3
Transportation and warehousing.....	100.7	101.4	101.9	102.5	103.7	104.1	104.2	105.0	106.0	1.0	2.2
Utilities.....	102.1	103.0	103.5	104.3	105.5	106.1	106.8	108.0	109.3	1.2	3.6
Information.....	101.7	102.6	102.4	103.8	104.9	105.2	105.3	105.3	106.3	.9	1.3
Financial activities.....	102.3	102.5	102.8	104.7	104.9	106.0	105.9	107.2	107.7	.5	2.7
Finance and insurance.....	102.8	102.9	103.2	105.4	105.5	106.5	106.6	107.9	108.4	.5	2.7
Real estate and rental and leasing.....	99.9	100.8	101.4	101.6	102.4	103.6	103.1	104.5	104.7	.2	2.2
Professional and business services.....	102.3	103.0	103.5	104.8	105.9	106.7	107.5	109.1	110.0	.8	3.9
Education and health services.....	101.6	103.0	104.0	104.8	105.6	106.9	107.7	108.6	109.2	.6	3.4
Education services.....	101.4	103.1	104.1	104.2	104.6	106.4	107.4	107.9	108.6	.6	3.8
Health care and social assistance.....	101.6	103.0	103.9	104.9	105.8	107.0	107.8	108.7	109.4	.6	3.4
Hospitals.....	101.8	102.9	103.7	104.6	105.4	106.5	107.2	108.2	109.2	.9	3.6
Leisure and hospitality.....	101.3	102.3	103.7	105.7	106.4	108.1	108.8	109.7	109.9	.2	3.3
Accommodation and food services.....	101.3	102.2	103.8	106.0	106.5	108.4	109.0	110.0	110.4	.4	3.7
Other services, except public administration.....	102.6	103.4	103.8	105.7	106.1	107.3	107.9	109.2	109.9	.6	3.6
<b>State and local government workers.....</b>	<b>100.8</b>	<b>102.8</b>	<b>103.5</b>	<b>104.1</b>	<b>104.6</b>	<b>106.4</b>	<b>107.1</b>	<b>107.7</b>	<b>108.2</b>	<b>.5</b>	<b>3.4</b>
Workers by occupational group											
Management, professional, and related.....	100.7	102.9	103.5	104.0	104.3	106.3	107.0	107.6	108.2	.6	3.7
Professional and related.....	100.7	103.0	103.6	103.9	104.2	106.3	107.0	107.5	108.1	.6	3.7
Sales and office.....	101.2	102.6	103.2	104.5	104.8	106.3	107.0	107.4	107.9	.5	3.0
Office and administrative support.....	101.4	102.7	103.4	104.7	105.0	106.5	107.3	107.8	108.3	.5	3.1
Service occupations.....	100.8	102.4	103.9	104.5	105.2	106.5	107.7	108.3	108.6	.3	3.2
Workers by industry											
Education and health services.....	100.7	103.1	103.6	104.0	104.2	106.3	107.1	107.5	108.1	.6	3.7
Education services.....	100.4	103.0	103.4	103.7	103.9	106.1	106.8	107.2	107.7	.5	3.7
Schools.....	100.4	103.0	103.4	103.6	103.9	106.1	106.8	107.2	107.7	.5	3.7
Elementary and secondary schools.....	100.3	103.0	103.4	103.6	103.8	106.0	106.6	106.9	107.5	.6	3.6
Health care and social assistance.....	103.0	104.8	105.5	106.6	107.2	108.2	109.2	110.1	111.0	.8	3.5
Hospitals.....	101.4	103.1	104.4	105.7	106.5	107.6	108.6	109.8	110.3	.5	3.6
Public administration <sup>2</sup> .....	101.1	102.0	103.5	104.5	105.2	106.4	107.4	108.2	108.6	.4	3.2

<sup>1</sup> Consists of private industry workers (excluding farm and household workers) and State and local government (excluding Federal Government) workers.

<sup>2</sup> 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	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	3 months ended	12 months ended
	June 2008										
<b>Civilian workers</b> .....	101.6	102.8	103.6	104.0	105.1	106.1	106.8	107.6	108.1	0.5	2.9
<b>Private industry workers</b> .....	101.7	102.5	103.1	103.2	104.3	105.0	105.6	106.5	107.0	.5	2.6
Workers by occupational group											
Management, professional, and related.....	101.8	102.8	103.4	103.8	104.9	105.6	106.0	107.3	107.9	.6	2.9
Sales and office.....	101.6	102.0	102.9	103.4	104.3	105.2	106.0	106.5	107.0	.5	2.6
Natural resources, construction, and maintenance.....	102.7	103.5	104.0	103.4	104.8	105.3	105.9	106.5	107.0	.5	2.1
Production, transportation, and material moving.....	101.0	101.6	102.0	101.2	102.4	102.7	103.7	104.4	104.5	.1	2.1
Service occupations.....	102.2	103.0	103.6	104.2	105.1	106.0	106.7	107.6	108.5	.8	3.2
Workers by industry											
Goods-producing.....	100.4	101.3	101.7	100.9	102.2	102.4	103.2	104.0	104.4	.4	2.2
Manufacturing.....	99.7	100.5	100.8	99.6	101.0	100.7	101.7	102.3	102.2	-.1	1.2
Service-providing.....	102.3	103.0	103.7	104.1	105.2	106.0	106.6	107.6	108.1	.5	2.8
<b>State and local government workers</b> .....	101.3	104.1	105.2	107.0	108.0	110.3	111.0	111.4	111.8	.4	3.5

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	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	3 months ended	12 months ended
	June 2008										
<b>COMPENSATION</b>											
<b>Workers by bargaining status<sup>1</sup></b>											
Union.....	101.8	102.4	103.0	102.7	103.9	104.4	105.1	105.9	106.7	0.8	2.7
Goods-producing.....	101.2	101.8	102.2	101.5	102.8	103.1	104.0	104.6	105.6	1.0	2.7
Manufacturing.....	100.1	100.5	100.8	99.2	100.0	100.0	101.0	101.4	101.7	.3	1.7
Service-providing.....	102.2	102.9	103.6	103.7	104.7	105.4	106.0	107.0	107.5	.5	2.7
Nonunion.....	101.7	102.6	103.2	104.2	105.1	105.9	106.5	107.5	108.3	.7	3.0
Goods-producing.....	101.4	102.0	102.5	103.3	104.2	104.8	105.4	106.5	107.1	.6	2.8
Manufacturing.....	101.3	101.7	102.1	102.8	103.7	104.1	104.6	105.6	106.2	.6	2.4
Service-providing.....	101.8	102.7	103.4	104.4	105.3	106.2	106.8	107.7	108.6	.8	3.1
<b>Workers by region<sup>1</sup></b>											
Northeast.....	101.8	102.5	103.3	104.0	105.1	106.2	106.8	107.4	108.1	.7	2.9
South.....	101.6	102.8	103.5	104.3	105.3	106.1	106.7	107.8	108.5	.6	3.0
Midwest.....	101.7	102.3	102.8	103.3	104.2	104.6	105.3	106.0	107.0	.9	2.7
West.....	101.8	102.5	103.0	104.2	104.9	105.7	106.5	107.8	108.4	.6	3.3
<b>WAGES AND SALARIES</b>											
<b>Workers by bargaining status<sup>1</sup></b>											
Union.....	101.2	101.7	102.3	102.8	103.7	104.4	104.7	105.5	106.7	1.1	2.9
Goods-producing.....	101.6	101.9	102.3	102.7	103.6	104.3	104.3	105.2	106.4	1.1	2.7
Manufacturing.....	101.2	101.4	101.7	102.0	102.5	102.9	102.6	103.4	104.4	1.0	1.9
Service-providing.....	100.9	101.6	102.2	102.9	103.8	104.6	104.9	105.8	106.9	1.0	3.0
Nonunion.....	101.8	102.7	103.3	104.5	105.3	106.2	106.9	107.9	108.7	.7	3.2
Goods-producing.....	101.9	102.4	103.0	104.2	105.0	105.8	106.4	107.7	108.4	.6	3.2
Manufacturing.....	101.8	102.0	102.5	103.6	104.2	104.9	105.5	106.6	107.3	.7	3.0
Service-providing.....	101.7	102.7	103.4	104.6	105.4	106.3	107.0	107.9	108.8	.8	3.2
<b>Workers by region<sup>1</sup></b>											
Northeast.....	101.7	102.5	103.1	104.0	105.0	106.1	106.6	107.5	108.2	.7	3.0
South.....	101.6	102.9	103.6	104.6	105.6	106.5	107.0	108.1	109.1	.9	3.3
Midwest.....	101.4	102.0	102.6	103.6	104.4	105.0	105.6	106.3	107.5	1.1	3.0
West.....	102.1	102.7	103.2	104.8	105.4	106.2	107.0	108.3	108.9	.6	3.3

<sup>1</sup> 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 <sup>1</sup>
<b>All retirement</b>					
<b>Percentage of workers with access</b>					
All workers.....	57	59	60	60	61
White-collar occupations <sup>2</sup> .....	67	69	70	69	-
Management, professional, and related.....	-	-	-	-	76
Sales and office.....	-	-	-	-	64
Blue-collar occupations <sup>2</sup> .....	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
<b>Percentage of workers participating</b>					
All workers.....	49	50	50	51	51
White-collar occupations <sup>2</sup> .....	59	61	61	60	-
Management, professional, and related.....	-	-	-	-	69
Sales and office.....	-	-	-	-	54
Blue-collar occupations <sup>2</sup> .....	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
<b>Take-up rate (all workers)<sup>3</sup>.....</b>	-	-	85	85	84
<b>Defined Benefit</b>					
<b>Percentage of workers with access</b>					
All workers.....	20	21	22	21	21
White-collar occupations <sup>2</sup> .....	23	24	25	23	-
Management, professional, and related.....	-	-	-	-	29
Sales and office.....	-	-	-	-	19
Blue-collar occupations <sup>2</sup> .....	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 <sup>1</sup>
<b>Percentage of workers participating</b>					
All workers.....	20	21	21	20	20
White-collar occupations <sup>2</sup> .....	22	24	24	22	-
Management, professional, and related .....	-	-	-	-	28
Sales and office .....	-	-	-	-	17
Blue-collar occupations <sup>2</sup> .....	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
<b>Take-up rate (all workers)<sup>3</sup>.....</b>	-	-	97	96	95
<b>Defined Contribution</b>					
<b>Percentage of workers with access</b>					
All workers.....	51	53	53	54	55
White-collar occupations <sup>2</sup> .....	62	64	64	65	-
Management, professional, and related .....	-	-	-	-	71
Sales and office .....	-	-	-	-	60
Blue-collar occupations <sup>2</sup> .....	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
<b>Percentage of workers participating</b>					
All workers.....	40	42	42	43	43
White-collar occupations <sup>2</sup> .....	51	53	53	53	-
Management, professional, and related .....	-	-	-	-	60
Sales and office .....	-	-	-	-	47
Blue-collar occupations <sup>2</sup> .....	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
<b>Take-up rate (all workers)<sup>3</sup>.....</b>	-	-	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 <sup>1</sup>
<b>Employee Contribution Requirement</b>					
Employee contribution required.....	-	-	61	61	65
Employee contribution not required.....	-	-	31	33	35
Not determinable.....	-	-	8	6	0
<b>Percent of establishments</b>					
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

<sup>1</sup> 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.

<sup>2</sup> The white-collar and blue-collar occupation series were discontinued effective 2007.

<sup>3</sup> 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, participation, and selected series, 2003-2007**

Series	Year				
	2003	2004	2005	2006	2007 <sup>1</sup>
<b>Medical insurance</b>					
<b>Percentage of workers with access</b>					
All workers.....	60	69	70	71	71
White-collar occupations <sup>2</sup> .....	65	76	77	77	-
Management, professional, and related .....	-	-	-	-	85
Sales and office.....	-	-	-	-	71
Blue-collar occupations <sup>2</sup> .....	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
<b>Percentage of workers participating</b>					
All workers.....	45	53	53	52	52
White-collar occupations <sup>2</sup> .....	50	59	58	57	-
Management, professional, and related .....	-	-	-	-	67
Sales and office.....	-	-	-	-	48
Blue-collar occupations <sup>2</sup> .....	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
<b>Take-up rate (all workers)<sup>3</sup>.....</b>	-	-	75	74	73
<b>Dental</b>					
<b>Percentage of workers with access</b>					
All workers.....	40	46	46	46	46
White-collar occupations <sup>2</sup> .....	47	53	54	53	-
Management, professional, and related .....	-	-	-	-	62
Sales and office.....	-	-	-	-	47
Blue-collar occupations <sup>2</sup> .....	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, participation, and selected series, 2003-2007**

Series	Year				
	2003	2004	2005	2006	2007 <sup>1</sup>
<b>Percentage of workers participating</b>					
All workers.....	32	37	36	36	36
White-collar occupations <sup>2</sup> .....	37	43	42	41	-
Management, professional, and related .....	-	-	-	-	51
Sales and office.....	-	-	-	-	33
Blue-collar occupations <sup>2</sup> .....	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
<b>Take-up rate (all workers)<sup>3</sup>.....</b>	-	-	78	78	77
<b>Vision care</b>					
Percentage of workers with access.....	25	29	29	29	29
Percentage of workers participating.....	19	22	22	22	22
<b>Outpatient Prescription drug coverage</b>					
Percentage of workers with access.....	-	-	64	67	68
Percentage of workers participating.....	-	-	48	49	49
<b>Percent of establishments offering healthcare benefits .....</b>	58	61	63	62	60
<b>Percentage of medical premium paid by</b>					
<b>Employer and Employee</b>					
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

<sup>1</sup> 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.

<sup>2</sup> The white-collar and blue-collar occupation series were discontinued effective 2007.

