USING THE CONSUMER PRICE INDEX (CPI)

Inflation is a decline in the purchasing power of money, meaning that prices are increasing. For budgeting, inflation either drives spending up or services down because it takes more dollars to purchase supplies and equipment and to provide services. More dollars are needed to continue doing what has been done in the past.

The best-known gauge of changing prices is the Consumer Price Index (CPI). This measures the average change in the prices of consumer items, the goods and services that people buy for daily living. The U.S. Department of Labor, Bureau of Labor Statistics (BLS) compiles the CPI. The CPI for All Urban Consumers (CPI-U) covers approximately 87 percent of the population. The CPI-U is important economically, and also politically. According to the U.S. Department of Labor, Bureau of Labor Statistics (BLS, http://www.bls.gov/cpi/cpiorvw.htm#item4):

Over 2 million workers are covered by collective bargaining agreements which tie wages to the CPI. The index affects the income of almost 80 million people as a result of statutory action: 47.8 million Social Security beneficiaries, about 4.1 million military and Federal Civil Service retirees and survivors, and about 22.4 million food stamp recipients. Changes in the CPI also affect the cost of lunches for the 26.7 million children who eat lunch at school. Some private firms and individuals use the CPI to keep rents, royalties, alimony payments and child support payments in line with changing prices. Since 1985, the CPI has been used to adjust the Federal income tax structure to prevent inflation-induced increases in taxes.

The CPI takes inflation into account or controls for inflation by converting current dollars into constant dollars (see figure 1). Current dollars refers to the dollar’s purchasing power today. Constant dollars are the number of dollars it would take to purchase the same goods and services
(or market basket in a chosen base year). The BLS data uses 1982–1984 as the base year for calculating the CPI-U. A CPI-U of 220 in 2008 indicates 120 percent inflation since 1982. The BLA inflation calculator informs us that it takes almost $2,222 in 2008 to match the purchasing power of $100 in 1913. The rate of inflation—say, 3 or 4 percent—is the change in the CPI-U from the previous year.

**Step One. What is a car’s cost in constant dollars?**

1. Divide the current CPI-U by 100
2. Divide the current cost by the result from #1
3. Divide the base-year CPI-U by 100
4. Multiply the result from #2 by the result from #3 which will tell you what the current cost is in constant dollars (dollars adjusted for inflation)

[Alternative: use BLS inflation calculator]

**Example**

Let us say that you bought a car for $23,885 in 2007, but you bought one for $13,542 a decade earlier. Was the more recent purchase really more expensive? After all, salaries have increased, along with the housing and other costs, and a dollar simply ain’t what it used to be. How much did the new car really cost in 2007, compared to the one you bought a decade earlier?

To find out, we compare the car’s cost in constant dollars over the ten years, starting with 1997 as the base year. We need to know (1) the cost of the car in 2007, $23,885, (2) the CPI-U for 2007, 207.8, (3) the car’s price in 1997, $13,542, and (4) 1997 or base-year CPI-U, 159.4 (using data extracted August 12, 2007). Simple arithmetic comes next:

1. \((207.8) / (100) = 2.078\)
2. \($23,885) / (2.078) = $11,494\)
3. \((159.4) / (100) = 1.594\)
4. \($11,494) x (1.594) = $18,321\)
The car is more expensive in real terms (or constant dollars): $18,321 versus $11,494.

**Step Two. How much of a spending increase is due to inflation?**

We also can figure out what portion of the increase in the number of dollars (nominal increase) is due to inflation by calculating the constant dollar increase as a percentage of the original price.

1. \[(2007 \text{ cost in constant dollars}) - (1997 \text{ price}) = \text{cost increase in real terms (increase in constant dollars)}\]
   \[($18,321) - ($11,494) = $6,827\]

2. \[(\text{Constants dollar increase}) / (1997 \text{ price}) = \text{percent of increase due to inflation}\]
   \[($6,827) / ($13,542) = 0.50 \text{ or } 50\% \text{ of the increase is due to inflation}\]

We now know that 50\% of the increase is due to inflation. This demonstrates a *real* increase in spending.

**How useful is the CPI for looking at government spending?**

Because governments do not buy consumers’ market baskets, the CPI-U is not suitable for scrupulous analysis of government spending. (Another problem is that price indexes are figured on calendar years, but governments spend on fiscal years.) The BLS recommends that we choose the index that best reflects the costs relating to a specific product or service, and professional best practice is shown in the table 1.

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<tr>
<th>Table 1. Implicit Price Deflator for Gross Domestic Product</th>
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<td>Government consumption expenditures</td>
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Note on index: 2000 = 100.


When communication needs override analytic purity, analysts may prefer using the CPI. Otherwise, they risk hearing a version of the famous line about miscommunication from the 1967 movie, Cool Hand Luke. It is the CPI that captures media headlines and shapes public perceptions of inflation. Citizens typically familiar with the CPI may not have confidence in other measures. Another advantage to using the CPI is that numerous price indices are available, including indices for local areas.

The CPI is used to adjust benefits in entitlement programs and figure cost-of-living increases (COLA’s) so that payments keep pace with changes in the cost of living. In a 2007 Special Notice, the BLS explains how the COLA works for Social Security:

Soon after the publication of September CPI data on October 18th, 2006, the Social Security Administration (SSA) announced the annual increase in its benefit payments for the coming year. This change will mean automatic increases in payments from Social Security's Old-Age, Survivors, and Disability Insurance (OASDI) and Supplemental Security Income (SSI) programs. The increase will be effective with December 2006 payments received in January 2007. Specific information on the size of the increase is available on the SSA Web site at http://www.ssa.gov/OACT/COLA/colasummary.html.

In addition, some collective bargaining contracts call for wage increases based on the CPI.
Implicit Price Deflator

An alternative is using the Implicit Price Deflator (IPD) for Gross Domestic Product from the U.S. Department of Commerce, Bureau of Economic Analysis. The National Association of State Budget Officers and National Association of Governors use the IPD to calculate real change in state budgets (2007, p. 2). The American City & County’s Municipal Cost Index has traced the effects of inflation on the cost of municipal services since 1978.

Example

Let us take a look at federal outlays on the legislative branch in 2004 as an example, and use 1994 as the base year. In FY 1994, federal outlays amounted to $2,542 million, compared to $3,885 million in FY 2004. Apply the same methodology but this time use the most appropriate IPD, as shown in table 1, to calculate federal outlays in constant dollars for FY 2004. How much of the increase in legislative spending is due to inflation?

References

American City & County, Municipal Cost Index,

Further Resources


on the CPI, http://www.bls.gov/cpi,

CPI Overview, http://www.bls.gov/cpi/cpiovrvw.htm,


and tutorial on inflation calculator, http://www.bls.gov/tutorial/inflation_calc/home.htm,


Figure 1. The Changing Value of a Dollar