# Utilizing ETPs to Navigate Year-End Liquidity

December 2022

**Multi-decade highs in inflation have resulted in one of the most challenging market conditions during this century. With tighter global monetary policy leading to more restrictive financial conditions, we have seen record losses across major equity and fixed income markets amidst a sustained period of heightened volatility and tighter liquidity conditions.**

As we have seen in previous periods of stress, investors have become more vigilant to the changing liquidity conditions where risk transfer is of utmost priority. This year has been plagued by a sustained period of volatility where liquidity has been more difficult to source, particularly in the fixed income markets. Therefore, it is of no surprise that we have seen record volumes traded across the US-listed fixed income ETP market this year, with average daily volumes of approximately $25bn representing a 55% YoY increase,[1] as institutions look to the ETPs as underlying markets have made it difficult to implement tactical changes in portfolios. With the exception of March 2020, this year has seen the highest months of trading activity since the inception of FI ETFs in 2002. US-listed equity ETPs have also seen a double-digit YoY increase in trading activity, rising 35% YoY to $161bn in average daily volumes. The focus of this piece is to highlight a number of liquidity considerations for investors, and how equity and fixed income ETPs can play an important role in portfolios as we approach year-end.

## Key Conclusions:

**<u>Fixed Income ETP bid-ask spreads remain low relative to IG and HY bonds</u>**:
As bid-ask spreads have widened ~10bps in IG and HY bonds this year, the reference ETP has traded at a consistent 2-3bps spread. In spite of market volatility, seasonality, or other changing market conditions, we have seen ETP bid-ask spreads remain consistent, particularly relative to its underlying representative basket of bonds

**<u>Fixed Income cash bond volumes have fallen while Fixed Income ETP volumes remain steady</u>**:
Investment Grade ("IG") and high yield ("HY") TRACE volumes have shown a notable decline in volumes in 4Q in the period from 2018-2021, declining -11% and -15% on average, respectively. In contrast to that decline, ETP volumes as a percent of TRACE volumes increased in 4Q, increasing by 25% and 51%, respectively, as risk transfer was more difficult to achieve in the underlying bond market.

**<u>Equity liquidity has fallen across numerous data points while ETP liquidity remains robust</u>**:
Looking at Top of Book, spreads, and volumes across equity markets, equity liquidity has been challenged and may decline further heading into year-end. Against this backdrop, equity ETPs liquidity remains robust and serves as vehicles for accessing liquidity.

**<u>We utilize z-scores to help quantify the current liquidity conditions across markets</u>**:
We examine bond and equity market trading data to help quantify current liquidity conditions across markets. To do so, we take a z-score of four different data points to standardize the four data points. Z-scores are calculated by dividing the difference between the mean of the period and mean of the entire sample by the standard deviation of the sample.

[1] From the January to end-October period.



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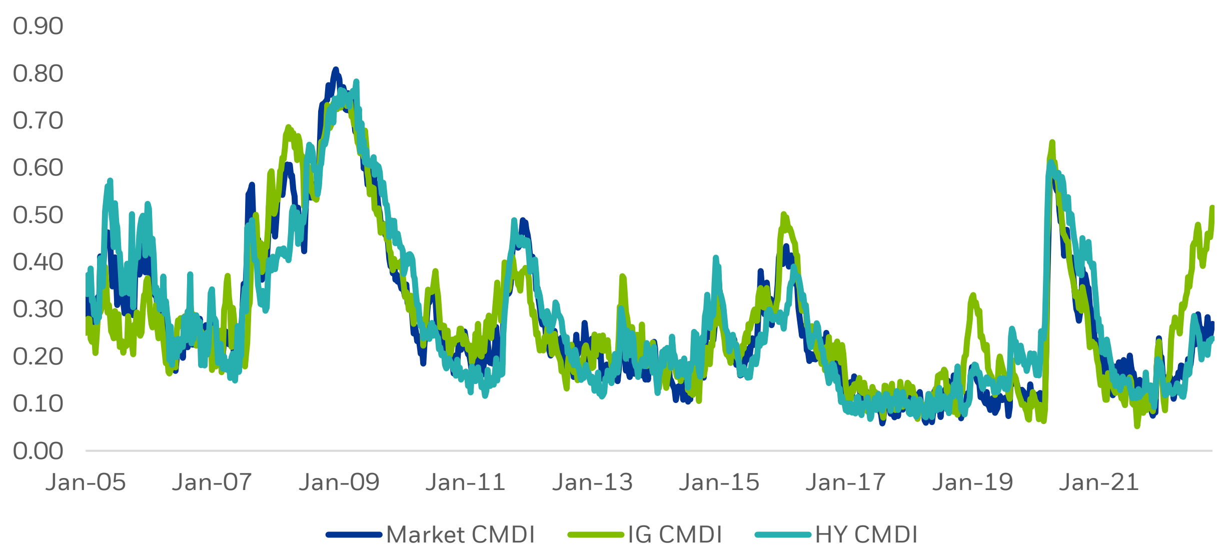
# I. Liquidity across fixed income markets tends to dissipate into year-end.

