

# Income in Indexing: How the iBoxx Liquidity Ecosystem Lends Well to Credit Markets

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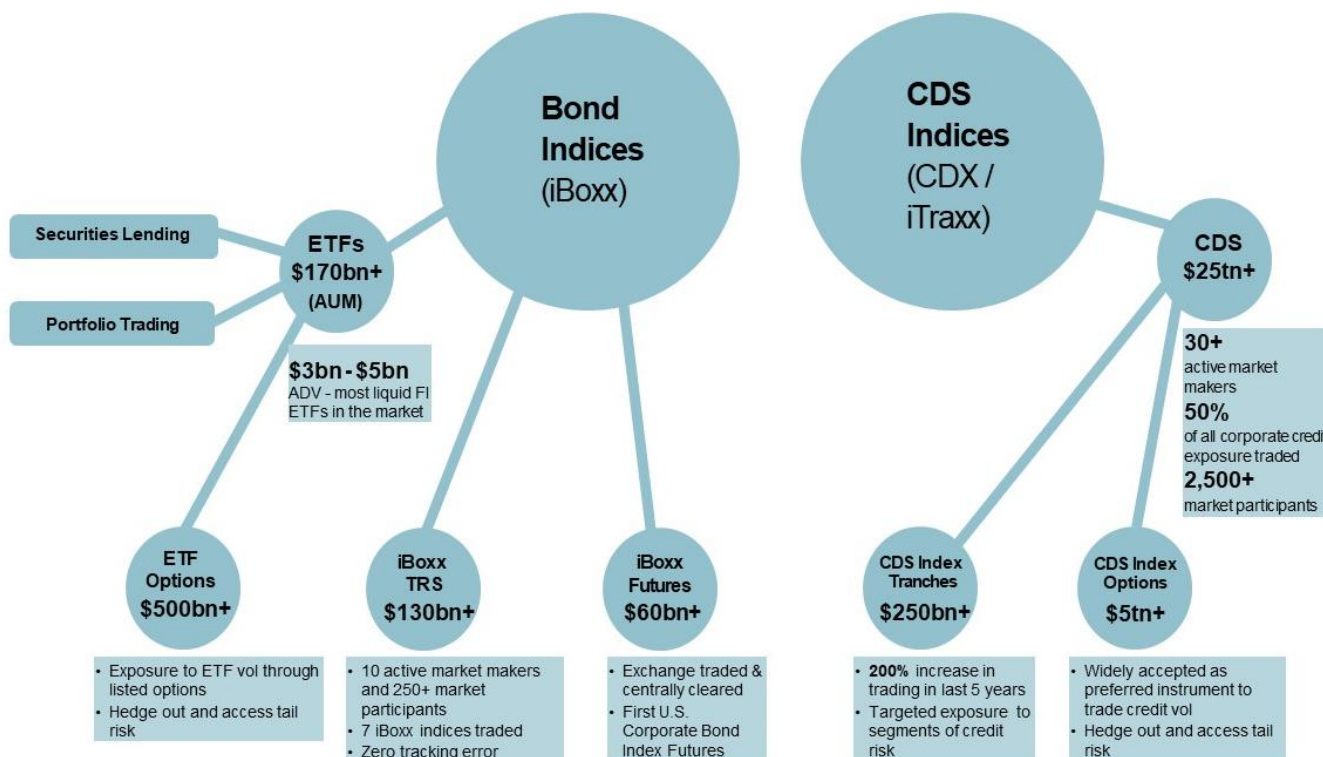
## Part 2: Derivatives and Lending Markets

The iBoxx USD Liquid High Yield Index has served as the leading benchmark for the high yield market since its debut in 2006. Designed to track the most liquid instruments in the high yield market, the index supports a broad trading ecosystem via ETFs and derivatives. In Part 1, “[Income in Indexing: How the iBoxx Liquidity Ecosystem Impacts Credit Markets](#),” we highlighted the growth of the high yield bond market and the index construction attributes that contribute to the iBoxx USD Liquid High Yield Index liquidity ecosystem. We measured the effectiveness of the index methodology in current markets through bond liquidity analysis. In Part 2 of this paper, we continue to analyze liquidity in different forms by exploring the fund, derivative and securities lending markets that propagate liquidity in various forms.

