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IN THIS
ISSUE

A preview of
Yanni Partners'
upcoming
research paper
on price
instability and
the capital
markets.

MEASURING UP

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The Quest for Growth: *A Study of Price Instability and the Capital Markets*

In this issue of *Measuring Up*, Yanni Partners provides a preview of our upcoming research paper: *The Quest for Growth: A Study of Price Instability and the Capital Markets*.

This paper will discuss the potential effects of inflation and deflation on the capital markets, examine academic research, and suggest asset classes that might help curb the harmful effects of price instability. Following is an extract of the paper's essential conclusions.

To begin, we define inflation and deflation. The Bureau of Labor Statistics offers a concise inflation definition: "Inflation has been defined as a process of continuously rising prices, or equivalently, of a continuously falling value of money."¹ The online encyclopedia Wikipedia describes deflation: "Deflation is a decrease in the general price level, or a rise in the purchasing power of money with respect to a large class of consumption goods or services."² One of the most common measures of the general price level is the Consumer Price Index (CPI), which measures changes in the prices of a broad basket of consumer goods and services.

Since 1913, the 12-month rolling CPI rate has fluctuated significantly. *Figure One* demonstrates the CPI's variability since 1913. Much of the extreme

fluctuation stems from the aftermath of World Wars I and II, the Great Depression, the Vietnam War, and oil shock of the 1970s. Beginning in the 1980s however, the inflation rate has leveled off and now hovers closely around the long-term average level. Some economists credit the Federal Reserve for engineering this decline in price level variation, through an increased knowledge of the effects of monetary policy and a dedication to promoting long-term price stability.³

Academic Research on Price Instability

Economic researchers, including Timothy Cogley, Thomas Sargent, and Willem Buiter argue that the Federal Reserve has the tools to continue fighting severe price fluctuations. Inflation can be contained by Federal Reserve intervention as well as by the bond market. If inflation begins to accelerate, the Federal Reserve can pre-empt further inflation through restrictive monetary policy. Moreover, bond investors will bid down bond prices (thereby raising interest rates), thus restricting economic activity and the likelihood of inflation.

¹Please refer to the Bureau of Labor Statistics website: <http://www.bls.gov/bls/glossary>.

²Please refer to the discussion of inflation and deflation at *Wikipedia* website: <http://en.wikipedia.org/wiki/Inflation>.

³Timothy Cogley and Thomas J. Sargent, "The Conquest of U.S. Inflation: Learning and Robustness to Model Uncertainty," *European Central Bank Working Paper Series*, Number 478, April 2005.

Likewise, conventional monetary and fiscal policies can combat deflation. Expansionary tax cuts, central bank purchases of long- and short-term government securities, and higher public spending can help improve aggregate demand, curbing deflationary pressures. Also, the central bank can cut short-term interest rates to encourage spending in an effort to shore up overall demand.⁴

Despite policymakers' ability to achieve price level stability, we believe investors should still acknowledge the risks of price instability. History offers numerous examples of policymakers' mistakes, and an external shock, such as an act of

investment implications of deflation. Therefore, the analysis will focus on asset class performance during differing periods of inflation.

Figure Two sorts the modern era returns according to two sub-periods: high inflation (December 1972 to December 1981) and moderate inflation (December 1981 to October 2005). In real terms, every asset type performed better in the moderate inflation period than during the high inflation period. With the exception of real estate (represented by the National Association of Real Estate Investment Trusts, or NAREIT, Index) and commodities (represented by the Goldman Sachs Commodities Index, or GSCI), all asset classes sustained real losses during the high inflation period. The ability of real estate and commodities to earn positive returns during the period of high inflation suggests structural characteristics that can help to protect against inflation.

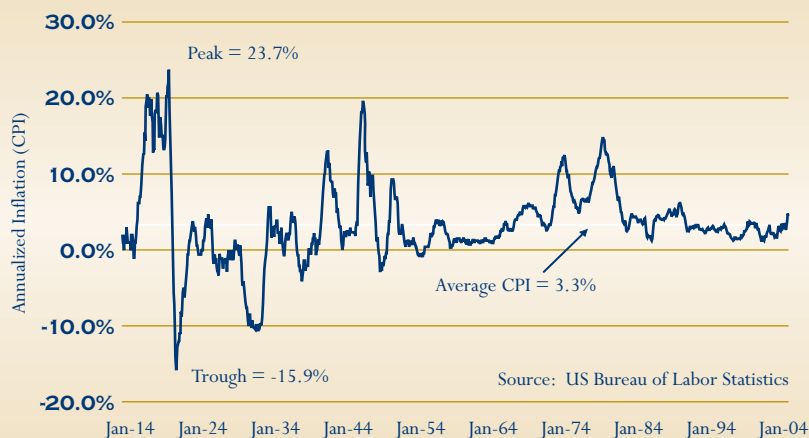
Potential Inflation and Deflation Hedges

The preceding discussion suggests that real estate and commodities both offer some degree of inflation protection. Since these investments represent holdings of real assets, their prices tend to move in line with inflation. However, these investments only provide a partial indirect inflation hedge as other factors, such as real growth of the economy, strongly influence their returns.