Rates markets globally have been the epicenter of the volatility that has permeated across all other asset classes this year. With 10yr US Treasuries experiencing the largest move in this century from 1.51% at the start of the year to 4.00% at the end of October, trading conditions have deteriorated across both credit markets and UST markets. We show the Fed's Corporate Bond Market Distress Index ("CMDI") as one indicator of this trend. This weekly index attempts to quantify dislocations in the primary and secondary corporate bond market. While current data indicates that corporate markets are functioning, with the overall market-level CMDI below its historical 65%-ile, market function, we have seen an upward trend in stress in the index, with more recent data points indicating a more strained in the IG segment of the market (see **Figure 1**).

**Figure 1**: Fed's Corporate Bond Market Distress Index

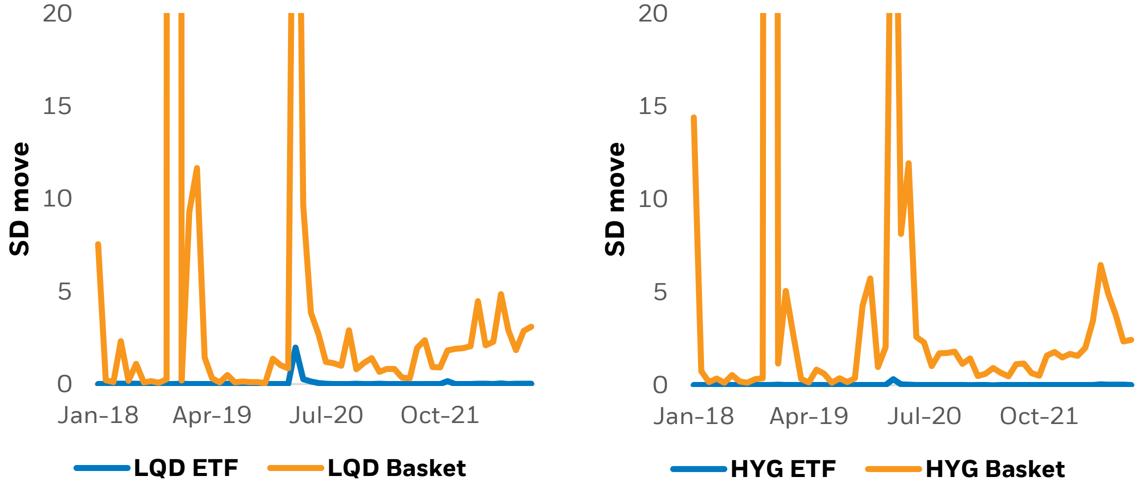



Source: Federal Reserve Bank of New York, as of 10.21.22

**Underlying bond spreads have gradually widened while Fixed Income ETP spreads remain robust**

This generally coincides with the data we have sourced in the underlying bond markets, as bid-ask spreads have gradually widened throughout the year (see **Figures 2 and 3**). During these periods of higher volatility and lower liquidity, bid-ask spreads not only will widen, but we also see a divergence between the widening in the underlying basket of bonds vs. the relevant ETP. The standard deviation of spreads across fixed income ETPs and underlying cash bonds highlights this relationship, as indicated by the 20+ standard deviation move seen in IG and HY bonds during March 2020, while the spread of the ETF remained fairly constant with little deviation (see **Figure 2**). Using LQD and HYG as proxies for the most liquid subset of the IG and HY market, the past four years shows the variability of spreads for the underlying spreads of a similar basket of cash bonds relative to the consistency of the ETP spreads.

