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Inflation Tutorial

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Introduction

During World War II, you could buy a loaf of bread for \$0.15, a new car for less than \$1,000 and an average house for around \$5,000. In the twenty-first century, bread, cars, houses and just about everything else cost more. A lot more. Clearly, we've experienced a significant amount of [inflation](#) over the last 60 years.

When inflation surged to double-digit levels in the mid- to late-1970s, Americans declared it public enemy No.1. Since then, public anxiety has abated along with inflation, but people remain fearful of inflation, even at the minimal levels we've seen over the past few years. Although it's common knowledge that prices go up over time, the general population doesn't understand the forces behind inflation.

What causes inflation? How does it affect your standard of living? This tutorial will shed some light on these questions and consider other aspects of inflation.

What Is Inflation?

Inflation is defined as a sustained increase in the general level of prices for goods and services. It is measured as an annual percentage increase. As inflation rises, every dollar you own buys a smaller percentage of a good or service.

The value of a dollar does not stay constant when there is inflation. The value of a dollar is observed in terms of purchasing power, which is the real, tangible goods that money can buy. When inflation goes up, there is a decline in the purchasing power of money. For example, if the inflation rate is 2% annually, then theoretically a \$1 pack of gum will cost \$1.02 in a year. After inflation, your dollar can't buy the same goods it could beforehand.

There are several variations on inflation:

- [Deflation](#) is when the general level of prices is falling. This is the opposite of inflation.
- [Hyperinflation](#) is unusually rapid inflation. In extreme cases, this can lead to the breakdown of a nation's monetary system. One of the most notable examples of hyperinflation occurred in Germany in 1923, when prices rose 2,500% in one month!
- [Stagflation](#) is the combination of high unemployment and economic stagnation with inflation. This happened in industrialized countries during the 1970s, when a bad economy was combined with [OPEC](#) raising oil prices.

In recent years, most developed countries have attempted to sustain an inflation rate of 2-3%.

Causes of Inflation

Economists wake up in the morning hoping for a chance to debate the causes of inflation. There is no one cause that's universally agreed upon, but at least two theories are generally accepted:

[Demand-Pull Inflation](#) - This theory can be summarized as "too much money chasing too few goods". In other words, if demand is growing faster than supply, prices will increase. This usually occurs in growing economies.

[Cost-Push Inflation](#) - When companies' costs go up, they need to increase prices to maintain their [profit margins](#). Increased costs can include things such as wages, taxes, or increased costs of imports.

Costs of Inflation

Almost everyone thinks inflation is evil, but it isn't necessarily so. Inflation affects different people in different ways. It also depends on whether inflation is anticipated or unanticipated. If the inflation rate corresponds to what the majority of people are expecting (anticipated inflation), then we can compensate and the cost isn't high. For example, banks can vary their [interest rates](#) and workers can negotiate contracts that include automatic wage hikes as the price level goes up.

Problems arise when there is unanticipated inflation:

- Creditors lose and debtors gain if the lender does not anticipate inflation correctly. For those who borrow, this is similar to getting an interest-free loan.
- Uncertainty about what will happen next makes corporations and consumers less likely to spend. This hurts economic output in the long run.
- People living off a fixed-income, such as retirees, see a decline in their purchasing power and, consequently, their standard of living.
- The entire economy must absorb repricing costs ("menu costs") as price lists, labels, menus and more have to be updated.
- If the inflation rate is greater than that of other countries, domestic products become less competitive.

People like to complain about prices going up, but they often ignore the fact that wages should be rising as well. The question shouldn't be whether inflation is rising, but whether it's rising at a quicker pace than your wages.

Finally, inflation is a sign that an economy is growing. In some situations, little inflation (or even deflation) can be just as bad as high inflation. The lack of inflation may be an indication that the economy is weakening. As you can see, it's not so easy to label inflation as either good or bad - it depends on the overall economy as well as your personal situation.

How Is It Measured?

Measuring inflation is a difficult problem for government statisticians. To do this, a number of goods that are representative of the economy are put together into what is referred to as a "market basket." The cost of this basket is then compared over time. This results in a price index, which is the cost of the market basket today as a percentage of the cost of that identical basket in the starting year.

In North America, there are two main price indexes that measure inflation:

- **Consumer Price Index** (CPI) - A measure of price changes in consumer goods and services such as gasoline, food, clothing and automobiles. The CPI measures price change from the perspective of the purchaser. U.S. CPI data can be found at the [Bureau of Labor Statistics](#).
- **Producer Price Indexes** (PPI) - A family of indexes that measure the average change over time in selling prices by domestic producers of goods and services. PPIs measure price change from the perspective of the seller. U.S. PPI data can be found at the [Bureau of Labor Statistics](#).

You can think of price indexes as large surveys. Each month, the U.S. Bureau of Labor Statistics contacts thousands of retail stores, service establishments, rental units and doctors' offices to obtain price information on thousands of items used to track and measure price changes in the CPI. They record the prices of about 80,000 items each month, which represent a scientifically selected sample of the prices paid by consumers for the goods and services purchased.

