

# MILL CREEK

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## Mill Creek White Paper Series

### Taxable Fixed Income: What Hath COVID Wrought?

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## Executive Summary

- Yields on high quality bonds fell to all-time low levels in 2020
- The recent decline is the continuation of a four-decade long trend in the US bond market
- Predicting future yields on specific maturities (e.g. the yield on a 10-year Treasury, five years hence) is fraught with forecasting error, however,
  - In the near term, macroeconomic conditions — broadly defined — drive bond yields within the longer-term trend, and
  - In the long run, inflation expectations and *uncertainty* about the path of short-term interest rates determine the structural trends that play out over years and decades.
- Bond yields are currently low due a combination of factors:
  - The US economy continues to operate with a significant output gap,
  - Future inflation expectations remain subdued, and
  - Federal Reserve policy has been clear about maintaining a multi-year period of low short term rates.
- We expect these factors to generally reverse and for yields to trend upward over the next 3-5 years
  - We have adjusted the interest rate risks to which our taxable fixed income portfolios are exposed in anticipation of that eventuality

### **A short primer on fixed income investing**

#### *The relationship between interest rates and bond prices*

Interest rates and bond prices exhibit an inverse relationship. As market interest rates increase, bond prices decline, and vice versa. The intuition behind this relationship can be seen by considering an individual bond. Assume you own a bond, issued last year, that yields 4%. Now assume similar bonds are currently being issued at a 5% yield. The market price of your bond will decline until the effective yield matches the current market rate of 5%.

#### *The relationship between short- and long- term interest rates*

In theory, long term interest rates reflect market participants' expectations for the path of short-term interest rates. A positively sloped yield curve indicates that market participants expect rates to increase over time, whereas a negatively sloped yield curve would indicate lower short-term rates are expected in the future. In practice, the yield curve is a poor predictor of future rates; other factors, like monetary policy, can also affect the slope of the yield curve.

Whether investing in US Treasuries, agency securities, or corporate bonds, yields on high-quality fixed income are near historic lows. The extended period of low bond yields that followed the financial crisis of 2008 was — in retrospect — just a precursor to what we are experiencing currently.

Between 2011 and 2013 and again in 2015 and 2016, the 10-year US Treasury traded with a yield below 2% — a level that had not been seen since 1941. Low post-financial crisis yields presented a medium-term challenge for bond holders, but the sustained, decade-plus economic expansion created light at the end of the tunnel. The Federal Reserve began raising the Fed Funds rate target at the end of 2015 and short-term cash yields reached 2.5% in 2019. Longer-term bond yields rose commensurately, and the 10-year yield exceeded 3% in 2018. However, the normalization proved elusive. Rates began to decline again in 2019, and the COVID-19 recession accelerated the move downward. The 10-year Treasury yield reached an all-time low of 0.318% during overnight trading in March 2020 and sits just below 1% today.

In this report we examine three aspects of fixed income investing:

- 1) An evaluation of the reasons high quality bond yields are at historically low levels,
- 2) Reasons we believe interest rates will rise gradually over the next 3-5 years, and
- 3) Changes to our fixed income investment program going into 2021.

Fig. 1: Current bond yields are near historically low levels



Source: Bloomberg, Mill Creek. Chart shows yield-to-worst as of 11/20/2020.