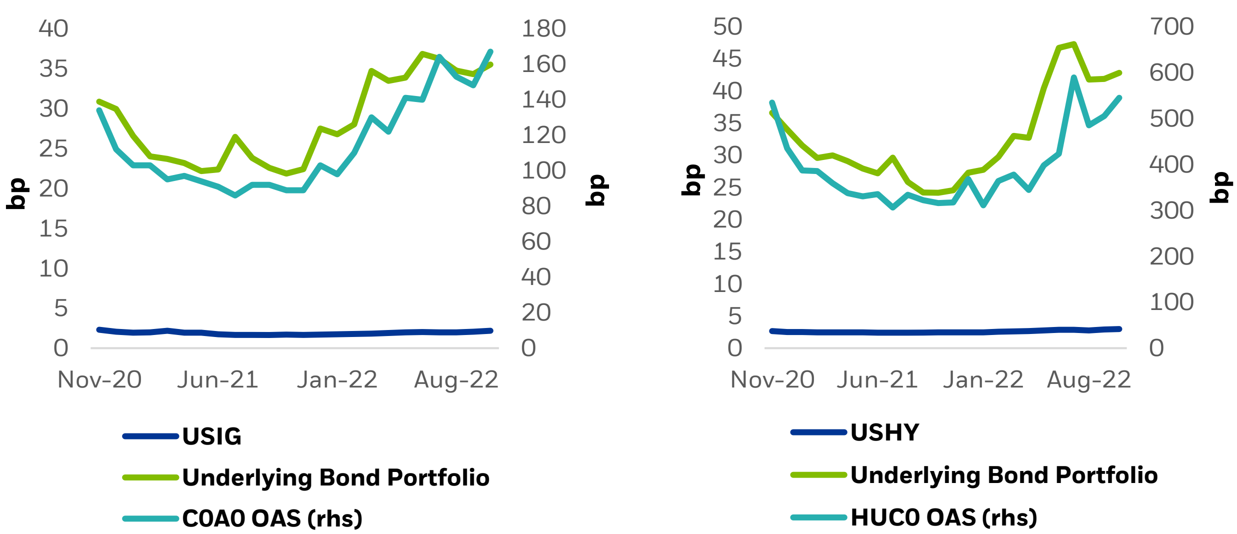
**Figure 2**: The standard deviation of ETF spreads versus representative portfolio of bonds




Source: BlackRock, Bloomberg as of 10.31.2022

In spite of market volatility, seasonality, or other changing market conditions, we have seen ETP bid-ask spreads remain consistent, particularly relative to its underlying representative basket of bonds. Even when looking at a broader subset of the IG and HY universe (see **Figure 3**), the bid-ask spread in USIG or USHY, remain stable while the underlying basket has moved in sync with the move higher in the index OAS.

**Figure 3**: Divergence in bid-ask spreads between the ETP and its underlying basket of bonds as OAS rises



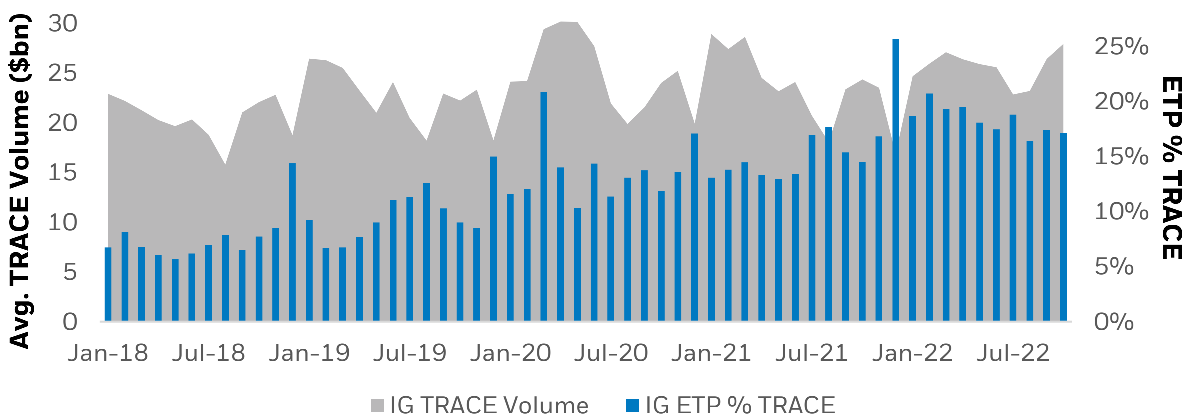

Source: BlackRock, Bloomberg as of 10.31.2022

**Underlying bond volumes have fallen while Fixed Income ETP volumes remain robust**
Due to the consistency in the bid-ask spreads of ETPs, secondary trading volumes generally rise during periods of illiquidity, whether due to market stress or seasonal illiquidity. Focusing on the seasonal impacts to liquidity across fixed income, fixed income ETP[2] volumes as a % of TRACE have surged heading into year-end as underlying cash bond volumes decline (see **Figure 4**).

