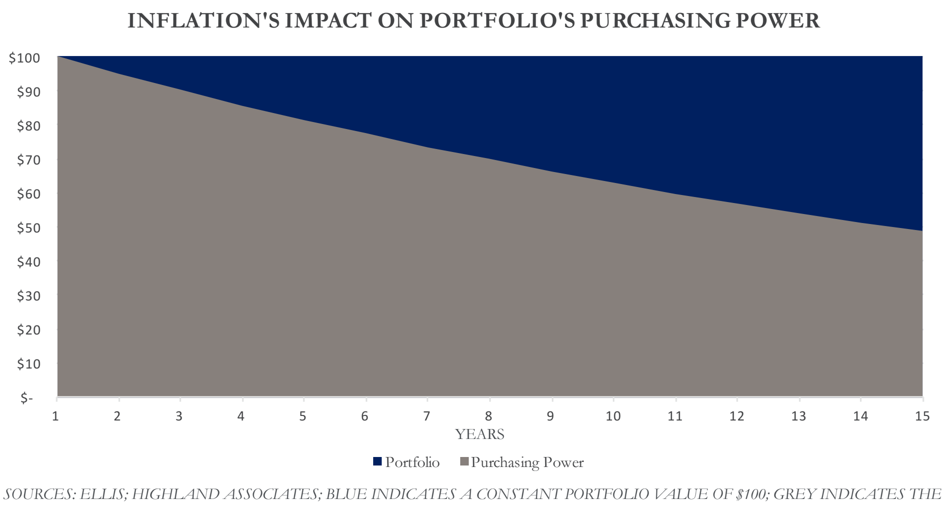
INSIGHT
JUNE 2016

INFLATION: THE SILENT THREAT

Inflation is one of the biggest and most overlooked risks to an investment portfolio. Inflation can be hard to see. It is a phenomenon that eats away at the value of a portfolio but is concealed in its manner of destruction. Former President Ronald Reagan described it best when he exclaimed, “Inflation is as violent as a mugger, as frightening as an armed robber and as deadly as a hit man.”

Typically, an investor's objective is to increase the value of their portfolio so that they can either live more comfortably later in life or have more money to gift to organizations and projects that better their communities. Inflation threatens those goals because its aim is to decrease a portfolio’s future purchasing power. As pointed out by Charles Ellis (1993), with a 5% inflation rate, an investor’s purchasing power is cut in half every 14 years (see Figure 1). The effect of inflation at 7% would cut an investor’s purchasing power in half every 10 years. Inflation has been at historical lows in the years following the Global Financial Crisis. Even at these levels, those that have not invested and remained in cash (which has paid next to nothing) have seen their $100 turned into $88 of purchasing power.

FIGURE 1



SOURCES: ELLIS; HIGHLAND ASSOCIATES; BLUE INDICATES A CONSTANT PORTFOLIO VALUE OF $100; GREY INDICATES THE PURCHASING POWER OF THE PORTFOLIO EACH YEAR WITH A 5% INFLATION RATE

For hospitals, inflation can be even more detrimental. While consumer price inflation (“CPI”) has averaged 3.4% since 1980, medical care inflation has averaged 5.4% during that time frame, outpacing overall inflation in all but a few select short-term periods (see Figure 2). This makes protecting a healthcare organization’s purchasing power that much more important due to the higher inflation the business incurs.

Foundations and endowments also have to grapple with inflation and its impact on portfolios. The goal is to increase the value of their portfolio to cover a spending rate plus pay any administrative expenses. Many institutions use inflation as a factor in

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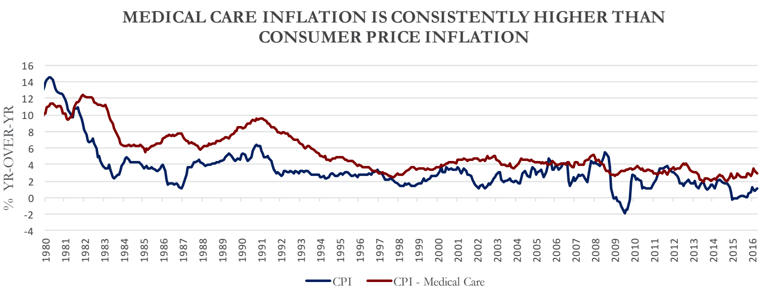
determining their yearly spending rate. This makes protecting their purchasing power a major focus.

