Bond Blog

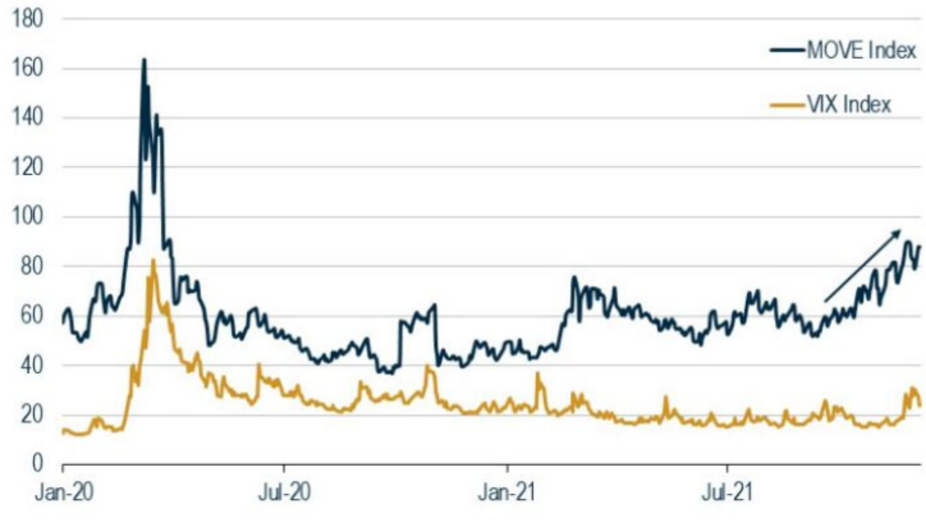
December 8, 2021

FINDING VALUE IN TREASURY MARKET TURBULENCE

By Mick Meyler, Head of Developed Market Rates,
and John Young, Principal, Developed Market Rates Team

The U.S. Treasury market has experienced outsized volatility in recent weeks, especially relative to the broader stability of the credit and equity markets (Figure 1). Policy-sensitive rates across developed markets rapidly repriced at the end of October amid relentless inflation pressure, causing broad shifts in market positioning. The magnitude of Treasury market volatility is historically significant, and the breakdown in the price relationship of normally highly correlated bonds is driving dislocations in fixed-income relative value to extremes that we have previously witnessed only during acute systemic crises, such as the Global Financial Crisis of 2008 and the early days of the COVID pandemic. This post seeks to provide a brief explanation of the structural issues that contributed to the market's dislocations and subsequently explores some of the most significant relative-value opportunities across the U.S. Treasury complex.

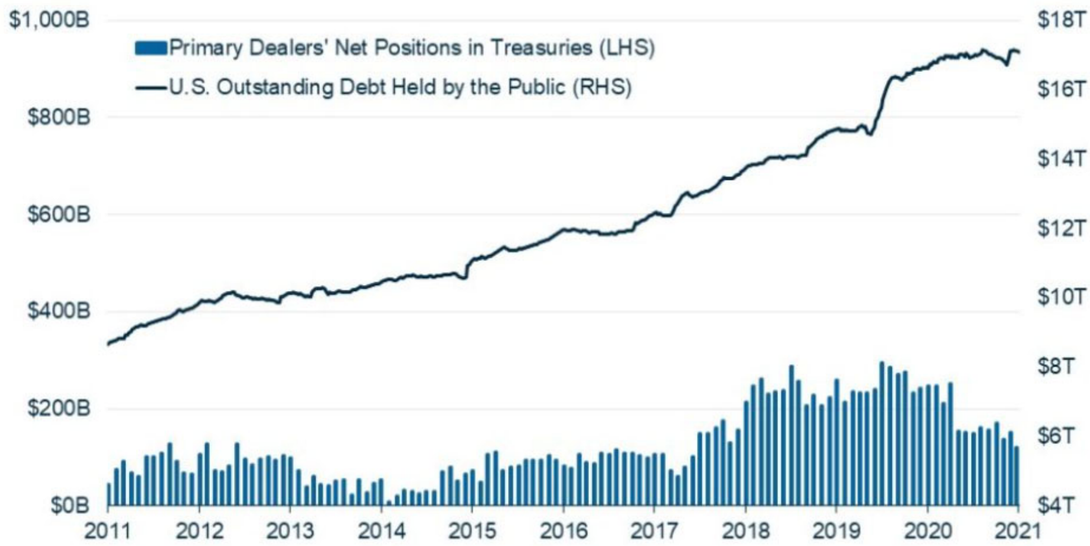
FIGURE 1: IMPLIED TREASURY VOLATILITY (MOVE INDEX) HITS POST-PANDEMIC HIGH AS IMPLIED EQUITY VOLATILITY CONTINUES TO DECLINE (VIX INDEX)



