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Treasury Inflation Protected Securities (TIPS)

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In this paper, we provide an overview of Treasury Inflation Protected Securities ("TIPS"). TIPS may provide reliable income while also offering a long-term inflation hedge to investors for whom inflation is a substantial risk (e.g., pensions for which benefits are indexed to inflation, as well as endowments and foundations). That said, a market-duration TIPS portfolio will be at least as sensitive to changes in interest rates as it is to changes in inflation expectations. Being issued by the US Treasury, TIPS can also play the role of high-quality bonds, serving as a unique kind of ballast. As with other Treasury bonds, TIPS' modest level of returns means that substituting them for other, riskier investments in a portfolio comes with a potential opportunity cost.

Inflation-linked bonds

Unlike nominal bonds, inflation-linked bonds guarantee an inflation-adjusted return if held to maturity. The expected nominal yield for a government bond consists of three components: the expected rate of inflation, the inflation risk premium, and the real interest rate. Because an inflation-linked bond eliminates the risk associated with uncertainty over inflation, its yield does not include the inflation risk premium. Consequently, the expected nominal yield provided by an inflation-linked bond consists of only the expected rate of inflation and the real interest rate.[1]

The US government first issued TIPS in 1997.[2] At present, more than twenty countries offer some form of inflation-linked bonds.[3] Although the mechanics of each country's inflation indexing differs, the concept is the same: investors are ultimately promised an inflation-adjusted return. Notably, as of the end of 2022, roughly 7% of the outstanding value debt stock of OECD government debt was inflation-linked, up from 3% in 1997.[4]

With one important difference, TIPS are structurally identical to traditional US Treasuries. Traditional US Treasuries pay a specified rate of income (via a coupon payment) and return the owner's principal at the stated maturity date. Likewise, TIPS pay a specified rate of income and return the owner's principal at the stated maturity date. And, as with traditional Treasuries, the full faith and credit of the US government backs TIPS. However, unlike that of nominal Treasuries, the principal value—and by extension the coupon payment—of TIPS are adjusted to reflect inflation at the consumer price level, as measured by the Consumer Price Index ("CPI-U").[5]

[1] Source: Inflation-linked bonds ("ILB") are generally less liquid than their nominal counterparts. While average ILB liquidity premium estimates vary based on the source (10Y ILB estimates range from 0 to 150 basis points), it is widely found that the premium is volatile and varies with liquidity risk proxies such as the implied volatility of VIX options (Andreasen, Christensen, & Riddell, "TIPS Liquidity Premium," July 2020 and Westerhout & Ciocyte, "The Role of ILBs," 2017). Furthermore, as expected, the premium also increases during economic crises, such as the 2008 GFC and 2020 COVID Pandemic.

[2] Source: Treasury Direct, Timeline of Treasury Inflation-Protected Securities.

[3] Source: S&P Global Sovereign Inflation-Linked Bond Indices: Methodology, as of April 2023..

[4] Source: OECD Borrowing Outlook 2022, as of May 2022. Mauro & Hopkins, "Global linkers versus US TIPS," State Street, 2008.

[5] For more information regarding the computation of the inflation adjustment, see Gürkaynak, Sack, and Wright, "The TIPS Yield Curve and Inflation Compensation," 2007.

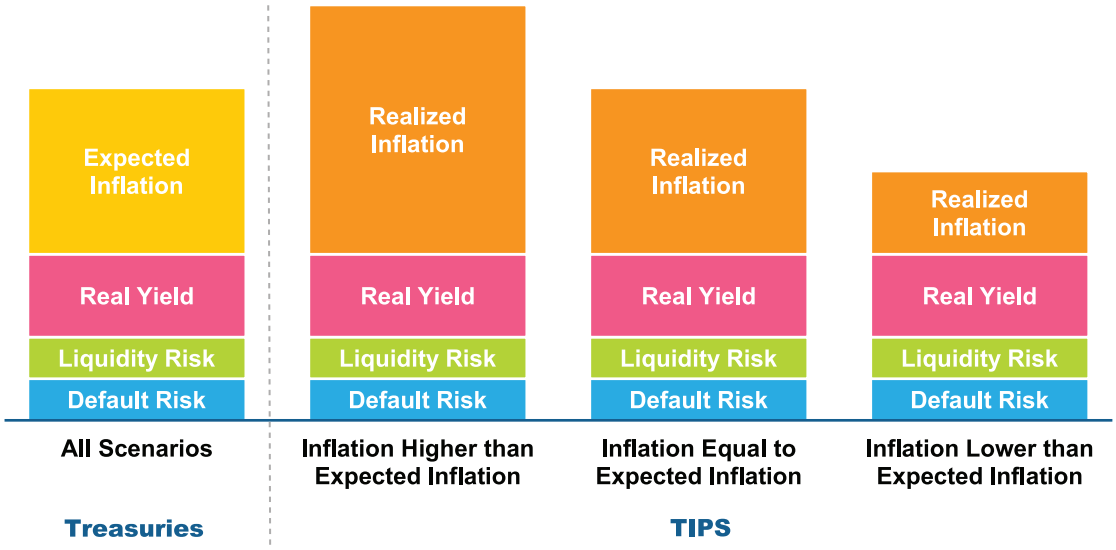

FIGURE 1
TIPS vs. Treasuries

Source: Meketa Investment Group, 2023.