<sup>3</sup> 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 disability 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	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June <sup>P</sup>
Number of stoppages:															
Beginning in period.....	20	21	2	1	1	5	3	1	2	0	2	2	1	2	1
In effect during period.....	23	23	2	1	1	6	3	2	4	1	3	4	2	4	1
Workers involved:															
Beginning in period (in thousands).....	70.1	189.2	4.0	1.1	1.0	108.3	41.7	10.5	6.5	.0	6.2	5.7	2.3	3.4	1.3
In effect during period (in thousands).....	191.0	220.9	4.0	1.1	1.0	108.3	41.7	14.2	20.7	10.5	16.7	11.9	6.0	9.4	1.3
Days idle:															
Number (in thousands).....	2,687.5	1,264.8	19.6	6.6	9.0	261.5	73.9	284.0	254.8	220.5	148.8	140.9	104.4	125.0	6.5
Percent of estimated working time <sup>1</sup> .....	.01	.01	0	0	0	.01	0	.01	.01	.01	.01	0	0	0	0

<sup>1</sup> 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	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	
<b>CONSUMER PRICE INDEX FOR ALL URBAN CONSUMERS</b>																
All items.....	201.6	207.342	208.352	208.299	207.917	208.490	208.936	210.177	210.036	211.080	211.693	213.528	214.823	216.632	218.815	
All items (1967 = 100).....	603.9	621.106	624.129	623.970	622.827	624.543	625.879	629.598	629.174	632.301	634.139	639.636	643.515	648.933	655.474	
Food and beverages.....	195.7	203.300	202.885	203.533	204.289	205.279	206.124	206.563	206.936	208.837	209.462	209.692	211.365	212.251	213.383	
Food.....	195.2	202.916	202.441	203.121	203.885	204.941	205.796	206.277	206.704	208.618	209.166	209.385	211.102	212.054	213.243	
Food at home.....	193.1	201.245	200.950	201.401	202.126	203.193	204.333	204.745	205.208	207.983	208.329	208.203	210.851	211.863	213.171	
Cereals and bakery products.....	212.8	222.107	222.605	223.297	223.981	223.372	224.691	225.668	226.461	228.661	233.389	236.261	240.034	244.192	245.758	
Meats, poultry, fish, and eggs.....	186.6	195.616	197.175	196.690	197.204	198.323	198.474	198.616	198.755	200.035	199.688	199.775	200.770	200.960	202.914	
Dairy and related products <sup>1</sup> .....	181.4	194.770	191.435	197.899	201.739	203.541	205.319	205.959	205.299	206.905	208.166	206.171	207.680	207.778	209.117	
Fruits and vegetables.....	252.9	262.628	258.337	254.616	252.845	259.100	263.648	268.407	272.482	279.072	272.129	268.446	272.746	276.481	277.957	
Nonalcoholic beverages and beverage materials.....	147.4	153.432	153.104	153.384	154.791	155.007	155.545	154.299	153.648	157.863	157.805	158.089	159.730	158.336	158.320	
Other foods at home.....	169.6	173.275	173.790	174.440	174.686	174.201	174.695	173.963	174.057	176.085	177.863	178.238	181.806	182.680	183.804	
Sugar and sweets.....	171.5	176.772	176.665	178.235	178.256	178.172	177.236	178.600	178.631	180.193	180.588	182.214	184.878	185.097	185.558	
Fats and oils.....	168.0	172.921	171.581	173.691	174.251	174.105	176.050	175.327	176.068	181.813	184.878	182.808	190.640	193.364	196.150	
Other foods.....	185.0	188.244	189.353	189.518	189.781	189.076	189.695	188.340	188.325	190.037	192.064	192.597	195.993	196.787	197.888	
Other miscellaneous foods <sup>1,2</sup> .....	113.9	115.105	116.101	115.017	116.072	114.628	114.850	115.396	115.267	115.162	118.182	117.321	118.500	118.744	118.453	
Food away from home <sup>1</sup> .....	199.4	206.659	205.934	206.931	207.756	208.805	209.275	209.854	210.233	211.070	211.878	212.537	213.083	213.667	215.015	
Other food away from home <sup>1,2</sup> .....	136.6	144.068	143.157	144.785	145.376	146.752	146.074	146.628	145.814	146.649	148.385	148.564	148.667	149.666	149.873	
Alcoholic beverages.....	200.7	207.026	207.383	207.624	208.264	208.408	209.126	209.018	208.704	210.425	212.044	212.407	213.503	213.532	213.912	
Housing.....	203.2	209.586	210.649	211.286	211.098	210.865	210.701	210.745	210.933	212.244	213.026	214.389	214.890	215.809	217.941	
Shelter.....	232.1	240.611	240.980	242.067	242.238	241.990	242.405	242.207	242.372	243.871	244.786	245.995	246.004	246.069	247.083	
Rent of primary residence.....	225.1	234.679	234.071	234.732	235.311	236.058	237.135	238.169	239.102	239.850	240.325	240.874	241.474	241.803	242.640	
Lodging away from home.....	136.0	142.813	148.622	153.016	150.236	144.480	143.172	136.703	133.545	140.176	144.092	149.434	146.378	145.634	148.621	
Owners' equivalent rent of primary residence <sup>3</sup> .....	238.2	246.235	245.690	246.149	246.815	247.487	248.075	248.876	249.532	250.106	250.481	250.966	251.418	251.576	252.170	
Tenants' and household insurance <sup>1,2</sup> .....	116.5	117.004	117.106	116.577	116.926	116.783	116.640	116.997	117.003	117.435	117.621	117.701	118.422	118.411	119.092	
Fuels and utilities.....	194.7	200.632	206.199	206.140	204.334	204.264	200.836	202.161	203.006	204.796	205.795	209.221	213.302	219.881	231.412	
Fuels.....	177.1	181.744	188.400	187.624	185.453	185.306	181.509	182.725	183.516	185.107	185.994	189.639	194.121	201.212	213.762	
Fuel oil and other fuels.....	234.9	251.453	241.589	245.680	246.542	252.580	261.745	291.845	299.296	306.937	308.269	332.139	342.811	363.872	389.423	
Gas (piped) and electricity.....	182.1	186.262	193.911	193.184	190.710	190.158	185.337	184.753	185.155	186.475	187.376	190.105	194.379	200.999	213.375	
Household furnishings and operations.....	127.0	126.875	127.361	126.894	126.520	126.193	126.233	126.252	126.066	126.515	126.753	127.423	127.332	127.598	127.625	
Apparel.....	119.5	118.998	117.225	113.500	114.439	119.535	121.846	121.204	118.257	115.795	117.839	120.881	122.113	120.752	117.019	
Men's and boys' apparel.....	114.1	112.368	110.869	109.568	109.032	112.380	114.953	114.807	112.026	110.691	112.917	114.994	116.653	116.479	112.011	
Women's and girls' apparel.....	110.7	110.296	107.826	101.291	103.237	110.973	113.402	112.166	109.418	104.367	106.340	110.645	111.221	108.722	104.312	
Infants' and toddlers' apparel <sup>1</sup> .....	116.5	113.948	111.546	108.759	110.221	113.611	117.149	117.339	113.779	113.861	115.750	116.037	116.358	114.582	111.555	
Footwear.....	123.5	122.374	120.602	119.375	120.329	123.183	124.675	125.005	122.258	121.148	122.377	124.407	126.212	125.537	123.568	
Transportation.....	180.9	184.682	189.064	187.690	184.480	184.532	184.952	190.677	189.984	190.839	190.520	195.189	198.608	205.262	211.787	
Private transportation.....	177.0	180.778	185.175	183.619	180.408	180.586	180.919	186.839	186.134	186.978	186.571	191.067	194.574	201.133	207.257	
New and used motor vehicles <sup>2</sup> .....	95.6	94.303	93.842	93.961	94.121	93.985	94.201	94.562	94.754	94.834	94.581	94.318	93.973	93.705	93.598	
New vehicles.....	137.6	136.254	135.820	135.415	135.204	134.927	135.344	136.250	136.664	136.827	136.279	135.727	135.175	134.669	134.516	
Used cars and trucks <sup>1</sup> .....	140.0	135.747	135.067	136.024	137.138	137.142	136.950	136.616	136.943	137.203	137.248	137.225	136.787	136.325	135.980	
Motor fuel.....	221.0	239.070	260.655	252.909	238.194	239.104	239.048	262.282	258.132	260.523	259.242	278.739	294.291	322.124	347.418	
Gasoline (all types).....	219.9	237.959	259.686	251.883	237.108	237.993	237.819	260.943	256.790	259.338	257.845	276.497	291.910	319.787	344.981	
Motor vehicle parts and equipment.....	117.3	121.583	120.885	121.514	121.730	122.927	123.017	123.487	123.928	124.282	125.225	126.325	126.049	126.824	127.824	
Motor vehicle maintenance and repair.....	215.6	222.963	222.553	223.487	224.019	224.302	224.939	225.672	226.120	227.732	228.120	229.765	230.528	231.730	233.162	
Public transportation.....	226.6	230.002	233.389	235.767	233.112	230.694	232.725	233.758	233.408	234.334	235.724	242.929	244.164	251.600	264.681	
Medical care.....	336.2	351.054	349.510	351.643	352.961	353.723	355.653	357.041	357.661	360.459	362.155	363.000	363.184	363.396	363.616	
Medical care commodities.....	285.9	289.999	288.508	289.250	291.164	291.340	292.161	293.201	293.610	295.356	296.130	297.308	296.951	294.896	295.194	
Medical care services.....	350.6	369.302	367.758	370.008	371.461	372.432	374.750	376.250	376.940	380.135	382.196	382.872	383.292	384.505	384.685	
Professional services.....	289.3	300.792	300.052	301.311	302.259	302.410	303.532	303.780	304.784	306.529	307.928	308.726	309.227	310.917	311.317	
Hospital and related services.....	468.1	498.922	494.916	499.400	501.026	504.206	510.006	515.359	515.677	523.313	527.971	528.968	530.144	531.022	531.606	
Recreation <sup>2</sup> .....	110.9	111.443	111.563	111.347	111.139	111.400	111.753	111.842	111.705	112.083	112.365	112.731	112.874	112.987	112.991	
Video and audio <sup>1,2</sup> .....	104.6	102.949	103.416	102.779	102.311	102.759	103.157	102.719	102.691	102.986	103.171	103.548	103.477	102.988	102.306	
Education and communication <sup>2</sup> .....	116.8	119.577	118.734	119.025	120.311	121.273	121.557	121.409	121.506	121.762	121.766	121.832	122.073	122.348	122.828	
Education <sup>2</sup> .....	162.1	171.388	168.601	169.490	172.873	175.486	176.339	176.717	176.927	177.440	177.460	177.407	177.754	177.994	178.385	
Educational books and supplies.....	388.9	420.418	415.635	418.394	427.425	430.114	431.432	431.606	434.352	437.822	439.052	439.906	442.160	442.770	443.309	
Tuition, other school fees, and child care.....	468.1	494.079	485.868	488.382	498.071	505.924	508.449	509.605	510.016	511.301	511.253	511.013	511.887	512.579	513.743	
Communication <sup>1,2</sup> .....	84.1	83.367	83.594	83.553	83.655	83.690	83.659	83.250	83.282	83.396	83.391	83.502	83.670	83.929	84.394	
Information and information processing <sup>1,2</sup> .....	81.7	80.720	80.880	80.840	80.944	80.976	80.946	80.5								