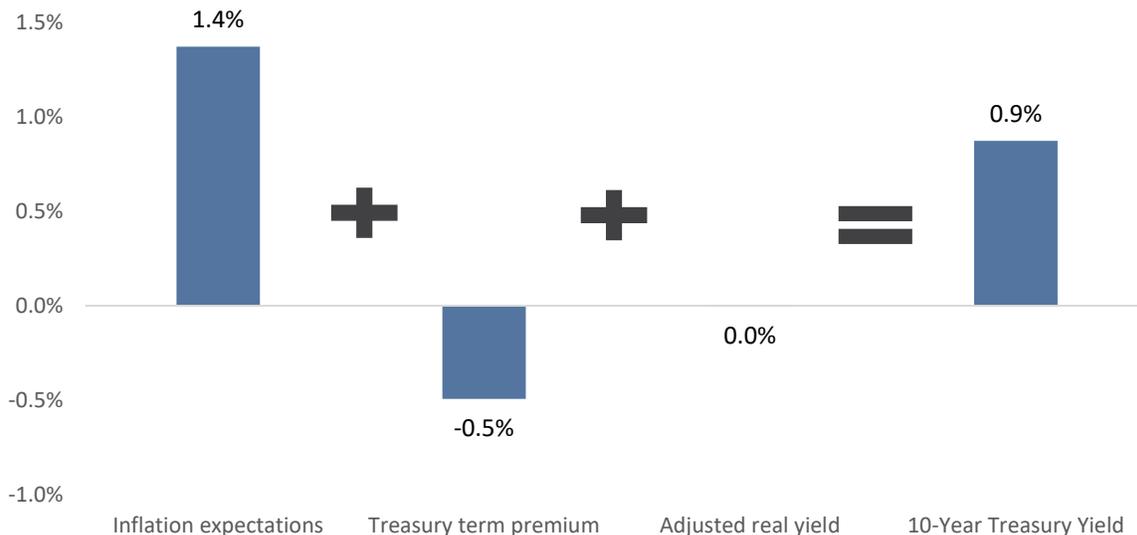
## Why Bond Yields Are Low

For the purposes of this paper we will focus mainly on the 10-year US Treasury bond. US Treasuries are considered the closest thing to a risk-free investment available from a default perspective. Accordingly, they provide the purest version of interest rate risk in the US bond market. Corporate bonds, mortgage-backed securities, and municipal bonds exhibit “rate component” (i.e. Treasury yield) and a “credit spread” (a yield that reflects compensation for the risk that the borrower will not repay the bond in full) that fluctuates over time.

Treasury rates can be broken down into three components: (1) compensation for inflation, (2) compensation for the risk that short term rates may not evolve as expected in the future (this is known as the *term premium*), and (3) a real rate of return after adjusting for the first two factors (we’ll refer to this as the “adjusted real yield”). These three components add up to the Treasury bond yield.

Breaking down the yield on the 10-year Treasury bond<sup>1</sup> into these building blocks helps to explain why yields have declined from over 14% to under 1% over the last 40 years. Furthermore, independently analyzing inflation expectations, the Treasury term premium, and the adjusted real yield also helps to put realistic expectations around the post-COVID path forward for yields.

Fig. 2: Deconstructing the current 10-year yield into building block components



Source: Bloomberg, Cleveland Fed, Mill Creek

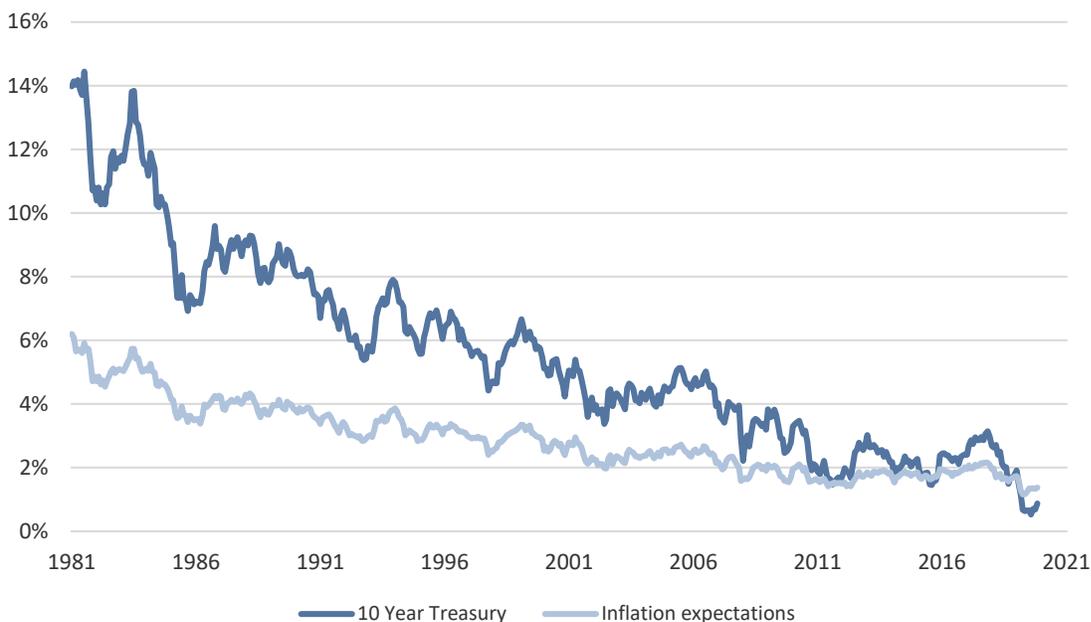
<sup>1</sup> The 10-year Treasury is technically referred to as the 10-year Treasury note, not bond, but we use the term *bond* here to match common parlance.

