Background Information on the Consumer Price Index

The Consumer Price Index is calculated by the Division of Consumer Prices and Price Indexes of the U.S. Bureau of Labor Statistics of the U. S. Department of Labor. The Consumer Price Index (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. The initial Consumer Price Index by the U.S. federal government was calculated in 1919 because of price increases resulting from World War I.

Consumer Price Indexes are available for two population groups:

1. A Consumer Price Index for All Urban Consumers (CPI-U), which covers approximately 87% of the total population; and
2. A Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W), which covers 32% of the population.

The CPI represents changes in prices of all goods and services purchased for consumption by urban households. It is based on the expenditures of almost all residents of urban or metropolitan areas, including professionals, the self-employed, the poor, the unemployed, and retired people, as well as urban wage earners and clerical workers. Not included in the CPI are the spending patterns of people living in rural nonmetropolitan areas, farm families, people in the Armed Forces, and those in various institutions, such as prisons and mental hospitals. User fees (such as water and sewer service), sales taxes, and excise taxes paid by the consumer are also included in computing the Consumer Price Index. Income taxes and investment items (like stocks, bonds, and life insurance) are not included.

The CPI-U includes expenditures by urban wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees and others not in the labor force. The CPI-W includes only expenditures by those in hourly wage earning or clerical jobs.

Prices for the goods and services used to calculate the Consumer Price Index are collected in 87 urban areas throughout the country and from about 23,000 retail and service establishments. Data on rents are collected from about 50,000 landlords and tenants. The weight for an item is derived from reported expenditures on that item as estimated by the Consumer Expenditure Survey. Prices are taken throughout the month.

The Consumer Price Index is used as an economic indicator, as a deflator of other economic series, and as a means for adjusting income payments. As the most widely used measure of inflation, the Consumer Price Index is an indicator of the effectiveness of government policy. In addition, business executives, labor leaders and other private citizens use the index as a guide in making economic decisions. Also, the Consumer Price Index and its components are used to adjust other published economic series for price change and to translate the results of these series into inflation-free dollars. Additionally, over 2 million workers are covered by collective bargaining agreements which tie wages to the Consumer Price Index. 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 Consumer Price Index also affect the cost of lunches for the 26.7 million children who eat lunch at school. Some private firms and individuals use the Consumer Price Index to keep rents, royalties, alimony payments and child support payments in line with changing prices. Since 1985, the Consumer Price Index also has been used to adjust the Federal income tax structure to prevent inflation-induced increases in taxes.

The Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) is based on the expenditures of households included in the CPI-U definition that also meet the additional requirements that more than one-half of the household's income must come from clerical or wage occupations, and that at least one of the household's earners must have been employed for at least 37 weeks during the previous 12 months. The CPI-W population is a subset of the CPI-U population.

The Consumer Price Index frequently is called a cost-of-living index, but it differs from a complete cost-of-living measure in important ways. A cost-of-living index is a conceptual measurement goal and would measure changes over time in the amount that consumers need to spend to reach a certain utility level or standard of living. Both the CPI and a cost-of-living index would reflect changes in the prices of goods and services, such as food and clothing, which are directly purchased in the marketplace; but a complete cost-of-living index would go beyond this role to also take into account changes in other governmental or environmental factors that affect consumers' well-being. It is very difficult to determine the proper treatment of public goods, such as safety and education, and other broad concerns, such as health, water quality, and crime, that would constitute a complete cost-of-living framework.

The Consumer Price Index market basket is developed from detailed expenditure information provided by families and individuals on what they actually bought. For the current Consumer Price Index, this information was collected from the Consumer Expenditure Surveys for 2007 and 2008. In each of those years, about 7,000 families from around the country provided information each quarter on their spending habits in the interview survey. To collect information on frequently purchased items, such as food and personal care products, another 7,000 families in each of these years kept diaries listing everything they bought during a 2-week period.

Over the two-year period, then, expenditure information came from approximately 28,000 weekly diaries and 60,000 quarterly interviews used to determine the weight of the more than 200 item categories in the index structure of the Consumer Price Index.

The Consumer Price Index represents all goods and services purchased for consumption by the reference population. More than 200 categories of expenditure items, arranged into eight major groups are used in computing the Consumer Price Index. The eight major groups and examples of expenditure items are:

- food and beverages (breakfast cereal, milk, coffee, chicken, wine, full service meals, snacks);
- housing (rent of primary residence, owners' equivalent rent, fuel oil, bedroom furniture);
- apparel (shirts, sweaters, women's dresses, jewelry);
- transportation (new vehicles, airline fares, gasoline, motor vehicle insurance);
- medical care (prescription drugs, medical supplies, physicians' services, eyeglasses, eye care, hospital services);
- recreation (televisions, toys, pets, pet products, sports equipment, admissions);
- education and communication (college tuition, postage, telephone services, computer software, computer accessories); and
- other goods and services (tobacco, smoking products, haircuts, other personal services, funeral expenses).

Also included within these major groups are various government-charged user fees, such as water and sewerage charges, auto registration fees, and vehicle tolls and some government taxes (such as sales and excise taxes) that are directly associated with the prices of specific goods and services, but excludes taxes (such as income and Social Security taxes) that are not directly associated with the purchase of consumer goods and services.

The Consumer Price Index does not include investment items, such as stocks, bonds, real estate, and life insurance, because these items relate to savings and are not day-to-day consumption expenses.

For each of the more than 200 item categories, using scientific statistical procedures, samples of several hundred specific items within selected business establishments frequented by consumers are collected to represent the thousands of varieties available in the marketplace.

The Consumer Price Index is subject to both limitations in application and limitations in measurement. With respect to application limitations, the Consumer Price Index may not be applicable to all population groups. The CPI-U is designed to measure inflation for the U.S. urban population and may not accurately reflect the experience of people living in rural areas. The Consumer Price Index does not produce official estimates for the rate of inflation experienced by subgroups of the population, such as the elderly or the poor. The Consumer Price Index cannot be used to measure differences in price levels or living costs between one place and another because it measures only time-to-time changes in each place and a higher index for one area does not necessarily mean that prices are higher there than in another area with a lower index. The Consumer Price Index cannot be used as a measure of total change in living costs because these costs are affected by social and environmental changes and changes in income taxes that are beyond the definitional scope of the index. The Consumer Price Index also does not take into account changes in taxes, health care, consumer safety, crime levels, water quality, air quality, and educational quality.

Limitations in measurement can be grouped into two basic types, which are sampling errors and non-sampling errors. With respect to sampling errors, because the Consumer Price Index measures price changes based on a sample of items, the published indexes differ somewhat from what the results would be if actual records of all retail purchases by everyone in the index population were used to compile the index. These estimating or sampling errors are limitations on the accuracy of the index, not mistakes in calculating the index. The Consumer Price Index program has developed measurements of sampling error. The Consumer Price Index sample design allocates the sample in a way that maximizes the accuracy of the index, given the funds available. With respect to non-sampling errors, errors can occur from a variety of sources and can cause a persistent bias in measurements of the index. Non-sampling errors are caused by problems of price data collection, logistical lags in conducting surveys, difficulties in defining basic concepts and their operational implementation, and difficulties in handling the problems of quality change. Non-sampling errors can be far more hazardous to the accuracy of a price index than sampling errors. The CPI program has an ongoing research and evaluation program in order to identify and implement improvements in the index.