**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	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
Miscellaneous personal services.....	313.6	324.984	325.259	324.579	325.566	327.783	328.056	328.610	329.908	332.183	333.826	335.427	337.685	339.824	340.547
<b>Commodity and service group:</b>															
<b>Commodities.....</b>	164.0	167.509	168.921	167.938	166.955	167.952	168.664	171.043	170.511	171.179	171.530	173.884	175.838	178.341	180.534
Food and beverages.....	195.7	203.300	202.885	203.533	204.289	205.279	206.124	206.563	206.936	208.837	209.462	209.692	211.365	212.251	213.383
Commodities less food and beverages.....	145.9	147.515	149.669	148.016	146.317	147.289	147.924	151.067	150.162	150.303	150.530	153.682	155.690	158.778	161.337
Nondurables less food and beverages.....	176.7	182.526	187.249	183.947	180.480	182.902	184.091	190.560	188.635	188.692	189.420	196.185	200.926	207.875	213.489
Apparel.....	119.5	118.998	117.225	113.500	114.439	119.535	121.846	121.204	118.257	115.795	117.839	120.881	122.113	120.752	117.019
and apparel.....	216.3	226.224	235.097	231.983	225.694	226.509	227.026	238.067	236.735	238.389	238.297	247.546	254.599	266.943	278.584
Durables.....	114.5	112.473	112.375	112.177	112.036	111.746	111.889	112.103	112.093	112.300	112.094	112.059	111.671	111.362	111.232
Services.....	238.9	246.848	247.460	248.331	248.555	248.700	248.878	248.974	249.225	250.648	251.527	252.817	253.426	254.509	256.668
Rent of shelter <sup>3</sup> .....	241.9	250.813	251.200	252.358	252.530	252.272	252.713	252.495	252.669	254.239	255.199	256.470	256.463	256.532	257.585
Transportation services.....	230.8	233.731	233.202	234.632	234.563	234.322	235.458	236.449	236.504	237.347	237.929	239.556	240.150	242.343	245.759
Other services.....	277.5	285.559	284.656	284.859	286.492	288.469	289.307	289.592	289.945	290.905	291.406	292.218	293.016	293.959	294.668
<b>Special indexes:</b>															
All items less food.....	202.7	208.098	209.353	209.179	208.607	209.100	209.478	210.846	210.610	211.512	212.136	214.236	215.462	217.411	219.757
All items less shelter.....	191.9	196.639	197.913	197.408	196.803	197.708	198.171	199.998	199.734	200.609	201.110	203.217	205.040	207.566	210.242
All items less medical care.....	194.7	200.080	201.178	201.042	200.598	201.159	201.544	202.770	202.600	203.569	204.136	205.992	207.317	209.170	211.408
Commodities less food.....	148.0	149.720	151.825	150.225	148.591	149.541	150.180	153.234	152.344	152.531	152.799	155.881	157.870	160.880	163.385
Nondurables less food.....	172.2	184.012	188.463	185.382	182.170	184.450	185.610	191.668	189.844	190.000	190.781	197.167	201.693	208.233	213.538
Nondurables less food and apparel.....	213.9	223.411	231.414	228.641	223.057	223.802	224.338	234.241	233.014	234.667	234.736	243.109	249.571	260.703	271.235
Nondurables.....	186.7	193.468	195.749	194.326	192.869	194.616	195.646	199.253	198.422	199.346	200.300	203.767	207.096	211.240	214.783
Services less rent of shelter <sup>3</sup> .....	253.3	260.764	261.677	262.284	262.588	263.243	263.109	263.599	263.966	265.311	266.154	267.567	269.007	271.467	275.200
Services less medical care services.....	229.6	236.847	237.565	238.357	238.507	238.604	238.657	238.671	238.894	240.201	241.004	242.921	243.982	246.219	
Energy.....	196.9	207.723	221.088	217.274	209.294	209.637	207.588	219.009	217.506	219.465	219.311	230.505	240.194	257.106	275.621
All items less energy.....	203.7	208.925	208.636	208.980	209.399	210.000	210.714	210.888	210.890	211.846	212.545	213.420	213.851	214.101	214.600
All items less food and energy.....	205.9	210.729	210.474	210.756	211.111	211.628	212.318	212.435	212.356	213.138	213.866	214.866	215.059	215.180	215.553
Commodities less food and energy.....	140.6	140.053	139.589	138.757	138.895	139.828	140.501	140.547	140.014	139.845	140.324	141.056	141.156	140.677	139.925
Energy commodities.....	223.0	241.018	260.739	253.696	239.885	241.120	241.642	265.420	261.976	264.660	263.508	283.362	298.757	326.414	351.886
Services less energy.....	244.7	253.058	252.955	253.998	254.491	254.706	255.385	255.549	255.785	257.220	258.098	259.249	259.503	260.049	261.216
<b>CONSUMER PRICE INDEX FOR URBAN</b>															
<b>WAGE EARNERS AND CLERICAL WORKERS</b>															
All items.....	197.1	202.767	203.906	203.700	203.199	203.889	204.338	205.891	205.777	206.744	207.254	209.147	210.698	212.788	215.223
All items (1967 = 100).....	587.2	603.982	607.374	606.759	605.267	607.324	608.662	613.287	612.948	615.828	617.345	622.985	627.606	633.830	641.082
Food and beverages.....	194.9	202.531	202.185	202.823	203.610	204.584	205.428	205.763	206.141	208.055	208.674	208.927	210.559	211.438	212.700
Food.....	194.4	202.134	201.722	202.409	203.207	204.241	205.082	205.451	205.855	207.794	208.317	208.571	210.252	211.200	212.514
Food at home.....	192.2	200.273	200.059	200.569	201.321	202.351	203.442	203.741	204.141	206.870	207.242	207.196	209.657	210.624	212.079
Cereals and bakery products.....	213.1	222.409	223.009	223.663	224.220	223.895	224.897	225.941	226.696	229.105	233.915	236.764	240.663	244.648	246.493
Meats, poultry, fish, and eggs.....	186.1	195.193	196.660	196.323	196.844	197.980	198.146	198.325	198.489	199.686	199.141	199.484	200.285	200.501	202.424
Dairy and related products <sup>1</sup> .....	180.9	194.474	191.235	198.027	201.598	203.464	205.100	205.850	205.149	206.652	207.750	205.660	207.135	207.088	208.510
Fruits and vegetables.....	251.0	260.484	256.565	252.703	251.575	257.223	261.774	265.736	269.533	275.843	268.954	266.030	270.169	274.136	276.641
Nonalcoholic beverages and beverage materials.....	146.7	152.786	152.501	152.829	154.152	154.501	154.873	153.610	152.883	157.130	157.456	157.488	158.799	157.285	157.309
Other foods at home.....	169.1	172.630	173.049	173.727	173.997	173.463	174.215	173.393	173.511	175.572	177.442	177.713	181.215	182.241	183.342
Sugar and sweets.....	170.5	175.323	175.073	176.736	176.664	176.458	176.248	176.845	177.051	178.902	179.740	181.033	183.725	184.127	184.378
Fats and oils.....	168.7	173.640	172.222	174.109	174.872	175.039	176.683	176.101	176.736	182.307	185.292	183.706	191.560	194.228	197.155
Other foods.....	185.2	188.405	189.456	189.667	189.941	189.110	189.987	188.657	188.646	190.364	192.430	192.832	196.106	197.081	198.163
Other miscellaneous foods <sup>1,2</sup> .....	114.2	115.356	116.366	115.355	116.348	114.584	115.378	115.803	115.658	115.658	118.828	117.754	118.751	119.248	118.879
Food away from home <sup>1</sup> .....	199.1	206.412	205.691	206.657	207.533	208.578	209.037	209.518	209.931	210.776	211.517	212.193	212.794	213.723	214.851
Other food away from home <sup>1,2</sup> .....	136.2	143.462	143.018	144.439	144.938	145.783	144.764	145.233	144.454	145.625	146.924	147.188	147.335	148.517	149.306
Alcoholic beverages.....	200.6	207.097	207.767	207.647	208.253	208.286	209.176	208.958	208.934	210.473	212.507	212.748	213.633	213.486	213.976
Housing.....	198.5	204.795	205.711	206.183	206.054	206.500	205.916	206.288	206.638	207.692	208.268	209.388	210.161	211.191	213.441
Shelter.....	224.8	232.998	233.040	233.848	234.169	234.275	234.812	235.069	235.480	236.550	237.158	237.965	238.261	238.353	239.198
Rent of primary residence.....	224.2	233.806	233.188	233.855	234.457	235.175	236.259	237.288	238.216	238.955	239.419	239.932	240.507	240.818	241.623
Lodging away from home <sup>2</sup> .....	135.3	142.339	148.948	153.107	149.919	143.727	142.666	136.244	133.179	139.825	143.046	148.110	145.936	144.979	148.378
Owners' equivalent rent of primary residence <sup>3</sup> .....	216.0	223.175	222.671	223.093	223.693	224.321	224.811	225.548	226.151	226.703	227.057	227.488	227.893	228.007	228.536
Tenants' and household insurance <sup>1,2</sup> .....	116.8	117.366	117.503	116.912	117.287	117.142	116.982	117.370	117.396	117.740	117.921	117.999	118.683	118.615	119.293
Fuels and utilities.....	193.1	198.863	204.396	204.272	202.397	202.304	198.796	200.151	200.831	202.663	203.584	206.811	210.612	217.388	228.843
Fuels.....	174.4	179.031	185.178	184.725	182.518	182.357	178.539	179.777	180.379	182.025	182.525	186.315	190.957	197.554	209.843
Fuel oil and other fuels.....	234.0	251.121	241.249	245.633	246.382	252.684	261.972	292.098	298.656	306.087	307.599	329.271	339.009	358.947	381.903
Gas (piped) and electricity.....	180.2	184.357	191.771	191.010	188.511	187.963	183.172	182.							



**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	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
New vehicles.....	138.6	137.415	137.060	136.663	136.414	136.129	136.509	137.372	137.736	137.931	137.445	136.910	136.456	135.933	135.728
Used cars and trucks <sup>1</sup> .....	140.8	136.586	135.917	136.880	137.999	137.996	137.798	137.457	137.791	138.052	138.094	138.070	137.616	137.145	136.790
Motor fuel.....	221.6	239.900	261.679	253.893	239.097	240.271	240.040	263.248	259.032	261.531	260.402	279.975	295.618	323.495	348.762
Gasoline (all types).....	220.7	238.879	260.799	252.567	238.100	239.523	238.906	262.013	257.792	260.457	259.112	277.842	293.349	321.291	346.459
Motor vehicle parts and equipment.....	116.9	121.356	120.666	121.350	121.584	122.144	122.830	123.302	123.786	124.416	125.238	126.330	126.032	126.742	127.750
Motor vehicle maintenance and repair.....	218.1	225.535	225.172	226.090	226.636	226.881	227.472	228.267	228.692	230.255	231.349	232.344	232.983	234.221	235.550
Public transportation.....	225.0	228.531	231.549	233.390	231.082	229.148	231.182	231.999	231.363	232.594	233.979	240.729	241.966	249.310	261.779
Medical care.....	335.7	350.882	349.145	351.346	352.704	353.571	355.719	357.165	357.745	360.710	362.329	363.069	363.356	363.462	363.628
Medical care commodities.....	279.0	282.558	280.862	282.662	283.379	283.712	284.517	285.475	285.913	287.703	288.335	289.254	288.796	286.825	287.033
Medical care services.....	351.1	370.111	368.384	370.696	372.261	373.306	375.899	377.498	378.119	381.507	383.510	384.149	384.753	385.769	385.911
Professional services.....	291.7	303.169	302.346	303.481	304.677	304.841	306.072	306.300	307.333	309.169	310.426	311.259	311.757	313.294	313.618
Hospital and related services.....	463.6	493.740	489.292	493.563	495.191	498.533	505.077	510.836	510.961	518.853	523.654	524.534	526.495	527.230	527.948
Recreation <sup>2</sup> .....	108.2	108.572	108.681	108.403	108.179	108.495	108.793	108.805	108.702	109.046	109.315	109.742	109.775	109.876	109.905
Video and audio <sup>1,2</sup> .....	103.9	102.559	103.001	102.358	101.923	102.427	102.833	102.465	102.523	102.839	103.028	103.525	103.414	102.958	102.306
Education and communication <sup>2</sup> .....	113.9	116.301	115.746	115.980	116.981	117.707	117.891	117.686	117.782	118.097	118.079	118.155	118.462	118.737	119.264
Education <sup>2</sup> .....	160.3	169.280	166.758	167.527	170.635	173.060	173.700	174.016	174.276	175.134	175.118	175.101	175.545	175.791	176.148
Educational books and supplies.....	390.7	423.730	418.705	421.529	431.089	433.670	434.800	434.979	437.391	441.207	441.927	442.639	444.594	445.394	445.740
Tuition, other school fees, and child care.....	453.3	477.589	470.329	472.395	480.960	488.199	490.061	491.022	491.554	493.797	493.672	493.546	494.711	495.384	496.449
Communication <sup>1,2</sup> .....	86.0	85.782	85.999	86.015	86.148	86.184	86.182	85.807	85.834	85.935	85.919	86.016	86.244	86.496	87.017
Information and information processing <sup>1,2</sup> .....	84.3	83.928	84.095	84.111	84.248	84.283	84.282	83.894	83.917	84.008	83.992	84.091	84.320	84.511	85.007
Telephone services <sup>1,2</sup> .....	95.9	98.373	98.603	98.721	98.964	99.024	99.149	98.874	98.887	98.988	98.931	99.090	99.566	99.939	100.723
Information and information processing other than telephone services <sup>1,4</sup> .....	13.0	11.062	11.062	11.001	10.965	10.958	10.877	10.710	10.722	10.737	10.754	10.745	10.671	10.621	10.585
Personal computers and peripheral equipment <sup>1,2</sup> .....	121.0	108.164	108.367	107.371	106.531	105.713	104.366	100.257	100.000	101.067	100.582	100.265	98.820	97.010	95.766
Other goods and services.....	330.9	344.004	343.939	344.221	344.214	345.800	346.742	347.427	348.830	350.630	351.979	353.351	354.887	356.523	358.419
Tobacco and smoking products.....	521.6	555.502	553.538	555.366	556.517	561.092	562.134	563.435	568.410	574.724	577.359	576.910	578.296	583.296	592.248
Personal care <sup>1</sup> .....	188.3	193.590	193.858	193.792	193.598	194.160	194.769	195.122	195.467	195.885	196.564	197.803	198.859	199.367	199.404
Personal care products <sup>1</sup> .....	155.7	158.268	158.739	158.445	157.813	157.654	158.408	158.579	158.407	158.167	157.877	158.730	159.585	158.993	159.052
Personal care services <sup>1</sup> .....	209.8	216.823	216.174	217.040	217.354	217.822	218.149	218.897	219.945	220.324	221.338	223.043	223.088	223.922	223.838
Miscellaneous personal services.....	314.1	326.100	326.572	326.135	327.235	329.329	329.706	330.258	330.850	333.154	334.868	336.476	338.851	341.212	341.921
Commodity and service group:															
Commodities.....	165.7	169.554	171.216	170.252	169.122	170.141	170.865	173.489	172.952	173.711	174.083	176.727	178.900	181.837	184.495
Food and beverages.....	194.9	202.531	202.185	202.823	203.610	204.584	205.428	205.763	206.141	208.055	208.674	208.927	210.559	211.438	212.700
Commodities less food and beverages.....	148.7	150.865	153.367	151.724	149.781	150.795	151.448	155.011	154.086	154.345	154.603	158.156	160.488	164.188	167.344
Nondurables less food and beverages.....	182.6	189.507	195.053	191.603	187.515	189.981	191.230	198.661	196.636	196.910	197.606	205.166	210.558	218.794	225.585
Apparel.....	119.1	118.518	116.389	113.157	114.146	118.986	121.536	120.920	118.126	115.866	117.883	120.809	121.855	120.407	116.706
Nondurables less food, beverages, and apparel.....	226.1	237.858	248.347	244.695	237.329	238.345	238.798	251.442	249.863	251.751	251.621	262.252	270.496	285.024	298.593
Durable.....	114.6	112.640	112.485	112.425	112.362	112.114	112.241	112.413	112.450	112.688	112.560	112.549	112.171	111.845	111.769
Services.....	234.1	241.696	242.241	242.901	243.118	243.436	243.572	243.906	244.275	245.484	246.154	247.197	248.045	249.870	251.365
Rent of shelter <sup>3</sup> .....	216.6	224.617	224.655	225.455	225.760	225.867	226.393	226.636	227.035	228.071	228.660	229.443	229.719	229.815	230.620
Transportation services.....	230.6	233.420	232.623	233.737	233.831	233.868	234.848	235.874	236.020	236.883	237.426	238.496	239.044	240.728	243.395
Other services.....	268.2	275.218	274.670	274.766	276.015	277.702	278.404	278.513	278.783	279.780	280.199	281.017	281.829	282.720	283.449
Special indexes:															
All items less food.....	197.5	202.698	204.121	203.750	203.011	203.638	204.015	205.783	205.575	206.371	206.877	209.055	210.583	212.870	215.498
All items less shelter.....	189.2	193.940	195.489	194.913	194.109	195.018	195.440	197.479	197.174	198.113	198.592	200.904	202.931	205.774	208.817
All items less medical care.....	191.3	196.564	197.783	197.504	196.949	197.629	198.022	199.565	199.431	200.329	200.800	202.713	204.290	206.423	208.906
Commodities less food.....	150.6	152.875	155.339	153.730	151.846	152.837	153.499	156.977	156.073	156.365	156.670	160.152	162.455	166.070	169.169
Nondurables less food.....	183.8	190.698	195.988	192.714	188.873	191.210	192.442	199.471	197.551	197.892	198.660	205.843	211.005	218.809	225.276
Nondurables less food and apparel.....	223.0	234.201	243.806	240.471	233.817	234.745	235.233	246.726	245.286	247.136	247.188	256.899	264.488	277.717	290.127
Nondurables.....	189.5	196.772	199.476	198.000	196.266	198.017	199.075	203.087	202.222	203.268	203.933	208.101	211.757	216.582	220.813
Services less rent of shelter <sup>3</sup> .....	224.7	230.876	231.965	232.367	232.450	232.982	232.628	233.029	233.314	234.576	235.258	236.483	237.922	240.181	243.780
Services less medical care services.....	225.3	232.195	232.848	233.415	233.562	233.839	233.850	234.115	234.468	235.557	236.154	237.201	238.048	239.167	241.422
Energy.....	196.8	208.066	221.832	217.795	209.441	209.933	207.885	219.861	218.104	220.163	219.983	231.533	241.518	258.903	277.597
All items less energy.....	198.0	203.002	202.582	202.849	203.319	204.037	204.797	205.066	205.155	205.991	206.588	207.296	207.812	208.021	208.458
All items less food and energy.....	199.2	203.554	203.132	203.310	203.710	204.363	205.107	205.355	205.377	205.992	206.605	207.406	207.687	207.747	208.007
Commodities less food and energy.....	141.1	140.612	140.019	139.352	139.557	140.491	141.236	141.254	140.815	140.696	141.238	141.973	142.040	141.558	140.878
Energy commodities.....	223.0	241.257	261.460	254.282	240.247	241.692	241.955	265.598	261.928	264.633	263.601	283.359	298.852	326.565	351.873
Services less energy.....	239.9	247.888	247.606	248.434	248.977	249.398	250.127	250.546	250.925	252.103	252.756	253.589	254.031	254.517	255.513

<sup>1</sup> Not seasonally adjusted.