## The iBoxx Liquidity Ecosystem

The iBoxx indices act as a central hub to a diverse and active tradable ecosystem, spanning active funds, ETFs, total return swaps and futures. Other instrument types, such as credit default swap indices, are complemented by the iBoxx ecosystem, which has also expanded to include ETF options, securities lending and portfolio trading as derivatives tracking the index have become more liquid.

### Exhibit 1: iBoxx Ecosystem of Liquid Fixed Income Instruments



Source: S&P Dow Jones Indices, fund analysis: FactSet Company/Security Analysis Tool, trade volume analysis: DTCC (<https://www.dtcc.com/repository-otc-data>), futures volume analysis: Cboe Global Markets. ([https://www.cboe.com/us/futures/market\\_statistics/historical\\_data/](https://www.cboe.com/us/futures/market_statistics/historical_data/)). Chart is provided for illustrative purposes. Volumes stated are estimates.

ETFs have been used to access high yield markets since the first ETF tracking the iBoxx USD Liquid High Yield Index launched in 2007. Beyond ETFs, total return swaps on the iBoxx USD Liquid High Yield Index are often used to express short positions, or to hedge a long position. In 2021, iBoxx Standardized Total Return Swaps and futures volumes linked to the iBoxx USD Liquid High Yield Index were USD 57.3 billion and USD 40.6 billion, respectively. Given the USD 21.4 billion in ETF AUM tracking the iBoxx USD Liquid High Yield Index at year-end 2021, derivative trading volume (iBoxx TRS and iBoxx Futures)-to-ETF AUM was 4.6x.<sup>1</sup> Lastly, holders of funds tracking the iBoxx USD Liquid High Yield Index are seeing increased demand for their shares in the securities lending market.

<sup>1</sup> Source: S&P Dow Jones Indices, fund analysis: FactSet Company/Security Analysis Tool, trade volume analysis: DTCC (<https://www.dtcc.com/repository-otc-data>), futures volume analysis: Cboe Global Markets ([https://www.cboe.com/us/futures/market\\_statistics/historical\\_data/](https://www.cboe.com/us/futures/market_statistics/historical_data/)). Volumes stated are estimates.

# Contributions of ETFs and Derivatives to the Liquidity Ecosystem

Recent data confirms the iBoxx USD Liquid High Yield Index underlies the most heavily traded corporate high yield ETF. ETF AUM linked to the iBoxx USD Liquid High Yield Index was USD 21.4 billion as of Dec. 31, 2022. The next two largest USD high yield ETFs had USD 9.6 billion and USD 8.9 billion in AUM, respectively. The average daily trading volume (ADTV) in ETFs linked to the iBoxx USD Liquid High Yield Index was USD 2.3 billion in the month of August 2022, versus USD 900.7 million in ADTV for the second most heavily traded U.S. high yield ETF. The mean ADTV of the five largest USD high yield ETFs excluding ETFs tracking the iBoxx USD Liquid High Yield Index was USD 291.0 million, revealing that the daily trading volume in ETF shares linked to the iBoxx USD Liquid High Yield Index was around 8 times that of the largest USD high yield ETFs.<sup>2</sup> This is the same index that underlies the liquidity of the standardized iBoxx Total Return Swaps and futures contracts.

In addition to the USD 21.4 billion of ETF AUM tracking the iBoxx USD Liquid High Yield Index, Standardized iBoxx Total Return Swaps traded on the same index amounted to USD 20 billion in Q1 2022 alone. The first ever high yield index bond futures contract is also linked to the index and traded USD 10 billion in Q1 2022.<sup>3</sup> When viewed together, the result is an evolving ecosystem of tradable instruments that reference the iBoxx USD Liquid High Yield Index, where investors can choose from different instruments with unique trading features and can trade on a funded or unfunded basis.