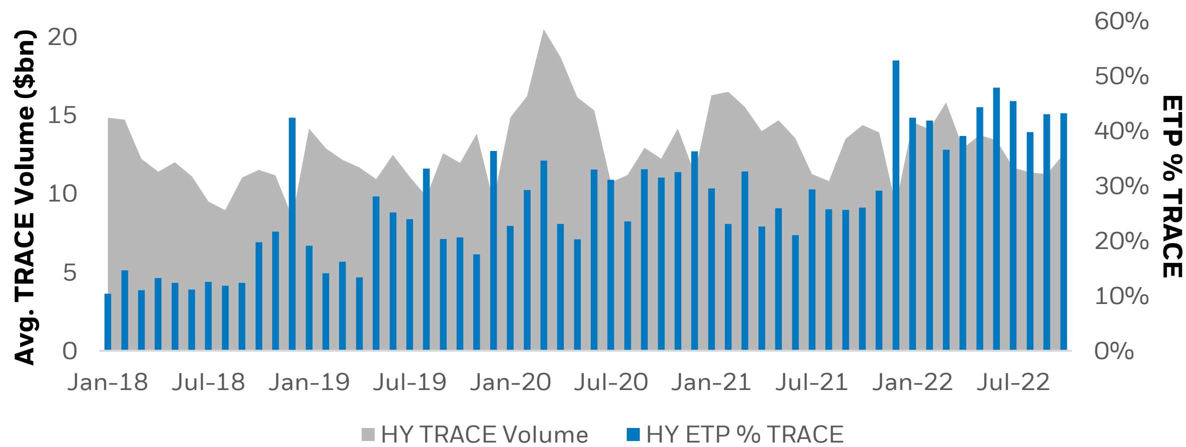
Investment Grade ("IG") and high yield ("HY") TRACE volumes have shown a notable decline in volumes in 4Q in the period from 2018-2021, declining -11% and -15% on average, respectively. In contrast to that decline, ETP volumes as a percent of TRACE volumes increased in 4Q, increasing by 25% and 51%, respectively, as risk transfer was more difficult to achieve in the underlying bond market.

This year specifically, fixed income ETPs as a % of TRACE has been elevated across IG and HY throughout the year as new issuance has slowed and broad liquidity has tapered.