Source: Bloomberg as of November 2021. The MOVE Index is a yield curve weighted index of the normalized implied volatility on 1-month Treasury options. It is the weighted average of volatilities on the CT2, CT5, CT10, and CT30. (Weighted average of 1m2y, 1m5y, 1m10y and 1m30y Treasury implied vols with weights 0.2/0.2/0.4/0.2, respectively.) The VIX Index is a financial benchmark designed to be an up-to-the-minute market estimate of the expected volatility of the S&P 500® Index and is calculated by using the midpoint of real-time S&P 500 Index (SPX) option bid/ask quotes.

U.S. Treasuries have long been considered to be among the safest and most liquid assets in the world. However, the market structure has become increasingly rigid over the last decade. Regulations enacted in the wake of the Global Financial Crisis have decreased primary dealers' incentive to allocate balance sheet to Treasury securities (Figure 2). Even as Treasury bond issuance has ballooned, primary dealers have reduced their risk appetite in the asset class during times of stress.

FIGURE 2: PRIMARY DEALERS' FOOTPRINT IN TREASURIES HAS SIGNIFICANTLY LAGGED GROWTH IN PUBLICLY HELD DEBT



Source: PGIM Fixed Income and the U.S. Federal Reserve as of September 30, 2021. Outstanding debt excludes Fed holdings.

Primary dealers' aggregate balance sheet currently represents a relatively small portion (~$200 billion) of a Treasury market that has outstanding debt of nearly $18 trillion.[1] The following simplified scenarios show how the market should function under normal conditions and under strained capacity during periods of stress:

1. A normal functioning market: An owner of a Treasury bond contacts a primary dealer and asks for a bid on $1 billion market value of a specific Treasury security. The dealer buys the security, hedges the risk, and holds the bond on its balance sheet for a period before selling to a buyer at a higher price. On balance, the dealer's balance sheet size stays constant, and the resulting bid-ask spread becomes the dealer's compensation for expanding balance sheet usage and taking on the risks associated with holding the bond.
2. A market under stress: The owner contacts a primary dealer and asks for a bid on the same bond. The dealer buys and holds the security on the balance sheet but, given the market stress and investors' desire to raise liquidity, the dealer is soon asked by another customer to bid another $1 billion of the same security. The dealer's balance sheet grows with each trade as it fails to offload these securities, and primary dealers in general quickly find themselves reaching the limit of their risk tolerance. It shows how just $200 billion of net selling in the market - or 1% of Treasuries outstanding - could be enough to overwhelm the balance sheet capacity of primary dealers.

Scenario 2 is an overly simplified example of market conditions during the onset of the pandemic in March 2020, although the scale of the selling was significantly more sizable.[2] The volatility of the pandemic-related selloff was greatly exacerbated by dealers' inability to meaningfully increase balance sheet usage as Treasury investors aggressively sold bonds to raise liquidity.

Unlike March 2020, the recent selloff was triggered by abnormally elevated inflation data which challenged the propriety of extreme central bank accommodation. As potential rate hikes suddenly became priced in globally, investors rapidly sold bonds to unwind crowded steepening carry trades. Investors who typically use large amounts of leverage were stopped out of directional trades and dealers were once again reluctant and/or unable to absorb risk. The selloff in front-end rates became self-fulfilling as liquidations and stop-outs spread to other types of investors.