Note: This example figure is not drawn to scale and does not represent the proportion that each component actually contributes. For example, many investors consider debt issues of the US Treasury to have very minimal risk of default.

Characteristics of TIPS

Expected Nominal Returns

A simple way to closely approximate the expected nominal return for an inflation-protected security is to add its present yield to the expected rate of inflation over its maturity. For example, on January 3, 2023, the real yield for the 10-year TIPS was approximately 1.53%.[6] At that time, the Survey of Professional Forecasters predicted that the CPI-U would average 2.37% over the next ten years.[7] Therefore, a buyer of a 10-year TIPS could expect a nominal return of (1.53 + 2.37 =) 3.90% over the subsequent ten years.

By contrast, a buyer of a 10-year traditional Treasury bond would receive a nominal return of 3.79% over ten years.[8] The 0.11% difference in yield can be attributed to the net effect of both an inflation risk premium for Treasuries and an illiquidity premium for TIPS.[9]

Inflation Risk Premium

Leaving aside the illiquidity premium, which may decline to de minimis levels at times, the only difference in nominal yields between Treasuries and TIPS should be the inflation risk premium. Changes in the amount investors are willing to pay for inflation protection will directly affect the relative pricing of TIPS and Treasuries: when the inflation risk premium goes up (down), then Treasuries should lose (gain) value relative to TIPS, all else equal.

Despite its importance in nominal Treasury valuation, determining the value of the inflation risk premium as well as the primary factors influencing it is difficult due to a lack of direct observability. Approaches to measuring have varied, incorporating related market prices (e.g., term structure models), survey data, and macroeconomic models (e.g., consumption-based asset pricing models).

[6] Source: FRED, Market Yield on US Treasury Securities at 10-year Constant Maturity, Quoted on an Investment Basis, Inflation-Indexed as of March 2023.

[7] Source: Survey of Professional Forecasters, 1st Quarter 2023. Federal Reserve Bank of Philadelphia, as of February 2023.

[8] Source: FRED, Market Yield on US Treasury Securities at 10-year Constant Maturity, Quoted on an Investment Basis as of March 2023.

[9] Note: It could also be interpreted that the "market" expects a lower inflation rate than the Survey of Pro Forecasters, though this may be captured via the inflation risk premium.

These various approaches reflect different explanations for changes in the inflation risk premium. Using a market-based framework, investors typically demand a higher inflation risk premium when they believe that there is a high likelihood that inflation exceeds their expectations. A behavioral finance framework suggests that periods of rising inflation will cause investors to overestimate the likelihood of further increases, with a commensurate increase in the inflation risk premium (and conversely, falling inflation leads to overestimates of further decreases which leads to decreased inflation risk premiums). Consumption-based models estimate the inflation risk premium by examining the relationship between forward consumption and inflation growth over time to determine whether inflation protection will offset a decline in consumption (i.e., during negatively correlated periods) or be superfluous/detrimental to consumption (i.e., during positively correlated periods). The output of the three types of models can vary significantly in different market environments.

While there is a consensus that the inflation risk premium has declined since the late 1970s, recent estimates have continued to vary between being positive with high variability to being minimal or negative.[10] Figure 2 below implies that the inflation risk premium has averaged approximately 0.4% over the past forty years, albeit with substantial variability.

[10] Source: See Ang and Bekaert, 2003; Bekaert & Wang, 2010; Chen, Engstrom, and Grischenko, 2016; DeAmico, Kim, and Wei, 2014; Grishchenko and Huang, 2016.