**39. Consumer Price Index: U.S. city average and available local area data: all items**

[1982-84 = 100, unless otherwise indicated]

	Pricing schedule <sup>1</sup>	All Urban Consumers						Urban Wage Earners					
		2008						2008					
		Jan.	Feb.	Mar.	Apr.	May	June	Jan.	Feb.	Mar.	Apr.	May	June
U.S. city average.....	M	211.080	211.693	213.528	214.823	216.632	218.815	206.744	207.254	209.147	210.698	212.788	215.223
<b>Region and area size<sup>2</sup></b>													
Northeast urban.....	M	224.325	225.213	226.926	228.133	230.089	232.649	221.065	221.702	223.209	224.794	227.114	229.829
Size A—More than 1,500,000.....	M	226.310	227.411	229.087	230.038	232.005	234.518	221.492	222.315	223.795	225.144	227.412	230.120
Size B/C—50,000 to 1,500,000 <sup>3</sup> .....	M	133.301	133.511	134.611	135.739	136.913	138.542	133.766	133.893	134.846	136.141	137.624	139.286
Midwest urban <sup>4</sup> .....	M	201.427	201.896	203.723	205.393	207.168	208.968	196.617	197.110	198.989	200.788	202.912	204.867
Size A—More than 1,500,000.....	M	202.830	203.347	205.141	206.590	208.291	209.813	196.963	197.549	199.378	200.989	202.969	204.509
Size B/C—50,000 to 1,500,000 <sup>3</sup> .....	M	128.753	128.922	130.121	131.484	132.682	134.018	128.561	128.695	129.922	131.354	132.867	134.409
Size D—Nonmetropolitan (less than 50,000).....	M	196.708	197.596	199.472	200.841	202.720	205.122	194.850	195.774	197.864	199.325	201.494	204.023
South urban.....	M	204.510	205.060	206.676	208.085	210.006	212.324	201.814	202.291	204.044	205.669	207.912	210.469
Size A—More than 1,500,000.....	M	207.221	207.605	209.065	209.987	211.846	214.359	205.304	205.588	207.336	208.511	210.748	213.549
Size B/C—50,000 to 1,500,000 <sup>3</sup> .....	M	129.937	130.351	131.442	132.516	133.714	134.980	128.767	129.144	130.243	131.428	132.808	134.222
Size D—Nonmetropolitan (less than 50,000).....	M	204.524	205.189	206.933	208.746	211.225	214.739	204.954	205.523	207.600	209.641	212.533	216.357
West urban.....	M	215.739	216.339	218.533	219.437	221.009	223.040	210.342	210.816	213.159	214.355	216.029	218.508
Size A—More than 1,500,000.....	M	219.036	219.799	221.997	222.689	224.704	226.767	212.040	212.614	214.954	216.055	218.141	220.603
Size B/C—50,000 to 1,500,000 <sup>3</sup> .....	M	131.328	131.538	132.896	133.694	134.023	135.283	130.935	131.148	132.640	133.570	134.133	135.738
Size classes:													
A <sup>5</sup> .....	M	193.045	193.685	195.314	196.191	197.898	199.840	191.461	191.982	193.702	194.886	196.844	199.028
B/C <sup>3</sup> .....	M	130.431	130.728	131.892	132.974	133.997	135.330	129.830	130.092	131.273	132.471	133.729	135.240
D.....	M	203.200	203.803	205.730	207.238	209.308	211.989	201.685	202.292	204.422	205.951	208.246	211.236
<b>Selected local areas<sup>6</sup></b>													
Chicago—Gary—Kenosha, IL—IN—WI.....	M	208.757	209.526	211.542	212.662	214.932	215.738	201.525	202.497	204.742	205.885	208.403	209.021
Los Angeles—Riverside—Orange County, CA.....	M	220.918	221.431	223.606	224.625	226.651	229.033	213.825	214.231	216.493	217.914	219.702	222.435
New York, NY—Northern NJ—Long Island, NY—NJ—CT—PA.....	M	229.869	231.020	233.122	233.822	236.151	238.580	224.557	225.281	226.951	228.215	230.923	233.776
Boston—Brockton—Nashua, MA—NH—ME—CT.....	1	231.980	—	233.084	—	235.344	—	231.291	—	232.656	—	235.419	—
Cleveland—Akron, OH.....	1	199.686	—	202.500	—	204.882	—	190.115	—	192.995	—	195.898	—
Dallas—Ft. Worth, TX.....	1	197.079	—	198.596	—	202.357	—	199.407	—	201.892	—	206.258	—
Washington—Baltimore, DC—MD—VA—WV <sup>7</sup> .....	1	136.293	—	138.090	—	139.649	—	135.826	—	137.544	—	139.332	—
Atlanta, GA.....	2	—	204.166	—	206.371	—	212.032	—	203.473	—	205.801	—	212.013
Detroit—Ann Arbor—Flint, MI.....	2	—	202.378	—	205.281	—	207.593	—	197.670	—	201.037	—	203.524
Houston—Galveston—Brazoria, TX.....	2	—	187.585	—	188.795	—	193.567	—	185.904	—	188.463	—	193.742
Miami—Ft. Lauderdale, FL.....	2	—	219.082	—	221.324	—	225.079	—	216.971	—	219.456	—	223.849
Philadelphia—Wilmington—Atlantic City, PA—NJ—DE—MD.....	2	—	220.935	—	223.622	—	228.408	—	220.718	—	223.295	—	228.429
San Francisco—Oakland—San Jose, CA.....	2	—	219.612	—	222.074	—	225.181	—	214.913	—	217.913	—	221.454
Seattle—Tacoma—Bremerton, WA.....	2	—	221.728	—	223.196	—	228.068	—	216.332	—	218.483	—	223.573

<sup>1</sup> Foods, fuels, and several other items priced every month in all areas; most other goods and services priced as indicated:

M—Every month.  
<sup>1</sup>—January, March, May, July, September, and November.  
<sup>2</sup>—February, April, June, August, October, and December.

<sup>2</sup> Regions defined as the four Census regions.

<sup>3</sup> Indexes on a December 1996 = 100 base.

<sup>4</sup> The "North Central" region has been renamed the "Midwest" region by the Census Bureau. It is composed of the same geographic entities.

<sup>5</sup> Indexes on a December 1986 = 100 base.

<sup>6</sup> 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; Cincinnati, OH—KY—IN; Kansas City, MO—KS; Milwaukee—Racine, WI; Minneapolis—St. Paul, MN—WI; Pittsburgh, PA; Portland—Salem, OR—WA; St. Louis, MO—IL; San Diego, CA; Tampa—St. Petersburg—Clearwater, FL.

<sup>7</sup> 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	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. <sup>P</sup>	Apr. <sup>P</sup>	May <sup>P</sup>	June <sup>P</sup>
<b>Finished goods.....</b>	160.4	166.6	167.2	168.5	166.1	167.4	168.6	171.4	170.4	172.0	172.3	175.4	176.7	179.6	182.5
Finished consumer goods.....	166.0	173.5	174.4	176.2	173.0	174.8	175.9	179.4	178.2	180.1	180.4	184.4	186.0	190.1	193.9
Finished consumer goods.....	156.7	167.0	166.3	166.4	166.3	168.4	169.7	169.5	172.2	174.5	173.6	175.9	175.4	177.7	180.1
Finished consumer goods excluding foods.....	169.2	175.6	177.2	179.7	175.3	177.0	177.9	182.9	180.1	181.9	182.7	187.3	189.8	194.7	199.1
Nondurable goods less food.....	182.6	191.7	194.5	198.1	191.8	194.6	194.5	201.5	197.9	200.3	201.4	207.9	211.4	219.6	226.5
Durable goods.....	136.9	138.3	137.7	137.6	137.2	136.7	139.8	140.2	139.5	140.1	140.2	140.4	140.7	140.1	139.8
Capital equipment.....	146.9	149.5	149.0	149.1	149.0	148.9	150.6	151.0	150.7	151.4	151.8	152.1	152.5	152.5	152.7
<b>Intermediate materials, supplies, and components.....</b>	164.0	170.7	172.0	173.6	171.5	172.2	172.2	176.2	175.7	177.8	179.1	184.1	186.9	192.6	196.9
Materials and components for manufacturing.....	155.9	162.4	163.6	164.5	163.4	163.3	164.4	166.1	166.3	168.4	170.1	172.5	174.5	178.8	181.6
Materials for food manufacturing.....	146.2	161.4	163.0	163.6	164.5	166.6	166.3	166.6	169.8	173.6	176.7	180.3	179.7	182.8	185.7
Materials for nondurable manufacturing...	175.0	184.0	184.9	187.1	185.0	186.0	189.4	195.1	195.1	199.3	201.5	204.3	207.7	214.4	220.1
Materials for durable manufacturing.....	180.5	189.8	194.8	195.1	191.8	189.1	189.0	188.6	188.1	189.5	193.1	199.6	203.5	212.8	216.3
Components for manufacturing.....	134.5	136.3	136.2	136.4	136.5	136.5	136.6	136.7	136.8	137.4	137.8	138.1	138.8	139.3	139.9
Materials and components for construction.....	188.4	192.5	193.1	193.5	193.5	193.2	193.2	193.2	193.4	194.4	195.7	197.2	199.3	203.4	206.3
Processed fuels and lubricants.....	162.8	173.9	178.1	183.0	175.3	178.4	175.5	189.7	186.3	188.6	189.0	205.7	212.3	227.2	238.6
Containers.....	175.0	180.3	179.7	180.2	180.5	181.0	182.3	183.2	183.4	185.1	185.7	185.9	187.0	188.0	188.5
Supplies.....	157.0	161.7	161.4	161.9	162.0	162.3	163.0	163.9	164.6	166.8	168.1	169.5	170.5	172.9	174.3
<b>Crude materials for further processing.....</b>	184.8	207.1	209.7	210.3	202.8	204.6	211.8	225.6	229.0	235.5	245.5	265.6	274.3	294.4	305.2
Foodstuffs and feedstuffs.....	119.3	146.7	148.4	150.0	147.8	151.9	150.0	152.9	158.5	162.6	165.4	168.0	166.5	172.7	178.9
Crude nonfood materials.....	230.6	246.3	249.6	249.2	237.6	237.4	252.0	274.1	275.4	283.8	299.9	333.1	349.9	385.4	399.6
<b>Special groupings:</b>															
Finished goods, excluding foods.....	161.0	166.2	167.1	168.8	165.8	166.9	168.1	171.6	169.6	171.0	171.7	174.9	176.7	179.8	182.8
Finished energy goods.....	145.9	156.3	160.9	166.4	155.6	159.7	159.1	170.4	163.8	166.6	167.2	177.5	182.6	193.8	204.3
Finished goods less energy.....	157.9	162.8	162.3	162.4	162.5	163.0	164.7	164.9	165.5	166.7	167.0	167.9	168.1	168.8	169.5
Finished consumer goods less energy.....	162.7	168.7	168.2	168.3	168.4	169.2	170.8	171.0	172.0	173.5	173.7	174.8	174.9	176.0	177.0
Finished goods less food and energy.....	158.7	161.7	161.3	161.4	161.5	161.5	163.2	163.6	163.5	164.4	165.0	165.4	165.9	166.1	166.2
Finished consumer goods less food and energy.....	166.7	170.0	169.6	169.7	170.0	170.0	171.8	172.2	172.2	173.2	174.0	174.4	175.0	175.3	175.4
Consumer nondurable goods less food and energy.....	191.5	197.0	196.7	197.1	197.9	198.3	199.0	199.3	200.0	201.4	203.0	203.5	204.2	205.9	206.4
Intermediate materials less foods and feeds.....	165.4	171.5	172.9	174.5	172.3	172.9	172.9	177.0	176.3	178.2	179.4	184.4	187.4	193.1	197.4
Intermediate foods and feeds.....	135.2	154.4	154.5	155.9	156.3	158.2	159.6	161.4	164.6	170.6	175.0	179.8	178.6	184.8	186.8
Intermediate energy goods.....	162.8	174.6	179.2	184.2	177.0	179.5	177.4	191.1	187.8	190.5	191.5	208.1	213.8	228.6	240.5
Intermediate goods less energy.....	162.1	167.6	168.1	168.8	168.1	168.2	168.9	170.2	170.4	172.3	173.7	175.5	177.4	181.1	183.4
Intermediate materials less foods and energy.....	163.8	168.4	169.0	169.6	168.8	168.9	169.5	170.8	170.9	172.5	173.7	175.3	177.5	181.0	183.2
Crude energy materials.....	226.9	232.8	238.0	236.8	221.7	219.9	237.7	267.1	268.3	273.6	291.7	330.5	344.1	389.0	409.7
Crude materials less energy.....	152.3	182.6	183.6	185.5	183.8	188.3	187.4	189.2	194.1	200.9	205.9	210.7	215.4	224.4	229.1
Crude nonfood materials less energy.....	244.5	282.6	281.5	284.0	284.7	289.9	292.8	289.9	291.7	307.3	319.7	332.2	359.4	376.2	374.5

p = preliminary.