FIGURE 2

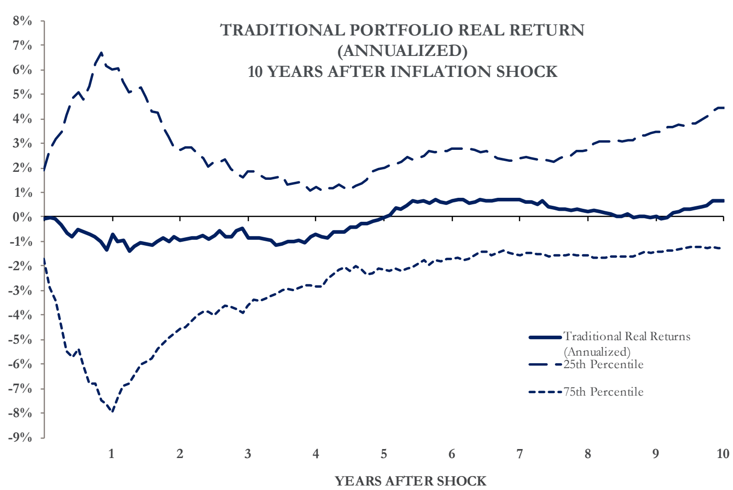


SOURCES: BLS; FACTSET; HIGHLAND ASSOCIATES

POOR PROTECTION: TRADITIONAL INVESTMENTS

Although inflation represents a substantial risk to investors' portfolios, many still only allocate to equities and fixed income. A traditional portfolio of 60% equities and 40% fixed income will not protect an investor's portfolio during an inflation shock. Even more importantly, the impact of an inflation shock to a traditional portfolio persists even after the shock itself has subsided (see Figure 3). On average, it takes over 5 years for the portfolio to regain its purchasing power, and in a worst case scenario can take longer than 10 years. Equities and fixed income tend to perform better in a declining interest rate environment and have a negative or negligible correlation to inflation. Recognizing that the erosion of purchasing power is a major risk to the investor and that the traditional asset allocation lacks the ability to maintain positive real returns during inflationary shocks, it becomes apparent that additional assets are needed to build a truly well-diversified portfolio.

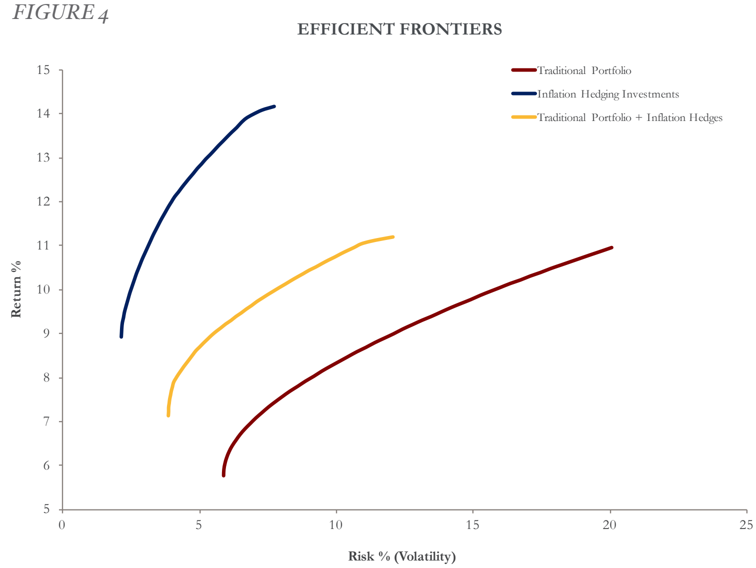
FIGURE 3



SOURCES: BLS; HIGHLAND ASSOCIATES

As discussed in Highland's 2010 white paper entitled ***Examining Inflation and its Effects on Investment Portfolios*** (Graham 2010), adding inflation-sensitive assets to a traditional portfolio (seen in the yellow line in Figure 4), increases the expected return and lowers the volatility over the long-term.

