LGIM America

Inflation – The silent killer of purchasing power

Strategies aimed at helping DC participants manage inflation

"Four dollars! You know what four dollars buys today? It don't even buy three dollars."

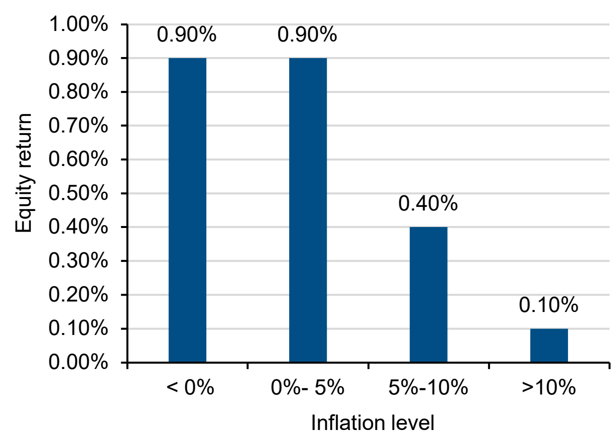
Frank Sr.
Saturday Night Fever

Although Frank Sr.'s sentiments related to the inflation of the 1970s, the inflation of the past year has given his analysis new relevance. Much like a long dormant volcano, inflation erupted in the past year and left eroded purchasing power in its wake. From January to September of 2022, inflation checked in at 6.5%.[1] This means a basket of goods that cost $100 a year ago would today cost $106.50. Even in less 'eruptive' times, inflation acts like carbon monoxide – a silent killer of purchasing power. Consider the period from 2010 to 2019, a period marked by benign inflation: A participant's savings would have eroded 27.4%. Put differently, a sum of $1,000 would be worth only $726 in real terms. Even in tame inflationary periods, participants need help protecting their savings.

Developing strategies to manage inflation

Over long periods, we believe investors can ameliorate these effects by taking advantage of the growth that comes with a diversified portfolio. Consider an investor utilizing a 60/40 portfolio (60% S&P 500 Index and 40% Bloomberg Aggregate Index). By using a simple buy-and-hold strategy, an investment made at the start of January 2010 would have notched a 154% gain (as of September 30, 2022). When we factor inflation into this return, it shrinks to a more modest 114%. A recent paper by Rabener Nicholas detailed the performance of equity in various regimes.[2]

Figure 1: Real monthly US equity returns by inflation regime, 1947 to 2021

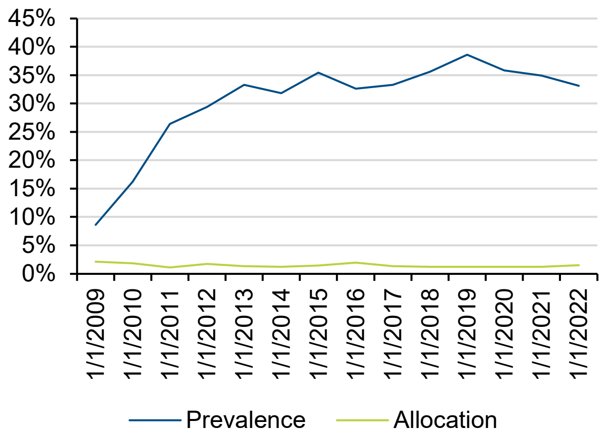


Source: Reproduced from Rabener Nicholas. "Myth Busting: Are Equities an Inflation Hedge," using data from FRED, Kenneth R. French Data Library, FactorResearch. Data as of July 31, 2022.

While Figure 1 above indicates equities are generally responsive to inflation, there remains the question of whether retirees could do better. Given the risk posed by inflation, particularly to those in retirement, the question becomes whether defined contribution (DC) lineups have a place for strategies that specifically aim to benefit during periods of inflation.

Emerging from the 2008 financial crisis, headlines abounded that quantitative easing and a policy regime that prioritized liquidity would usher in inflation. Against this backdrop, many DC plans added diversified real asset and TIPS funds to their lineups.[3] As Figure 2 shows, the prevalence of such options grew to roughly a third of DC plans. Despite the prevalence, however, investment in these options (allocation) remained low, with inflation-conscious options never garnering more than 3% of total assets.

Figure 2: Prevalence versus allocation to real asset/TIPS funds



Source: Callan DC Index, www.callan.com/dc-index/. Data as of June 30, 2022.

