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A Quick Look at Hedging Inflation in DC Plans

"Inflation is when you pay fifteen dollars for the ten-dollar haircut you used to get for five dollars when you had hair." - Sam Ewing, Outfielder / Designated Hitter

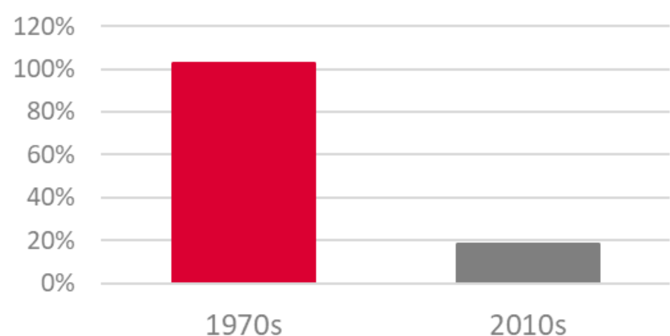
Of the risks that retirement investors face - and the challenges that confront target-date managers and other asset allocators - inflation is among the most pernicious. Plan fiduciaries can choose from several anti-inflation "tools" to populate plan menus, but following conventional thought in selecting and using those tools can be counterproductive. We look at potential candidates commonly discussed in DC settings and provide some food for thought.

INFLATION RISK

One of the four basic risks faced through the retirement investment cycle (aside from shortfall, longevity, and downside risks), inflation risk is most acute in retirement. No longer are there wages that (hopefully) rise along with prices, larger slices of portfolios may be invested in inflation-susceptible bonds, and the ability to maintain spending power is a primary concern.

Inflation takes many forms. It can be driven by economic growth ("demand-pull," like demand boom caused by China's growing economy in 2007-2008) or ignited by a shortage ("cost-push," like the OPEC oil embargo of 1972 to 1974). It can be "expected" (the July 2021 Survey of Consumer Expectations shows that consumers expect inflation to be about 4.8% over the next year)[i] or "unexpected" (consumers probably didn't expect the cost of used cars and trucks to soar by 32% in the first six months of 2021).

For retirees, inflation is a "luck of timing" issue. Bad luck? What $100 could have bought in January 1970 would have required over $200 in December of 1979. Good luck? To equal the buying power of $100 in January 2010, you would have only needed $119 in December of 2019.[ii] With such a dramatic range of potential outcomes, inflation is a "known unknown" for which portfolios must be prepared.

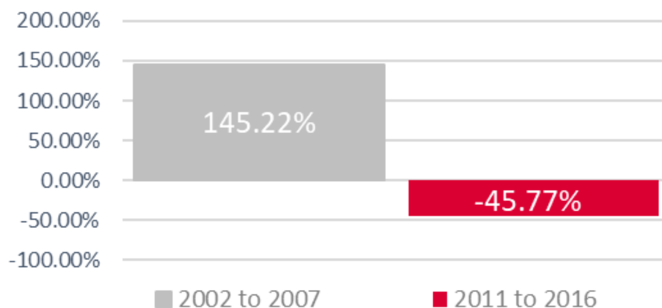


Sponsors should also consider that inflation faced by retirees doesn't necessarily look like that faced by workers. For example, retirees are likely to have greater exposure to rising medical care costs and less to increases in the cost of education, potentially reducing the effectiveness of CPI-based hedges for those in retirement.

POTENTIAL TOOLS

A range of investment types have - or are commonly perceived as having - a direct or indirect relationship to inflation. As with most investment-related questions, determining what might work (and how, when, and to what extent it might work) requires both digging beyond platitudes and carefully considering needs and objectives.

- **Commodity Funds**
  In basic terms, commodities are basic goods (like oil, cotton, or aluminum) used to produce other goods and services. Commodity funds commonly offer exposure to futures contracts for energy and agricultural products, as well as industrial and precious metals. The prices of these "inputs" tend to react when inflation rises unexpectedly, making commodities funds a direct inflation hedge and especially good weapons against unexpected inflation shocks. A 2021 Vanguard study found that a 1% rise in unexpected inflation would produce a 7% to 9% rise in commodities (as represented by the Bloomberg Commodity Index).[iii]