FIGURE 4



SOURCES: WILSHIRE COMPASS; FACTSET; HIGHLAND ASSOCIATES

Examining changes in economic growth and inflation in our research led us to conclude that economic cycles vary and certain asset classes tend to outperform in specific market environments (see Figure 5). Highland believes it is vital to decompose the various economic scenarios and to diversify across different strategies accordingly. Equities outperform when economic growth is rising and inflation is falling. Nominal bonds outperform when economic growth and inflation are declining. Commodities, inflation-sensitive equities and private real estate generate the highest returns when both economic growth and inflation are increasing. Conversely, inflation-linked bonds outperform when economic growth is declining while inflation is rising.

A traditional stock/bond portfolio will not outperform in a rising inflation environment (or the far right quadrants). In an environment when inflation rises higher than market expectations (i.e. an inflation-shock), nominal bonds and equities tend to underperform inflation-sensitive assets. The underperformance occurs because nominal bonds, which have a fixed payment structure, tend to perform poorly in times of inflation. This is because bond yields are a function of short-term rates, long-term real growth and inflation expectations. When inflation rises, bond yields typically increase and bond prices subsequently fall. When looking at equities as a hedge against inflation, studies have shown that equities are effective as long-term inflationary hedges (Siegel 1998), but are not additive in the short run. Highland's research corroborated this finding by examining equities during prior inflation shocks. In every instance, equities' correlation with inflation shifted to negative during the higher inflationary period. Therefore, adding an allocation to inflation hedges and its uncorrelated returns during inflationary periods, benefits the long-term return of a portfolio.

FIGURE 5

	FALLING INFLATION	RISING INFLATION
RISING GROWTH	PUBLIC EQUITIES PUBLIC REAL ESTATE CORPORATE BONDS EMERGING MARKET DEBT	COMMODITIES INFLATION-SENSITIVE EQUITIES PRIVATE REAL ESTATE
DECLINING GROWTH	NOMINAL BONDS	INFLATION-LINKED BONDS GOLD/PRECIOUS METAL

SOURCES: WELLINGTON MANAGEMENT; HIGHLAND ASSOCIATES

A study by Bridgewater Associates (2010) analyzed the returns of different asset classes since 1926 in various environments. Their analysis confirmed Highland's findings that asset classes outperform in certain economic settings and poorly in others (see Figure 6). Therefore, it is crucial to build portfolios that can excel in different environments, and then tactically weight the assets based on the outlook for future returns.

FIGURE 6

ASSET CLASS RETURNS BY ECONOMIC ENVIRONMENT

ECONOMIC ENVIRONMENT	ASSET CLASS	AVERAGE RETURN
RISING GROWTH	EQUITIES	+13.9%
	COMMODITIES	+10.2%
	TIPS	+8.4%
	BONDS	+1.1%
FALLING GROWTH	TIPS	+9.4%
	BONDS	+8.8%
	EQUITIES	+5.8%
	COMMODITIES	+1.2%
RISING INFLATION	TIPS	+19.4%
	COMMODITIES	+11.5%
	EQUITIES	+5.9%
	BONDS	+3.9%
FALLING INFLATION	EQUITIES	+12.9%
	BONDS	+7.1%
	COMMODITIES	-.9%
	TIPS	-1.4%

SOURCE: BRIDGEWATER ASSOCIATES (FOR THE PERIOD 1926-2010)

A MULTI-ASSET APPROACH TO INFLATION PROTECTION

Asset classes that are able to maintain their value during inflationary periods are going to be the most effective hedges. Different inflationary periods call for different types of investments. Therefore, it is important to understand the various inflation scenarios, which include the following:

- Rising inflation and economic growth
- Rising inflation and economic stall (or stagflation)
- Inflation shock

