Beyond Cash Bonds:
Redefining and Combining iBoxx® and CDX/iTraxx Indices

Introduction

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For fixed income market participants, higher yields and greater liquidity tend to be important. These objectives, however, typically involve trade-offs between each other. Each structure reallocates risk across credit, rates, funding, basis and liquidity dimensions rather than eliminating that risk.

As discussed in previously published research,[1] market participants have increasingly focused on liquidity, implementation efficiency and portfolio flexibility in a higher yield and more volatile environment. Credit derivatives have become an important component of that market infrastructure, supporting price discovery, risk transfer and portfolio management alongside cash bonds and exchange-traded funds (ETFs).

For market participants seeking scalable exposure and exchange-traded liquidity, fixed income ETFs may offer an access point to yield-oriented markets; for market participants seeking yield, private credit and illiquid segments may provide opportunities for additional income with a similar level of credit risk.

Market participants may also seek higher yields by extending further along the yield curve or by venturing into less liquid segments of the market. However, doing so carries an inherent trade-off in the form of greater duration exposure, heightened volatility or potential illiquidity risk.

[1] S&P Dow Jones Indices, "Powering Index Solutions for a Changing Fixed Income Landscape," September 2026.

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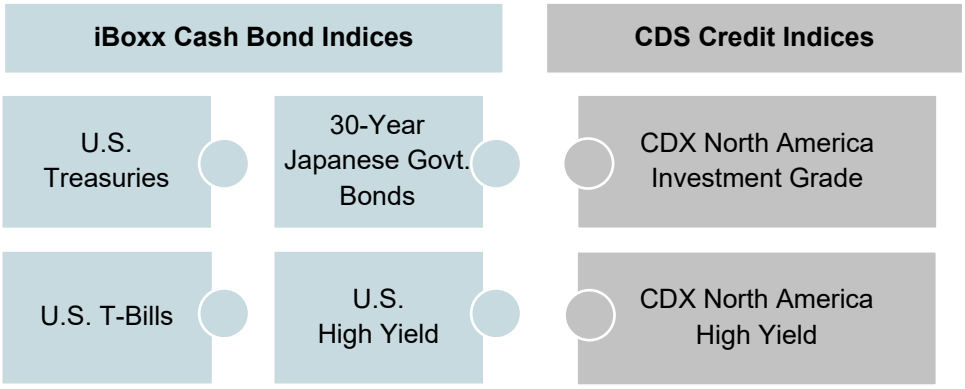
Cash income is market- and rate-cycle dependent rather than a uniform source of return. Where policy rates or deposit pass-through rates move lower, cash allocations may become less effective as an income source, increasing the potential relevance of short-duration implementations that retain liquidity while adding diversified credit risk premia.

However, there are approaches that seek to increase fixed income yield while maintaining liquidity characteristics and managing exposure to interest rate duration. Rather than viewing bonds as a single asset class, an alternative approach is to decompose them into core components. Tools such as iBoxx cash bond indices and CDX/iTraxx credit default swap (CDS) indices can be used to combine credit risk, duration and yield flexibly, supporting a range of strategies focusing on yield, synthetic income or the isolation of credit risk from traditional bond structures.

The iBoxx CDX ecosystem reflects these broader fixed income trends by providing transparent, rules-based benchmarks for measuring and accessing credit risk.

Consider the sample instruments in Exhibit 1 as modular toolkits that can be combined to unlock a range of possibilities.

Exhibit 1: iBoxx Cash Bond and CDS Credit Indices as Building Blocks



Source: S&P Dow Jones Indices LLC. Chart is provided for illustrative purposes.

The Liquidity Factor

Liquidity is a key consideration when viewing iBoxx bond indices alongside CDS indices such as CDX and iTraxx. iBoxx-linked instruments, including ETFs and standardized total return swaps, and CDX indices are among the most actively traded fixed income tools available today.[2] This depth may help in supporting scalable credit strategies with relatively low transaction costs, even in volatile markets. In 2025, U.S. high yield ETFs tracking the iBoxx

[2] S&P Dow Jones Indices, "2025 Fixed Income Index Products Report," Feb. 16, 2026.

