

## What is the Difference Between the Consumer Price Index and the Employment Cost Index? *by Professor Craig A. Depken, II*

The Consumer Price Index (CPI) and the Employment Cost Index (ECI) are two series published by the Bureau of Labor Statistics (BLS), a division of the U.S. Department of Labor. The CPI is the more common of the two series as it is often used as a measure of inflation and to adjust government income transfer programs. The ECI is used in management-labor compensation negotiations and may serve as an early signal of potential cost-push inflation in consumer prices.

### The CPI

The CPI is a relative measure of how consumer prices change for a representative "basket" of goods, ostensibly purchased by the majority of urban consumers. The CPI is best used as a measure relative to a base year. The CPI is published monthly for the entire United States, and on a staggered bimonthly basis for 11 metropolitan areas. The index is also published for 26 local areas but with less precision.

The CPI is reported in several forms: the most prominent is the CPI-U, which reflects prices faced by all urban consumers (approximately 87% of the U.S. population). It is possible to obtain relative price changes for various subsets of the representative "basket" of goods, for example "All Items Less Food and Energy." It is also possible to obtain the CPI-U for select metropolitan areas and geographical regions. However, a loss of accuracy arises with finer geographic focus by the methodology employed to create the index.

Currently, the base year for the CPI is the average of prices from 1982-1984. In June, 2002, the CPI was 179.9, indicating that the basket today is approximately 1.79 times as expensive as it was during the 1982-1984 period. However, it must be noted that the bundle of goods included in the basket used to measure the CPI, and more importantly included in the basket that individuals actually purchase, changes over time.

This change can occur on two levels. First, new products are introduced to the economy over time, e.g., personal computers, and consumption patterns change (however slowly) to incorporate these new products. Second, the quality of existing products is almost always improving, e.g., an automobile today is safer than a vehicle made in the early 1980s. Therefore, the CPI might register nominal inflation but might not account for all qualitative changes in the products included in the basket. This makes comparisons of the CPI over extended periods of time difficult.

The data to calculate the CPI are obtained by interviews and on-site visits of retail establishments and service providers across

the country. Eight sectors of the economy are included in the CPI: Food and Beverages, Housing, Apparel, Transportation, Medical Care, Recreation, Education and Communication, and Other Goods and Services. Thus, the CPI does not cover all items in the economy, and using changes in the CPI in a particular area, especially rural, may be misleading. Local market forces may increase the prices in one sector of the economy at a faster rate than the overall economy, or vice-versa.

### The ECI

The ECI is very similar to the CPI, although it measures a completely different set of "prices:" the price of labor services. The ECI measures the relative increase in total compensation that employers pay labor, including wages, paid leave, supplemental pay, bonuses, insurance benefits (life and health), retirement (deferred compensation and pension plans), and government mandated withholdings (Social Security, Medicare, Unemployment Insurance and Workman's Compensation).

The ECI is published quarterly by the BLS and reflects the civilian economy, including all non-farm private entities and the public sector (less the Federal Government). Currently the base year is 1985, and therefore is not directly comparable to the CPI, and includes data gathered from a sample of approximately 7,200 private and 800 public sector entities.

The ECI is published for different occupational categories, however it is not published on regional or city specific levels. The major job classifications include white and blue-collar workers, manufacturing, retail trade, wholesale trade, service, construction and nine other categories.

The ECI may be used in labor-management negotiations dealing with compensation negotiations. However, because many of the components to the ECI are legislatively mandated, and others are determined outside the arena of labor productivity itself, the ECI can increase for reasons that are ultimately unrelated to the productivity of labor. For example, if healthcare costs increase, the ECI might increase with no change in worker take-home pay.