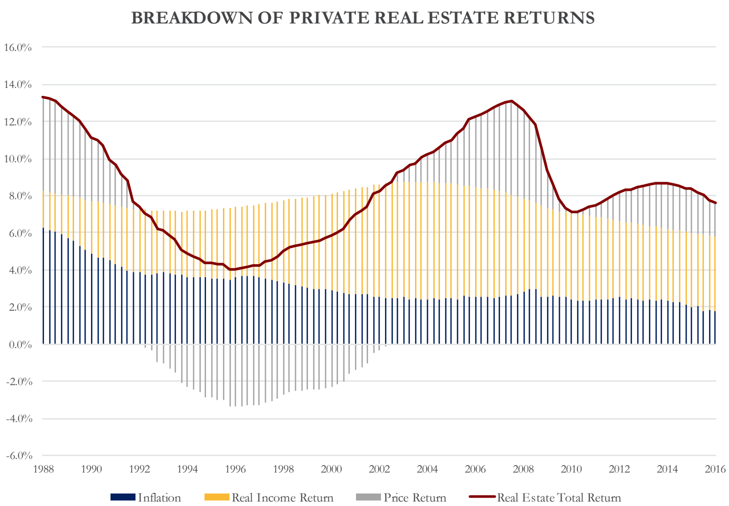
RISING INFLATION AND ECONOMIC GROWTH

An environment of rising inflation and economic growth can be thought of as "healthy" inflation. This type of inflation is associated with prices rising because people's incomes and wealth are rising. The U.S. has been in a predominantly rising inflation and economic growth setting. Under this scenario, real assets with cash flows, such as private real estate, have historically provided solid returns. Private real estate is real estate owned directly by an investor or through a private partnership (i.e. limited partnership). The objective of this investment is to earn income generated by the underlying properties' leases and to capture property appreciation when the investor exits the investment. Historically, the largest determinant of private real estate returns is the income component, which is directly impacted by inflation (see Figure 7).

The return pattern of real estate is a hybrid of inflation-linked bonds (e.g., TIPS) and equity. Lease payments are short-term in nature and typically reset more quickly to the current level of prices in the economy, which is similar to an inflation-linked bond. This provides the asset class with a certain level of inflation pass-through. The second level of the return comes from the ownership of the property itself, like an equity, which allows the owner to participate in the long-term appreciation.

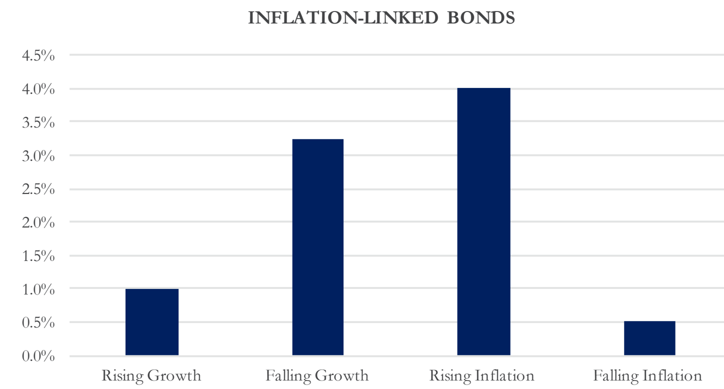
Infrastructure is another asset class that performs well in a rising inflation environment. The return from infrastructure projects is generated by the cash flow from the underlying investment, such as collections on a toll road or fees from using a pipeline. Many of these projects have long-term contracts for their services and a stated annual inflation adjustment. In addition, since these cash flows are backed by real assets, they are expected to maintain their real value in an inflationary environment.

FIGURE 7



SOURCES: NCREIF; BLS; HIGHLAND ASSOCIATES; ROLLING 10-YEAR PERIODS WITH QUARTERLY PERIODICITY

FIGURE 8



SOURCES: BRIDGEWATER; ANNUALIZED EXCESS RETURNS OVER CASH SINCE 1970

RISING INFLATION AND ECONOMIC STALL (STAGFLATION)

The next type of inflationary environment is characterized by rising inflation with no real economic growth. It is often called stagflation because there is a high rate of both inflation and stagnation. This is “bad” inflation and is associated with prices rising at the same time that the production of goods and services slows down or even declines. This type of setting is usually associated with high unemployment as companies lay off workers due to a decline in production. In a stagflation scenario, inflation-linked bonds, or TIPS, are expected to outperform most asset classes. TIPS are fixed income instruments in which the principal amount adjusts periodically based on the underlying inflation in the economy. This structure protects the purchasing power of the portfolio during this type of environment. There have only been a few instances of stagflation in the U.S., primarily in the 1970s. Since TIPS were not in existence until 1997, we reviewed a study by Bridgewater Associates that compared how inflation-linked bonds would have performed in that type of scenario. The research constructed hypothetical TIPS returns using implied real yields and inflation expectations. Their analysis confirmed that inflation-linked bonds would generate positive excess returns in a stagflation environment (see Figure 8).