## Inflation Expectations

Inflation expectations have historically been an important driver of Treasury bond yields and can vary with the length of time evaluated and market conditions. For example, inflation expectations within the 10-year Treasury bond yield (i.e. a 10 year time horizon) declined from 6% in 1981 to 1.4% today<sup>2</sup>. Treasury rates fell 13% over the same period, indicating that a reduction in inflation expectations can explain just under half of the long-term yield decline.

Additionally — and perhaps paradoxically — it is worth noting that inflation expectations comprised less than half of the total 10-year Treasury yield in the early 1980s, but now exceed the total yield. Bond investors typically require compensation above and beyond inflation for holding Treasury bonds. Today's situation is unique because 10-year Treasury yields are below investors' expectations for future inflation. Treasury market participants expect inflation to average 1.4% per year for the next 10 years, but the 10-year Treasury yields just 0.85%. Said differently, investors are accepting Treasury yields that clearly offer negative inflation-adjusted (real) returns.

Fig. 3: Inflation expectations and the 10-year Treasury yield, 1981-2020



Source: Bloomberg, Cleveland Fed, Mill Creek

<sup>2</sup> For this analysis we use an inflation expectation series calculated by the Federal Reserve Bank of Cleveland that adjusts for some of the problems in using TIPS yields to proxy inflation expectations, including liquidity, taxes, and the embedded inflation asymmetry in TIPS pricing. Source: <https://www.clevelandfed.org/our-research/indicators-and-data/inflation-expectations/background-and-resources.aspx>