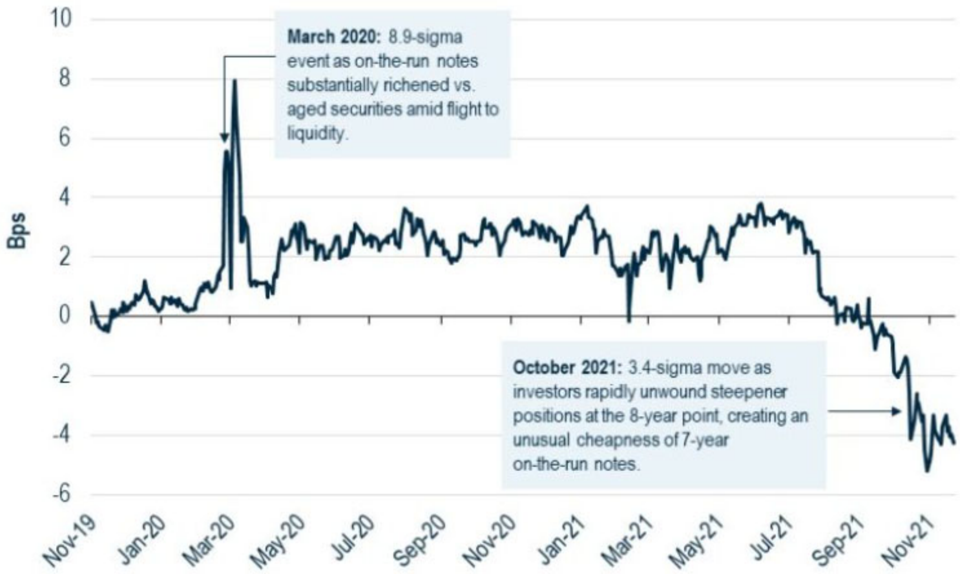
The forced unwinds of leveraged investors have created unprecedented dislocations in various parts of the Treasury market and resulted in attractive relative value opportunities, two of which we highlight below.

The Spectacular Richening of (Very) Old 10-year Bonds

The U.S. Treasury regularly issues new government bonds monthly or quarterly, depending on the maturity. In normal market conditions, investors have a defined preference for the most recently issued bonds, known as on-the-run securities. The premium investors are willing to pay for such securities relative to other bonds of similar maturity is known as the "liquidity premium." One way to measure the liquidity premium is to calculate the spread of the on-the-run security against an interest rate derivative and compare that to those of similar securities. Since on-the-run bonds tend to be more liquid and offer lower transaction costs, the liquidity premium normally rises and asset swap spreads widen during periods of stress. For example, in March 2020, the asset-swap spread between old off-the-run 10-year Treasuries issued in 2019 and on-the-run seven-year notes rapidly widened (Figure 3), creating an 8.9-sigma event.

In recent weeks, we have witnessed an unprecedented counter-reaction. Forced unwinds of leveraged positions have driven the asset swap spread to quickly compress, leading to a significant richening of off-the-run securities. We believe many macro funds were forced to purchase these eight-year notes - which were already trading rich - in order to cover short steepener positions, contributing to the relative-value anomaly in this localized segment of the curve. The extreme liquidity premium quickly reverted in March 2020, and we believe mean reversion will again prevail as the value of the off-the-run notes cheapens over time.

FIGURE 3: THE ANOMALY OF THE RICHENING IN OFF-THE-RUN EIGHT YEAR VS. ON-THE-RUN SEVEN YEAR



Source: PGIM Fixed Income and Bloomberg as of November 2021. Based on OIS spread between two-year aged 10-year and on-the-run seven year. Z-scores calculated using rolling three-day change with two-year time frame.

The Incredible Cheapening of 20-Year Bonds

Cross currents at the long end of the Treasury curve have also created sizable relative-value opportunities. Since its re-introduction in May 2020, the 20-year bond has traded poorly relative to similar maturities. One way to gauge the relative undervaluation of the 20-year bond is to compare it with Treasury futures of similar maturity. Recent disruptions in the market and large liquidations of the 20-year sector have further amplified the relative cheapness in the bond, creating a 4.4 standard-deviation move in late October that has yet to normalize (Figure 4).