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USD Liquid High Yield Index traded over USD 806 billion, while the CDX North America High Yield Index recorded USD 4.0 trillion in notional traded, both all-time highs.

This liquidity is also associated with lower execution costs. In 2025, U.S. high-yield ETFs had average bid-ask spreads of around 1.3 bps, compared with roughly 26 bps for the individual high yield bonds they tracked, while the CDX North America High Yield 5Y Long Excess Return Index swaps traded at around 2 bps. These cost differences may support implementation efficiency for market participants using index-based strategies.

Importantly, these instruments have also remained liquid during periods of stress historically. During the March 2020 liquidity squeeze, CDX and iTraxx swaps and ETFs linked to iBoxx benchmarks saw record trading volumes, providing liquidity and price discovery when trading in individual bonds became more difficult.[3]

Together, this means that iBoxx and CDX/iTraxx-linked instruments can serve as building blocks for credit strategies focused on liquidity, scalability and cost efficiency.

Potential Index Applications

This section illustrates a few potential applications using iBoxx and iTraxx/CDX indices as the building blocks of credit strategies.

Regular Tenor: U.S. Treasuries Combined with the CDX North America High Yield Index

For this scenario, U.S. Treasuries, represented by iBoxx USD Treasuries, are used as the rates component. The credit component is represented by the CDX North America High Yield 5Y Long Excess Return Index (CDX.NA.HY 5Y Long Excess Return Index). An excess return version is used to help avoid double counting the overnight risk-free rate, given that the rates element is already reflected by the Treasury component.

Exhibit 2: Components of Regular Tenor Concept

Component	Index	Yield/Conventional Spread (bps)	Duration (Years)
Rates	iBoxx USD Treasuries	545	5.77
Credit	CDX.NA.HY 5Y Long Excess Return Index	341	-

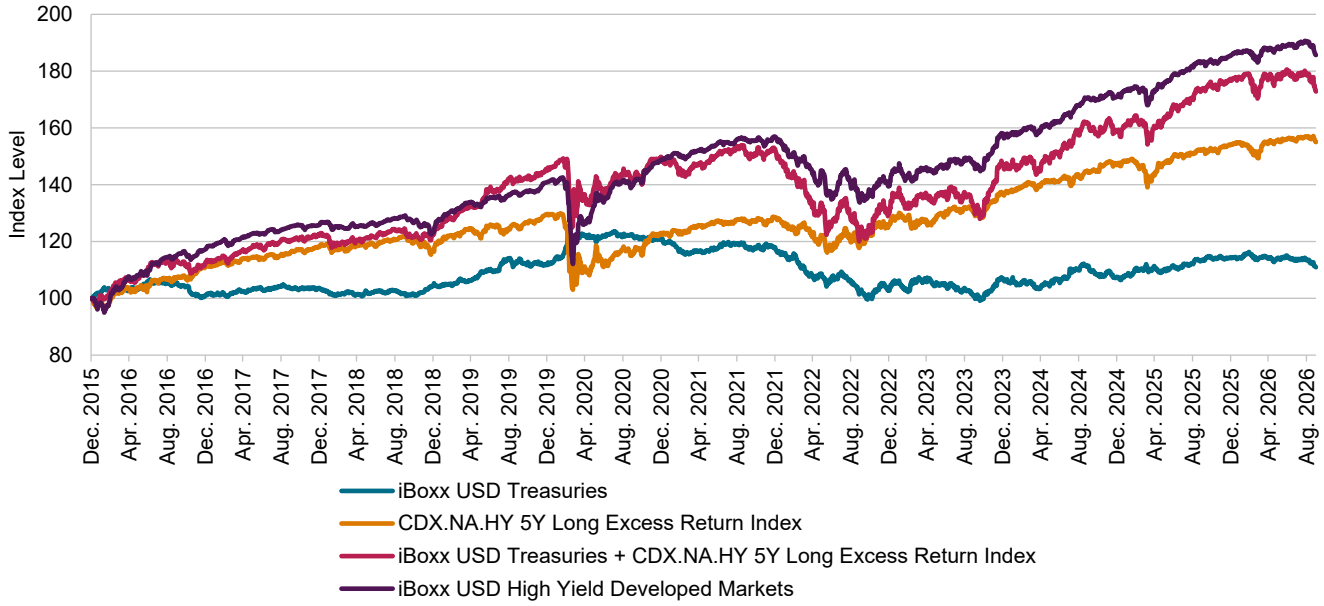
Source: S&P Dow Jones Indices LLC. S&P Global Market Intelligence. Data as of Sept. 30, 2026. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