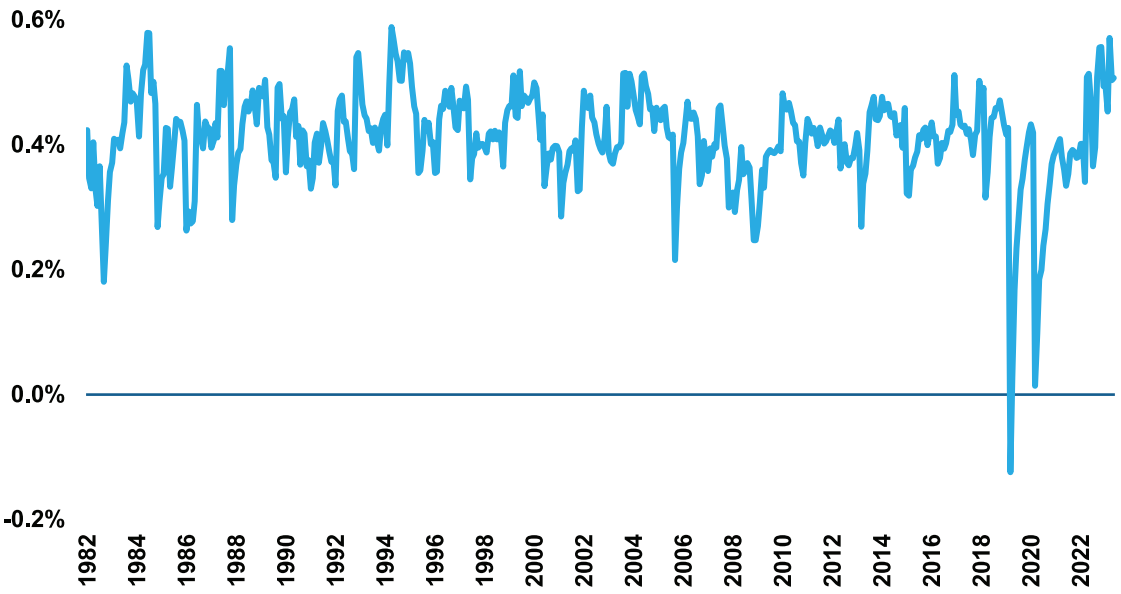

FIGURE 2
Cleveland Fed Inflation Risk Premium

Source: FRED, monthly Inflation Risk Premium, as of June 2023. The Federal Reserve Bank of Cleveland estimates the expected rate of inflation over the next 30 years along with the inflation risk premium, the real risk premium, and the real interest rate. Their estimates are calculated with a model that uses Treasury yields, inflation data, inflation swaps, and survey-based measures of inflation expectations.

Volatility

At first look, one would expect TIPS to be less volatile than a broad basket of nominal bonds, whose prices must reflect not only investors' expectations about inflation but also credit risk. However, actual returns have indicated otherwise: the annualized standard deviation of monthly returns is 5.7% for US TIPS versus 3.9% for US bonds[11] for the period from January 1998 to February 2023.[12] Furthermore, Figure 3 showcases this counterintuitive relationship between TIPS and US bonds' volatility over time.

[11] Source: "US Bonds" are proxied by the Bloomberg US Aggregate Bond Index throughout this paper.

[12] Source: Bloomberg monthly returns as of March 2023. Indices Used: Bloomberg Barclays Global Inflation-Linked US Tips, and Bloomberg Barclays US Aggregate Bond Index.

FIGURE 3
Rolling 3-Year Annualized Volatility

Source: Bloomberg monthly returns as of March 2023. Indices Used: Bloomberg Barclays Global Inflation-Linked US Tips, and Bloomberg Barclays US Aggregate Bond Index.

The conundrum may be resolved by noting that expectations regarding the future real interest rate and inflation rate are thought to be negatively correlated. That is, a high expected real interest rate may serve as a brake on economic growth, thereby discouraging inflation; conversely, low real rates likely spur growth and lead to inflation. To the extent that the inflation risk premium does not vary drastically, this negative correlation serves as a dampening mechanism that may cause Treasuries to be less volatile than TIPS. Alternatively, the TIPS index has tended to have a longer duration - and thus higher sensitivity to changes in interest rates - than the broad bond market, which may also contribute to their higher volatility (see below for a fuller discussion of duration).

Correlations

The rolling 3-year correlation of monthly returns between TIPS and various other asset classes are shown in Figure 4.