**Figure 4**: Seasonality impact of TRACE Volumes relative to FI ETP volumes




Source: BlackRock, Bloomberg as of 10.31.2022




Source: BlackRock, Bloomberg as of 10.31.2022

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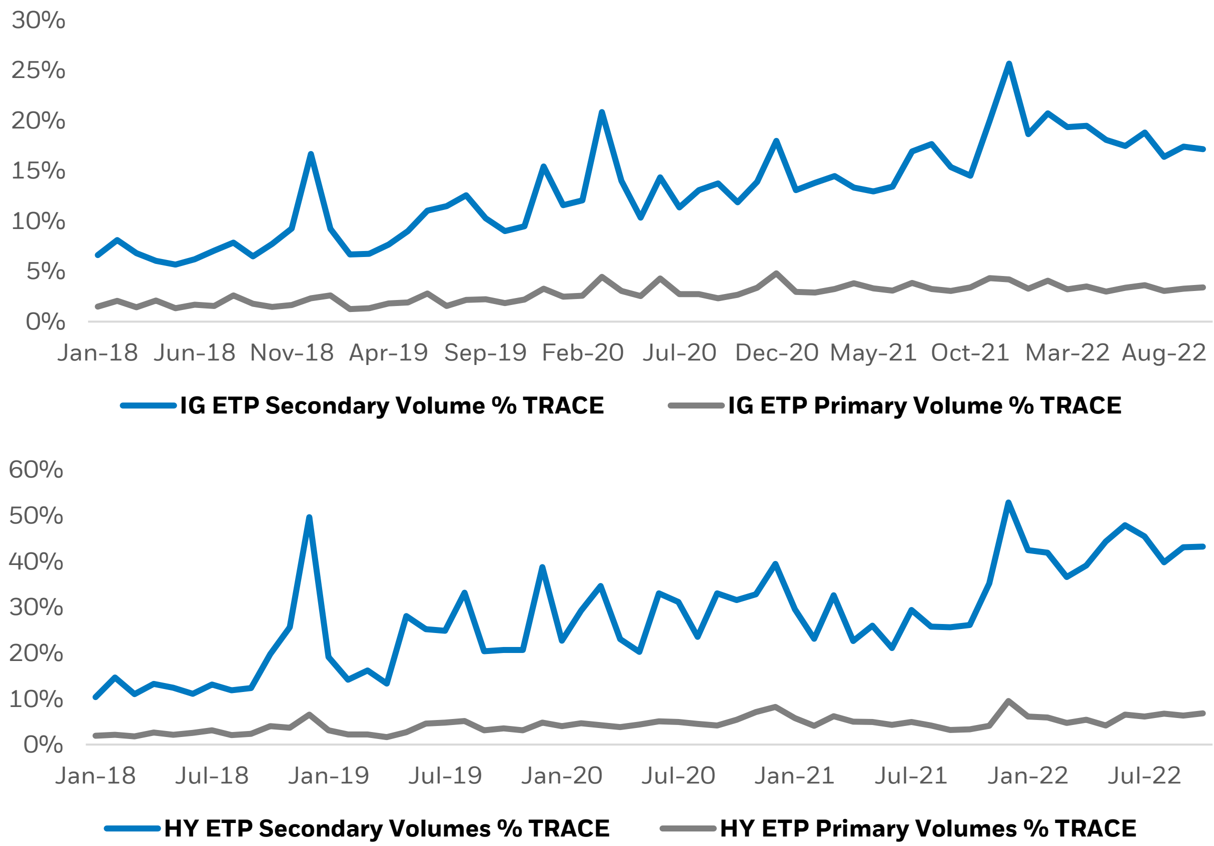
[2] Asset class definitions as defined by Markit

The secondary market layer of liquidity assists in handling the elevated activity in ETPs heading into year-end. Year-to-date, IG and HY ETP[3] secondary market volumes are 7x larger than primary market flows in IG and 9x larger than primary market flows in HY, highlighting the ETPs ability to sustain elevated volumes before triggering the primary market process (see **Figure 5**).

**Figure 5**: Credit ETP primary and secondary market activity




Source: Markit and Bloomberg as of 10.31.22

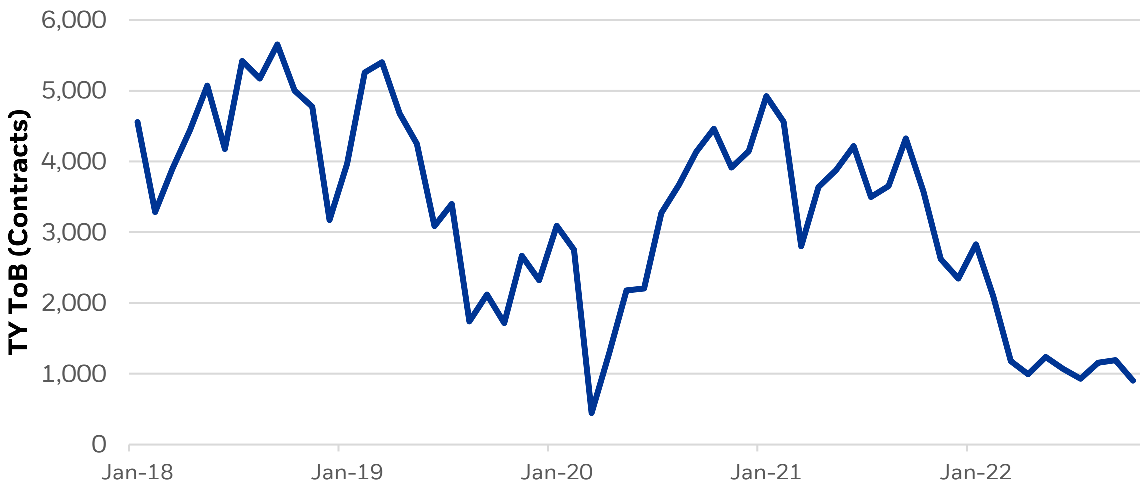
[3] Asset class definitions as defined by Markit

## Treasury Market Liquidity Has Worsened in 2022

US Treasury markets, in both cash and futures, have experienced a decline in liquidity this year, as evidenced by the drop in the size of top of book orders for the TY contract, looming near 2020 levels. As we have seen in corporate markets, US Treasury ETPs have also seen an increase in trading volumes vis-à-vis underlying UST volumes. As of end-October 2022, ***US Treasury couponed ETP volumes rose +26.6% YoY.*** This stands ***in contrast to a -3.6% decline in underlying US coupon*** security Treasury volumes in the same period (Source: SIFMA, Bloomberg).