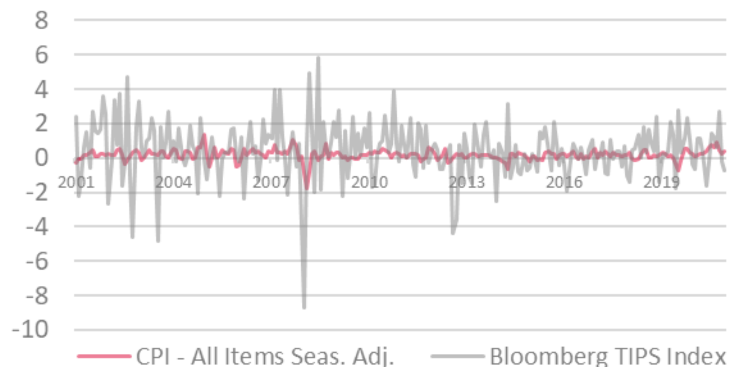


Bloomberg Commodity Index. Source: Morningstar Direct.

On the flip side, returns can be streaky. The same Bloomberg index returned over 145% from 2002 through 2007 but lost almost 46% from 2011 through 2016. Also, commodities don't have a "built-in" economic return like dividend-paying stocks or bonds, and long-term returns haven't always been attractive. Over 20 years ending June 30, 2021, a period of broadly benign inflation, the Bloomberg Index had a cumulative return of just over 20%, compared with over 420% for the S&P 500 and over 140% for the Bloomberg U.S. Aggregate Bond Index.

Commodity funds enjoyed a brief, albeit mild, popularity as core funds in the early 2000s among plans with extensive menus and sophisticated participant bases. Today, however, it's uncommon to see a commodity fund as a stand-alone option (especially in plans served by an institutional consultant, due to the reasons outlined above). In most cases, commodity funds are best employed as components of target-date or other asset allocation strategies.

- **Treasury Inflation-Protected Securities (TIPS) Funds**
  Issued by the U.S. Treasury, TIPS are the most widely available inflation-linked bonds. Unlike nominal (or "traditional") bonds, TIPS' principal values are directly tied to inflation as measured by the Consumer Price Index (CPI), increasing with inflation and decreasing with deflation. Hence, TIPS provide a direct hedge against a rise in CPI.



Consumer Price Index for All Urban Consumers: All Items in U.S. City Average and Bloomberg US Treasury US TIPS TR USD. Sources: FRED, Morningstar Direct.

  In exchange for this protection, TIPS generally offer a lower coupon (interest rate) than nominal Treasury notes of like maturities. So, in periods of deflation or less-than-expected inflation, investors should expect the total return of TIPS to be lower than that of contemporary nominal Treasury notes. In addition, like all bonds, TIPS are subject to interest rate risk (i.e., rates go up, prices go down). TIPS also

won't always provide a buffer against stock market downturns like nominal Treasuries do, given that equity bear markets and deflationary periods often coincide. Lastly, CPI may not reflect the real-world inflation impact that participants, especially retirees, face.

Though tradeoffs exist, TIPS funds are a standard component of target-date strategies. Presenting an opportunity for diversification from equities, lower-than-equity volatility, and protection from inflation, TIPS funds may be prudent core menu options for many plans, as well.

- Bank Loan Funds

  Also called floating rate funds, the interest rates of bank loans are adjusted periodically (commonly every 30 to 60 days) based on changes to reference rates like the Prime Rate or the London Interbank Offered Rate (though LIBOR is being rapidly phased out). This feature lowers the interest rate risk faced by investors and, since interest rates often rise when inflation rises, it can have the knock-on effect of making bank loan funds indirect inflation hedges.

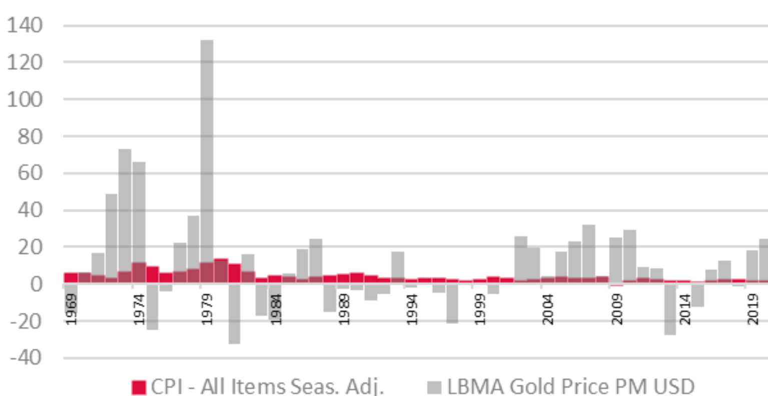
  Beyond the indirect relationship to inflation, there are other factors to consider. Floating-rate debt is generally carried by companies whose credit ratings are below investment grade. While floaters are usually senior obligations (near the front of the line to be paid), they do carry more credit risk than, say, TIPS. In addition, bank loans funds don't lend themselves to passive management and, thus, often have higher expense ratios than other funds investing in assets that are better suited to indexing. All 235 bank loan mutual funds in Morningstar's universe are actively managed; only four have expense ratios under 0.50%, and those only beat that mark by waiving expenses.