In the long run, the various PPIs and the CPI show a similar rate of inflation. This is not the case in the short run, as PPIs often increase before the CPI. In general, investors follow the CPI more than the PPIs.

Inflation And Interest Rates

Whenever you hear the latest inflation update on the news, chances are that interest rates are mentioned in the same breath.

In the United States, interest rates are decided by the [Federal Reserve](#). The Fed meets eight times a year to set short-term interest rate targets. During these meetings, the CPI and PPIs are significant factors in the Fed's decision.

Interest rates directly affect the credit market (loans) because higher interest rates make borrowing more costly. By changing interest rates, the Fed tries to achieve maximum employment, stable prices and a good level growth. As interest rates drop, consumer spending increases, and this in turn stimulates economic growth.

Contrary to popular belief, excessive economic growth can in fact be very detrimental. At one extreme, an economy that is growing too fast can experience

[hyperinflation](#), resulting in the problems we mentioned earlier. At the other extreme, an economy with no inflation has essentially stagnated. The right level of economic growth, and thus inflation, is somewhere in the middle. It's the Fed's job to maintain that delicate balance. A tightening, or rate increase, attempts to head off future inflation. An easing, or rate decrease, aims to spur on economic growth.

Keep in mind that while inflation is a major issue, it is not the only factor informing the Fed's decisions on interest rates. For example, the Fed might ease interest rates during a financial crisis to provide [liquidity](#) (flexibility to get out of investments) to U.S. financial markets, thus preventing a market meltdown.

Inflation And Investment

When it comes to inflation, the question on many investors' minds is: "How will it affect my investments?" This is an especially important issue for people living on a fixed income, such as retirees.

The impact of inflation on your portfolio depends on the type of securities you hold. If you invest only in stocks, worrying about inflation shouldn't keep you up at night. Over the long run, a company's revenue and earnings should increase at the same pace as inflation. The exception to this is stagflation. The combination of a bad economy with an increase in costs is bad for stocks. Also, a company is in the same situation as a normal consumer - the more cash it carries, the more its purchasing power decreases with increases in inflation.

The main problem with stocks and inflation is that a company's returns tend to be overstated. In times of high inflation, a company may look like it's prospering, when really inflation is the reason behind the growth. When analyzing financial statements, it's also important to remember that inflation can wreak havoc on earnings depending on what technique the company is using to value inventory.

Fixed-income investors are the hardest hit by inflation. Suppose that a year ago you invested \$1,000 in a [Treasury bill](#) with a 10% yield. Now that you are about to collect the \$1,100 owed to you, is your \$100 (10%) return real? Of course not! Assuming inflation was positive for the year, your purchasing power has fallen and, therefore, so has your real return. We have to take into account the chunk inflation has taken out of your return. If inflation was 4%, then your return is really 6%.

This example highlights the difference between [nominal interest rates](#) and [real interest rates](#). The nominal interest rate is the growth rate of your money, while the real interest rate is the growth of your purchasing power. In other words, the real rate of interest is the nominal rate reduced by the rate of inflation. In our

example, the nominal rate is 10% and the real rate is 6% (10% - 4% = 6%).

As an investor, you must look at your real rate of return. Unfortunately, investors often look only at the nominal return and forget about their purchasing power altogether.

Inflation-Indexed Bonds

There are securities that offer investors the guarantee that returns will not be eaten up by inflation. [Treasury inflation-protected securities](#) (TIPS), are a special type of Treasury note or bond. TIPS are like any other Treasury, except that the principal and coupon payments are tied to the CPI and increase to compensate for any inflation.

This may sound like a good thing, but the running joke on Wall Street is that it's easier to sell an air conditioner in the dead of winter than it is to convince investors they need protection from inflation. Inflation has been so low in recent years that it hasn't been much of an issue. Because these securities are so safe, they offer an extremely low rate of return. For most investors, inflation-indexed securities simply don't make sense.

Conclusion

After reading this tutorial, you should have some insight into inflation and its effects. For starters, you now know that inflation isn't intrinsically good or bad. Like so many things in life, the impact of inflation depends on your personal situation.

Some points to remember:

- [Inflation](#) is a sustained increase in the general level of prices for goods and services.
- When inflation goes up, there is a decline in the purchasing power of money.
- Variations on inflation include [deflation](#), [hyperinflation](#) and [stagflation](#).
- Two theories as to the cause of inflation are [demand-pull inflation](#) and [cost-push inflation](#).
- When there is unanticipated inflation, creditors lose, people on a fixed-income lose, "menu costs" go up, uncertainty reduces spending and exporters aren't as competitive.
- Lack of inflation (or deflation) is not necessarily a good thing.
- Inflation is measured with a price index.

- The two main groups of price indexes that measure inflation are the [Consumer Price Index](#) and the [Producer Price Indexes](#).
- Interest rates are decided in the U.S. by the [Federal Reserve](#). Inflation plays a large role in the Fed's decisions regarding interest rates.
- In the long term, stocks are good protection against inflation.
- Inflation is a serious problem for fixed income investors. It's important to understand the difference between [nominal interest rates](#) and [real interest rates](#).
- [Inflation-indexed securities](#) offer protection against inflation but offer low returns.