## Measuring Index Liquidity through Securities Lending

The securities finance market functions to match holders of bonds with those who wish to borrow (or “go short”). As the fixed income ETF market has evolved, a securities lending market has also grown around fixed income ETFs. S&P Global Market Intelligence Securities Finance and Prime Services (SFPS) tracks over USD 9 trillion in fixed income securities, offering trade transparency and reporting lending yields (or cost to borrow) for stocks, bonds and ETFs. In addition to the bond pricing used to calculate the iBoxx Liquid Indices, S&P Global Market Intelligence’s Liquidity Navigator also tracks securities lending market activity. In part 1 of this paper, we differentiated the iBoxx USD Liquid High Yield Indices from the iBoxx USD Developed Markets High Yield Index, which is a broad benchmark for the USD high yield

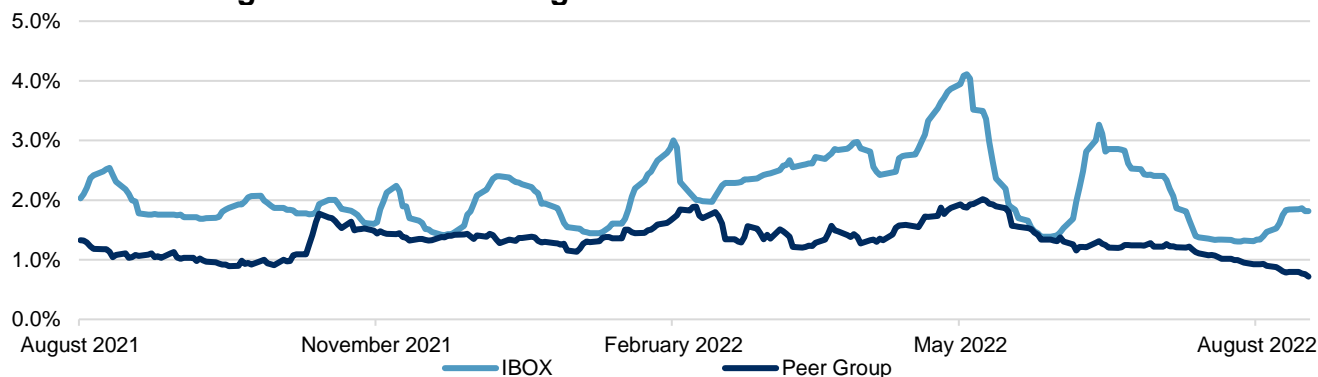
<sup>2</sup> Source: FactSet Company/Security Analysis Tool, S&P Global Securities Finance.

<sup>3</sup> Source: FactSet Company/Security Analysis Tool, DTCC (<https://www.dtcc.com/repository-otc-data>), Cboe Global Markets. ([https://www.cboe.com/us/futures/market\\_statistics/historical\\_data/](https://www.cboe.com/us/futures/market_statistics/historical_data/)).

market. On average, bid-offer spreads for bonds in the liquid index traded tighter than those only included in the broad high yield index, with that difference increasing from 7 bps to over 65 bps during times of volatility<sup>4</sup>. Securities lending rates from SFPS cover over 99% of the high yield market with 80% of the total value on loan from bonds in the iBoxx USD Liquid High Yield Index.<sup>5</sup> This metric helps quantify the depth of coverage in the securities lending market for bonds included in the liquid index. Next, we highlight how the ETF wrapper affects that metric, where it appears that the liquid index construction rules matter from a lending yield and breadth perspective.

Similar to tracking AUM growth of ETFs and notional volumes on total return swaps, activity within the securities lending market suggests growing interest in fixed income index-replicating funds. The securities lending market stakes collateral and may offer yields like bonds to institutions who hold the securities. The SFPS data show that an ETF tracking an index with construction measures designed to include the most liquid bonds might be sought after during times of volatility, particularly in the high yield market. According to SFPS, securities lending yields for ETFs tracking the iBoxx USD Liquid High Yield Index averaged 2% during June and July 2022, a period where the index fell 7.2% then rose 6.7%, respectively.<sup>6</sup> Comparable high yield ETFs with at least USD 1 billion in assets and over USD 100 million in actual lendable value (as defined by SFPS), offered securities lending yields with an average of 1.18% (see Exhibit 2). Given the relative yield advantage during periods of volatility, it appears index liquidity seems to matter, which leads us back to the index ecosystem.