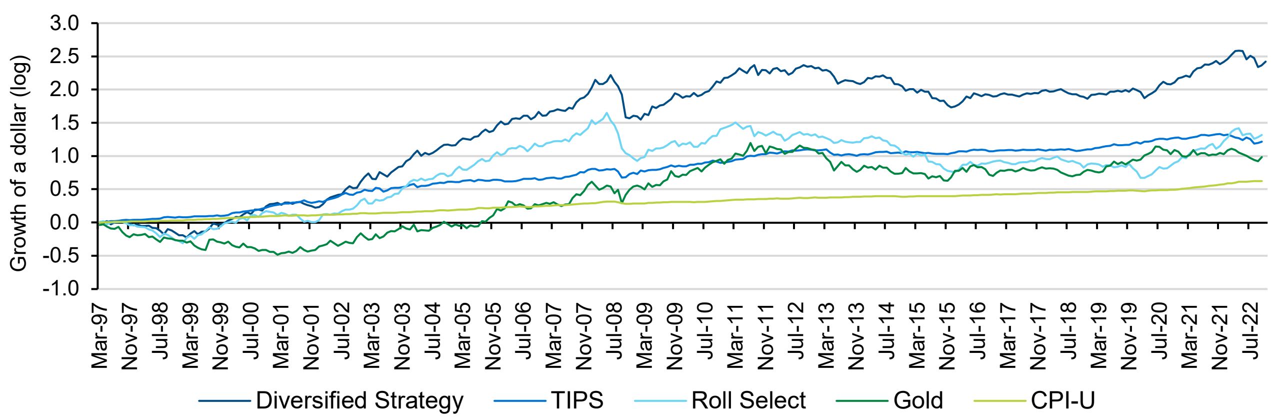
We can examine the benefits of various approaches commonly used in DC lineups to battle inflation. TIPS represent one line of possible defense. As the name (Treasury Inflation-Protected Securities) implies, TIPS, by design, should protect against inflation. TIPS are issued by the US Treasury and feature a principal value that is indexed to inflation. Likewise, as the principal rises (and potentially falls), the coupon payments that are based on the principal will fluctuate as well. Being government issued, TIPS provide security and insulation from default risk. However, they do carry interest rate risk. Given their built-in inflation sensitivity, TIPS often carry lower coupon payments to otherwise similar bonds. In an environment of rising interest rates, this makes TIPS susceptible to a decrease in price. Therefore, as occurred in 2022 when the Bloomberg 1-10 Year TIPS Index returned -3.6% (January 2022 to September 30, 2022), the price declines due to interest rate movements can outpace the gains in principal due to inflation.

Commodities intuitively should also correspond to inflationary pressures

Many inflationary pressures result from price increases in raw materials and energy which producers can subsequently pass along to consumers in the form of higher prices. Historically, there is a correlation between commodity prices and Consumer Price Index (CPI). In fact, this correlation strengthens when examining the correlation between monthly lagged commodity prices and monthly CPI, suggesting CPI responds to changes in commodity prices.[4]

For institutional money managers considering implementing commodity exposure, utilizing a roll enhanced index can help reduce ‘rolling costs,’ as underlying futures contracts near expiration and are ‘rolled’ into longer dated contracts.[5] Total return swaps (using an underlying roll select index) represent one way to gain exposure to commodities. Using total return swaps permits a greater degree of collateral

Figure 3: Diversified commodities strategy - Growth of a dollar



Source: LGIM America. Data as of November 30, 2022. Commodities returns are represented by the Bloomberg Roll Selected Commodity Index, the Bloomberg Gold Index is the proxy for gold returns with TIPS represented by the Bloomberg US Treasury Inflation Notes TR Index Value Unhedged. Past performance is no guarantee of future results. In certain strategies, LGIMA may utilize derivatives, which inherently include a higher level of risk than other investments and present a substantial risk of loss. Investors should consider these risks with the understanding that the strategy may not be successful in all market conditions. Reference to an index does not imply that an LGIMA portfolio will achieve returns, volatility or other results similar to the index. You cannot invest directly in an index, therefore, the composition of a benchmark index may not reflect the manner in which an LGIMA portfolio is constructed in relation to expected or achieved returns, investment holdings, portfolio guidelines, restrictions, sectors, correlations, concentrations, volatility, or tracking error targets, all of which are subject to change over time.

flexibility relative to futures. The key to this flexibility is the ability to use TIPS as collateral for the swaps. By doing so, a portfolio manager maintains exposure not only to commodities but also to TIPS. Total return swaps additionally allow for exposure to individual commodities, allowing an investor to tactically overweight certain commodities. In Figure 3 below, the 'diversified strategy' implements commodity exposure with an overweight to gold. We find a slight overallocation to gold improves the diversity of the inflation hedge through reduced correlation to economic growth cycles and increased performance during currency debasements via higher money supply.