## 42. Producer Price Indexes for the net output of major industry groups

[December 2003 = 100, unless otherwise indicated]

NAICS	Industry	2007							2008					
		June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. <sup>P</sup>	Apr. <sup>P</sup>	May <sup>P</sup>	June <sup>P</sup>
	<b>Total mining industries (December 1984=100)</b> .....	222.6	222.3	212.5	214.3	228.3	249.3	249.5	254.2	263.8	290.0	299.0	328.9	345.9
211	Oil and gas extraction (December 1985=100) .....	270.9	269.6	254.1	256.2	279.6	314.8	315.9	321.9	335.0	375.6	390.3	440.5	463.5
212	Mining, except oil and gas.....	159.3	162.4	160.8	162.2	162.4	161.3	161.2	164.9	170.3	175.6	176.4	174.3	185.1
213	Mining support activities.....	171.2	168.9	168.6	169.7	168.5	168.7	164.9	167.2	168.8	170.0	170.0	171.3	174.6
	<b>Total manufacturing industries (December 1984=100)</b> .....	163.7	164.9	163.0	163.7	164.5	168.0	166.9	168.5	169.6	173.4	175.1	179.3	182.0
311	Food manufacturing (December 1984=100).....	160.3	160.4	160.3	160.8	160.7	161.4	162.8	165.8	167.5	170.2	170.9	174.2	176.3
312	Beverage and tobacco manufacturing.....	109.3	109.2	109.9	110.3	111.1	111.1	111.2	112.1	112.7	112.6	113.0	114.4	114.2
313	Textile mills.....	107.8	108.4	108.6	108.7	108.9	109.1	109.3	110.1	110.3	110.3	110.8	111.7	111.7
315	Apparel manufacturing.....	101.4	101.5	101.5	101.3	101.5	101.5	101.5	101.8	101.8	102.0	102.2	102.2	102.2
316	Leather and allied product manufacturing (December 1984=100).....	149.4	149.4	149.9	150.0	150.4	150.5	151.1	152.0	152.4	152.5	152.8	152.7	153.9
321	Wood products manufacturing.....	107.5	108.4	107.8	107.2	106.5	106.1	106.1	105.7	105.5	105.8	106.0	108.3	109.5
322	Paper manufacturing.....	115.2	115.4	115.6	116.1	117.1	117.8	118.0	118.5	119.2	119.6	120.2	120.4	120.8
323	Printing and related support activities.....	106.5	106.7	106.8	107.0	107.1	107.2	107.4	107.8	108.1	108.1	109.2	109.4	109.5
324	Petroleum and coal products manufacturing (December 1984=100).....	268.2	283.1	258.0	267.4	266.9	305.5	288.4	294.9	298.4	336.4	347.6	384.1	406.0
325	Chemical manufacturing (December 1984=100).....	202.8	203.6	204.9	205.0	206.4	209.2	210.4	213.6	215.8	216.9	220.4	224.1	227.8
326	Plastics and rubber products manufacturing (December 1984=100).....	149.9	150.4	151.3	151.2	151.6	152.2	153.2	154.8	155.6	156.5	156.3	158.5	159.5
331	Primary metal manufacturing (December 1984=100).....	196.4	196.4	192.1	188.8	188.6	188.9	188.6	190.4	194.2	202.9	210.5	221.6	228.5
332	Fabricated metal product manufacturing (December 1984=100).....	162.2	162.3	162.9	162.8	163.3	163.7	164.3	165.6	166.8	167.8	170.6	172.9	174.7
333	Machinery manufacturing.....	112.0	112.1	112.3	112.5	112.7	113.0	113.1	113.8	114.3	114.8	115.2	115.7	116.5
334	Computer and electronic products manufacturing.....	94.6	94.1	93.5	93.3	93.1	92.8	92.6	92.6	92.8	92.8	92.7	92.8	92.8
335	Electrical equipment, appliance, and components manufacturing.....	122.1	123.0	123.6	123.7	124.2	124.5	124.4	125.2	125.9	128.4	127.3	128.1	128.4
336	Transportation equipment manufacturing.....	104.4	104.4	104.2	103.8	106.3	106.6	106.0	106.6	106.6	106.3	106.5	106.3	105.9
337	Furniture and related product manufacturing (December 1984=100).....	165.9	165.6	165.7	165.9	166.1	166.6	166.4	167.1	167.8	167.8	169.7	170.6	171.7
339	Miscellaneous manufacturing.....	107.0	106.9	107.0	107.1	107.2	107.5	107.7	108.5	108.7	109.3	109.5	109.7	110.0
	<b>Retail trade</b>													
441	Motor vehicle and parts dealers.....	116.2	115.6	114.9	116.0	115.3	116.1	118.0	118.3	118.4	118.8	119.0	118.5	118.6
442	Furniture and home furnishings stores.....	116.2	116.5	119.6	119.0	120.1	121.1	119.0	119.6	118.8	122.2	119.2	118.6	119.8
443	Electronics and appliance stores.....	112.4	111.6	109.8	107.8	111.1	114.9	89.3	109.0	110.2	88.0	110.9	109.5	111.3
446	Health and personal care stores.....	123.1	123.6	124.3	123.9	123.5	123.8	123.8	124.8	124.5	125.9	128.0	127.9	128.0
447	Gasoline stations (June 2001=100).....	86.5	81.6	71.3	73.7	78.0	73.7	66.6	67.1	61.6	61.1	65.6	60.9	67.3
454	Nonstore retailers.....	127.7	123.1	128.3	126.0	130.2	125.7	134.7	136.0	133.8	134.3	136.2	136.9	138.0
	<b>Transportation and warehousing</b>													
481	Air transportation (December 1992=100).....	185.9	188.0	189.1	180.5	187.2	189.4	187.1	192.0	191.8	197.2	199.5	201.4	211.7
483	Water transportation.....	111.7	113.6	114.7	115.3	117.2	116.5	116.4	119.0	119.2	120.8	122.1	122.3	127.0
491	Postal service (June 1989=100).....	175.4	175.5	175.5	175.5	175.5	175.5	175.5	175.5	175.5	175.5	175.5	180.5	180.5
	<b>Utilities</b>													
221	Utilities.....	129.9	131.6	130.8	129.3	127.2	126.6	127.4	127.8	129.7	129.7	133.6	135.7	141.1
	<b>Health care and social assistance</b>													
6211	Office of physicians (December 1996=100).....	122.1	122.2	122.2	122.9	122.9	121.5	122.7	123.3	123.3	121.0	122.3	123.2	123.2
6215	Medical and diagnostic laboratories.....	107.2	107.0	107.7	107.6	107.7	106.7	106.7	107.3	107.3	106.8	107.4	107.4	106.6
6216	Home health care services (December 1996=100).....	123.6	123.8	123.9	124.1	125.1	125.3	125.3	125.4	125.5	125.6	125.5	125.5	125.4
622	Hospitals (December 1992=100).....	157.6	158.1	158.0	158.2	161.3	161.9	161.9	162.4	162.6	162.7	162.9	162.7	162.8
6231	Nursing care facilities.....	113.9	114.9	115.7	115.8	116.4	116.5	117.0	117.9	118.0	117.6	118.2	118.1	118.1
62321	Residential mental retardation facilities.....	112.5	112.9	113.2	113.5	113.9	114.3	114.6	115.4	117.2	118.2	118.0	117.6	117.6
	<b>Other services industries</b>													
511	Publishing industries, except Internet .....	108.1	108.2	108.4	108.4	108.5	108.5	108.5	109.7	109.8	110.4	110.7	110.4	110.2
515	Broadcasting, except Internet.....	101.8	98.7	98.7	99.6	101.0	102.3	103.6	104.4	104.6	103.2	102.4	103.4	102.7
517	Telecommunications.....	101.0	102.2	101.3	102.0	101.8	101.2	100.7	100.6	100.9	100.8	102.1	101.3	101.1
5182	Data processing and related services.....	100.3	100.4	100.4	100.4	100.3	100.5	100.4	100.4	100.5	100.6	100.5	100.9	100.9
523	Security, commodity contracts, and like activity.....	118.6	120.5	120.4	121.1	121.4	124.2	123.0	122.5	122.9	118.4	119.2	120.1	120.7
53112	Lessors or nonresidential buildings (except miniwarehouse).....	106.8	106.2	107.9	109.0	108.5	108.5	110.0	108.1	108.2	107.9	109.1	109.2	109.7
5312	Offices of real estate agents and brokers.....	110.8	111.1	111.1	110.7	110.5	110.5	109.9	110.3	109.8	110.6	110.0	106.1	105.4
5313	Real estate support activities.....	103.7	103.8	103.2	102.9	103.5	106.1	105.6	106.6	106.0	107.2	107.1	107.1	107.4
5321	Automotive equipment rental and leasing (June 2001=100).....	114.4	121.2	122.3	117.2	118.9	118.4	119.1	121.3	121.3	121.6	117.8	123.2	125.2
5411	Legal services (December 1996=100).....	153.4	153.7	153.8	154.3	154.8	155.1	155.1	159.9	160.3	160.6	160.8	160.9	160.9
541211	Offices of certified public accountants.....	111.4	112.2	112.6	112.4	113.1	112.9	113.0	115.6	114.1	113.0	111.9	114.2	112.4
5413	Architectural, engineering, and related services (December 1996=100).....	140.1	140.3	140.8	140.7	140.8	140.8	140.8	139.2	140.3	140.0	140.4	140.5	141.9
54181	Advertising agencies.....	105.1	105.1	105.1	105.1	105.1	105.1	105.1	105.2	105.3	105.2	106.0	105.8	105.7
5613	Employment services (December 1996=100).....	121.6	121.8	121.9	122.0	122.4	122.3	122.2	122.3	123.0	122.5	122.3	122.7	122.9
56151	Travel agencies.....	101.4	101.1	101.0	100.9	102.5	101.7	100.2	98.8	98.8	98.7	98.8	98.8	98.8
56172	Janitorial services.....	105.4	105.5	105.5	106.8	106.9	107.1	108.7	108.9	109.1	107.7	109.0	109.7	109.2
5621	Waste collection.....	107.2	107.3	107.9	108.9	108.9	109.5	108.4	110.7	112.1	112.1	112.3	112.0	112.8
721	Accommodation (December 1996=100).....	143.1	147.1	147.2	145.0	145.8	144.7	143.7	145.4	145.2	144.2	146.0	144.8	149.6

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
<b>Finished goods</b>											
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
<b>Intermediate materials, supplies, and components</b>											
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
<b>Crude materials for further processing</b>											
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					
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
<b>ALL COMMODITIES.....</b>	116.0	116.1	116.3	116.7	117.6	118.7	119.3	120.7	121.8	123.8	124.3	124.8	126.0
Foods, feeds, and beverages.....	148.6	149.2	151.4	157.8	164.1	165.9	171.1	180.5	188.7	196.9	192.8	193.3	197.7
Agricultural foods, feeds, and beverages.....	151.0	151.5	153.7	160.8	167.6	169.8	175.2	185.0	193.8	202.6	198.2	198.9	203.9
Nonagricultural (fish, beverages) food products.....	128.5	130.2	132.2	133.0	134.2	133.1	136.1	142.0	144.7	148.3	146.2	144.8	144.9
Industrial supplies and materials.....	149.0	148.6	148.8	148.8	150.5	153.9	154.1	157.1	159.1	165.5	167.9	169.4	172.7
Agricultural industrial supplies and materials.....	128.7	138.6	137.4	140.0	142.7	144.9	144.7	146.0	150.6	159.3	158.1	157.1	158.0
Fuels and lubricants.....	201.1	202.9	197.4	200.9	204.8	224.7	222.8	232.1	225.6	249.5	259.4	274.7	294.5
Nonagricultural supplies and materials, excluding fuel and building materials.....	146.1	144.6	145.7	145.0	146.5	147.9	148.5	150.9	154.1	158.2	160.1	159.9	161.4
Selected building materials.....	113.9	114.1	114.0	114.4	114.2	113.8	113.7	113.3	113.8	114.2	114.0	113.8	113.8
Capital goods.....	99.6	99.7	99.8	99.9	100.1	100.3	100.6	100.9	101.3	101.2	101.5	101.6	101.9
Electric and electrical generating equipment.....	106.5	106.6	106.7	106.7	107.1	107.2	107.5	107.7	108.3	108.6	108.7	108.6	108.5
Nonelectrical machinery.....	92.9	93.1	93.1	93.1	93.2	93.4	93.6	93.7	93.9	93.7	93.9	93.9	94.3
Automotive vehicles, parts, and engines.....	106.1	106.2	106.2	106.3	106.5	106.5	106.7	106.9	107.0	107.1	107.5	107.5	107.6
Consumer goods, excluding automotive.....	105.8	106.1	106.3	106.2	106.4	106.8	107.3	107.3	107.4	108.0	108.1	108.1	108.2
Nondurables, manufactured.....	106.7	107.0	107.2	107.0	107.4	108.0	108.2	108.1	108.2	109.3	109.9	110.1	110.2
Durables, manufactured.....	103.7	104.0	104.2	104.2	104.2	104.4	105.2	105.2	105.5	105.4	105.1	105.0	105.0
Agricultural commodities.....	146.7	149.0	150.5	156.8	162.8	165.0	169.3	177.5	185.6	194.3	190.5	190.9	195.1
Nonagricultural commodities.....	113.8	113.7	113.8	113.8	114.4	115.4	115.7	116.6	117.3	118.8	119.6	120.0	121.1

**45. U.S. import price indexes by end-use category**

[2000 = 100]

Category	2007							2008					
	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
<b>ALL COMMODITIES</b> .....	120.0	121.5	121.1	121.8	123.6	127.5	127.3	129.2	129.5	133.5	137.3	140.9	144.6
Foods, feeds, and beverages.....	127.8	129.4	130.1	131.8	133.2	133.4	134.4	138.1	137.8	141.8	143.7	145.3	148.0
Agricultural foods, feeds, and beverages.....	139.5	141.4	142.1	144.4	146.5	147.1	148.3	153.1	152.6	157.3	159.8	162.7	165.6
Nonagricultural (fish, beverages) food products.....	101.5	102.7	103.2	103.5	103.2	102.5	103.0	104.3	104.4	106.8	107.2	105.9	108.3
Industrial supplies and materials.....	185.6	190.9	188.5	190.7	197.2	212.8	211.3	218.2	219.0	234.5	248.5	263.3	278.5
Fuels and lubricants.....	238.2	249.8	244.0	250.0	262.4	294.8	290.3	301.9	300.0	329.0	354.0	384.6	413.3
Petroleum and petroleum products.....	245.6	260.3	256.4	264.4	277.7	312.2	306.7	319.6	315.6	347.5	375.1	408.4	438.7
Paper and paper base stocks.....	110.8	110.3	110.7	111.2	112.2	108.0	109.2	112.5	113.4	114.1	116.3	118.2	119.0
Materials associated with nondurable supplies and materials.....	125.4	126.6	127.3	128.2	131.4	133.7	135.3	143.6	146.6	147.8	148.8	149.4	152.1
Selected building materials.....	113.1	116.9	116.5	116.9	115.7	115.6	116.0	115.9	113.8	114.1	114.3	116.0	119.4
Unfinished metals associated with durable goods...	219.7	215.1	215.3	209.1	211.0	214.8	217.2	215.3	224.5	241.5	259.4	263.6	276.2
Nonmetals associated with durable goods.....	101.6	102.1	102.2	102.5	103.0	103.3	103.8	105.4	105.9	105.2	106.2	107.3	107.2
Capital goods.....	91.3	91.6	91.8	91.9	92.0	92.1	92.2	91.9	92.0	92.2	93.0	93.3	93.2
Electric and electrical generating equipment.....	105.7	105.8	106.4	106.5	106.8	107.5	107.9	107.7	108.7	109.3	111.6	111.7	112.3
Nonelectrical machinery.....	87.2	87.4	87.6	87.7	87.7	87.7	87.7	87.4	87.4	87.5	88.0	88.3	88.2
Automotive vehicles, parts, and engines.....	104.7	104.8	105.0	105.2	105.6	106.2	106.8	107.1	107.2	107.4	107.8	107.8	107.9
Consumer goods, excluding automotive.....	101.4	101.7	102.0	102.1	102.2	102.4	102.6	103.1	103.5	104.0	104.8	105.0	105.2
Nondurables, manufactured.....	104.3	104.8	104.9	105.0	105.1	105.3	105.5	106.5	106.8	107.5	107.9	108.0	108.0
Durables, manufactured.....	98.2	98.3	98.8	98.8	99.0	99.2	99.3	99.6	100.0	100.4	101.4	101.7	102.1
Nonmanufactured consumer goods.....	102.6	103.1	103.4	103.4	103.3	103.3	103.8	104.0	104.1	104.3	105.6	105.8	106.6