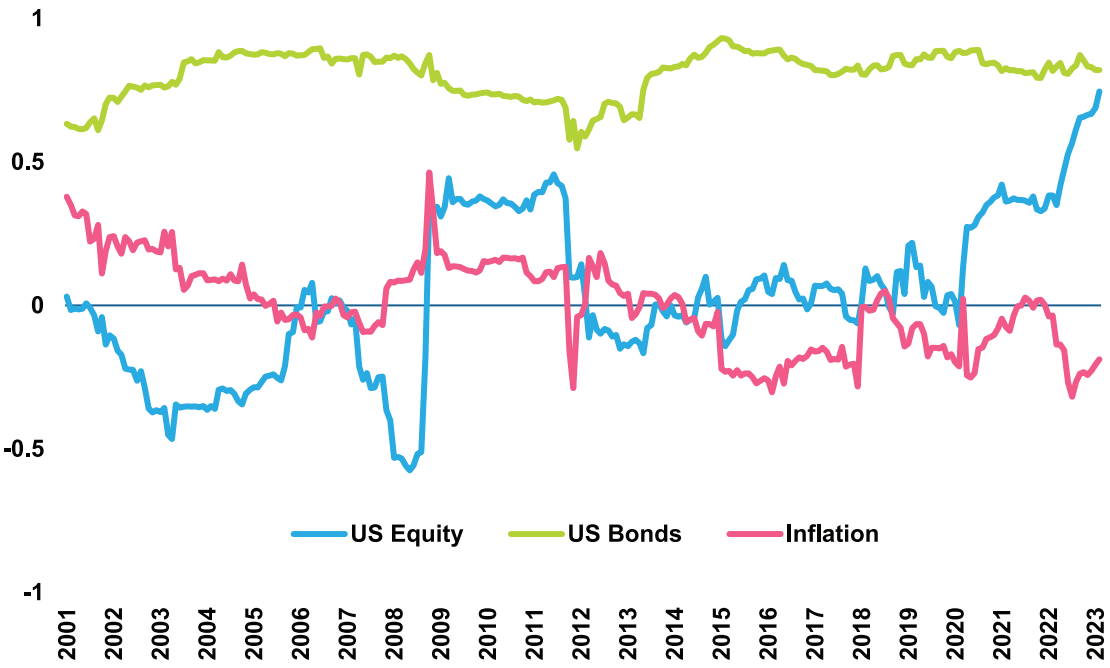

FIGURE 4
Rolling 3-Year Correlation to US TIPS

Source: Bloomberg and FRED monthly returns as of March 2023. Indices Used: Russell 3000 TR, Bloomberg Barclays Global Inflation-Linked US Tips, Bloomberg Barclays US Aggregate Bond Index, and CPI-U.

From 1998 to 2023, US TIPS exhibited a high, positive correlation with US bonds. This makes intuitive sense because both are similarly affected by changes in expectations about future real interest rates despite the differential impact of inflation expectations on each. TIPS' correlation with equities have varied considerably, mainly ranging between -0.5 and 0.5, though this correlation has reached a peak recently. Finally, TIPS exhibited approximately zero average correlation with inflation. This may seem counterintuitive, but it is because out of TIPS' two main components (inflation and interest rates), interest rates dominate TIPS' movements. Thus, TIPS exhibit practically zero correlation with inflation over short-term periods despite offering a long-term hedge against inflation (when bought and held to maturity).

In times of rising inflation, investors should be willing to pay more for inflation insurance. An increase in this premium should be directly manifested in decreased demand for nominal fixed income securities, hence there is a negative correlation between nominal bonds and inflation.[13] The money slated for nominal bonds typically must go somewhere, and TIPS may be the logical alternative investment. Thus, TIPS may benefit from the rotation out of nominal fixed-income securities during times of increasing inflation.

[13] The correlation between US Bonds and Inflation for the period 01/2005 - 02/2023 is -0.30. Inflation is the monthly % change of the CPI-U. Source: Bloomberg and FRED monthly returns as of March 2023. Indices Used: Bloomberg Barclays US Aggregate Bond Index & CPI-U.

Portfolio roles and considerations

Inflation hedge

Over long-term periods, investments in real assets and equities will likely protect investors from inflation by appreciating in value in excess of the rate of inflation. This is because as the prices of goods and services increase, the prices of these assets will also increase. However, over the short term, inflation produces major dislocations that can result in unpredictable investment returns. As a result, TIPS – particularly short-term TIPS, which have much less sensitivity to interest rates – can help hedge short-term volatility from changes in inflation while other real assets hedge longer-term inflation risk.[14] The scenario analysis in Figure 5 below shows how TIPS with different levels of duration, as well as core bonds, would likely perform during various inflationary scenarios.

[14] See Meketa's Short Term TIPS Whitepaper for more information on Short Term TIPS and its unique characteristics.