Nevertheless, the ECI can be a signal of labor cost inflation, which is often an early signal of potential consumer price increases, declines in stock and bond markets and increases in interest rates. Because of these potential impacts of labor-cost increases, the Federal Reserve uses the ECI as an early warning signal for possible inflationary trends. It may be tempting to use the ECI to measure local wage increases, but this is a rather strained use of the index. The BLS does offer estimated hourly wages for many occupations,

sectors and geographic and metropolitan areas, available at [www.bls.gov/bls/blswage.htm](http://www.bls.gov/bls/blswage.htm).

This is a better indicator of how employee wages are changing over time and in a specific region.

### The CPI and the ECI Compared

A direct comparison between the ECI and the CPI is difficult at best. The CPI measures the general increase in the prices paid for a basket of goods, whereas the ECI measures changes in labor costs, including many elements of the compensation package that are legislated. The CPI is difficult to compare across regions because almost all prices included in its calculation can change over time and across local markets. On the other hand, the ECI is less volatile over time and across regions because much of the total costs of labor is mandated at similar levels across different regions of the country.

Figures 1 and 2 depict the CPI and the ECI from 1998 through July 2002. As can be seen in Figure 1, the CPI tends to be more volatile

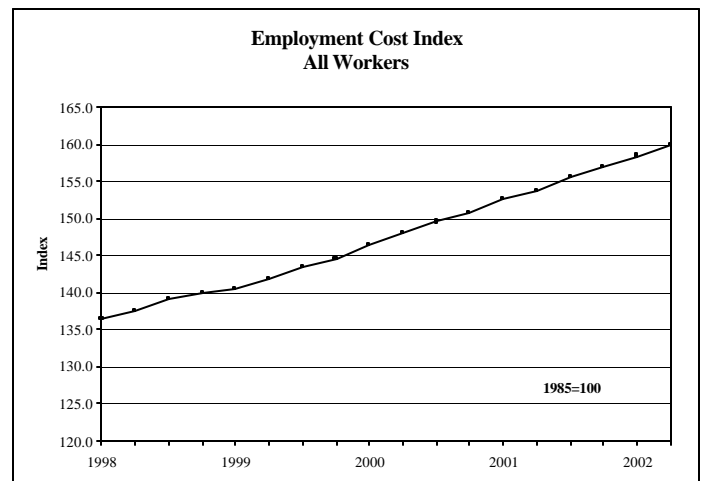
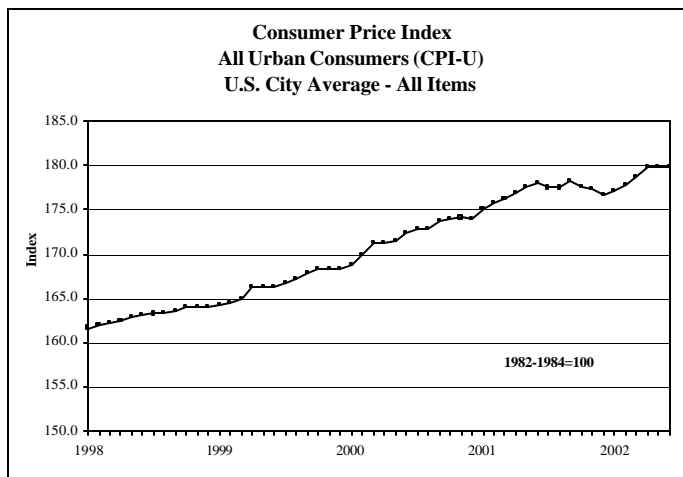
over time compared to the ECI, depicted in Figure 2. As mentioned, increases in the ECI may be an early warning signal for potential cost-push inflation in final consumer goods, especially if the ECI is increasing faster than nominal Gross Domestic Product growth. However, this "signal" is most useful at the national level and may be of little use on a local level because of variations across local markets. If the CPI and the ECI are related, it is most likely in a lagged fashion; increases in the ECI will precede increases in the overall price level.

Web links of interest:

CPI Data: [www.bls.gov/cpi](http://www.bls.gov/cpi)

ECI Data: [www.bls.gov/ncs/ect](http://www.bls.gov/ncs/ect)

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