**46. U.S. international price indexes for selected categories of services**

[2000 = 100, unless indicated otherwise]

Category	2006			2007				2008	
	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June
Import air freight.....	135.2	133.1	131.2	130.7	132.3	134.2	141.8	144.4	155.4
Export air freight.....	115.9	117.9	116.7	117.0	117.0	119.8	127.1	132.0	142.2
Import air passenger fares (Dec. 2006 = 100).....	136.7	130.9	125.4	122.9	144.6	140.2	135.3	131.3	171.6
Export air passenger fares (Dec. 2006 = 100).....	139.3	142.4	137.3	140.2	147.3	154.6	155.7	156.4	169.0

**47. Indexes of productivity, hourly compensation, and unit costs, quarterly data seasonally adjusted**

[1992 = 100]

Item	2005			2006				2007				2008	
	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
<b>Business</b>													
Output per hour of all persons.....	134.2	135.6	135.2	136.1	136.6	135.9	135.9	135.9	137.6	139.7	139.7	140.5	141.3
Compensation per hour.....	161.6	164.1	165.8	168.0	168.1	168.9	172.6	174.7	175.5	177.1	179.0	181.2	182.9
Real compensation per hour.....	119.5	119.6	119.6	120.6	119.6	119.1	122.1	122.4	121.7	121.9	121.7	121.9	121.6
Unit labor costs.....	120.4	121.1	122.6	123.5	123.1	124.3	127.0	128.5	127.5	126.8	128.1	128.9	129.4
Unit nonlabor payments.....	129.5	131.6	132.4	133.4	136.2	136.2	133.4	134.3	137.4	139.7	139.2	139.5	139.2
Implicit price deflator.....	123.8	125.0	126.3	127.2	128.0	128.8	129.4	130.7	131.2	131.6	132.2	132.9	133.1
<b>Nonfarm business</b>													
Output per hour of all persons.....	133.4	134.6	134.2	135.1	135.7	134.9	135.0	135.0	136.4	138.3	138.6	139.5	140.3
Compensation per hour.....	160.8	163.2	164.7	166.8	167.1	167.9	171.7	173.7	174.1	175.5	177.8	180.1	181.7
Real compensation per hour.....	118.9	118.9	118.8	119.7	118.9	118.3	121.4	121.8	120.7	120.9	121.0	121.2	120.8
Unit labor costs.....	120.5	121.2	122.7	123.5	123.1	124.4	127.1	128.7	127.7	126.9	128.3	129.1	129.5
Unit nonlabor payments.....	130.8	133.2	134.2	135.5	138.6	138.3	134.9	135.2	138.2	140.3	139.8	140.3	140.0
Implicit price deflator.....	124.3	125.6	126.9	127.9	128.8	129.5	130.0	131.1	131.5	131.8	132.5	133.2	133.4
<b>Nonfinancial corporations</b>													
Output per hour of all employees.....	143.7	142.8	144.8	146.3	146.0	147.0	146.0	146.2	147.4	148.1	148.8	149.2	—
Compensation per hour.....	158.6	160.8	161.2	164.5	164.5	165.1	167.8	170.3	171.3	172.5	175.0	177.1	—
Real compensation per hour.....	117.3	117.2	116.3	118.1	117.0	116.3	118.7	119.4	118.7	118.7	119.0	119.2	—
Total unit costs.....	110.6	113.5	111.8	112.5	113.1	112.8	115.3	116.7	116.5	116.8	117.9	118.7	—
Unit labor costs.....	110.4	112.6	111.4	112.4	112.6	112.3	114.9	116.5	116.2	116.5	117.6	118.7	—
Unit nonlabor costs.....	111.4	115.7	113.1	112.9	114.4	114.2	116.2	117.2	117.4	117.8	118.9	118.7	—
Unit profits.....	166.8	152.2	177.4	182.5	183.1	193.0	173.9	171.8	172.5	166.8	155.9	149.8	—
Unit nonlabor payments.....	126.2	125.5	130.3	131.5	132.8	135.3	131.6	131.8	132.2	130.9	128.8	127.0	—
Implicit price deflator.....	115.7	116.9	117.7	118.8	119.4	120.0	120.5	121.6	121.5	121.3	121.3	121.5	—
<b>Manufacturing</b>													
Output per hour of all persons.....	172.0	172.9	172.8	172.6	172.7	174.5	175.4	177.0	178.7	180.6	182.5	184.0	183.3
Compensation per hour.....	164.2	166.5	165.3	170.9	169.5	170.3	174.6	176.9	176.4	176.4	179.7	182.4	184.5
Real compensation per hour.....	121.4	121.3	119.2	122.7	120.7	120.0	123.5	124.0	122.3	121.4	122.2	122.8	122.7
Unit labor costs.....	95.5	96.3	95.6	99.0	98.2	97.6	99.5	100.0	98.7	97.6	98.5	99.1	100.6

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
<b>Private business</b>													
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
<b>Private nonfarm business</b>													
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
<b>Manufacturing [1996 = 100]</b>													
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
<b>Business</b>													
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
<b>Nonfarm business</b>													
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
<b>Nonfinancial corporations</b>													
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
<b>Manufacturing</b>													
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, 1987-2006**

[1997=100]

NAICS	Industry	1987	1990	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<b>Mining</b>													
21	Mining.....	85.5	85.1	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	75.7	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	75.7	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	79.3	100.0	104.5	105.8	106.3	109.0	110.9	113.6	115.9	114.0	110.6
2121	Coal mining.....	58.4	68.1	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	79.9	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	92.3	100.0	101.3	101.2	96.2	99.3	103.6	108.1	114.2	118.2	118.7
<b>Utilities</b>													
2211	Power generation and supply.....	65.6	71.1	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	71.4	100.0	99.0	102.7	113.2	110.1	115.4	114.1	118.3	122.2	119.0
<b>Manufacturing</b>													
311	Food.....	94.1	93.9	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	91.5	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	88.6	100.0	107.5	116.1	113.1	119.5	122.4	123.9	130.3	130.3	130.7
3113	Sugar and confectionery products.....	87.6	89.5	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	87.6	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	91.1	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	94.3	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	119.7	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	94.5	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	92.5	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	87.6	100.0	97.6	87.3	88.3	89.5	82.6	90.9	94.7	100.5	94.0
3121	Beverages.....	77.1	87.6	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	79.1	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	77.2	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	74.4	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	75.3	100.0	104.2	110.0	110.1	110.3	125.4	137.3	138.6	164.1	170.5
3133	Textile and fabric finishing mills.....	91.3	82.0	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	90.2	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	88.0	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	91.4	100.0	96.7	107.6	108.9	103.1	105.1	104.2	120.4	128.9	126.1
315	Apparel.....	71.9	73.7	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	86.2	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	70.1	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	101.3	100.0	109.0	99.2	98.3	105.2	76.1	78.7	70.8	74.0	67.3
316	Leather and allied products.....	71.6	72.7	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	90.7	100.0	100.3	98.1	100.1	100.3	81.2	82.2	93.5	118.7	118.1
3162	Footwear.....	76.7	78.1	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	89.9	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	97.5	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	79.4	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	102.8	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	105.3	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	87.1	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	84.0	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	90.1	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	97.5	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	97.5	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	75.4	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	75.4	100.0	102.2	107.1	113.5	112.1	118.0	119.2	123.4	123.8	122.8
325	Chemicals.....	85.9	86.9	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	93.4	100.0	102.7	115.7	117.5	108.8	123.8	136.0	154.4	165.2	169.3
3252	Resin, rubber, and artificial fibers.....	77.4	76.4	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	85.8	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	91.3	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.....	89.3	87.1	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	84.8	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	77.8	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	84.7	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	85.2	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	83.5	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	87.2	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	89.4	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	79.1	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	96.6	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, 1987-2006

[1997=100]

NAICS	Industry	1987	1990	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
3274	Lime and gypsum products.....	88.2	85.4	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	79.5	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	84.7	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	70.2	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	84.4	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	90.7	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	96.3	100.0	111.3	108.4	102.3	99.5	107.6	120.6	123.1	122.3	115.7
3315	Foundries.....	81.4	86.5	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	87.1	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	89.0	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	85.4	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	87.9	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	90.1	100.0	100.0	96.5	94.2	94.4	98.9	101.6	93.6	95.7	96.6
3325	Hardware.....	88.7	84.8	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	85.2	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	79.2	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	81.3	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	86.5	100.0	101.9	99.6	99.9	96.7	106.5	111.6	111.2	112.5	117.7
333	Machinery.....	82.3	87.7	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	83.3	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	81.6	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	95.7	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	90.6	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	86.5	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	85.9	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	86.8	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.....	30.1	34.5	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.....	11.9	14.7	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	48.4	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	77.0	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.....	19.8	21.9	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	78.5	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	83.7	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	76.2	100.0	103.9	106.6	111.5	111.4	113.3	117.2	123.3	130.0	129.4
3351	Electric lighting equipment.....	91.1	88.2	100.0	104.4	102.7	102.0	106.7	112.4	111.4	122.7	130.3	136.7
3352	Household appliances.....	73.3	76.5	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	73.6	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	76.1	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	83.1	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	85.6	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	75.9	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	76.0	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	89.1	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	77.6	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	99.6	100.0	99.3	112.0	121.9	121.5	131.0	133.9	138.7	131.7	127.3
3369	Other transportation equipment.....	73.7	62.9	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	85.9	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	88.2	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	82.2	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	88.9	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	87.0	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	82.9	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	90.5	100.0	102.1	105.0	113.6	111.8	118.0	124.7	128.6	137.8	143.2
	<b>Wholesale trade</b>												
42	Wholesale trade.....	73.2	79.9	100.0	103.4	111.2	116.6	117.7	123.3	127.5	134.3	135.2	141.1
423	Durable goods.....	62.3	67.5	100.0	107.1	119.2	125.1	129.0	140.2	146.7	161.5	167.3	175.8
4231	Motor vehicles and parts.....	74.5	78.6	100.0	106.4	120.4	116.7	120.0	133.4	137.6	143.5	146.7	165.7
4232	Furniture and furnishings.....	80.5	90.1	100.0	99.9	102.3	112.5	110.7	116.0	123.9	130.0	127.2	136.6
4233	Lumber and construction supplies.....	109.1	108.4	100.0	105.4	109.3	107.7	116.6	123.9	133.0	139.4	140.2	136.7
4234	Commercial equipment.....	28.0	34.2	100.0	125.6	162.2	182.2	218.4	265.2	299.5	353.2	401.0	441.1
4235	Metals and minerals.....	101.7	103.1	100.0	100.9	94.0	93.9	94.4	96.3	97.4	106.3	103.2	99.9
4236	Electric goods.....	42.8	50.3	100.0	105.9	127.5	152.8	147.6	159.5	165.7	194.1	204.1	225.6
4237	Hardware and plumbing.....	82.2	88.0	100.0	101.8	104.4	103.7	100.5	102.6	103.9	107.3	104.9	105.8
4238	Machinery and supplies.....	74.1	81.5	100.0	104.3	102.9	105.5	102.9	100.3	103.4	112.4	118.8	123.3
4239	Miscellaneous durable goods.....	89.8	90.5	100.0	100.8	113.7	114.7	116.8	124.6	119.6	135.0	133.5	119.8
424	Nondurable goods.....	91.0	98.9	100.0	99.1	100.8	105.1	105.1	105.8	110.5	113.6	114.3	117.4

50. Continued - Annual indexes of output per hour for selected NAICS industries, 1987-2006

[1997=100]