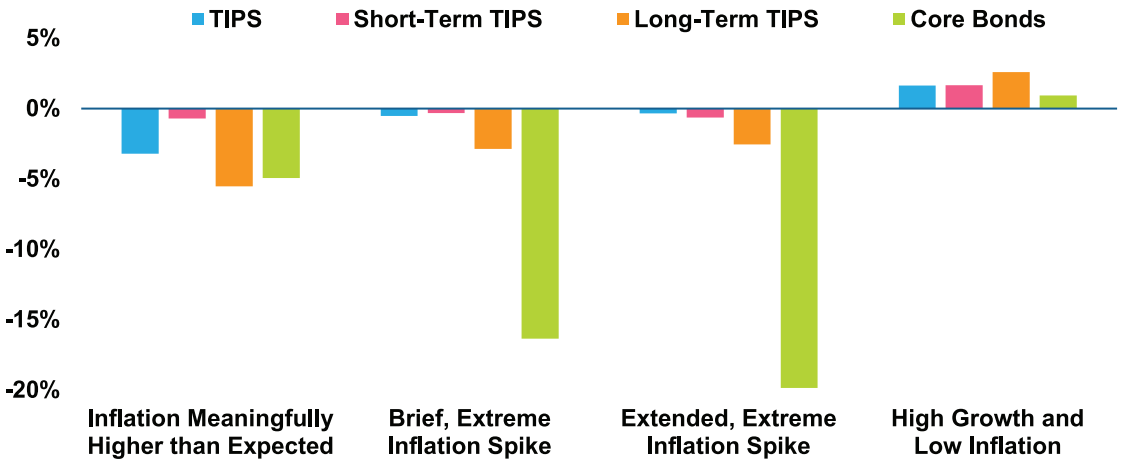

FIGURE 5
TIPS and Core Bonds Performance During Inflationary Scenarios

Source: Reflects average, annualized asset class returns. One traditional difficulty in analyzing TIPS returns is their relatively short history, as the first TIPS was issued in 1997. These figures are from Meketa's scenario analysis based on data from Bloomberg and FRED through December 2022. See the appendix for more details on and descriptions of the inflationary periods included in Meketa's scenario analysis.

Furthermore, since TIPS guarantee an inflation-adjusted income, they may be an appropriate asset for investors who have some portion of their liabilities exposed to inflation. For example, defined benefit plans that offer a cost-of-living adjustment possess liabilities that are explicitly linked to inflation. Similarly, endowments and foundations must adjust to rising salaries and other relevant costs. By owning TIPS, these funds may be able to match their assets more closely to their real liabilities, particularly if their liabilities are directly linked to CPI-U. Conversely, if an investor's liabilities are determined by other measures of inflation, TIPS may provide only a partially effective hedge (i.e., they will have a degree of basis risk). For investors who are more concerned about short-term inflation, short duration TIPS, combined with real assets, may be the ideal backbone of an inflation-protection program in their portfolios.

Duration

Duration is often defined as a bond's sensitivity to a change in (nominal) interest rates. Theoretically, duration can be broken into two primary components: sensitivity to changes in real interest rates and sensitivity to changes in the expected inflation rate. Since TIPS provide an inflation-adjusted return, their sensitivity to the latter is zero. Hence, the duration for inflation-linked bonds measures their sensitivity to a change in real interest rates only. The aggregate US TIPS market exhibited an average effective duration of 6.3 years in the first quarter of 2023.[15]

[15] Source: S&P Global, S&P US TIPS Index Effective Duration as of April 2023. Reflects the average duration from 1/03/2023 to 3/31/2023.

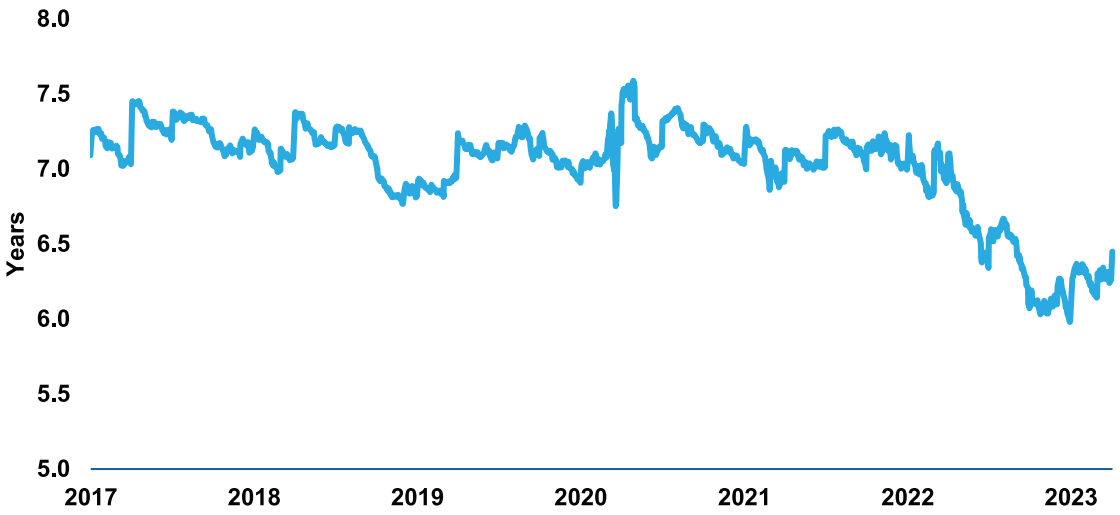

FIGURE 6
US TIPS Effective Duration

Source: S&P Global, S&P US TIPS Index Effective Duration as of April 2023.

