FRAME GLOBAL ASSET MANAGEMENT

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A Regime Change Underway

When Does Inflation Change Consumer and Investor Behavior?

In this third whitepaper, we discuss the reasons supporting our decision to redefine the threshold for our Inflation Environment.

At Frame Global Asset Management (FGAM), our view of the macroeconomic environment that we expect to be in over the next twelve months is at the center of our model creation. We are constantly reviewing this outlook but we are also looking at changes in the relationships of the drivers in the economy that cause a shift from the current environment to the next. When does inflation change consumer and investor behavior? In asking this question, we have concluded that we are amidst a regime change. At the very least, coming off a period of prolonged low interest rates and low inflation since the recession of 2008-2009, we are experiencing a regime change with impact on the global economy that has not been experienced in prior inflation environments due to the evolution of technology, demographics and global competition.

Historical experience and studies have led central banks around the world to maintain inflation at around 2%. Historically, there are three reasons for inflation to increase:

1. **Too Much Money**. One cause of inflation is the expansion of the money supply. This creates a situation where the ability to pay more causes prices to rise. The surge in housing prices during 2005-2007 is an example of too much money in the system.
2. **Demand Outweighs Supply**. When demand for goods and services increases at a faster rate than supply, you have inflation. A shortage of supply can be the result of a growing economy.
3. **Increased Costs**. Inflation can also occur when manufacturers and businesses raise prices due to an increase in their production costs. Raw materials, transport expenses, or rising labor costs are potential factors. Companies pass these costs on to customers via higher prices.

While consumers don't like inflation since it drives up prices, a stable level of inflation can be a good thing for the economy. When prices of goods and services increase, company revenues grow and increased revenues lead to salary raises and the creation of more jobs. Increased salaries encourage consumers to spend money on the goods they want and keeps the economy growing. Historically, when inflation rose too far over that 2% level, currency devaluation and uncontrollable prices threatened the stability of the economy.

Inflation and Deflation in the Pre- and Post-2008 World

After the Great Depression of the 1920s and 30s, governments prioritized domestic employment. Central banks operated on the premise that the economy followed a relationship known as the Phillips Curve, which focused on a trade-off between wage inflation and unemployment. Governments could have less of one if they were prepared to accept more of the other. However, this interpretation changed during the stagflation

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Deborah Frame, ***CFA, MBA***
President and CIO

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of 1970s when unemployment and inflation both surged. Economists realized that this relationship weakened over time. When the stimulative effect of faster growth faded, economies were left with both high inflation and high unemployment.

In the aftermath of the Great Recession of 2008, inflation has been surprisingly stable even though unemployment increased significantly and then recovered. The analysis reported in an April 2013 IMF report found that, over the past decade, inflation in advanced economies has become less responsive to changes in economic slack and that longer-term inflation expectations have become more firmly anchored[1]. There are two explanations for this inflation stability.

1. Most of the unemployment increase during the Great Recession was structural and high levels of unemployment have less influence recently on wages and prices than historically.
2. Inflation behaviour has changed. Historically, it was more volatile and responsive to changes in economic slack. Recently it is less volatile and less responsive.

The prolonged period of low interest rates and low inflation has challenged the current recovery. Unique to the recovery was a period of deflation where the U.S. inflation rate turned negative for a few months during 2009 because of the financial crisis and has since averaged 1.41% (from Jan 2009 to March 2017)[2]. Since then, headline inflation, which includes food and energy prices, continues to rise while housing and electronics prices have risen below the rate of inflation.

Real Rate = Nominal Rate – Inflation Rate

Real interest rates can not only be positive or negative but can also be higher or lower than nominal rates. When nominal interest rates exceed real rates, inflation is a positive number. However, when real rates exceed nominal rates, inflation is a negative number, known as deflation.

For example, if the nominal rate is 2% and the inflation rate is -0.5%, then the real rate is 2.5%.