The increase in secondary volumes have coincided with the growth in US Treasury ETP AUM, which has seen a record 79% inflow this year, growing to $253bn of AUM.[4]

**Figure 6**: TY Treasury future top of book liquidity




Source: Bloomberg as of 10.26.22

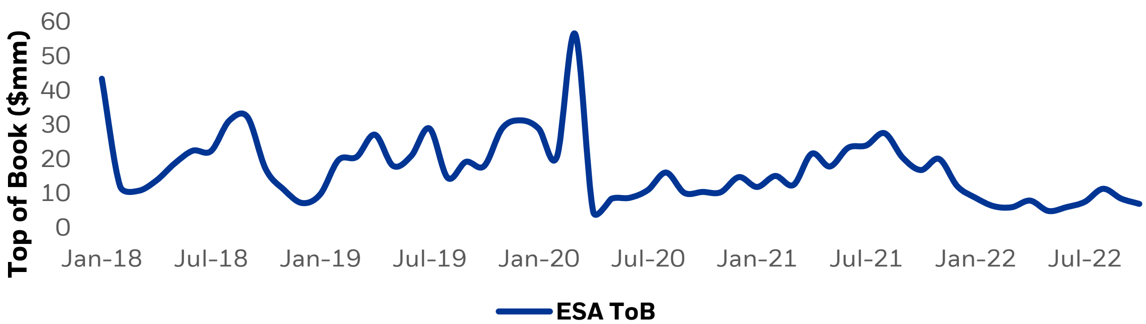
[4] Source: Blackrock, Bloomberg, as of November 9, 2022

## II. Equity market liquidity is challenged in 2022 and may decrease further into year end.

**<u>Top of Book Liquidity has started to decline, similar to historical trends</u>**

Similar to what we have observed in Fixed Income, the increase in volatility in 2022 within Equity markets has been paired with some marked decreases in certain liquidity metrics. S&P e-mini futures top of book, a measure that market participants often use to assess depth of market liquidity, have dropped to four-year lows in 2022. Further, relative to 2021, e-mini top of book has fallen by 59%, on average, year-to-date. (see **Figure 7**). Volumes in this contract have historically fallen in the $4^{th}$ quarter on average, and indeed thus far 4Q top of book levels have *already* fallen 6% versus the Q1-Q3 2022 averages.

**Figure 7**: S&P 500 e-mini future top of book liquidity

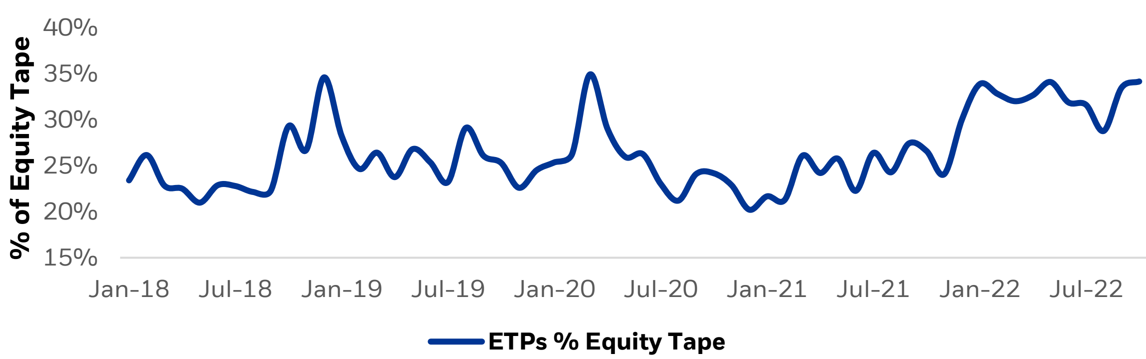



Source: BlackRock, Refinitiv as of 10.31.22

**<u>ETPs as a % of Equities YTD has surpassed 5-year averages</u>**

In times of market stress, investors have regularly turned to ETPs for use as liquidity vehicles to help manage risk in a myriad of ways. And in these periods of volatility, we have tended to observe large increases in the size of ETP trading volumes as a percent of the broader equity market. For this reason, ETPs as a % of the equity tape can serve as a signal for general market conditions. This relationship was exhibited heading into year-end of 2018 and also in March of 2020. Perhaps not surprising given this year's volatility, total ETP volumes as a percent of the equity tape has averaged 32% this far this year, far above the 5-year average of 26%. (see **Figure 8**).