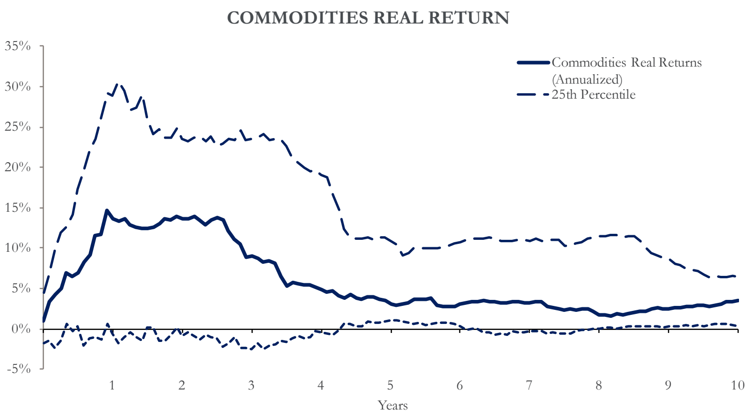
In addition, TIPS can be an ideal hedge for institutions whose liabilities fluctuate sharply with the inflation rate (Stumpp 2003). The liabilities of many defined benefit plans contain obligations that are linked to unknown future wage growth, which has a strong correlation to the inflation rate. These plans might benefit from an allocation to TIPS. In the case of a deflationary environment, TIPS have a floor of par; therefore, the investor’s original investment is protected from deflation.

INFLATION SHOCK

The last type of inflationary environment is the inflation shock. These are typically caused by an adverse supply side shock. Examples of these shocks include rising oil prices caused by OPEC restricting supply, bad weather damaging crops, strikes by workers that cause a decline in production, and civil unrest. In this type of scenario, commodities typically outperform other asset classes. Owning commodities helps hedge against rising food and energy prices (the most volatile components of inflation) and act as a shock absorber to inflation surprises.

Figure 9 examines how commodities react in periods of elevated inflation. As demonstrated below, commodities perform well during the early stages of higher inflation, but give back some of their real return during the later stages of the periods. From a portfolio construction standpoint, commodity exposure introduces more volatility into a portfolio and thus must be sized appropriately.

FIGURE 9



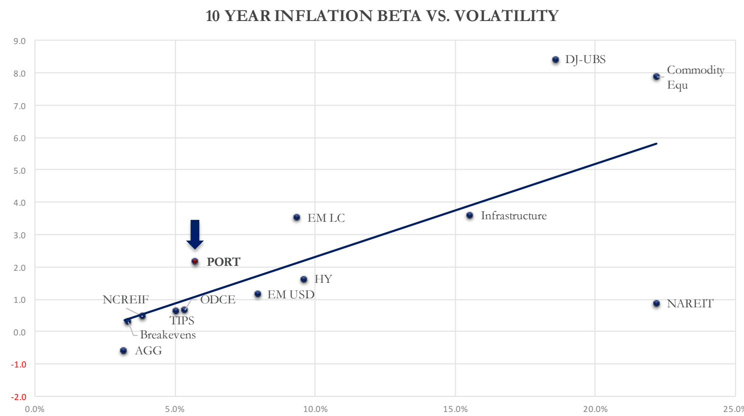
SOURCES: BLS; ECONOMAGIC.COM; STANDARD & POOR'S; HIGHLAND ASSOCIATES; ANNUALIZED DURING INFLATIONARY PERIODS (10-YEAR PERIODS)

CONSTRUCTING A PORTFOLIO OF INFLATION-SENSITIVE ASSETS

There is an assumption from some investors that it is important to own an inflation-sensitive asset ***in case*** there is a spike in inflation. This kind of singular approach only protects a portfolio in one type of inflationary environment. Their rationale is similar to how we own home insurance in case of damage to our house. In that scenario, we pay a premium each month and only reap the benefits if there is actual damage to the house, thus protecting our investment in the case of calamity. We find this type of thinking overly simplistic. We believe owning a basket of inflation-sensitive assets that can protect in any type of inflationary environment is the better solution. By doing this, the portfolio reaps the benefits before there is actual shock to the portfolio, thus protecting our investment before, during and after any "event." The basket approach allows us to focus on investments that are priced based on the rate of change of inflation, not the level. Investors garner the benefits as inflation rises, even if it is on a low base. Therefore, it is important to understand which asset classes have the highest sensitivity to inflation. We do this by assessing the inflation beta, or sensitivity to inflation, of each asset class. For example, if an asset class has an inflation beta of 1.0, then if inflation rises 1%, its return is expected to rise 1%.

