

Introduction to U.S. Economy: Inflation

What Is Inflation?

Inflation is defined as a general increase in the price of goods and services across the economy, or, in other words, a general decrease in the value of money. Conversely, deflation is a general decrease in the price of goods and services across the economy, or a general increase in the value of money.

As inflation occurs, individuals can purchase fewer goods and services with the same amount of money. For this reason, an individual would need about \$304 in 2020 to purchase the same amount of goods and services as \$100 would have purchased in 1980. Measures of inflation are used to adjust money figures to keep purchasing power constant over time, allowing for more accurate comparisons across disparate time periods. Monetary figures that have been adjusted for inflation are referred to as *real*, and non-inflation-adjusted figures are referred to as *nominal*.

Measuring Inflation

The rate of inflation can be measured by observing changes in the average price of a consistent set of goods and services, often referred to as a market basket. Inflation is generally measured using a price index, such as the Consumer Price Index (CPI). A price index is constructed by dividing the price of a market basket in a given year by the price of the same basket of goods in a base year. The rate of inflation is then measured by calculating the percentage change in the price index across different periods. For example, the CPI was about 257 in November 2019 and about 260 in November 2020, which amounts to an inflation rate of about 1.2% over this 12-month period.

Alternative Measures of Inflation

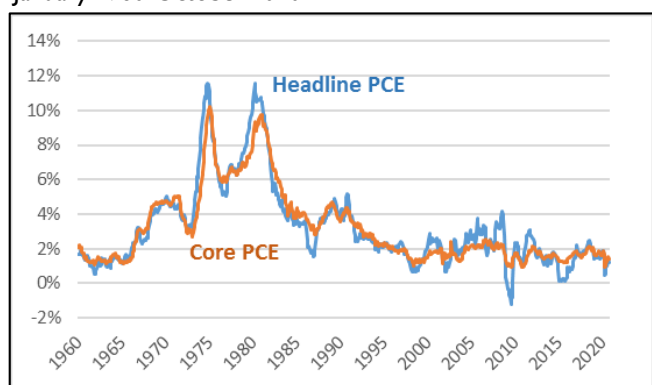
Alternative price indices will use different goods within their market baskets and are generally used for different purposes. For example, the CPI includes consumer goods and services typically purchased by households, which is often used to adjust household incomes for inflation over time. By contrast, the gross domestic product (GDP) deflator, which is generally used to adjust GDP for inflation over time, measures inflation for all of the final goods and services produced in the United States. There are a number of additional measures of inflation, including the Producer Price Index, Employment Cost Index, Personal Consumption Expenditures Index, and Import/Export Price Index. Different inflation measures are calculated differently. For example, the CPI uses a (mostly) fixed basket of goods and services, whereas the GDP deflator allows the composition of its market basket to change with spending patterns from period to period.

Additionally, within a specific price index, researchers often make separate calculations for so-called *headline inflation* and *core inflation*, as seen in **Figure 1**. Headline

inflation includes the full set of goods and services within the basket of goods, whereas core inflation excludes energy and food prices from the basket of goods. Core inflation is often used by researchers in place of headline inflation due to the volatile nature of the price of food and energy. However, headline inflation can provide a more accurate sense of the price changes actually faced by individuals.

Figure 1 Annual Inflation Rate

January 1960-October 2020



Source: Bureau of Economic Analysis.

Notes: Annual percentage change as measured by Personal Consumption Expenditures Index.

Complications in Measuring Inflation

The fundamental concept behind inflation is to measure changes in the price of the same goods and services over time. However, in reality, this is nearly impossible for two reasons. First, the quality of goods and services change over time. As such, some portion of increasing prices over time is due to improvements in quality rather than inflation. Second, new products are introduced into the marketplace over time that are fundamentally different than any previously available products and are only slowly incorporated into price indices with fixed baskets. Statistical agencies try to adjust data to account for these factors, because, if these complications are not correctly accounted for, measured inflation would be inaccurate and most likely overstated.

Causes of Inflation

Inflation is largely the result of two different phenomena, which are often referred to as *demand-pull* and *cost-push* inflation. Demand-pull inflation occurs when demand for goods and services within the economy exceeds the economy's capacity to produce goods and services. As demand exceeds supply within the economy—"too much money chasing too few goods"—there is upward pressure placed on prices, resulting in rising inflation.