Duration is not as meaningful a tool for TIPS portfolios as it is for nominal bonds, because an investor cannot discern the root cause of a shift in nominal rates. In other words, it is nearly impossible to accurately predict the sensitivity of a portfolio of TIPS to a change in nominal interest rates.

Thus, incorporating the duration of a TIPS portfolio into the calculation of duration for an aggregate bond portfolio can be misleading because it conflates two different constructs. While not exact, the effective duration of the TIPS portfolio can be used to provide a better sense of the interest rate sensitivity of the aggregate bond portfolio. Therefore, an investor who has a dedicated allocation to TIPS may consider calculating the duration of their aggregate bond portfolio both with and without TIPS.

Yield

Because TIPS are quoted in terms of a real yield, it can be similarly misleading to compare them to the nominal yields of an aggregate bond portfolio. If it is imperative to estimate a nominal yield for TIPS, the investor can do so by adding the most appropriate long-term inflation expectation to the real yield. Note that this involves some estimation error.

TIPS should generally offer a lower nominal yield than mortgage-backed securities, corporate debt, or other fixed income securities that possess credit risk, though this can vary based on the credit cycle and inflation expectations. Hence, an increased allocation to TIPS may reduce the nominal yield of a diversified bond portfolio.

Quality

Because TIPS are issued and backed by the US government, they have historically been considered to possess the lowest possible credit risk and to be of the same quality as nominal Treasuries. Hence, an increased allocation to TIPS can increase the quality of a diversified bond portfolio.

Sizing

When including TIPS as a portfolio construction component, their returns, volatilities, and cross-correlation with other assets show neither a clear benefit nor a penalty to the diversified portfolio's efficiency from the standpoint of mean-variance optimization ("MVO").[16] However, MVO is a general tool that may not fully capture the benefits that certain assets offer, such as providing a better inflation hedge than core bonds (see the aforementioned scenario analysis in Figure 5). Whether to utilize TIPS thus hinges on their perceived strategic role.

For those investors whose liabilities are measured in real (i.e., purchasing power) terms, inflation matters. Unexpected inflation – which by its very term cannot be predicted – damages stock and bond portfolios' real value. Some assets offer the ability to hedge inflation to varying degrees, albeit at some opportunity cost, which also varies. Typically, the better (or "purer") the hedge, the greater the opportunity cost, usually in the form of lower long-term expected returns.[17] TIPS – particularly short-term TIPS, with their minimal sensitivity to interest rate moves – are at the pure but costly end of the spectrum. However, they also offer the benefit of safety as they are US government-issued securities and thus can act as an anchor to windward.

Sizing is therefore a tradeoff. Each investor wishing to protect against inflation must weigh how much they wish to hedge, and how much opportunity cost they are willing to incur as the price of this "insurance." Backward-looking historical stress tests unfortunately do not shed much light on this puzzle because there has only been one period of damaging unexpected inflation that occurred after the inception of US TIPS. This period is very recent, beginning in early 2021 and continuing through the writing of this paper in 2023. During this period, TIPS produced a cumulative return of -3.8%, outperforming US bonds' -12.4% cumulative return.[18]

[16] Source: Based on the 20-year assumptions from Meketa's 2023 Capital Markets Expectations. A theoretical diversified portfolio's Sharpe Ratio was .45 with no TIPS, .45 with 5% TIPS, and .45 with 10% TIPS.

[17] While an in-depth discussion is beyond the scope of this paper, for example, assets such as public natural resource equities have returns comparable to other equities, so their opportunity cost is not high, but their inflation-hedging benefit (from price increases in the underlying commodity) is often offset by their equity beta, which pulls them down during unexpected inflation.

[18] Source: Bloomberg and FRED monthly returns for the period January 2021 through June 2022, as of July 2023. Indices used: Bloomberg Barclays Global Inflation-Linked: US TIPS, Bloomberg Barclays US Aggregate Bond Index, and CPI-U.

