



SHOULD INVESTORS FEAR DEFLATION OR HYPERINFLATION?

by **Robert F. DeLucia, CFA**
Consulting Economist

The weight of evidence strongly supports the view that deflationary forces are likely to prevail over the next two years, with important implications for virtually all asset classes. As a general principle, all long-term financial assets benefit from low inflation. In textbook theory, the rate of inflation affects the interest rate on US Treasury bills, the ultimate risk-free asset, which then becomes the basis for determining an appropriate discount rate. Valuations for all other financial assets — government bonds, corporate bonds, common stocks, and real estate — emanate from the risk-free rate.

Summary and Major Conclusions:

- Economists are currently engaged in a fierce debate regarding the outlook for inflation. There is a wide difference of opinion as to how inflation will respond to the unprecedented monetary and fiscal stimulus provided by policymakers in recent weeks.
- There are two textbook principles that are most relevant for making projections regarding the direction of inflation: (1) Monetary data and the policies of the Federal Reserve; and (2) Factors pertaining to supply and demand in the real economy.
- There is a striking divergence between these two variables with respect to the outlook for inflation. The monetary data point unambiguously to higher inflation in the future, with the M2 money supply increasing at an 11% annual rate, the fastest rate in many decades.
- Following resumption of an unprecedented increase in Federal Reserve purchases of government bonds (quantitative easing), the Fed's balance sheet has exploded, currently at \$6.6 trillion, up from \$4.2 trillion only two months earlier.
- In stark contrast, supply/demand data point to falling inflation. The unemployment rate jumped to nearly 10% in April, while capacity utilization in the nation's factories plunged to 65%, down from 78% earlier in the year.
- On a very preliminary basis, most recent data point to lower, rather than higher, inflation. Both the Consumer Price Index (CPI) and the core Personal Consumption Expenditures (PCE) price index declined by 0.1% in March, the first monthly decline since 2017. Most ominously, the price of consumer services declined by a larger 0.3%.
- Inflationary expectations have also collapsed in recent months. Compared with a rate of 1.65% prior to the crisis, expectations for inflation over the next five years plunged to 0.75%, as measured in the TIPS market (US Treasury inflation-linked bonds). Using two-year TIPS as a proxy, inflation expectations through 2022 have declined to close to zero.
- Rather than either deflation or hyperinflation, my forecast assumes a gradual but steady decline in the inflation rate, usually referred to as *disinflation*. Currently at an annual rate of 1.7%, core consumer inflation is likely to decline to 1.0% by the first half of next year, ending 2021 at an annual rate of less than 1.5%.
- The primary determinant of inflation in the medium term will be a large divergence between the demand for goods and services and effective supply. Profound weakness in consumer spending has resulted in a massive demand deficiency and historically wide output gap.

- As a reminder, inflation is a classic lagging indicator, trailing changes in economic growth by as much as two years. In other words, profound weakness in current economic data will not be manifested in the inflation data until later this year and throughout 2021.
- However, an eventual steep rise in inflation in the *long term* should not be ruled out. The unprecedented monetary stimulus in recent months could trigger a rise in inflation beyond the next two years.
- The trend in inflation is one of the most significant drivers of the real economy. There are several important economic implications of low inflation. Fearful of outright deflation, the Federal Reserve will almost certainly maintain an ultra-accommodative policy for many years, maintaining massive levels of liquidity in the financial system.
- Debtors will be at greater risk in a low inflation world. The reason is that debt payments are fixed while income growth is variable and fluctuates with inflation. In short, *real debt burdens* of households increase in a disinflationary environment.
- In textbook theory, the rate of inflation dictates the interest rate on the ultimate risk-free asset, US Treasury bills. Valuations for all other financial assets — common stocks, government bonds, corporate bonds, and real estate — are closely linked to the risk-free rate.
- In principle, all long-term financial assets benefit from low inflation. The value of an income-producing asset — stocks, long-term bonds, commercial property — is equal to the future stream of annual cash flow payments, discounted back to the present.
- Lower inflation means lower interest rates, which implies a *lower discount rate* and therefore a higher present value for long-term financial assets, all else equal. Similarly, higher inflation pushes up interest rates and the discount rate, resulting in downward pressure on market prices.
- Market yields on US Treasury securities are likely to remain at historically depressed levels for the foreseeable future. Currently at a market yield of 0.65%, ten-year government bonds are likely to fluctuate within a range of 0.5% and 1.5% over the next year, with a central tendency of 1%.
- The combination of a 1% rate for both inflation and market yields on long-term US government bonds is unprecedented, and implies higher valuations on common stocks. A price-to-earnings (P/E) ratio for the S&P 500 in excess of 20x would be justified and consistent with inflation and long-term interest rates of 1%.

Economists are currently engaged in a fierce debate regarding the outlook for inflation. There is a wide difference of opinion as to how inflation will respond to the current unprecedented monetary and fiscal stimulus provided by policymakers to support the economy and financial system. This week's *Economic Perspective* explores the various issues pertaining to the outlook for inflation.