## Exhibit 2: Average Securities Lending Fee for Institutions



Source: S&P Global Securities Finance. Data as of August 23, 2022. Chart is provided for illustrative purposes. IBOX represents the average lending yield for institutional holders of ETFs benchmarked to iBoxx USD Liquid High Yield Indices. Peer Group represents high yield ETFs with over USD 1 billion in AUM and over USD 100 million in Actual Lendable Value that are not benchmarked to iBoxx USD Liquid High Yield Indices.

<sup>4</sup> See Part 1, "[Income in Indexing: How the iBoxx Liquidity Ecosystem Impacts Credit Markets](#)." Time period observed from Dec. 31, 2021, to Aug. 31, 2022.

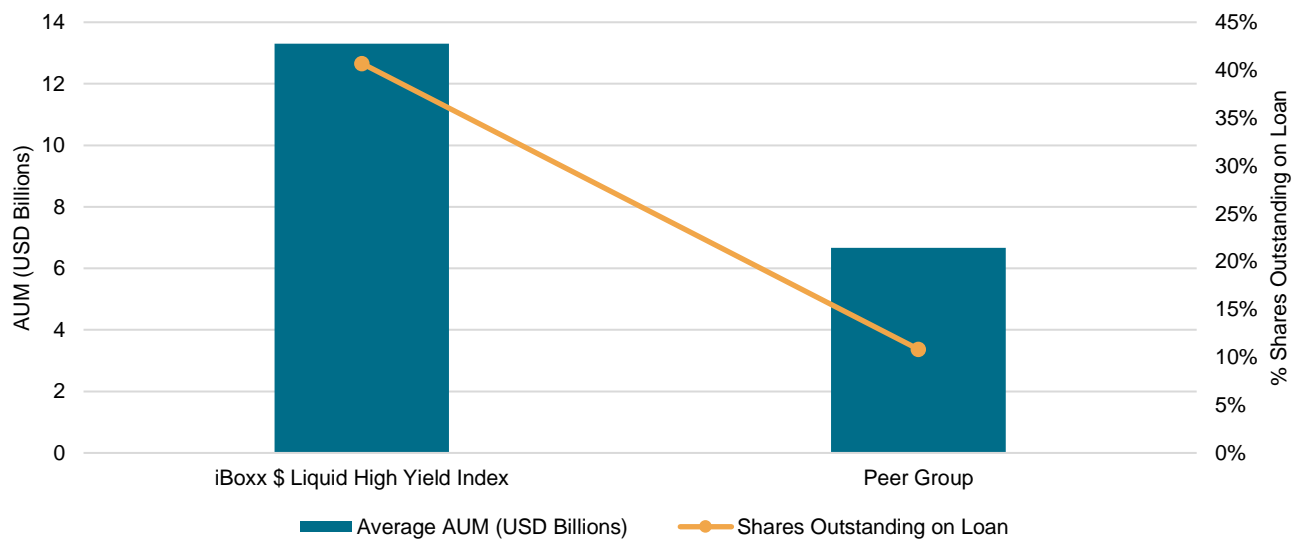
<sup>5</sup> Source: S&P Global Securities Finance Indicative Rates for ETFs tracking the iBoxx USD Liquid High Yield Index and subindices. Data reviewed for the month of May 2022. <https://ihsmarkit.com/products/securities-finance.html>

<sup>6</sup> Source: S&P Global Securities Finance Indicative Rates for ETFs tracking the iBoxx USD Liquid High Yield Index and subindices. Data reviewed for the month of May 2022. <https://ihsmarkit.com/products/securities-finance.html>

Like the robust tradable ecosystem linked to the iBoxx USD Liquid High Yield Index previously described, the ETF lending market linked to the iBoxx USD Liquid High Yield Index constitutes the most active USD high yield ETF lending market versus its peer group during August 2022. To define a suitable peer group, one can filter the USD high yield ETF universe to funds with AUM greater than USD 1 billion to include only the most liquid high yield ETFs, as well as filter for funds that track broad market benchmarks (no duration-constrained or thematic strategies) to focus on funds delivering USD high yield performance. The application of these filters (within the ETF universe tracked by SFPS) resulted in a list of four USD high yield ETFs, one of which tracks the iBoxx USD Liquid High Yield Index and three other ETFs that track comparable broad USD high yield market benchmarks. The peer group is defined as those three funds tracking comparable broad USD high yield market benchmarks to the iBoxx USD Liquid High Yield Index.