The optimal portfolio is one where investors can attain higher sensitivity to inflation without substantially increasing the overall risk of the portfolio (see Figure 10). By combining assets that perform well in different inflationary environments, it is possible to increase the portfolio's sensitivity to inflation while decreasing its volatility. The point labeled "PORT" illustrates a Portfolio with 50% Private Real Estate, 25% TIPS, 15% Commodity Equities, 5% Commodity Futures and 5% Infrastructure. It has an inflation beta of 2.2 and is positioned to generate real returns in all 3 inflation environments with manageable risk (6% volatility). This portfolio serves as our neutral allocation and will shift based on the changing inflation and growth outlook.

FIGURE 10



SOURCES: WELLINGTON; HIGHLAND ASSOCIATES

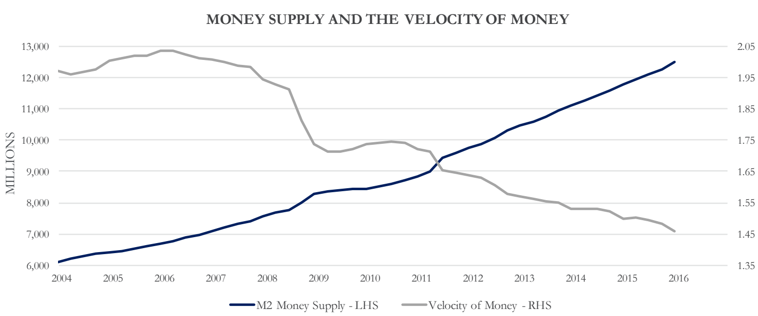
WHAT COULD DRIVE AN INCREASE IN INFLATION

An inflation shock by definition means that the market is not expecting a move. These are most likely to occur in periods in which inflation is low or remained low for awhile. Inflation has been muted since the Global Financial Crisis. As of April 2016, inflation ranks in the 94% percentile of inflation rates over the past 36 years. Inflation has been subdued for many reasons, including lower global economic growth, softer global trade driven by a slowdown in China and emerging markets and higher saving rates in Europe and Japan. Additionally, emerging markets and more specifically, commodity exporting countries, capitalized on low interest rates and expanded aggressively, resulting in a glut of excess capacity and an eventual fall in commodity prices. All of these factors have weighed heavily on inflation.

Highland believes the seeds for a rise in inflation have been planted. One of the main weapons of central banks to fight off deflation during the Global Financial Crisis was to flood the economy with excess liquidity. In the U.S. the money supply rose 82% from 2008 – 2014 (see Figure 11). This did not spur the type of economic activity and inflation that many expected, as businesses and consumers increased their savings, counteracting the growth in money supply. This resulted in a decline in the velocity of money or the number of times money flows through the economy and is used by its citizens, which put downward pressure on inflation and growth.

Aggregate demand, in the form of borrowing for capital expenditures and expansion, is lower than pre-crisis as businesses and consumers worry about policy uncertainty amid this low growth environment. There is pent up money supply that is searching for a home. We are in the midst of a presidential election and a new President and Congress could bring changes that decrease some of this policy uncertainty in the form of tax reform, fiscal stimulus and infrastructure spending. As the future becomes more certain, businesses and consumers will be willing to spend. The growth in demand and money supply could cause a wave of credit growth and rising prices.