COULD YOU BEGIN BY SUMMARIZING THE MOST IMPORTANT FACTORS AFFECTING THE OUTLOOK FOR INFLATION?

There are two textbook principles that are most relevant for estimating the future direction of inflation: (1) Monetary data and the policies of the Federal Reserve; and (2) Factors pertaining to physical supply and demand in the real economy.

- **Monetary Policy:** Monetarist economists believe in the theories of Milton Friedman who famously stated that “inflation is always and everywhere a monetary phenomenon.” In other words, trends in inflation can always be traced back to previous monetary policy.
- **Supply and Demand:** Keynesian economists believe that inflation is determined by the relationship between the demand for goods and services and their supply. Under this model, the rate of inflation is based upon the current growth rate in GDP relative to long-term supply-side factors, most notably the potential trendline growth in the supply of the factors of production — labor, land, capital, and natural resources.

WITH THAT AS BACKGROUND, WHAT ARE THE KEY DATA TRENDS PERTAINING TO INFLATION?

Key monetary data include the growth rate in the money supply, commercial bank reserves, the monetary base, and bank loans. In terms of the real economy, the key metrics include the unemployment rate, the rate of capacity utilization in manufacturing, the output gap, and the growth in GDP relative to its potential growth rate.

COULD YOU QUANTIFY EACH OF THESE DATA TRENDS?

The monetary data point unambiguously to higher inflation in the future. The M2 money supply is increasing at an 11% annual rate, while the narrow M1 definition of money is growing at an even faster 15% annual rate. Each of these measures was expanding at a 3% annual rate prior to the crisis.

Following resumption of an unprecedented increase in Federal Reserve purchases of government bonds (quantitative easing), the Fed’s balance sheet has exploded, currently at \$6.6 trillion, up from \$4.2 trillion only two months earlier. Bank reserves have doubled to a current level of \$3.2 trillion.

In stark contrast, supply/demand data point to falling inflation. The unemployment rate jumped to nearly 10% in April, while capacity utilization in the nation’s factories plunged to 65%, down from 78% earlier in the year. Assuming a full-year decline of 5% in real GDP, the output gap should widen significantly by the end of this year.

ARE THERE OTHER INDICATORS THAT ARE RELEVANT FOR INFLATION FORECASTING?

Investors should also follow various market-based signals of future inflation. By definition, financial markets are forward looking and give signals regarding the future direction of inflation. These include industrial commodity prices, energy prices, and measures of inflationary expectations embedded in the US Treasury market and the market for derivatives.

Industrial commodity prices have declined by 35% since January while crude oil prices plunged by 60%. Inflationary expectations have collapsed in recent months. Compared with a rate of 1.65% prior to the crisis, expectations for inflation over the next five years have plunged to 0.75%, as measured in the TIPS market. For the next two years, inflation expectations embedded in the TIPS market have declined to close to zero.

WHAT IS THE RECENT TREND IN MONTHLY DATA ON INFLATION?

It is premature to draw conclusions from the government's monthly reports on inflation. *However, on a preliminary basis, the data point to lower, rather than higher, inflation.* Both the Consumer Price Index (CPI) and the core Personal Consumption Expenditures (PCE) price index **declined** by 0.1% in March, the first monthly decline since 2017. Most ominously, the price of **consumer services** declined by a larger 0.3%, a reflection of the profound weakness in the service sector.

BASED UPON KEY LEADING INDICATORS, WHAT IS YOUR FORECAST FOR INFLATION OVER THE NEXT SEVERAL YEARS?

Rather than either deflation or hyperinflation, my forecast assumes a gradual but steady decline in the inflation rate, usually referred to as disinflation.

Whereas deflation refers to an actual decline in prices for goods and services, disinflation involves a declining trend in the rate of inflation, referred to as the second derivative in calculus. In short, the general price level will increase, but at a moderating pace.

Currently at an annual rate of 1.7%, core consumer inflation is likely to decline to 1.0% by the first half of next year, ending 2021 at an annual rate of 1.5%. I am also assuming that core inflation will remain below the Federal Reserve target of 2% throughout 2022.

COULD YOU EXPLAIN WHY YOU EXPECT CONSUMER INFLATION TO DECLINE?

The primary determinant of inflation in the medium term will be the massive divergence between the demand for goods and services and effective supply. The slump in consumer spending has resulted in a massive demand deficiency and historically wide output gap.

Capacity utilization in manufacturing could decline to 65% or less in coming months, resulting in widespread slack in the production side of the economy. A large excess of supply versus demand would be consistent with falling inflation.

As a reminder, inflation is a classic lagging indicator, trailing changes in economic growth by as much as two years. In other words, profound weakness in current economic data will not begin to flow through to inflation until later this year and in 2021. Finally, the enormous strength of the US dollar in recent months is a disinflationary force, with a lag of 12 months, suggesting that the biggest impact on inflation data will show up in the next year.