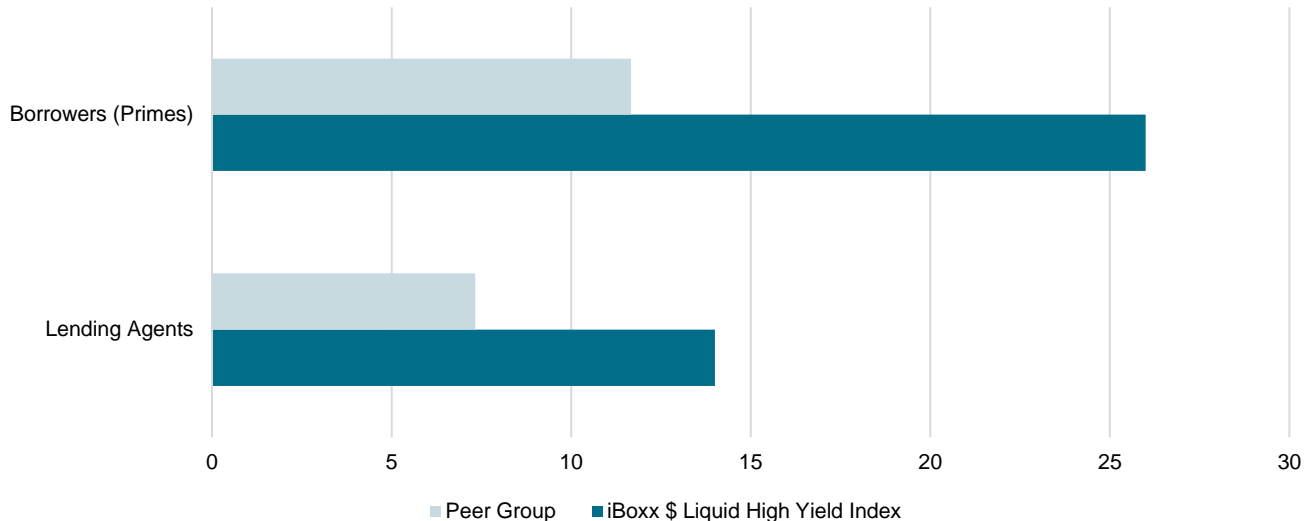
Focusing on the lending market, as of Aug. 30, 2022, the number of ETF shares outstanding on loan as a percentage of overall ETF shares outstanding linked to the iBoxx USD Liquid High Yield Index was 30.3%, compared with an average of 18.8% in the peer group (see Exhibit 3). According to SFPS data for May, within the lending markets, there were an average of 14 lending agents and 26 prime brokers in ETFs linked to the iBoxx index, versus an average of 7 and 12 lenders and borrowers, respectively, in ETF shares linked to the ETFs in the peer group (see Exhibit 4).

**Exhibit 3: Average AUM and Shares Outstanding**



Source: S&P Global Securities Finance. Data as of May 27, 2022. Chart is provided for illustrative purposes.