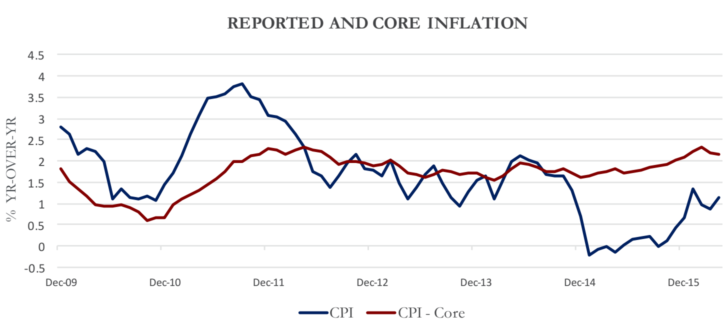
FIGURE 11



SOURCES: FEDERAL RESERVE; FACTSET; HIGHLAND ASSOCIATES

Although reported inflation has been subdued since 2011, we have seen CPI tick up since September 2015, rising from 0% to 1.1% in April 2016 (see Figure 12). On a one-month annualized basis, CPI increased from 1.1% in March to 5.0% in April, the largest increase in more than three years.

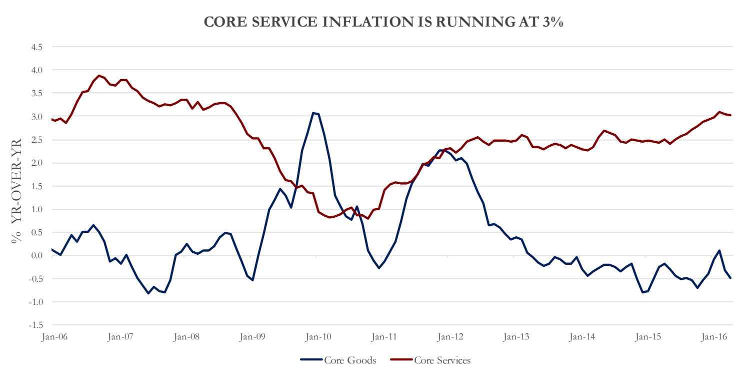
FIGURE 12



SOURCES: BLS; BARCLAYS; HIGHLAND ASSOCIATES

As discussed earlier, it is the rate of change of inflation and not the level that drives prices. Through April 30th, the Bloomberg Commodity index, MSCI ACWI Commodity Producers and Barclays TIPS index gained 9.0%, 20.4% and 4.8% respectively, year-to-date. It appears that many of the fundamentals that were keeping inflation lower are abating and could turn into a significant tailwind for inflation-sensitive assets. Oil supply has tightened thanks to the Baker Hughes rig count declining from 1,900 rigs in December 2014 to 400 rigs as of today. China appears to have pumped more fiscal stimulus into their economy resulting in a higher demand for commodities. U.S. labor conditions have tightened as the unemployment rate moves close to the natural rate of unemployment. The result of a tighter labor supply could lead to more wage pressure. Lastly, core services (which are becoming a larger part of the U.S. economy) are seeing price inflation closer to 3% (see Figure 13). However, not all the pressures are pointing to higher inflation. Continued economic health combined with divergent monetary policy could lead to a stronger U.S. dollar. This could be a headwind for inflation, as commodities are priced in dollars and a strong dollar hurts emerging markets, which has been a big driver of global trade.

FIGURE 13



SOURCES: FEDERAL RESERVE; FACTSET; HIGHLAND ASSOCIATES

HIGHLAND'S VIEW

When constructing a truly diversified portfolio, it is vital to prepare for different macro/inflationary environments. Incorporating inflation-protection strategies is paramount as inflation is detrimental to a traditional portfolio. There is no one size fits all approach when constructing a portfolio with inflation hedges. It is important to tactically weight them based on the current environment. With a current backdrop of low inflation with positive economic growth, Highland favors private real estate as prices have benefited from declining real rates with rising cash flows. We continue to allocate to inflation-linked bonds and maintain commodity exposure.

Even in this "**Triple L**" environment of **low** growth, **low** yields for a **long** time, inflation remains a real risk to portfolios. It is during these times where investors have been lulled into thinking that inflation is not an issue, they become susceptible to jeopardizing their real portfolio value. Highland's view is that a rise in inflation is on the horizon. Our focus remains on the rate of the change of inflation, not the level, to help us determine the appropriate allocation. Looking beyond a traditional stock/bond portfolio and incorporating inflation sensitive strategies better positions investors to protect their portfolio from the silent threat of inflation.

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