DO YOU HAVE ANY CONCERNS REGARDING A POTENTIAL SHARP RISE IN INFLATION?

Fears over hyperinflation are not warranted in the medium term. *However, an eventual steep rise in inflation in the long term should not be ruled out.* There are meaningful odds that the unprecedented monetary stimulus in recent months could trigger a rise in inflation beyond the next two years. With a current annualized growth rate of 11%, the M2 money supply is expanding at the fastest rate since 1983.

An examination of history could be instructive. Money supply (M2) growth surged to 13% in Q4 of 1972; the core CPI rose from 3% in 1972 to 11% in 1975, a time lag of roughly three years. In addition, M2 growth accelerated to 13% in early 1977, which was followed by a rise in inflation from 6% in 1977 to 10% in 1979, once again a time lag of three years.

Economic and political circumstances differ markedly from those of the 1970s, but there is concrete historical evidence that inflation does respond violently to a surge in money supply growth with a time lag of approximately three years.

WHAT ARE THE MOST IMPORTANT ECONOMIC IMPLICATIONS OF FALLING INFLATION?

The trend in inflation is one of the most significant drivers of the real economy. There are at least three important economic implications of low inflation:

- **Monetary Policy:** Fearful of outright deflation, the Federal Reserve could maintain an ultra-accommodative policy for many years.
- **Household Spending:** Consumer purchasing power should benefit from a widening gap between household income and inflation.
- **Debt Burdens:** Debtors will be at greater risk in a low inflation world. The reason is that debt payments are fixed while income growth is variable and fluctuates with inflation. This means that *the real debt burdens of households* tend to increase in a disinflationary environment. During periods of outright deflation, loan delinquencies and defaults surge as falling incomes are unable to keep pace with monthly debt payments.

WHAT ARE THE CRITICAL INVESTMENT IMPLICATIONS?

The weight of evidence strongly supports the view that deflationary forces are likely to prevail over the next two years, with important implications for virtually all asset classes. As a general principle, all long-term financial assets benefit from low inflation. In textbook theory, the rate of inflation affects the interest rate on US Treasury bills, the ultimate risk-free asset. Valuations for all other financial assets — government bonds, corporate bonds, common stocks, and real estate — emanate from the risk-free rate.

There are two overarching investment conclusions. First, market yields on US Treasury securities are likely to remain at historically depressed levels for the foreseeable future. Currently at a market yield of 0.65%, ten-year government bonds are likely to fluctuate within a range of 0.5% and 1.5% over the next year, with a central tendency of 1%.

Second, the combination of a 1% rate for both inflation and market yields on long-term US government bonds is unprecedented, and implies higher valuations on common stocks. The price-to-earnings (P/E) ratio for the S&P 500 has averaged roughly 17x over the past five years, during a period when the inflation rate and the market yield on ten-year government bonds have averaged 2% and 2.25%, respectively. Regression analysis suggests that a justifiable P/E ratio in excess of 20x would be consistent with expectations for both inflation and long-term interest rates of approximately 1%.



Robert F. DeLucia, CFA, was formerly Senior Economist and Portfolio Manager for Prudential Retirement. Prior to that role, he spent 25 years at CIGNA Investment Management, most recently serving as Chief Economist and Senior Portfolio Manager. He currently serves as the Consulting Economist for Prudential Retirement. Bob has 45 years of investment experience.

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Bloomberg Barclays U.S. Treasury Inflation-Protected Securities (TIPS) Index: Measures the performance of rules based, market value-weighted inflation protected securities issued by the U.S. Treasury. It is a subset of the Global Inflation-Linked Index (Series-L).

CBOE Volatility Index: An index of implied equity market volatility, reflecting the market estimate of future volatility for the S&P 500 Stock Index over the next 30 days, using options.

MSCI Emerging Market Index: An index of equity market performance for developing markets, primarily in Asia, Latin America, and Eastern Europe. The index tracks both large-cap and small-cap stocks and is weighted by market capitalization.

MSCI World Ex US Index: Measures the performance of the large and mid-cap segments of world, excluding US equity securities. It is free float-adjusted market-capitalization weighted.

Russell 2000 Small-Cap Index: Is an index measuring the performance of approximately 2,000 small-cap companies within the United States.

S&P 500® Index: Measures the performance of 500 widely held stocks in US equity market. Standard and Poor's chooses member companies for the index based on market size, liquidity and industry group representation. Included are the stocks of industrial, financial, utility, and transportation companies. Since mid-1989, this composition has been more flexible and the number of issues in each sector has varied. It is market capitalization-weighted.

State Street Investor Confidence Index: measures investor confidence or risk appetite quantitatively by compiling actual buying and selling patterns of institutional investors.

US Trade-Weighted Dollar Index: An index that measures the value of the US dollar in relationship with other currencies, statistically weighted on the basis of importance to the US as trading partners.

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