  For a variety of reasons, bank loan funds require sophisticated use and are better suited as components in managed asset allocation products than stand-alone core menu options.

- Gold Funds

  Proponents can be evangelical in their support for gold as an inflation hedge, but the actual record is mixed. Boosters point to tremendous returns during the oil price spikes, dollar devaluation, and Fed missteps of the 1970s when the yellow metal returned over 35% annualized from 1973 to 1979 (LBMA Gold Price PM USD).

% Annual Change: CPI vs. Gold



Consumer Price Index for All Urban Consumers: All Items in U.S. City Average and LBMA Gold Price PM USD. Sources: FRED, Morningstar Direct.

However, gold failed to perform during other periods of high inflation that didn't have an associated "crisis component." The LBMA PM index showed a -7.6% return from 1988 to 1991, when inflation ran 4.6%, and lost 10% yearly from 1980 to 1984 when the annual inflation rate was about 6.5% (*FRED, Morningstar Direct*).

Gold may find a limited place as a precious metal allocation within a target-date or multi-asset fund. However, gold funds are generally unsuitable as a core menu option for a

list of reasons beyond a tenuous relationship with inflation (including the asset's volatility and the imperfection of vehicles available for investment).

- Equity Funds

  Stocks are widely seen as protecting against inflation. We prefer to put a finer point on this: Stocks have provided high nominal returns over the long term, and those high returns can counteract long-term inflation as well as prepare a portfolio for inflationary periods.[iv] However, stocks shouldn't be relied upon to provide a buffer against inflationary shocks (a key factor during retirement).

  The story of equity returns during inflationary periods is both nuanced and widely misunderstood (and frequently oversimplified). Returns vary markedly depending on what point in the inflation cycle is examined or the root cause of the inflation (e.g., a demand-pull or a supply shock).

  In 2021, the Man Group and Duke University looked at eight periods of inflation in the U.S., from World War II on. They found that while, in nominal terms, broad market equities broke even during inflationary regimes, their real return (i.e., the return above inflation) was -7%. Only the Energy sector provided a positive average real return over the eight periods studied (1%, with returns ranging from -19% to 31%). The authors added that the inflationary period returns of the stocks of energy companies weren't nearly as high as those of the commodities produced by those companies (a real return of 41%!).[v] Man and Duke also found that during the Korean War inflation spike (August 1950 to February 1951), all broad sectors showed positive real returns. However, during the OPEC Oil Embargo period (July 1972 to December 1974), real returns were negative for all sectors (the best being Telecoms at -15%!).[vi]

  In another study, Goldman Sachs found that, between 1962 and 2019, nominal broad stock index returns were better when inflation was high and falling than when inflation was high and rising (though returns were far better during deflationary times). However, the nominal returns of value stocks showed an opposite pattern: they were higher when inflation was high and rising and better during periods of inflation vs. deflation.

  Both studies concluded that sectors frequently touted as inflation buffers, including REITs (real estate investment trusts), materials stocks, and consumer staples stocks, haven't consistently provided positive real returns during periods of high inflation (though all have in specific inflation regimes).

  So, the diversified equity funds found in every 401(k) menu and target-date fund, while historically powering the growth of portfolios during both saving and payout phases, are unlikely to provide retirees with a reactive buffer during periods of sharp inflation. Sector-specific equity funds may be more responsive to inflation than broadly diversified funds, but long-term returns for inflation-sensitive sectors are similar to the broad market. Hence, using sector funds for inflation protection implies the need for sophisticated economic understanding and successful market-timing, making that strategy generally unworkable for plan participants.