Given that these asset classes respond at different times and to different types of inflation (both expected and unexpected), we believe that a diversified approach to inflation sensitivity makes sense. Figure 3 illustrates the growth of a dollar (in log terms) of various approaches as well as the growth in CPI-U from 1997 to 2022. It illustrates the growth potential of a 'diversified strategy' (TIPS + commodities with a 20% overweight to gold) versus more pure play approaches.

Over the time period examined (1997-2022), the diversified strategy outpaced the alternative approaches in growth terms while maintaining a material degree of inflation sensitivity (as shown in Figure 4).

In summary

For much of the recent past, many investors whistled past the inflation graveyard. The events of the past year served as a wake-up call that inflation remains a material risk. As the period prior to 2022, even when low, inflation over time erodes savings in real terms. With this in mind, advisors and plan sponsors should question the tools currently in place for participants seeking a more direct route to hedging inflation. At LGIM America we believe a diversified approach, utilizing several underlying building blocks with their own unique relationship to inflation, provides one avenue for managing the pernicious effects of inflation.

We want to help

At LGIM America, we understand plan sponsor's concerns around different types of risk. We welcome the opportunity to provide additional insight into our retirement thinking and capabilities. For more information about this thought paper or LGIM America's resources, please contact Jimmy Veneruso at Inquiry.DefinedContribution@lgima.com.

Figure 4: Correlation of monthly returns (1997-2022)

	CPI-U	Comm (Roll Select)	Gold	TIPS	Diversified Strategy
CPI-U	1.00	0.60	0.15	0.14	0.51
Comm. (Roll Select)	0.60	1.00	0.43	0.28	0.91
Gold	0.15	0.43	1.00	0.40	0.65
TIPS	0.14	0.28	0.40	1.00	0.63
Strategy	0.51	0.91	0.65	0.63	1.00

Source: LGIM America. Data as of November 30, 2022. Commodities returns are represented by the Bloomberg Roll Selected Commodity Index, the Bloomberg Gold Index is the proxy for gold returns with TIPS represented by the Bloomberg US Treasury Inflation Notes TR Index Value Unhedged. Past performance is no guarantee of future results.

About LGIM America

LGIM America (LGIMA) was founded in 2006 with the purpose of helping people achieve their long-term financial goals. We offer a range of strategies to help our institutional clients (corporations, healthcare agencies, non-profit, educational institutions, public plans and Taft-Hartley multi-employer plans) manage their investment objectives, which can range from market-based alpha-oriented strategies, derivative overlays, equity solutions and those that are designed to be more liability-centric. Encouraging a diverse and inclusive environment coupled with a solutions-focused culture allows us to increase our breadth of knowledge and the likelihood of improved client outcomes and stronger financial performance. We have teams of experienced, innovative professionals committed to helping plan sponsors meet their pension promises, managing investment exposures efficiently to seek enhanced returns while mitigating risks, and working to generate returns while making a positive societal difference. For further information about LGIM America, find us at www.lgima.com.

1. As measured by the Consumer Price Index
2. Rabener Nicholas. “Myth Busting: Are Equities an Inflation Hedge,” Enterprising Investor, CFA Institute, July 19, 2021, https://blogs.cfainstitute.org/investor/2021/07/19/myth-busting-equities-are-an-inflation-hedge
3. Typically, funds composed of some mixture of TIPS, commodities and REITs.
4. The correlation exists when examining monthly CPI data and monthly commodity price data as represented by the Goldman Sachs Commodity Index. Monthly data was taken going from January 1970 to September 2022. Using lagged independent variables in an effort to make inferences about possible causation is better known as “Granger Causality”. More details can be found at: “Chickens, Eggs and Causality or Which Came First?” Thurman, Walter; Fisher, Mark. American Journal of Agricultural Economics, 1988.
5. More information on the commodity roll-select index can be found at https://assets.bbhub.io/professional/sites/27/BCOM-Roll-Select.pdf