Investors can access the public real estate equity market through investments in real estate investment trusts, commonly known as REITs. These companies own and manage commercial and/or residential real estate properties. *Figure Two* displays the potential hedging benefits of real estate. During the high inflation period, the NAREIT Index posted an annualized real return of 2.8%, whereas most other asset classes lost value. Though real estate outperformed during this period, it has a complicated relationship with inflation. Inflation will impact real estate cash flows through both higher rents and higher expenses, and it is difficult

FIGURE ONE

Annualized Inflation Rates Over Rolling 12-Month Periods: February 1913 to October 2005



terrorism, might aggravate the effects of policy mistakes. Given this conclusion, it is important to consider the investment strategy that can help to hedge against price instability.

Capital Market Performance: The Modern Era

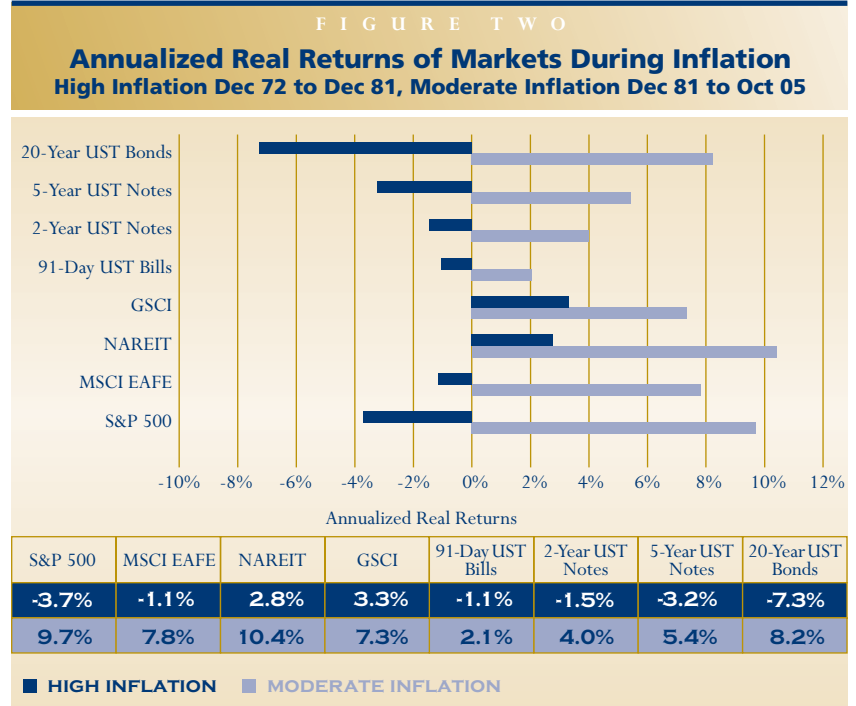
This analysis evaluates the price performance of several asset classes during the modern era (December 1972 to October 2005). The modern era exhibits periods of high and moderate inflation, but includes only brief periods of deflation. The limited number of deflationary observations limits our ability to draw conclusions about the

⁴Willem H. Buiter, "The Return of Deflation: What Can Central Banks Do?," *Queen's Prize Lectures: Challenges for Europe* at London School of Economics and Political Science on 19 May 2003. European Bank for Reconstruction and Development, NBER and CEPR, 2003: 1-37.

to predict which effect will have the greater impact on REITs' profits.⁵ This complex relationship causes difficulties in predicting investment performance based on inflation expectations.