NAICS	Industry	1987	1990	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
4241	Paper and paper products.....	85.6	81.0	100.0	98.4	100.1	100.9	104.6	116.6	119.7	130.9	139.0	137.2
4242	Druggists' goods.....	70.7	80.6	100.0	94.2	93.1	85.9	84.9	89.8	100.2	105.8	112.3	119.8
4243	Apparel and piece goods.....	86.3	99.3	100.0	103.6	105.1	108.8	115.2	122.8	125.9	131.0	140.4	149.9
4244	Grocery and related products.....	87.9	96.2	100.0	101.1	101.0	102.4	101.9	98.6	104.9	104.1	104.3	105.1
4245	Farm product raw materials.....	81.6	79.4	100.0	94.3	101.6	105.1	102.1	98.1	98.2	109.1	108.2	120.9
4246	Chemicals.....	90.4	101.1	100.0	97.1	93.3	87.9	85.3	89.1	92.2	91.2	87.9	89.0
4247	Petroleum.....	84.4	109.8	100.0	88.5	102.9	138.1	140.6	153.6	151.1	163.2	152.5	157.7
4248	Alcoholic beverages.....	99.3	110.0	100.0	106.5	105.6	108.4	106.4	106.8	107.9	103.1	104.8	107.5
4249	Miscellaneous nondurable goods.....	111.2	109.0	100.0	105.4	106.8	115.0	111.9	106.1	109.8	120.7	124.2	126.8
425	Electronic markets and agents and brokers.....	64.3	74.3	100.0	102.4	112.4	120.1	110.7	109.8	104.1	97.0	87.3	93.6
4251	Electronic markets and agents and brokers.....	64.3	74.3	100.0	102.4	112.4	120.1	110.7	109.8	104.1	97.0	87.3	93.6
	<b>Retail trade</b>												
44-45	Retail trade.....	79.1	81.4	100.0	105.7	112.7	116.1	120.1	125.6	131.6	137.9	141.5	148.5
441	Motor vehicle and parts dealers.....	78.3	82.7	100.0	106.4	115.1	114.3	116.0	119.9	124.3	127.3	127.0	129.8
4411	Automobile dealers.....	79.2	84.1	100.0	106.5	116.3	113.7	115.5	117.2	119.5	124.7	123.8	126.8
4412	Other motor vehicle dealers.....	70.6	69.7	100.0	109.6	114.8	115.3	124.6	133.6	133.8	143.3	135.1	136.3
4413	Auto parts, accessories, and tire stores.....	71.8	79.0	100.0	105.1	107.6	108.4	101.3	107.7	115.1	110.1	115.9	115.8
442	Furniture and home furnishings stores.....	75.1	79.0	100.0	104.1	110.8	115.9	122.4	129.3	134.6	146.7	151.4	162.6
4421	Furniture stores.....	77.3	84.8	100.0	104.3	107.5	112.0	119.7	125.2	128.8	139.2	143.4	155.5
4422	Home furnishings stores.....	71.3	71.0	100.0	104.1	115.2	121.0	126.1	134.9	142.6	156.8	161.9	172.6
443	Electronics and appliance stores.....	38.0	47.7	100.0	122.6	150.6	173.7	196.7	233.5	292.7	334.1	369.6	416.2
444	Building material and garden supply stores.....	75.8	79.5	100.0	107.4	113.8	113.3	116.8	120.8	127.1	134.5	134.9	143.6
4441	Building material and supplies dealers.....	77.6	81.6	100.0	108.3	115.3	115.1	116.7	121.3	127.5	134.0	134.9	142.9
4442	Lawn and garden equipment and supplies stores.....	66.9	69.0	100.0	102.3	105.5	103.1	118.4	118.3	125.7	140.1	135.6	150.1
445	Food and beverage stores.....	110.8	107.4	100.0	99.9	101.9	101.0	103.8	104.7	107.2	112.9	118.3	122.1
4451	Grocery stores.....	111.1	106.9	100.0	99.6	102.5	101.1	103.3	104.8	106.7	112.2	117.1	119.2
4452	Specialty food stores.....	138.5	127.2	100.0	100.5	96.4	98.5	108.2	105.3	112.2	120.3	127.7	153.3
4453	Beer, wine, and liquor stores.....	93.6	97.6	100.0	104.6	99.1	105.7	107.1	110.1	117.0	127.8	141.8	148.8
446	Health and personal care stores.....	84.0	91.0	100.0	104.0	107.1	112.2	116.2	122.9	129.5	134.3	133.2	139.7
4461	Health and personal care stores.....	84.0	91.0	100.0	104.0	107.1	112.2	116.2	122.9	129.5	134.3	133.2	139.7
447	Gasoline stations.....	83.9	84.2	100.0	106.7	110.7	107.7	112.9	125.1	119.9	122.2	124.6	121.8
4471	Gasoline stations.....	83.9	84.2	100.0	106.7	110.7	107.7	112.9	125.1	119.9	122.2	124.6	121.8
448	Clothing and clothing accessories stores.....	66.3	69.8	100.0	106.3	114.0	123.5	126.4	131.3	138.9	139.1	147.8	163.3
4481	Clothing stores.....	67.1	70.0	100.0	108.7	114.2	125.0	130.3	136.0	141.8	140.9	153.1	169.9
4482	Shoe stores.....	65.3	70.8	100.0	94.2	104.9	110.0	111.5	125.2	132.5	124.8	132.9	149.3
4483	Jewelry, luggage, and leather goods stores.....	64.5	68.1	100.0	108.7	122.5	130.5	123.9	118.7	132.9	144.3	139.0	148.8
451	Sporting goods, hobby, book, and music stores.....	74.9	82.3	100.0	107.9	114.0	121.1	127.1	127.6	131.5	151.1	164.8	175.3
4511	Sporting goods and musical instrument stores.....	73.2	82.2	100.0	111.5	119.8	129.4	134.5	136.0	141.1	166.0	181.7	203.1
4512	Book, periodical, and music stores.....	78.9	82.3	100.0	101.0	103.2	105.8	113.0	111.6	113.7	123.6	133.7	124.9
452	General merchandise stores.....	73.5	75.1	100.0	105.3	113.4	120.2	124.8	129.1	136.9	140.7	145.0	152.3
4521	Department stores.....	87.2	83.9	100.0	100.4	104.5	106.2	103.8	102.0	106.8	109.0	109.9	113.1
4529	Other general merchandise stores.....	54.8	61.2	100.0	114.7	131.0	147.3	164.7	179.3	188.8	192.9	199.7	210.4
453	Miscellaneous store retailers.....	65.1	69.5	100.0	108.9	111.3	114.1	112.6	119.1	126.1	130.8	142.0	159.3
4531	Florists.....	77.6	73.3	100.0	102.3	116.2	115.2	102.7	113.8	108.9	103.4	120.6	125.3
4532	Office supplies, stationery and gift stores.....	61.4	66.4	100.0	111.5	119.2	127.3	132.3	141.5	153.9	172.8	187.9	215.5
4533	Used merchandise stores.....	64.5	70.4	100.0	119.1	113.4	116.5	121.9	142.0	149.7	152.6	159.5	166.6
4539	Other miscellaneous store retailers.....	68.3	75.0	100.0	105.3	103.0	104.4	96.9	94.4	99.9	96.9	103.5	118.5
454	Nonstore retailers.....	50.7	54.7	100.0	114.3	128.9	152.2	163.6	182.1	195.5	215.5	218.4	256.3
4541	Electronic shopping and mail-order houses.....	39.4	43.4	100.0	120.2	142.6	160.2	179.6	212.7	243.6	273.0	285.2	337.1
4542	Vending machine operators.....	95.5	95.1	100.0	106.3	105.4	111.1	95.7	91.2	102.3	110.5	105.1	110.7
4543	Direct selling establishments.....	70.8	74.1	100.0	101.9	104.2	122.5	127.9	135.0	127.0	130.3	121.5	135.6
	<b>Transportation and warehousing</b>												
481	Air transportation.....	81.1	77.5	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	69.8	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	89.2	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	112.6	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	94.2	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	94.2	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	138.5	100.0	112.6	117.6	121.9	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
	<b>Information</b>												
511	Publishing industries, except internet.....	64.1	67.1	100.0	116.1	116.3	117.1	116.6	117.2	126.4	130.7	136.5	142.7
5111	Newspaper, book, and directory publishers.....	105.0	95.5	100.0	103.9	104.1	107.7	105.8	104.7	109.5	106.6	107.6	110.8

**50. Continued - Annual indexes of output per hour for selected NAICS industries, 1987-2006**

[1997=100]

NAICS	Industry	1987	1990	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
5112	Software publishers.....	10.2	28.5	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	109.2	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	98.2	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	97.7	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	100.3	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	66.0	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	70.4	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	100.0	97.1	95.8	91.6	87.7	95.0	101.3	113.8	110.6	110.6
	<b>Finance and insurance</b>												
52211	Commercial banking.....	72.8	80.7	100.0	97.0	99.8	102.7	99.6	102.1	103.6	108.4	108.5	114.2
	<b>Real estate and rental and leasing</b>												
532111	Passenger car rental.....	92.7	90.8	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	68.5	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	97.1	100.0	113.2	129.4	134.9	133.3	130.3	148.5	154.5	144.2	176.4
	<b>Professional and technical services</b>												
541213	Tax preparation services.....	82.9	76.2	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	93.8	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	99.4	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	107.9	100.0	89.2	97.9	107.5	106.9	113.1	121.1	133.4	131.5	132.8
541921	Photography studios, portrait.....	98.1	95.9	100.0	124.8	109.8	108.9	102.2	97.6	104.1	93.0	93.5	95.3
	<b>Administrative and waste services</b>												
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	94.6	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	94.3	100.0	95.3	98.6	101.0	102.1	105.6	118.8	116.6	121.5	115.6
	<b>Health care and social assistance</b>												
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
	<b>Arts, entertainment, and recreation</b>												
71311	Amusement and theme parks.....	112.0	112.5	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	94.0	100.0	89.9	89.4	93.4	94.3	96.4	102.4	107.9	106.1	110.6
	<b>Accommodation and food services</b>												
7211	Traveler accommodation.....	85.1	81.9	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	102.4	100.0	101.0	100.9	103.5	103.8	104.4	106.3	107.0	108.2	110.9
7221	Full-service restaurants.....	92.1	99.4	100.0	100.9	100.8	103.0	103.6	104.4	104.2	104.8	105.6	108.6
7222	Limited-service eating places.....	96.5	103.6	100.0	101.2	100.4	102.0	102.5	102.7	105.4	106.8	107.8	111.2
7223	Special food services.....	89.9	99.8	100.0	100.6	105.2	115.0	115.3	114.9	117.6	118.0	119.2	116.4
7224	Drinking places, alcoholic beverages.....	136.7	123.3	100.0	99.7	98.8	100.6	97.6	102.9	118.6	112.2	121.1	124.2
	<b>Other services</b>												
8111	Automotive repair and maintenance.....	85.9	89.9	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	82.1	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	98.4	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	94.8	100.0	100.1	105.0	107.6	110.9	112.5	103.8	110.6	120.5	119.6
81292	Photofinishing.....	95.8	107.7	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
<b>Civilian labor force</b>											
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
<b>Participation rate<sup>1</sup></b>											
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
<b>Employed</b>											
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
<b>Employment-population ratio<sup>2</sup></b>											
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
<b>Unemployed</b>											
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
<b>Unemployment rate</b>											
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

<sup>1</sup> Labor force as a percent of the working-age population.

<sup>2</sup> 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/flscompareif.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/flssec.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**

[1992 = 100]

Measure and economy	1980	1990	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<b>Output per hour</b>																
United States.....	68.4	93.5	102.8	108.2	112.3	116.7	121.7	130.1	136.7	147.1	148.6	164.4	174.8	185.3	189.4	193.2
Canada.....	74.0	94.7	104.5	110.4	111.7	111.2	116.3	121.8	127.0	134.7	131.8	134.1	134.4	136.5	141.7	141.6
Australia.....	68.5	92.4	104.5	107.0	106.4	112.3	115.4	118.5	119.7	128.1	131.4	137.1	140.1	142.3	143.7	144.1
Japan.....	63.6	94.4	101.7	103.3	111.0	116.1	120.2	121.3	124.5	131.2	128.4	133.1	142.2	152.1	162.0	165.1
Korea.....	—	82.7	108.3	118.1	129.7	142.6	160.8	179.3	199.4	216.4	214.8	235.8	252.2	281.2	300.4	332.7
Taiwan.....	49.1	89.8	101.3	105.2	112.9	121.5	126.5	132.7	140.9	148.4	155.1	169.0	174.5	183.2	196.5	209.9
Belgium.....	65.4	96.8	102.5	107.9	112.7	114.3	125.5	127.1	125.9	130.5	131.8	136.2	139.5	145.8	150.3	153.6
Denmark.....	82.0	98.5	100.3	112.7	112.7	109.0	117.7	117.1	119.0	123.2	123.4	124.2	129.3	136.8	138.3	145.4
France.....	66.0	95.3	101.8	109.5	114.9	115.5	122.3	128.7	134.4	143.7	146.0	152.0	158.7	162.3	169.2	175.4
Germany.....	77.2	99.0	101.0	108.5	110.2	113.3	119.9	120.4	123.4	132.0	135.4	136.7	141.6	146.8	152.3	163.1
Italy.....	75.3	97.3	102.8	107.6	111.1	112.5	113.3	112.5	112.5	116.1	116.6	114.8	112.1	110.4	110.3	111.8
Netherlands.....	70.8	98.0	103.7	113.3	117.7	120.3	120.7	124.2	129.3	138.6	139.2	143.5	146.5	156.3	161.7	166.8
Norway.....	78.5	98.3	99.9	99.9	98.7	101.6	101.8	99.2	102.7	105.9	108.8	111.9	121.6	128.8	133.3	137.7
Spain.....	67.3	93.1	101.8	104.9	108.6	107.2	108.3	110.2	112.1	113.2	115.8	116.3	119.2	121.4	123.3	126.6
Sweden.....	78.3	96.4	107.8	118.9	126.3	130.5	142.4	150.8	164.7	175.9	170.9	189.6	205.0	226.8	241.0	255.2
United Kingdom.....	57.3	90.1	104.1	106.7	105.0	104.1	105.1	106.4	111.6	117.2	122.2	125.7	132.1	140.0	145.0	151.5
<b>Output</b>																
United States.....	73.6	98.2	104.2	112.2	117.3	121.6	129.0	137.7	143.7	152.7	144.2	148.2	149.9	158.2	159.8	164.5
Canada.....	85.6	106.7	105.4	113.5	118.7	120.3	127.8	134.3	145.5	160.1	153.9	155.2	154.0	157.5	160.1	158.5
Australia.....	89.8	104.2	103.8	109.1	108.5	111.9	114.5	117.8	117.5	123.1	121.9	127.8	130.1	130.1	130.3	128.7
Japan.....	60.8	97.1	96.3	94.9	98.9	103.0	105.6	100.1	99.7	104.9	99.1	97.6	102.8	108.8	114.4	119.4
Korea.....	28.6	88.1	105.1	117.1	130.8	139.2	146.0	134.5	163.7	191.5	195.7	210.5	222.2	246.8	264.3	286.5
Taiwan.....	45.4	91.0	100.9	106.9	112.7	118.7	125.5	129.5	139.0	149.2	138.1	150.4	158.4	173.8	185.3	198.7
Belgium.....	78.2	101.0	97.0	101.4	104.2	104.6	113.2	115.1	115.2	120.1	120.1	119.2	117.6	121.9	121.6	124.9
Denmark.....	92.0	101.7	97.0	107.5	112.7	107.5	116.3	117.2	118.2	122.5	122.5	119.0	115.7	117.5	113.8	120.0
France.....	88.3	100.5	96.6	100.7	105.2	105.2	110.1	115.4	119.3	124.8	126.0	125.9	128.3	129.4	131.2	133.2
Germany.....	85.3	99.1	92.0	94.9	94.0	92.0	96.1	97.2	98.2	104.8	106.6	104.4	105.1	108.9	110.4	116.9
Italy.....	81.0	100.5	97.6	104.1	109.1	107.8	109.6	109.9	109.6	112.9	111.8	110.4	107.8	106.4	103.7	107.6
Netherlands.....	77.7	98.3	99.4	104.7	108.6	110.2	111.7	115.5	119.8	127.8	127.6	127.7	126.2	130.6	130.6	133.7
Norway.....	105.7	101.7	102.0	104.7	105.2	109.4	114.1	113.3	113.2	112.6	111.8	111.2	114.9	121.4	126.8	132.4
Spain.....	78.6	98.4	96.1	97.8	101.5	104.0	110.7	117.4	124.1	129.6	133.7	133.5	135.2	136.0	137.4	141.3
Sweden.....	92.4	110.7	102.0	117.8	133.3	137.7	148.4	160.7	175.8	190.2	185.8	197.5	207.1	226.2	236.6	248.8
United Kingdom.....	87.3	105.3	101.4	106.2	107.9	108.6	110.6	111.3	112.3	115.0	113.5	110.5	110.7	113.0	111.6	113.2
<b>Total hours</b>																
United States.....	107.6	104.9	101.3	103.7	104.4	104.2	106.0	105.8	105.1	103.8	97.0	90.1	85.7	85.4	84.4	85.1
Canada.....	115.8	112.6	100.9	102.8	106.3	108.1	109.9	110.2	114.5	118.9	116.7	115.8	114.6	115.4	112.9	112.0
Australia.....	131.1	112.7	99.3	102.0	101.9	99.7	99.2	99.4	98.2	96.0	92.8	93.2	92.8	91.4	90.7	89.3
Japan.....	95.5	102.9	94.7	91.9	89.1	88.8	87.9	82.5	80.0	80.0	77.2	73.3	72.3	71.5	70.6	72.3
Korea.....	—	106.4	97.1	99.2	100.9	97.6	90.8	75.0	82.1	88.5	91.1	89.3	88.1	87.8	88.0	86.1
Taiwan.....	92.4	101.4	99.6	101.7	99.8	97.7	99.2	97.6	98.7	100.5	89.0	89.0	90.8	94.9	94.3	94.6
Belgium.....	119.7	104.3	94.7	94.0	92.4	91.5	90.2	90.5	91.5	92.1	91.2	87.5	84.3	83.6	80.9	81.3
Denmark.....	112.1	103.3	96.8	95.4	100.0	98.6	98.8	100.1	99.4	99.4	99.3	95.8	89.5	85.9	82.3	82.5
France.....	133.8	105.5	94.8	91.9	91.6	91.0	90.1	89.7	88.7	86.8	86.3	82.8	80.8	79.7	77.5	75.9
Germany.....	110.5	100.1	91.1	87.5	85.3	81.3	80.1	80.8	79.6	79.4	78.7	76.4	74.3	74.2	72.5	71.7
Italy.....	107.6	103.3	95.0	96.8	98.2	95.8	96.7	97.7	97.4	97.2	95.9	96.2	96.1	96.4	94.1	96.2
Netherlands.....	109.8	100.4	95.9	92.5	92.3	91.6	92.6	93.0	92.7	92.2	91.7	89.0	86.2	83.5	80.8	80.2
Norway.....	134.7	103.4	102.1	104.8	106.6	107.7	112.1	114.2	110.3	106.4	102.7	99.3	94.4	94.2	95.1	96.1
Spain.....	116.7	105.7	94.4	93.2	93.5	97.0	102.2	106.5	110.7	114.4	115.4	114.8	113.4	112.1	111.5	111.6
Sweden.....	118.0	114.8	94.7	99.1	105.6	105.6	104.3	106.5	106.7	108.1	108.7	104.2	101.1	99.7	98.2	97.5
United Kingdom.....	152.3	116.9	97.4	99.5	102.7	104.4	105.2	104.6	100.6	98.1	92.9	88.0	83.8	80.7	77.0	74.7
<b>Hourly compensation (national currency basis)</b>																
United States.....	55.9	90.5	102.0	105.3	107.3	109.3	112.2	118.7	123.4	134.7	137.8	147.8	158.2	161.5	168.3	172.4
Canada.....	47.4	89.2	101.2	104.1	106.6	108.2	110.9	116.6	119.0	123.0	126.3	130.5	135.8	139.8	146.6	149.4
Australia.....	—	87.5	105.2	106.1	113.5	121.7	126.0	128.4	132.9	140.2	149.2	156.0	162.7	171.7	182.2	192.7
Japan.....	58.6	90.6	102.7	104.7	108.3	109.1	112.7	115.5	115.4	114.7	116.2	117.0	114.5	115.5	116.5	114.9
Korea.....	—	68.0	115.9	133.1	161.6	188.1	204.5	222.7	223.9	239.1	246.7	271.6	285.0	325.5	351.5	375.5
Taiwan.....	29.6	85.2	105.9	111.1	120.2	128.2	132.1	137.1	139.6	142.3	151.4	146.7	149.1	151.6	158.2	161.5
Belgium.....	52.5	90.1	104.8	105.6	108.6	110.6	114.7	116.5	118.0	120.1	126.4	131.9	135.8	138.7	143.5	146.5
Denmark.....	44.5	93.6	102.4	106.0	108.2	112.6	116.5	119.6	122.6	125.0	130.9	136.5	145.7	151.3	161.7	166.7
France.....	36.7	88.5	104.3	108.0	110.7	112.5	116.3	117.2	121.0	127.0	130.6	136.9	141.0	144.6	143.7	147.5
Germany.....	53.6	89.4	106.2	111.0	117.0	122.5	124.9	126.7	129.6	136.3	140.6	144.0	147.2	148.0	149.8	155.9
Italy.....	30.6	87.7	105.7	107.3	112.0	120.0	124.1	123.3	125.6	128.7	134.0	137.5	141.6	145.7	150.2	152.9
Netherlands.....	59.8	89.8	104.4	108.9	111.8	113.8	116.4	121.4	125.7	132.1	138.1	146.1	151.9	158.1	161.3	165.8
Norway.....	39.0	92.3	101.5	104.5	109.2	113.8	118.8	125.8	133.0	140.5	148.9	157.9	164.3	169.7	177.7	185.8
Spain.....	28.0	79.9	109.4	113.4	118.3	121.1	124.0	124.9	124.7	126.6	131.6	135.4	142.2	147.1	152.8	157.4
Sweden.....	37.4	87.9	97.4	99.9	105.3	113.5	119.6	124.2	128.1	133.0	139.4	146.9	153.5	157.6	163.0	169.2
United Kingdom.....	35.8	88.7	104.5	107.0	108.9	108.7	112.3	121.2	128.3	133.8	140.7	149.0	156.9	165.1	172.3	184.2