Cost-push inflation occurs when the price of input goods and services increases. The classic example of cost-push

inflation is the result of an oil shock, which sharply decreases the supply of oil and other petroleum products. The decrease in oil supplies increases the price of oil and petroleum products. Petroleum products are an input good for a significant portion of goods and services across the economy, and as the price of this important input good increases, so does the price of the final goods and services, resulting in inflation. Cost-push inflation results in only a temporary increase in inflation unless accommodated by monetary policy.

Changes in inflation expectations can also cause changes in actual inflation. Individuals form expectations around the future rate of inflation and incorporate those expectations when setting prices at the firm level or when bargaining for wages as a worker. For example, if the general consensus is that prices will increase 2% in the next year, businesses will want to increase prices by at least 2%, and workers will want at least a 2% raise.

Inflation's Impact on the Economy

Inflation tends to interfere with pricing mechanisms in the economy, resulting in individuals and businesses making less than optimal spending, saving, and investment decisions. Additionally, in the presence of inflation, economic actors often engage in actions to protect themselves from the negative impacts of inflation, diverting resources from other more productive activities.

Ultimately, these inefficient decisions reduce incomes, economic growth, and living standards. For this reason, it is generally accepted that inflation should be kept low to minimize these distortions in the economy. Some would argue that an inflation rate of zero is optimal. However, a target of zero inflation makes a period of accidental deflation more likely, and deflation is thought to be even more costly than inflation, as it can be associated with recessionary conditions. In an effort to balance these two risks, policymakers, including the Federal Reserve, often target a positive but low inflation rate, generally around 2%, which reduces inefficiencies within the economy while protecting against deflation.

The Federal Reserve and Inflation

The Federal Reserve has been charged with promoting stable prices by statute since the late 1970s, largely as a result of the volatile and exceptionally high inflation experienced during the 1970s, as shown in **Figure 1**. Beginning in 2012, the Federal Reserve began explicitly targeting a long-run inflation rate of 2%. The Federal Reserve generally uses its ability to impact short-term interest rates to combat demand-pull and cost-push inflation in an effort to decrease the volatility of inflation and keep inflation close to its target rate.

As shown in **Figure 1**, beginning in the 1980s, the rate of core inflation, which excludes energy and food prices, begins to decrease, as does the volatility seen in the measure. Beginning in the late 1990s, the inflation rate remains relatively close to 2%, and the large swings in inflation, such as those seen during the 1970s, mostly disappear. The moderation of inflation seen since the 1970s,

save for the brief period of deflation during the 2007-2009 global financial crisis, has largely been attributed to the actions undertaken by the Federal Reserve as part of its mandate to promote stable prices.

In August 2020, the Federal Reserve amended its strategy to an inflation target that averages 2% over time, meaning that if inflation runs below 2% for a period, the Federal Reserve will use monetary policy to target an inflation rate above 2% for some time. Inflation has run below 2% fairly consistently since the financial crisis, despite several notable periods of quantitative easing and an 11-year expansion that ended in 2020. In response to the current recession, the Federal Reserve has indicated that it will keep the federal funds at near zero levels for the foreseeable future, which, all else being equal, would stimulate economic activity and cause inflation to increase.

Adjusting for Inflation

Comparing figures in real terms is often beneficial to observe actual changes in purchasing power over time rather than changes in the number of dollars.

Figure 2. How to Adjust for Inflation

$$\text{Real Figure} = \text{Nominal Figure} \times (\text{CPI Target Year} / \text{CPI Base Year})$$

Source: CRS.

To adjust nominal figures for inflation, multiply the nominal figure by the ratio of the price index value in the target year to the price index value in the base year, as shown in **Figure 2**. For example, median household income in 1990 (the base year) was \$29,943 in nominal terms. To determine the equivalent income in terms of purchasing power for 2019 (the target year) using CPI, multiply \$29,943 by the ratio of CPI in 2019 (256) to the CPI in 1990 (131), which comes out to about \$58,515.

As discussed previously, there are a number of different price indices, and within those indices more specific deflators are available to make inflation adjustments. It is important to use the most relevant index for the subject being researched. For example, when looking at corporate revenues in the United States, it would be advisable to use the Producer Price Index, which uses a market basket consisting of the price of goods and services sold by domestic producers, as opposed to the CPI, which is designed to reflect the goods and services purchased by the typical household.

Resources

The Bureau of Labor Statistics and the Bureau of Economic Analysis both create various price indices, which are available at <http://www.bls.gov/bls/inflation.htm> and <https://www.bea.gov/data/prices-inflation>, respectively.

(Note: This In Focus was originally authored by Jeffrey Stupak, former CRS Analyst in Macroeconomic Policy.)

Lida R. Weinstock, Analyst in Macroeconomic Policy

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