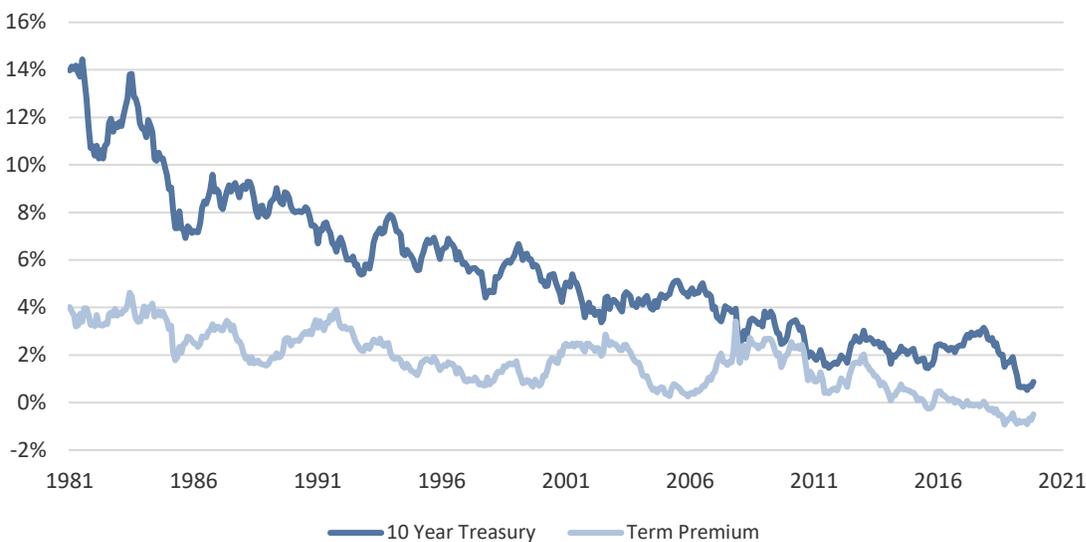
## The Treasury Term Premium

The Treasury term premium refers to compensation the holders of longer-term Treasuries require for accepting the risk that short-term yields do not develop as expected. Against the backdrop of dovish Fed guidance and additional QE, the 10-year term premium has fluctuated between -0.5% and -1% in the post-COVID environment.

Four researchers at the Federal Reserve Bank Of New York publish an estimated time series of the Treasury term premium<sup>3</sup>. A higher (lower) term premium suggests greater (less) uncertainty around the path of future short-term rates. Perhaps it is not surprising then that the term premium averaged 0.5% during the 1960s, increased to 4% during the — volatile, from a rate perspective — 1970s, and declined again starting in the early 1980s as the Fed regained control of interest rates and inflation (Fig. 4).

The term premium collapsed in the wake of the financial crisis. Research<sup>4</sup> by the Federal Reserve indicates that post-financial crisis quantitative easing (QE) drove the 10-year term premium down by 1 percentage point. Fed policy transparency likely also played a role. To the extent that the Fed has gained credibility around telegraphing future policy actions, market participants can be more confident in the future path of short-term interest rates.

Figure 4: The Treasury term premium has collapsed



Source: Bloomberg, New York Fed, Mill Creek

<sup>3</sup> [https://www.newyorkfed.org/research/data\\_indicators/term\\_premia.html](https://www.newyorkfed.org/research/data_indicators/term_premia.html)

<sup>4</sup> <https://www.federalreserve.gov/econres/notes/feds-notes/effect-of-the-federal-reserves-securities-holdings-on-longer-term-interest-rates-20170420.htm>

## Adjusted Real Yields

If we subtract inflation expectations and the term premium from the 10-year Treasury yield, what is left over is the *adjusted real yield* (Fig. 5). The adjusted real yield represents the expected inflation-adjusted, term premium-adjusted yield an investor receives for holding a Treasury bond.

The adjusted real yield has historically bounced around between 4% and -1% and generally follows prevailing macroeconomic conditions — declining during recessions and increasing during expansions. For example, one coincident indicator for the adjusted real rate is the Congressional Budget Office’ output gap, which measures the difference between actual GDP and potential GDP. The CBO currently projects the output gap of -6.4% at the end of 2020, slowly closing to less than -1% in 2027.

The adjusted real yield for a 10-year Treasury is currently 0.0%, but 0% is not abnormally low on a historical basis considering we face a substantial economic output gap due to the COVID induced recession. For example, adjusted real yields were even lower — they dipped into negative territory — following the 1992, 2002, and 2008 recessions.

Fig. 5: Adjusted real yields follow the business cycle



Source: Bloomberg, New York Fed, Cleveland Fed, Mill Creek. Shading indicates periods of recession as determined by NBER.

## The Outlook for High Quality Bond Yields

At the present time, there are reasons to believe that inflation expectations, the Treasury term premium, and the adjusted real yield will all rise over the next 3-5 years, creating a headwind for bond prices and, therefore, fixed income returns.