Real Rate = 2.0% – (-0.5%) = 2.5%

A Certificate of Deposit earning 2% per year on a nominal basis could earn 2.5% per year in real terms in a mildly deflationary environment.

When Deflation Becomes an Anchor to Growth and Recovery

When goods prices remain stable or fall, the short-term impact may initially be a benefit. When prices don't change but the costs of production increase, company profits decrease. When companies experience declining margins, they take measures to compensate for losses by withholding raises, cutting salaries and eventually jobs. Consumers spend less money in anticipation of future financial difficulties. Steady or falling prices encourage consumers to wait before making big purchases, further restricting the flow of money in the market and slowing economic growth. If the inflation rate is below zero (deflation), unemployment and economic stagnation are magnified.

In a deflation environment, a lender is motivated to save rather than spend. Declining prices can lead to lower demand, lower profits and higher unemployment. This is the anchoring of inflation in the current environment.

Other consequences of low inflation related to low interest rates are improving bank balance sheets and a shift to higher alternative asset prices. The three rounds of Quantitative Easing (QE) following the U.S. recession had this goal in mind. The Fed increased the money supply, expecting people to use these excess balances to increase their purchases of goods and services, and purchase assets like houses or corporate equities. The increased demand for these assets was expected to raise their prices. While QE did lead to higher stock market levels, prices in the rest of the economy were much slower to respond, including business investment.

Has the link between inflation and unemployment broken down temporarily or permanently changed?

Stabilization of inflation may imply a shift in economic volatility to other variables including asset prices. Low and stable inflation appears to have generated asset-price booms by making borrowing and risk-taking more attractive with wild swings seen in both equity prices and global housing prices.

The data and case studies presented in the April 2013 IMF paper have led us to some important conclusions[3].

1. The Phillips curve is significantly flatter today than in the past, and the inflation consequences of changes

[1] International Monetary Fund, World Economic Outlook, April 2013
[2] Bureau of Labor Statistics. Average of monthly CPI data.
[3] International Monetary Fund, World Economic Outlook, April 2013

in economic slack are much smaller. If the inflation stability during the Great Recession of 2008 and 2009 reflects a flat Phillips curve and the anchoring of inflation expectations, there seems little risk of strong inflation pressure during the next phase of the recovery currently underway.

2. Inflation expectations are better anchored now than in the past. These two factors largely explain why the declines in inflation during the Great Recession were small. It also follows that these small declines are consistent with continued economic slack in most advanced economies.

The combination of a relatively flat Phillips curve and strongly anchored inflation expectations implies that any temporary overstimulation of the economy, perhaps stemming from misperception about the size of output gaps, is likely to have only small effects on inflation. An important policy conclusion is that if inflation expectations remain firmly anchored, fears about high inflation should not prevent monetary authorities from pursuing highly accommodative monetary policy in higher inflation environments than previously.

Why would low yields persist?

Three structural forces keep us in this low yield environment.

1. **Technological Change.** Digital technologies used for routine work have replaced less-skilled and less-educated workers. Employers prefer investing in more technology than labour, especially as machines become cheaper and more powerful. As this trend accelerates, it puts downward pressure on wage inflation. Firms can ramp up production without incurring additional labour costs as the share of products produced at zero marginal cost continues to grow.

2. **Flexible Labour Markets.** There has been a steady rise in part-time work and temporary contracts, and a decline in trade union membership. These changes would reduce labour's bargaining power and are unlikely to be reversed.

3. **Globalization**. The existence of global supply chains continues to weigh on wage growth despite the rise of protectionist sentiment. Cross-border supply chains may not continue to expand, but they will not disappear. The ability of firms to offshore production to other parts of the world puts pressure on wages in advanced economies.