**Figure 8**: ETPs % of the equity tape

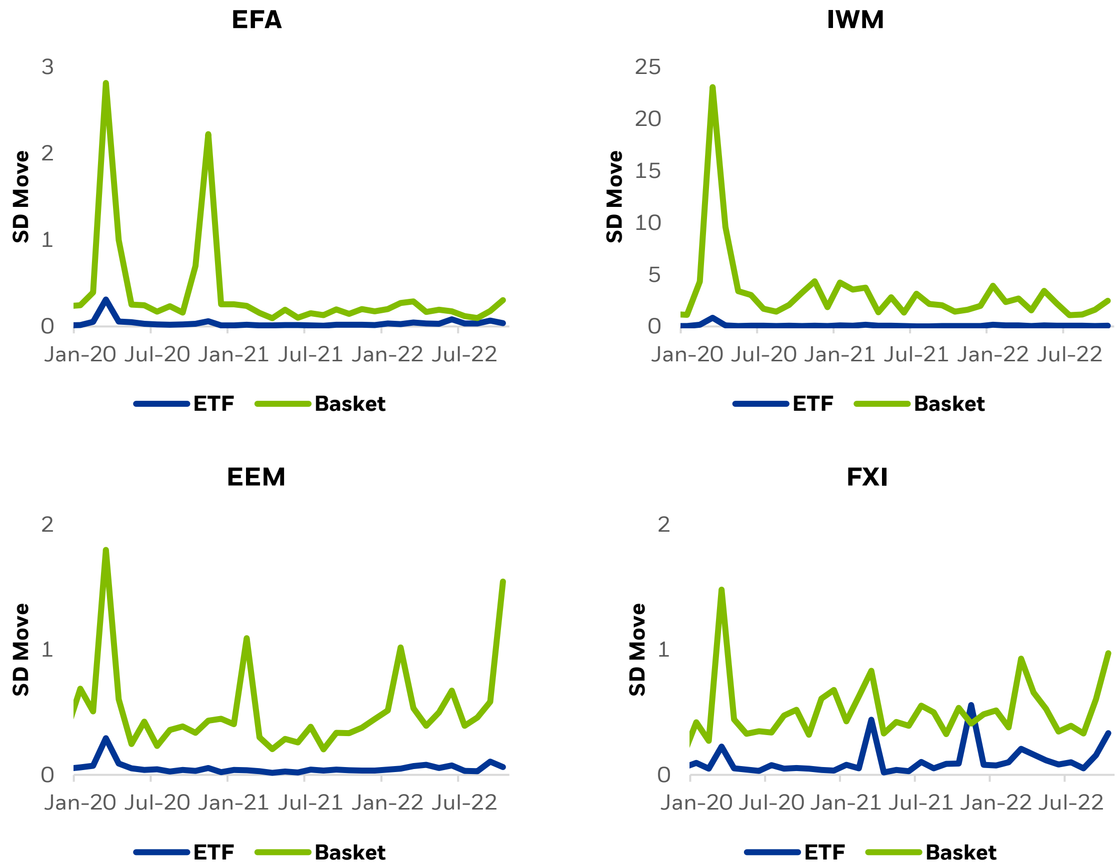



Source: BlackRock, Bloomberg as of 10.31.22

**ETF bid-ask spreads exhibit lower variability versus the underlying basket of stocks**

The relationship between bid-ask spreads of an ETF and its underlying basket of securities can diverge during periods of elevated stress in the market, with those of the ETFs typically remaining tighter relative to those of their respective underlying baskets. To display this relationship, we look at four equity ETFs (EFA, IWM, EEM, and FXI) which cover a range of funds with broad and targeted exposures to highlight the consistency of the ETF's spreads (see **Figure 9**).