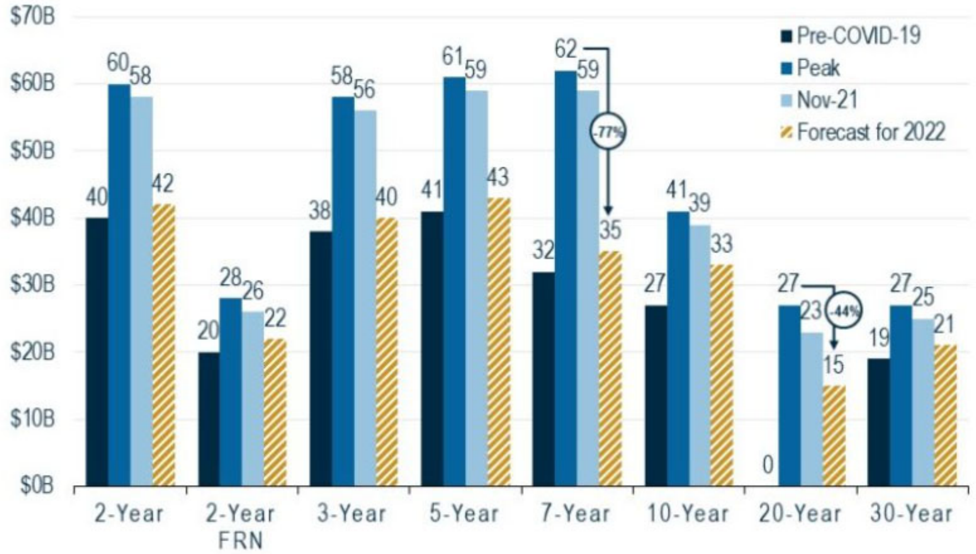
FIGURE 4: THE 20-YEAR BOND APPEARS OVERLY CHEAP AMID SLOWLY MATERIALIZING DEMAND

Source: PGIM Fixed Income and Bloomberg as of November 2021. Z-scores calculated using rolling three-day change with one-year time frame.

The U.S. government is acutely aware of the relative cheapness of the 20-year bond and has recently taken several steps to alleviate the supply-demand imbalance.

In 2020, to fund COVID-related fiscal stimulus, Treasury rapidly increased bond issuance and disproportionately increased supply in the 7- and 20-year sectors. The overwhelming supply outstripped demand and has led to the relative cheapness exhibited in those two securities since. Now, the rapid economic recovery alleviated Treasury's need to issue as much debt. Consequently, Treasury officials cut issuance across all maturities and disproportionately reduced supply in the 7- and 20-year sectors (Figure 5), and further signalled the potential for more reductions in the upcoming quarters.

FIGURE 5: SEVEN AND 20-YEAR ISSUANCE IN 2022 POISED TO SLIDE BY 77% AND 44% FROM THEIR RESPECTIVE PEAKS



Source: PGIM Fixed Income, U.S. Treasury Department as of November 2021. Forecasts made by PGIM FI.

Furthermore, the Federal Reserve, which has been buying Treasuries as part of its quantitative easing program, began to reduce the pace of purchases in November as the economy had largely recovered. The Fed announced that it would reduce purchases by $10 billion a month and, surprisingly, changed the composition of bonds it would buy. The buyback schedule released later demonstrated it would purchase fewer bonds in all maturities except the 20-year bucket. The Fed's continued sponsorship of the sector, combined with decreased supply, should alleviate the relative discount of the 20-year bond.

Finally, the Chicago Mercantile Exchange has also joined the effort to improve liquidity and recently unveiled prototypes for a potential futures contract tied to the 20-year bond. U.S. Treasury futures tend to be among the most liquid instrument in the world, and a potential 20-year contract would help enhance investor demand.

At a time when investors confront historically tight credit spreads and stretched equity valuation, rare relative value is left waiting to be captured in the U.S. Treasury market. The emergence of these market anomalies stems from the intermediation challenges faced by the U.S. Treasury market, but the normal relationships between these highly correlated bonds should stabilize with time, as they have in the past.

[1] Privately Held Marketable Debt (Excluding SOMA holdings)

[2] Recent Disruptions and Potential Reforms in the U.S. Treasury Market: A Staff Progress Report, November 8, 2021.

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