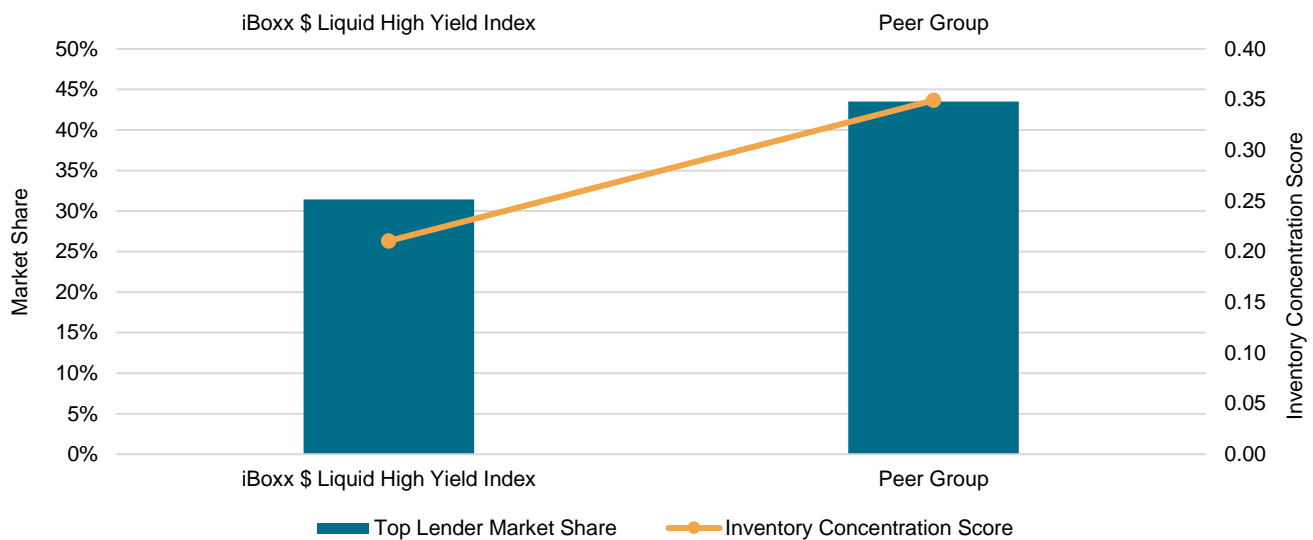
## Exhibit 4: Lenders and Borrowers



Source: S&P Global Securities Finance. Data as of May 27, 2022. Chart is provided for illustrative purposes.

SFPS separately examines Inventory Concentration Scores, which is a metric that provides a value between 0 and 1 to measure the distribution of inventory. A small number indicates a large number of lenders with low inventory, and a score of 1 indicates a single lender with all the inventory. A score of 0 means no inventory. In this context, a lower score indicates lending activity is diffuse across lenders in the market, whereas a score closer to one indicates there is likely one player supporting lending activity. The Inventory Concentration Score for ETFs linked to the iBoxx USD Liquid High Yield Index was 0.21, versus an average score of 0.35 for ETFs in the peer group.

We can then evaluate lending market concentration by examining the market share controlled by the single top lender in the ETF lending market. According to SFPS, the top lender of ETF shares linked to the index accounted for 31.4% of shares on loan, versus an average top lender market concentration of 43.5% for the ETFs comprising the peer group (see Exhibit 5). This indicates that ETFs linked to the peer group had nearly double the concentration in the single largest lending agent. This is important because less concentration in the lending market may indicate a more competitive marketplace.

**Exhibit 5: Market Share Controlled by Top Lender**

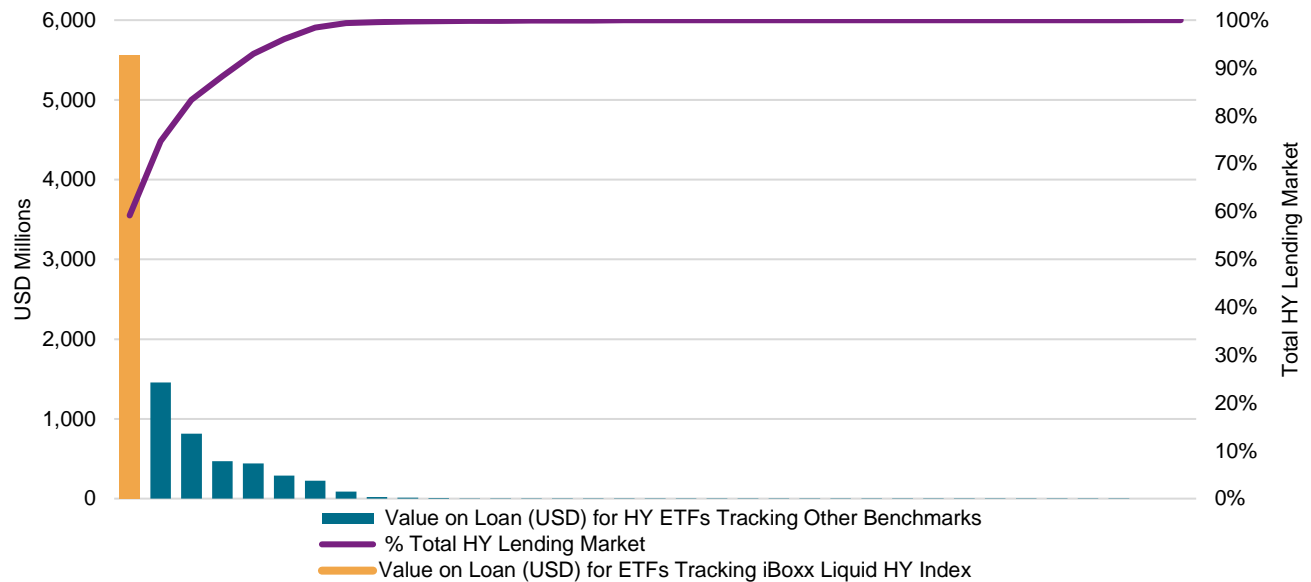
Source: S&P Global Securities Finance. Data as of May 27, 2022. Chart is provided for illustrative purposes.