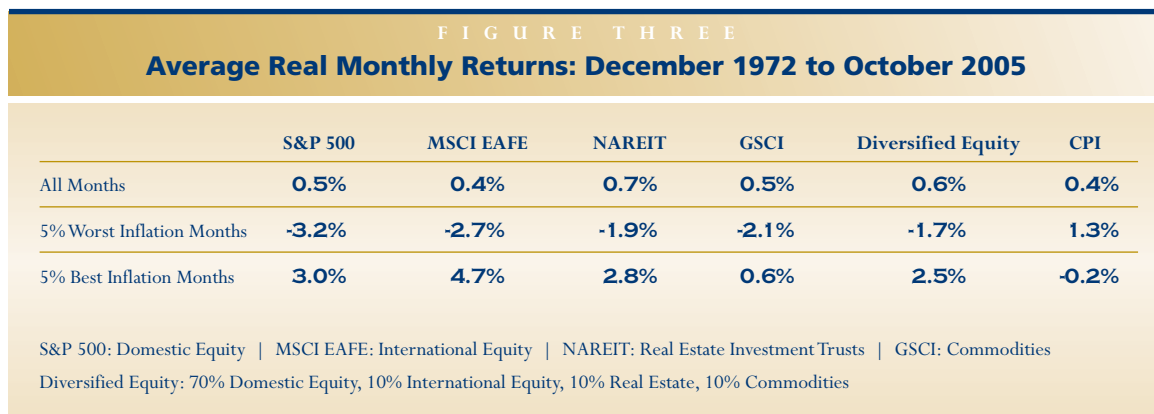
Commodities futures can also partially hedge inflation risk in a portfolio. This strategy requires investing in futures contracts for various commodities, such as soybeans, oil, and gold. An unleveraged passive allocation, indexed to the GSCI can provide basic commodities exposure. *Figure Two* shows the potential inflation hedging benefits of commodities. During the high inflation period, the GSCI earned a real annualized return of 3.3%, while most other asset classes posted negative real returns. During the period of moderate inflation, the GSCI underperformed equities, though the asset class still earned meaningful returns. Commodities offer a measure of inflation protection because their futures prices move with the underlying commodity prices, which provide a direct link to the individual components of inflation. In addition, since futures prices include information about future trends in commodities prices, they rise and fall in response to unexpected deviations in the components of the inflation rate.⁶

When evaluating different asset types, we must distinguish between short- and long-term effects of inflation. For example, real estate and commodities have not demonstrated the ability to hedge inflation effectively over the short term; however, over the long term these two assets might perform well in an



era of high inflation due to their structural characteristics. The only investments that provide explicit inflation protection are US Treasury Inflation Protected Securities (TIPS).

The US Treasury issues TIPS, which offer explicit inflation protection (provided they are held to maturity). TIPS are Treasury securities with a principal value that adjusts to changes in the CPI. As the CPI rises, so too does the principal value and subsequent coupon payment. As the CPI falls, the coupon payment will drop commensurately. At maturity, the principal payment will be the greater of the inflation-adjusted principal or original par



⁵Susan Hudson-Wilson, Frank J. Fabozzi, and Jacques N. Gordon, "Why Real Estate? - An Expanding Role for Institutional Investors," *The Journal of Portfolio Management* (Institutional Investor, Special Issue 2003).

⁶Gary Gorton and K. Geert Rouwenhorst, "Facts and Fantasies about Commodities Futures," Yale International Center for Finance Working Paper No. 04-20, February 2005.

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value. A study by professors S.P. Kothari and Jay Shanken⁷ suggests that TIPS offer significant diversification benefits due to their relative stability compared to nominal bonds and their lower comparative correlation with equities.

Given the risks of price instability and the ability of several investments to potentially hedge this instability, should an investor implement explicit inflation protection? We believe that this answer depends on the investor's unique circumstances. The investor should assess the organization's unique circumstances, specifically the exposure to inflation. Investors that depend on portfolio withdrawals to fund normal operating expenses might be exposed to inflation. An investor's degree of inflation exposure should influence the potential allocation to an inflation hedge.

Figure Three shows the markets' vulnerability to price instability since December 1972. It displays the average monthly real returns for each asset class as well as a diversified equity portfolio during all months, the 5% of months with the highest monthly inflation rates and the 5% of months with the lowest inflation rates. During the months with the highest inflation (averaging 1.3% per month), the diversified equity portfolio clearly provided downside protection compared to the other asset classes. Over all months considered, the diversified portfolio earned returns comparable to the

individual asset classes. During the brief periods of deflation (CPI averaging -0.2%), the diversified equity portfolio performed well. Broad diversification clearly has helped to protect capital during periods of price level instability.

Conclusion

Empirical evidence and academic research suggest that the Federal Reserve should be able to control inflation and deflation using prudent monetary policy. However, we cannot ignore possible policy mistakes and/or exogenous shocks to the economy that might exacerbate price level fluctuations. Therefore, a diversified portfolio that incorporates assets with inflation hedging potential can help reduce downside risk during periods of high inflation. In addition, recent short-term episodes of deflation suggest that a diversified portfolio might provide meaningful returns during similar periods in the future. Unless an investor strongly believes that deflationary pressures will ensue, or needs to hedge fixed nominal liabilities against a decline in interest rates, it becomes difficult to justify adding an explicit deflation hedge.

Organizations need to determine how inflation and deflation will affect their overall financial position, as price level instability will affect investors differently. Knowing where the organization's risk exposure lies will enable an investor to implement the most effective investment strategy.

Yanni Partners provides a full range of consulting services vital to the management of various portfolios. Our ultimate goal is to offer a basis for improved investment monitoring and performance.

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⁷ S. P. Kothari and Jay Shanken, "Asset Allocation with Inflation-Protected Bonds," *Financial Analysts Journal* Volume 60, No. 1, January/February 2004: 54-70.