## 53. Continued— Annual indexes of manufacturing productivity and related measures, 16 economies

Measure and economy	1980	1990	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<b>Unit labor costs</b> (national currency basis)																
United States.....	81.8	96.7	99.2	97.3	95.5	93.7	92.2	91.2	90.3	91.6	92.7	89.9	90.5	87.2	88.9	89.3
Canada.....	64.1	94.2	96.9	94.3	95.4	97.3	95.4	95.7	93.7	91.3	95.8	97.4	101.0	102.4	103.4	105.5
Australia.....	—	94.6	100.6	99.2	106.6	108.4	109.2	108.4	111.0	109.4	113.6	113.8	116.1	120.7	126.8	133.7
Japan.....	92.1	95.9	101.0	101.4	97.6	94.0	93.8	95.2	92.7	87.4	90.5	87.9	80.5	76.0	71.9	69.6
Korea.....	44.4	82.1	107.0	112.7	124.6	131.9	127.1	124.2	112.3	110.5	114.8	115.2	113.0	115.8	117.0	112.8
Taiwan.....	60.3	94.9	104.6	105.6	106.5	105.5	104.5	103.4	99.1	95.9	97.6	86.8	85.5	82.7	80.5	76.9
Belgium.....	80.3	93.0	102.3	97.9	96.4	96.8	91.4	91.6	93.7	92.0	95.9	96.9	97.3	95.1	95.5	95.4
Denmark.....	54.3	95.0	102.2	94.1	96.0	103.3	98.9	102.1	103.0	101.4	106.1	109.9	112.7	110.6	116.9	114.6
France.....	55.6	92.8	102.4	98.6	96.3	97.4	95.0	91.0	90.0	88.4	89.4	90.1	88.9	89.1	85.0	84.1
Germany.....	69.4	90.3	105.2	102.4	106.2	108.2	104.2	105.2	105.1	103.3	103.8	105.3	104.0	100.8	98.3	95.6
Italy.....	40.7	90.2	102.9	99.8	100.8	106.6	109.5	109.6	111.7	110.9	114.9	119.8	126.3	132.0	136.2	136.7
Netherlands.....	84.5	91.7	100.7	96.2	95.0	94.6	96.5	97.7	97.3	95.3	99.2	101.8	103.7	101.2	99.8	99.4
Norway.....	49.7	93.9	101.6	104.6	110.7	112.0	116.7	126.7	129.5	132.7	136.8	141.0	135.1	131.7	133.3	134.9
Spain.....	41.5	85.8	107.4	108.1	108.9	112.9	114.5	113.4	111.2	111.8	113.6	116.4	119.3	121.2	124.0	124.3
Sweden.....	47.7	91.2	90.4	84.0	83.4	87.0	84.0	82.3	77.7	75.6	81.6	77.5	74.9	69.5	67.7	66.3
United Kingdom.....	62.4	98.5	100.4	100.2	103.7	104.4	106.8	113.9	115.0	114.2	115.1	118.6	118.8	117.9	118.8	121.6
<b>Unit labor costs</b> (U.S. dollar basis)																
United States.....	81.8	96.7	99.2	97.3	95.5	93.7	92.2	91.2	90.3	91.6	92.7	89.9	90.5	87.2	88.9	89.3
Canada.....	66.3	97.5	90.7	83.4	84.0	86.3	83.2	77.9	76.2	74.3	74.8	74.9	87.2	95.1	103.2	112.4
Australia.....	—	100.5	93.0	98.7	107.4	115.4	110.4	92.7	97.5	86.5	79.8	84.1	103.0	120.9	131.5	137.0
Japan.....	51.5	83.9	115.3	125.8	131.7	109.5	98.3	92.2	103.3	102.8	94.3	89.0	88.0	89.0	82.8	75.8
Korea.....	57.3	90.7	104.2	109.6	126.5	128.6	105.3	69.6	74.0	76.7	69.7	72.3	74.4	79.3	89.7	92.8
Taiwan.....	42.1	88.7	99.6	100.4	101.1	96.7	91.3	77.5	77.2	77.2	72.6	63.2	62.5	62.4	63.0	59.5
Belgium.....	88.3	89.5	95.1	94.2	105.2	100.4	82.1	81.1	79.6	67.7	68.4	73.0	87.8	94.3	94.7	95.5
Denmark.....	58.1	92.7	95.1	89.4	103.5	107.6	90.4	92.0	89.0	75.6	76.9	84.2	103.4	111.5	117.7	116.5
France.....	69.6	90.2	95.7	94.1	102.2	100.7	86.2	81.7	77.4	65.8	64.6	68.7	81.2	89.5	85.4	85.3
Germany.....	59.6	87.3	99.3	98.6	115.8	112.3	93.8	93.4	89.4	76.2	74.2	79.5	94.0	100.1	97.8	95.9
Italy.....	58.5	92.7	80.6	76.3	76.2	85.2	79.2	77.7	75.7	65.1	65.5	72.1	91.0	104.5	107.9	109.3
Netherlands.....	74.8	88.5	95.2	93.0	104.1	98.6	86.9	86.6	82.7	70.2	70.9	76.8	93.7	100.4	99.1	99.7
Norway.....	62.6	93.3	88.9	92.1	108.6	107.7	102.3	104.3	103.1	93.6	94.5	109.8	118.6	121.4	128.6	130.8
Spain.....	59.3	86.2	86.3	82.6	89.5	91.3	80.0	77.7	72.9	63.5	62.6	67.7	83.1	92.8	95.0	96.1
Sweden.....	65.7	89.7	67.5	63.4	68.0	75.6	64.0	60.3	54.7	48.0	46.0	46.4	54.0	55.1	52.8	52.4
United Kingdom.....	82.2	99.5	85.3	86.9	92.7	92.3	99.0	106.9	105.3	98.0	93.8	100.9	109.9	122.4	122.5	126.9

NOTE: Data for Germany for years before 1993 are for the former West Germany. Data for 1993 onward are for unified Germany. Dash indicates data not available.

54. Occupational injury and illness rates by industry,<sup>1</sup> United States

Industry and type of case <sup>2</sup>	Incidence rates per 100 full-time workers <sup>3</sup>												
	1989 <sup>1</sup>	1990	1991	1992	1993 <sup>4</sup>	1994 <sup>4</sup>	1995 <sup>4</sup>	1996 <sup>4</sup>	1997 <sup>4</sup>	1998 <sup>4</sup>	1999 <sup>4</sup>	2000 <sup>4</sup>	2001 <sup>4</sup>
<b>PRIVATE SECTOR<sup>5</sup></b>													
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	-	-	-	-	-	-	-	-	-
<b>Agriculture, forestry, and fishing<sup>5</sup></b>													
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	-	-	-	-	-	-	-	-	-
<b>Mining</b>													
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	-	-	-	-	-	-	-	-	-
<b>Construction</b>													
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	-	-	-	-	-	-	-	-	-
<b>Manufacturing</b>													
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,<sup>1</sup> United States

Industry and type of case <sup>2</sup>	Incidence rates per 100 workers <sup>3</sup>												
	1989 <sup>1</sup>	1990	1991	1992	1993 <sup>4</sup>	1994 <sup>4</sup>	1995 <sup>4</sup>	1996 <sup>4</sup>	1997 <sup>4</sup>	1998 <sup>4</sup>	1999 <sup>4</sup>	2000 <sup>4</sup>	2001 <sup>4</sup>
<b>Nondurable goods:</b>													
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	-	-	-	-	-	-	-	-	-
<b>Food and kindred products:</b>													
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	-	-	-	-	-	-	-	-	-
<b>Tobacco products:</b>													
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	-	-	-	-	-	-	-	-	-
<b>Textile mill products:</b>													
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	-	-	-	-	-	-	-	-	-
<b>Apparel and other textile products:</b>													
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	-	-	-	-	-	-	-	-	-
<b>Paper and allied products:</b>													
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	-	-	-	-	-	-	-	-	-
<b>Printing and publishing:</b>													
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	-	-	-	-	-	-	-	-	-
<b>Chemicals and allied products:</b>													
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	-	-	-	-	-	-	-	-	-
<b>Petroleum and coal products:</b>													
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	-	-	-	-	-	-	-	-	-
<b>Rubber and miscellaneous plastics products:</b>													
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	-	-	-	-	-	-	-	-	-
<b>Leather and leather products:</b>													
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	-	-	-	-	-	-	-	-	-
<b>Transportation and public utilities</b>													
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	-	-	-	-	-	-	-	-	-
<b>Wholesale and retail trade</b>													
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	-	-	-	-	-	-	-	-	-
<b>Wholesale trade:</b>													
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	-	-	-	-	-	-	-	-	-
<b>Retail trade:</b>													
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	-	-	-	-	-	-	-	-	-
<b>Finance, insurance, and real estate</b>													
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	-	-	-	-	-	-	-	-	-
<b>Services</b>													
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	-	-	-	-	-	-	-	-	-

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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).

<sup>4</sup> 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.

<sup>5</sup> 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 <sup>1</sup>	1996-2000 (average)	2001-2005 (average) <sup>2</sup>	2005 <sup>3</sup>	
			Number	Percent
All events .....	6,094	5,704	5,734	100
<b>Transportation incidents</b> .....	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
<b>Assaults and violent acts</b> .....	1,015	850	792	14
Homicides .....	766	602	567	10
Shooting .....	617	465	441	8
Suicide, self-inflicted injury .....	216	207	180	3
<b>Contact with objects and equipment</b> .....	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
<b>Falls</b> .....	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
<b>Exposure to harmful substances or environments</b> .....	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
<b>Fires and explosions</b> .....	196	174	159	3
Fires--unintended or uncontrolled .....	103	95	93	2
Explosion .....	92	78	65	1

<sup>1</sup> Based on the 1992 BLS Occupational Injury and Illness Classification Manual.

<sup>2</sup> Excludes fatalities from the Sept. 11, 2001, terrorist attacks.

<sup>3</sup> 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.