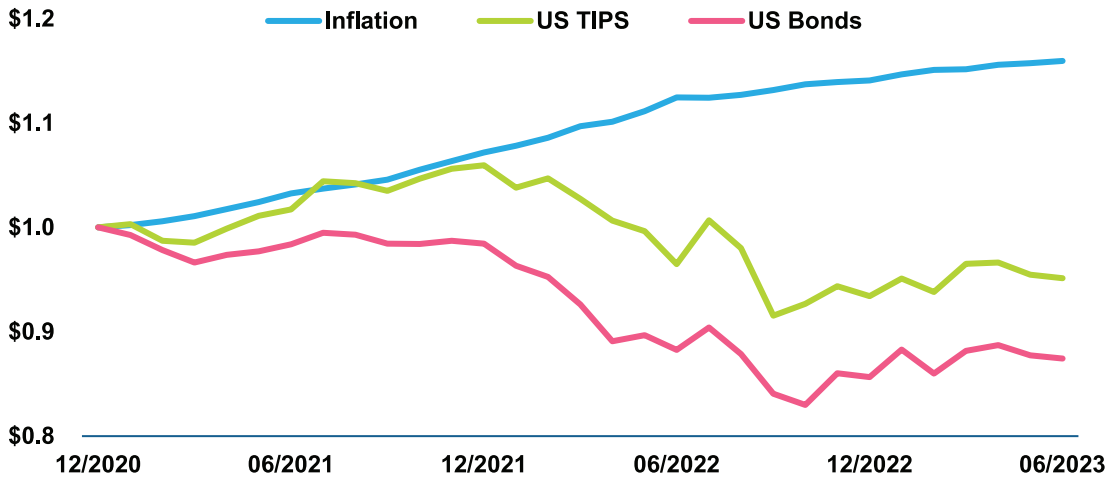

FIGURE 7
Cumulative Performance During the Recent High Inflation Period

Source: Bloomberg and FRED monthly returns for the period January 2021 through June 2022, as of July 2023. Indices used: Bloomberg Barclays Global Inflation-Linked US TIPS, Bloomberg Barclays US Aggregate Bond Index, and CPI-U.

Implementation issues

Market liquidity

The United States is the largest issuer of inflation-linked debt, by volume.[19] As of December 31, 2022, TIPS represented 8% of the total US marketable debt outstanding.[20] TIPS are currently auctioned several times per year, with the frequency depending on the TIPS' maturity.[21] The TIPS market is not as liquid as that for nominal Treasury bonds. This has several causes, including: the smaller size of the TIPS market, the fact that TIPS constitute a non-benchmark investment for many bond managers, and TIPS' attractiveness as a buy-and-hold investment. Consequently, it is slightly more expensive to trade TIPS than it is to trade Treasuries. On the other hand, the TIPS market is more liquid than that for most investment grade corporate bonds.

In recent years, the trading spread has been approximately 0.10% of principal value for TIPS versus approximately 0.05% for Treasuries.[22] Therefore, for every trade, Treasuries have a one-time 0.05% advantage, on average. Of course, it is possible that during periods of heightened volatility the spreads for TIPS could widen just as they do for other securities. This happened during the Global Financial Crisis, when TIPS spreads grew to nearly 0.50%, as well as during the early days of uncertainty in March 2020 related to COVID-19, when TIPS spreads grew to over 3%.[23]

Passive and active management

Passive investors in TIPS generally accept the term structure of the TIPS index they are using as a benchmark. Alternatively, passive investors may design term structures better suited to the term structure of their liabilities.

Active investors in TIPS seek to augment a passive return through several approaches, described below. These active managers are almost always measured against the TIPS benchmark indexes, discussed below.

[19] Source: OECD Borrowing Outlook 2022, as of May 2022.

[20] Source: Treasury Department, Presentation to TBAC Q1 2023.

[21] Source: Treasury Direct, Auction Schedule as of April 2023.

[22] Source: Bloomberg, average monthly bid-ask spread of on-the-run 10-year TIPS and Treasuries between September 30, 2018 and September 30, 2021.

[23] Source: Bloomberg, bid-ask spread of 30-year TIPS issuance with expiration of 2032.

An active TIPS manager may try to outperform a TIPS benchmark by managing the term structure of the portfolio. Hence, a manager may employ a bullet or barbell strategy or may make modest real interest rate bets through changes to the portfolio's real duration.

Another means of adding value includes making a relative value decision between TIPS and nominal Treasuries, switching between these instruments accordingly. However, note that too much exposure to nominal Treasuries would defeat the inflation-hedging purpose of a strategic allocation to TIPS.

Finally, a manager may try to add value by investing in other inflation-linked bonds, such as those issued by US corporations or foreign governments. Investments in the former may offer additional yield at the expense of credit risk and limited liquidity. Investment in the latter may be a relative value decision between real rates in the US versus those in foreign countries. However, while foreign real rates may look attractive, it is important to note that these inflation-linked bonds track inflation in those countries, which can differ significantly from US inflation. This would be likely undesirable to investors seeking to hedge US dollar-denominated liabilities.

In our opinion, there is little potential to generate large excess returns without substantially departing from the benchmark. That being said, including short maturity securities which recently exited the index, substituting nominal Treasuries for TIPS on the short end of the curve, and optimized sampling (rather than full replication) can potentially provide moderate increases in return relative to a fully passive approach.