These permanent structural changes shift the drivers of inflation

Consistent with this recognition of a weakening in the links, a cover story published in The Economist in April 2016 "The Prosperity Puzzle," documented several reasons why official measurements of U.S. inflation, GDP, and productivity growth have become misleading[4]. The article demonstrated that the link between productivity growth and modern living standards has weakened. The root of the issue is that the meaning of "output" in measuring productivity growth using output per worker has become unclear. Some of the output is not relatable to conventional living standard measurements. When the classical concept of "more goods of the same kind (tons of steel)" is replaced by "ever better quality goods," and completely new goods which are often free like smartphone apps, the current measures of inflation, GDP, and productivity growth are lacking in their ability to measure the true levels of activity.

Along with this research, the suggestion that low inflation has resulted in changes in other asset prices is well documented. Based on our research and data, the relationship between growth and stock valuation is rooted in the forward-looking nature of the entrepreneur and investor, the sensitivity of results to the time horizon and important country specific effects. The expected behavior of the economy is correlated with the current behavior of stock markets.

The Scotiabank GBM Strategy Team looked at the strength of the relationship between equities and bond yields at different level of interest rates[5]. They looked at the correlation between weekly returns in the S&P 500 and weekly changes in 10-year yields over a rolling 52-week period for different levels of interest rates. They plotted the level of U.S. 10-year bond yields on the x-axis relative to the 52-week correlation coefficients generated since 1962 on the y-axis. They found that at very low levels of bond yields, i.e., generally below 5%, the correlation between the weekly S&P 500 returns and changes in 10-year yields tend to be positive; while at yields above 5%, the correlation tends to be negative.

This new relationship indicates that the economy's new threshold for responding to inflation pressures

[4]The Economist. The Prosperity Puzzle. April 30, 2016.
[5]Scotiabank Strategy - Daily Snapshot, March 20, 2017.

is 3.5%, given a nominal interest rate of 1.5%. This is both higher than the Fed's target of 2% and FGAM's current inflation threshold of CPI of 2.7%.

Like previous industrial revolutions, the technological revolution will take many years to fully play out, leading to permanent changes in manufacturing and the optimal combination of capital and labor. The problem is not that we are slow to recover from the Great Recession or a Great Stagnation, but rather that we are in the middle of a great restructuring. We describe this as a Regime Change.

How should the Fed respond?

Michael T. Kiley and John M. Roberts, two Federal Reserve Board economists, presented a study at the Brookings Papers conference suggesting three ways for the Fed to avoid zero interest rates as much as possible[6].

1. The Fed could maintain its 2% inflation target. However, when the interest rate is above zero, it could allow inflation to rise to 3% to compensate for periods of lower inflation, giving the economy some extra time to expand before the Fed raises rates, preventing growth. The authors of the report acknowledged this approach "only moderately improves" the economic picture.
2. The Fed could intentionally let the economy overheat by holding nominal interest rates near zero until either inflation or economic growth overshoots their long-run levels. The authors find this option "very effective."
3. The Fed could raise its inflation target above 2%. This provides more room to raise rates during expansions, however, comes with the risk that if prices rose too fast, it could hurt households and businesses.

We prefer option three, setting the inflation target above 2% while the Fed keeps an eye on the weighted impact of all capacity constraints currently present. With this in mind, we are redefining our Inflation Environment threshold to U.S. CPI greater than 3.5%, up from the previous 2.7%. We will review this as the economy grows, and underlying inflation and interest rate move higher.

Deborah Frame, CFA, MBA
President and Chief Investment Officer
Frame Global Asset Management

[6]Kiley, Michael T. & Roberts, John M. "Monetary Policy in a Low Interest Rate World." Brookings Papers on Economic Activity. March 23–24, 2017.

Other Information

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Inflation measured by Consumer Price Index (CPI) is defined as the change in the prices of a basket of goods and services that are typically purchased by specific groups of households.

The Phillips Curve is a describes the relationship between rates of unemployment and corresponding rates of inflation that result within an economy.

Past performance is not a guarantee of future performance.
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Contact Us

Frame Global Asset Management

info@frameglobal.com

www.frameglobal.com

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