First, the Fed has adjusted its inflation policy objective to an “average inflation target” of 2%, indicating that it will allow inflation to run above 2% as an offset to periods of inflation below 2%. A commensurate increase in inflation expectations from the current level of 1.4% to 2% would suggest an increase in Treasury yields of 0.6%, all else equal. Second, we believe the term premium should also rise, albeit slowly, as the Fed reduces quantitative easing while the economy recovers from the COVID-19 recession. However, the Fed will be very cautious about letting rates rise too quickly and could easily take 5-10 years to reduce its balance sheet to 2019 levels. Finally, a strong economic recovery and optimism around a COVID-19 vaccine in 2021 bode well for the adjusted real yield, which now sits at 0%. The adjusted real yield exceeded 1% in 2018 and 2019, indicating that a continued expansion that gets us back to pre-COVID economic activity could push yields higher by 1% over the next 3 years.

Put together, these factors indicate a Base Case where the 10-year Treasury yield increases by 100 to 200 basis points (1-2%) during the next 3-5 years. Better (worse) than expected economic growth would likely push rates higher (lower) than that range. Yields on other types of high-quality bonds would be expected to follow Treasuries.

We believe there are two main risks to our Base Case scenario. The first is a double-dip recession that would push rates toward negative territory. The second risk is a more activist Federal Reserve. For example, between 1942 and 1951 the Fed worked with the US Treasury to cap long term Treasury yields at 2.5% even though inflation averaged over 5% during that period. It is possible that the Fed could again use monetary policies to control the yield curve and cap interest rates below inflation if it is sufficiently motivated by economic circumstances to do so.

Fig. 6: Treasury yield scenarios over a 3-5 year horizon

	Current	Base case	Accelerated growth	Double Dip	Yield curve control
<b>Inflation expectations</b>	1.4%	1.5-2%	2.5%	1.5%	2.0%
<b>+ Treasury term premium</b>	-0.5%	0.0%	1.0%	-0.5%	-1.0%
<b>+ Adjusted real yield</b>	0.0%	0.5-1%	1.0%	-1.0%	1.0%
<b>= 10-Year Treasury yield</b>	0.9%	2-3%	4.5%	0.0%	2.0%

Source: Bloomberg, New York Fed, Cleveland Fed, Mill Creek

## Positioning Portfolios for 2021

We are reducing interest rate risk across Mill Creek’s taxable fixed income portfolios by decreasing our investments in intermediate term bonds and reallocating the proceeds to shorter term securities (Fig. 7). While Mill Creek’s taxable fixed income program has benefited from an intermediate duration profile over the past two years, the market’s low absolute yield suggests that similar price appreciation over the next two years is mathematically impossible unless Treasuries turn negative.

In addition to reducing interest rate risk, an allocation to ultra-short term bonds (i.e., 1-2 year maturities) also establishes a source of funds for opportunistic bond market investments going forward. For example, we would contemplate a shifting of assets into a more credit-focused strategy if a market dislocation creates an attractive (higher yield; higher risk-adjusted potential returns) entry point.

Once fully implemented, we expect the revised portfolio asset allocation will produce favorable absolute and relative returns over these next several challenging years for fixed income portfolios.

Fig. 7: Pro-Forma Descriptive Characteristics for Mill Creek Taxable Fixed Income programs

	Mutual Fund Program	SMA Program	Index
Yield to Worst	1.80%	1.51%	1.27%
Duration	5.85	5.26	6.13
Avg Credit Quality	A	A	AA
<i>Sector Allocation</i>			
Corporate	41%	50%	29%
Government	26%	18%	41%
Securitized	29%	30%	29%
<i>Regional Exposure</i>			
United States	79%	86%	93%
Developed	13%	10%	5%
Emerging	9%	4%	2%

Source: Bloomberg, Mill Creek. Index refers to the Bloomberg Barclays US Aggregate Bond Index. Actual portfolio holdings may vary. For illustration only. “SMA” refers to Separately Managed Account.

## Disclosures

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Published December 10<sup>th</sup>, 2020