The interquartile range of the active universe was 59 basis points on a 10-year period, gross of fees.[24] Further, the fees for active management are higher than those of passively managed funds, though fees tend to be highly negotiable for investors committing larger mandates to TIPS, and the fees for both have declined considerably since TIPS were first offered.

[24] Represents the difference between the 25th and 75th percentile based on an analysis by Meketa of the US TIPS active universe for the 10-year period ending December 2022. The average number of managers over the period was 28 funds and the figure is gross of fess.

Active Management	Passive Management
25 bps	5 bps

FIGURE 8
Median TIPS Fee

Source: eVestment, median basis point fee at $50 M, as of June 2023. Fund count for active US TIPS fees is 45 and passive US TIPS fees is 15.

Benchmark

There are several benchmarks appropriate for TIPS investors. One of the most used benchmarks is the Bloomberg US TIPS index. The differences in methodology between this index and other popular indices, such as the BofA Merrill Lynch US Inflation-linked Treasury Index, are subtle and should result in return dispersion of only a few basis points per month.[25] Both indices include only TIPS that have at least one year remaining to final maturity, and they are rebalanced on the last business day of the month.

[25] Source: Bloomberg, Bloomberg US TIPS TR and BofA Merrill Lynch US Treasury Index, as of April 2023.

Alternatively, if an investor is structuring a custom TIPS portfolio, a custom index may be constructed using the appropriate issues. For example, an investor concerned only about near-term inflation may invest only in TIPS maturing in the next five years and may construct a benchmark accordingly.

Vehicle

Investors willing to accept the term structure offered by the market (or more accurately, the US Treasury) may invest in a commingled vehicle that is charged with matching or slightly outperforming the index, net of fees. Because the potential to add value is minimal, low fees are essential to meeting this goal.

Alternatively, if an investor seeks a custom portfolio, a separate account structure (or managing the assets in house) usually must be utilized. In this case, the investment manager would construct a portfolio to match the liability or inflation requirements of the investor. This portfolio could be actively traded or treated as a buy-and-hold portfolio.

Summary

TIPS have risk and return patterns that differ from those of stocks or traditional (nominal) bonds and, importantly, provide a durable stream of income linked to CPI-U. For investors with liabilities that are significantly impacted by broad measures of inflation, TIPS would likely help hedge against a rise in liabilities in an inflationary environment. Even for investors without inflation-indexed liabilities, TIPS can ultimately benefit investors by acting as an insurance policy against unexpectedly high inflation.

TIPS may provide reliable income while also offering a long-term inflation hedge to investors for whom inflation is a substantial risk (e.g., pensions for which benefits are indexed to inflation, as well as endowments and foundations). That said, a market-duration TIPS portfolio will be at least as sensitive to changes in interest rates as it is to changes in inflation expectations.

Being issued by the US Treasury, TIPS can also play the role of high-quality bonds, serving as a unique kind of ballast. As with other Treasury bonds, TIPS' modest level of expected returns means that substituting them for other investments in a portfolio comes with an opportunity cost. Investors must make the decision based upon their specific circumstances to determine the sizing of their TIPS allocation, balancing their needs for an inflation hedge with the likely reduction in return that would ensue in ordinary markets.

Appendix

Meketa scenario analysis: periods of high inflation

- Meketa's Inflation Scenario Analysis is for the period February 1973 - December 2022.
- The Scenario Analysis is based on a generalized linear regression ("GLS") model that estimates the effects of realized and surprise inflation on monthly asset returns, controlling for the economic environment. The GLS model assumes a residuals autocorrelation of 1. Quadratic independent variables are added to the regression model to account for potential non-linearity between an asset class and inflation. Estimated scenario returns at the asset class level are then calculated as the expected value of asset class returns, conditional on the inflation scenario.
- Inflation is the monthly change in CPI from the 3-month rolling average CPI, surprise inflation is the difference between this month and last month's inflation rate, and GDP Growth is the percent change in GDP from the previous quarter. Inflation and GDP data are taken from the St. Louis Federal Reserve Bank's FRED database.
- Inflation meaningfully higher than expected is when surprise inflation is in the 75th percentile of positive, historical surprise inflation.
- Brief, extreme inflation spike is when inflation is in the 95th percentile of historical inflation and lasts for 4-8 months.
- Extended, extreme inflation spike when inflation is in the 95th percentile of historical inflation and lasts for 12+ months.
- High Growth and Low Inflation is when real GDP growth is the 75th percentile of historical GDP growth and inflation is in the 25th percentile of historical inflation.
- Indices Used: Bloomberg Global Inflation Linked US TIPS Index, Bloomberg US Treasury TIPS 1-5 Years Index, Bloomberg US Govt. Inflation-Linked >10 Years Index, and Bloomberg US Aggregate Bond Index.

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