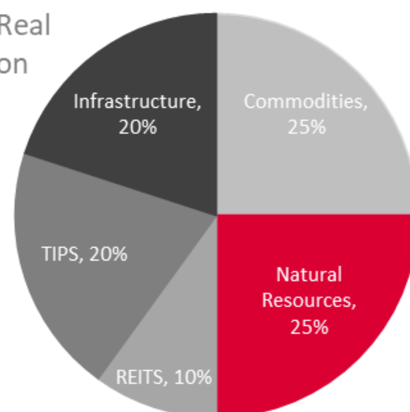
- Diversified Real Asset Funds

  Diversified real asset (DRA) funds provide exposure to a range of inflation-sensitive assets (including those detailed above) in a single package. On offer since the early 2000s, these funds are typically benchmarked to a TIPS index, "CPI + x%," or a custom composite index. Morningstar shows that roughly 25 DRA mutual funds are available, and strategies are available in collective trust format as well (including options composed of relatively inexpensive index funds).

As the moniker would imply, DRA funds are generally well-diversified. This feature limits the potential boom or bust pattern of a volatile focused option (such as a commodity fund). DRA funds' allocation approach can also include exposure to more esoteric asset categories (like water infrastructure stocks) and complex vehicles (like inflation swaps). Investment approaches range from highly active tactical allocation to fixed strategic portfolios.

Pitfalls certainly exist. These include the relative difficulty of tactical allocation, the frequent and potentially sub-optimal use of proprietary investments, and the strain that long stretches of poor absolute performance associated with periods of low inflation (like over the last decade or so) can put on both individual investors and investment committees.

Sample Diversified Real Asset Fund Allocation



State Street Real Asset Fund, allocation as of 9/30/2021. Source: State Street Global Advisors

SUMMING UP

Inflation presents a corrosive threat to investors, especially those in retirement who depend on their portfolios for current income. It's a tricky problem to solve, and conventional wisdom is particularly unhelpful. Plan sponsors should thoughtfully weigh the needs and capabilities of plan participants - as well as plan goals - when deciding how to provide anti-inflation exposure.

- Core Funds: The list of alternatives that may buffer a portfolio from an inflation shock AND are likely prudent stand-alone options for a broad participant base is a short one. For most plans, consideration is best limited to TIPS or diversified real asset funds. Sponsors should expect usage to be slim (rarely over 3% of assets).

  In terms of preparation for inflation (as opposed to reaction to inflation), the high nominal growth potential provided by equity funds over a long-term savings horizon may be the best concept to focus on for plan menus (though this approach presents an incomplete solution for retirees).

- Target-Date Funds: Countering inflation in target-date funds is a slightly different story. Preparation for inflation through nominal equity growth is a primary key. However, professional portfolio management may allow for the broader application of more volatile and sophisticated asset classes that may buffer against inflation shocks (including commodities, bank loans, or institutional investments like direct real estate).

  The threat of inflation highlights a potential advantage of professionally managed portfolios. However, due diligence is critical: we can't overstate how important it is for investment committees to understand the detailed workings of their chosen target-date suite. A full review of management's approach to countering inflation risk should be a facet of every target-date fund evaluation.

Constructing a portfolio that will defend against all modes of inflation is a challenging endeavor for professionals as well as participants. Though many tools exist, a poorly implemented cure may be as harmful as the disease. In the end, having a portfolio that is prepared for inflation, rather than trying to develop one that reacts to it, may be the better bet.

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[i] Center for Microeconomic Data. Survey of Consumer Expectations – Federal Reserve Bank of New York. (n.d.). https://www.newyorkfed.org/microeconomics/sce#/.

[ii] U.S. Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers: All Items in U.S. City Average [CPIAUCSL], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/CPIAUCSL, August 25, 2021.

[iii] The Potency of Commodities as an Inflation Hedge, Vanguard, 16 Aug. 2021, investornews.vanguard/the-potency-of-commodities-as-an-inflation-hedge/.

[iv] Goldman Sachs indicates that "…equities have also historically done well in inflationary environments, ultimately beating inflation 100% of the time when held for 15 years or more." Four Challenges for Investors Today, www.gsam.com/content/gsam/us/en/institutions/market-insights/gsam-connect/2021/4-Challenges-For-Investors-Today.html.

[v] Neville, Henry and Draaisma, Teun and Funnell, Ben and Harvey, Campbell R. and van Hemert, Otto, The Best Strategies for Inflationary Times (May 25, 2021). Available at SSRN: https://ssrn.com/abstract=3813202 or http://dx.doi.org/10.2139/ssrn.3813202

[vi] Neville.