The lower number of ETF shares outstanding on loan in the ETFs constituting the peer group, along with the peer group's higher concentration in the single top lending agent, the peer group's fewer number of lenders and higher average Inventory Concentration Score all indicate that the most robust lending market ecosystem among USD high yield ETFs exists in ETFs linked to the iBoxx USD Liquid High Yield Index, which offers the greatest depth of liquidity and participation.

So far we have focused on normalized statistics between ETF lending activity linked to the iBoxx USD Liquid High Yield Index versus activity in funds linked to comparable benchmarks that meet minimum liquidity criteria. We can also take a step back and evaluate nominal lending activity in ETFs linked to the iBoxx USD Liquid High Yield Index versus lending activity in other U.S. high yield ETFs, regardless of specific mandate.

Looking at the absolute dollar amount of shares on loan in June 2022 shows that the roughly USD 4 billion of ETF lending activity linked to the iBoxx USD Liquid High Yield Index accounts for 51.56% of the total U.S. high yield ETF lending market. The second-most-lent high yield U.S. ETF had roughly USD 1.1 billion on loan, which is 14.38% of the total U.S. high yield ETF lending market (see Exhibit 6). This effect may be due to the greater trading activity in funds linked to the iBoxx USD Liquid High Yield Index, which results in more liquidity on the lending side as well. These two sides of the market appear to be reinforcing each other.

## Exhibit 6: U.S. ETFs Tracking iBoxx Liquid High Yield Index



Source: S&P Global Securities Finance. Data as of Aug. 31, 2022. Chart is provided for illustrative purposes.

## Conclusion

Information is essential to achieving financial goals. As advocates of indexing, central to that view is access to quality benchmarks and measurement data over time. As bond markets evolve and the methods of accessing them create new opportunities, indices continue to provide transparent performance across markets. All healthy ecosystems rely on interconnected organisms with one keystone species interconnected to all. The iBoxx USD Liquid High Yield Index has served as the keystone to the growth of the high yield market for over 15 years. Starting as a benchmark for the first transparent liquid ETF and for derivative products, its impact is reflected in newer markets including futures, options and securities lending. A robust derivatives and lending market surrounds products linked to the iBoxx USD Liquid High Yield Index. Lending activity in ETFs linked to the index appears to reinforce the significant activity across the derivative markets linked to the index, such as standardized Total Return Swaps and futures. Lending activity marks the continued development of the high yield market functioning to better serve investors. The iBoxx USD Liquid High Yield Index and its ecosystem offer essential insight into that market.

For more information on the iBoxx USD Liquid High Yield Index, please see the complete methodology [here](#).



## Performance Disclosure/Back-Tested Data

The iBoxx USD High Yield Developed Markets was launched on May 31, 2018. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance. The back-test calculations are based on the same methodology that was in effect on the index Launch Date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. Complete index methodology details are available at [www.spglobal.com/spdji](http://www.spglobal.com/spdji). Past performance of the Index is not an indication of future results. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results. Please refer to the methodology for the Index for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations. Back-tested performance is for use with institutions only; not for use with retail investors.

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