**Figure 9:** The standard deviation of ETF spreads versus representative portfolio of stocks (bps)




Source: BlackRock, Bloomberg, Markit as of 10.31.22

An analysis of the standard deviations of spreads shows a lower variability for these ETFs versus their underlying basket of stocks. This is especially apparent during March 2020, when market stress contributed to widening basket spreads across all four funds. Idiosyncratic risks have impacted the individual fund's since then, but in the second half of 2022, this metric is moving higher across all four funds. The inconsistency of underlying spreads at the basket level heading into year-end 2022 will be something to monitor when assessing liquidity conditions and may reinforce the important role ETPs can play.

# III. Liquidity Scoring Monitor

We examine bond and equity market trading data to help quantify current liquidity conditions across markets. In order to standardize the data, we take a z-score of three different data points across equities and fixed income (Please see our methodology and sourcing in the appendix).

Current z-scores, based on year-to-date trading volumes, indicate a degradation of liquidity in the S&P E-mini futures market, while liquidity conditions remain fairly benign in US IG and HY markets, relative to trading volumes seen in the first three quarters of the year. Given the elevated volumes seen in FI ETPs this year, perhaps this statistic is less surprising given the recent reprieve seen in volatility.

Current data may indicate that equities are facing increasing seasonal liquidity pressures, while fixed income z-scores are mixed across the Treasury and credit space. As we move further into year-end, perhaps we will observe the further impacts of seasonal illiquidity across these asset classes.

We will monitor this data to provide real-time liquidity conditions for investors, particularly during periods of market stress and challenged liquidity.

We explain the underlying data per market below:

- **S&P e-mini futures top of book Z-score** – The z-score of the S&P e-mini futures top of book for the current quarter relative to the current year. Lower z-scores highlight a degradation of futures liquidity.
- **Treasury futures top of book Z-score** – The z-score of the Treasury TY futures contract top of book for the current quarter relative to the current year. Lower z-scores highlight a degradation of futures liquidity.
- **TRACE volume Z-score –** Total TRACE volumes, the addition of IG and HY corporate bonds volumes, gives insights into the current state of credit cash bond volumes. Lower z-scores indicate lower liquidity across cash bonds.


For illustrative purposes only

# IV. Conclusion

The pervasive volatility across financial markets this year has once again reinforced the importance of liquidity in efficiently managing risk. As conditions potentially become even more challenged due to Q4 seasonality, we highlight the consistency in both equity and fixed income ETPs to provide liquidity under both volatile and less volatile market periods. Finally, we will refer back to our Liquidity Z-Score Dashboard to alert any further deteriorations to liquidity into year- end.

# V. Appendix

**Z-Score Methodology:**

A z-score, also known as a standard score, is a numerical measurement that describes a values relationship to the mean of a group of values. The score is measured in terms of standard deviations from the mean. Therefore, a score of 0 indicates that a point is identical to the mean score of a set of data.[5]

To calculate a z-score:

$$Z\ score = \frac{Observed\ Value - Mean\ of\ Sample}{Standard\ Deviation\ of\ Sample}$$

In our calculations,
- Observed Value = mean of the current month
- Sample = current year

We calculate three z-scores using three different data points:

- **S&P e-mini z-score**

$$Z\ score = \frac{Current\ Monthly\ Avg\ S\&P\ emini\ ToB - Current\ Year\ Avg\ S\&P\ emini\ ToB}{Standard\ Deviation\ of\ Current\ Year\ S\&P\ emini\ ToB}$$

S&P e-mini Top of Book (ToB) sourced from Aladdin, TRACE, and Refinitiv as of 10/31/2022

- **Treasury Futures Top of Book (ToB)**

$$Z\ score = \frac{Current\ Monthly\ Avg\ Treasury\ ToB - Current\ Year\ Avg\ Treasury\ ToB}{Standard\ Deviation\ of\ Current\ Year\ Treasury\ ToB}$$

Treasury Futures Top of Book (ToB) sourced from Bloomberg as of 10/26/2022

- **TRACE Volumes**

$$Z\ score = \frac{Current\ Monthly\ Avg\ TRACE\ Volumes - Current\ Year\ Avg\ TRACE\ Volumes}{Standard\ Deviation\ of\ Current\ Year\ TRACE\ Volumes}$$

TRACE Volumes sourced from Bloomberg as of 10/31/2022

Interpreting a z-score:
- A z-score of 1 indicates that the observed value is a one-standard deviation above the mean of the sample.
- A z-score of 0 indicates that the observed value is a equivalent to the mean of the sample.
- A z-score of -1 indicates that the observed value is a one-standard deviation below the mean of the sample.

[5] Definition source: Investopedia

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## iShares Fixed Income Strategy

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