[3] S&P Dow Jones Indices, "2025 Fixed Income Index Products Report," Feb. 16, 2026.

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While this example uses U.S. Treasuries as the rates building block, the same framework could be adapted to other rates markets, such as Japanese government bonds, U.K. gilts, euro government bonds or other sovereign bond segments, depending on the currency, duration and risk profile being considered.

Exhibit 3: Historical Performance of a Hypothetical U.S. Treasuries + CDX North America High Yield Index Combination



The iBoxx USD Treasuries + CDX.NA.HY 5Y Long Excess Return Index is a hypothetical composition.
Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 2015, to Sept. 30, 2026. Indices were rebased to 100 on Dec. 31, 2015. Overall index performance based on total return in USD. The iBoxx USD High Yield Developed Markets was launched on April 30, 2018. The iBoxx USD Treasuries was launched on June 28, 2005. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

A conventional U.S. high yield bond index, represented here by the iBoxx USD High Yield Developed Markets, is used as a comparator for the analysis. As shown in Exhibit 3, the hypothetical composition of the iBoxx USD Treasuries plus the CDX.NA.HY 5Y Long Excess Return Index had a back-tested performance profile that was broadly comparable to that of a traditional high yield bond index over the period shown.

A key distinction lies in how the strategy is constructed. The credit component is represented by the CDX North America High Yield Index, a standardized and highly liquid CDS index, while the duration aspect is primarily determined by the selected rates component—in this case, U.S. Treasuries. This structure allows market participants to separate credit and rates sensitivities more explicitly than in a conventional cash bond strategy.

In addition, because a CDS index can be implemented on an unfunded basis, the approach may reduce the need for transactions in individual bonds. This may help reduce turnover costs associated with cash bond portfolio management, such as replacing bonds as they mature or

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as new issues enter the market. While this construction could potentially provide a more operationally efficient means of tracking the broad credit market exposure, its performance profile may differ from that of a cash bond strategy portfolio under certain market conditions. For instance, differences can arise from the interaction between CDS and cash bond spreads, market liquidity dynamics and the CDS-bond basis, alongside implementation aspects such as collateral management, roll activity and credit event settlement. Accordingly, the strategy seeks to provide a diversified measurement of credit beta rather than targeted bond selection or liability-matching objectives.

This index concept illustrates how cash bond and CDS indices may be used as building blocks to create flexible high yield strategies. By pairing a transparent rates component with a liquid CDS-based credit component, the resulting performance profile may be similar to that of conventional high yield bonds (as seen in Exhibit 3), while allowing control over duration, supporting implementation that may involve less reliance on trading individual cash bonds.

Short-Dated Tenor: U.S. Treasury Bills with CDX North America Investment Grade

This next concept seeks to replicate short-dated exposure to U.S. Treasury Bills, as represented by iBoxx USD Treasury Bills 0-3 Months, with additional yield from U.S. investment grade credit accessed via the CDX North America Investment Grade 5Y Long Excess Return Index (CDX.NA.IG. 5Y Long Excess Return Index). As with the previous example, the underlying rates component could be substituted with other short-term rates markets—or even bank deposits—depending on the selected implementation, currency and risk profile.

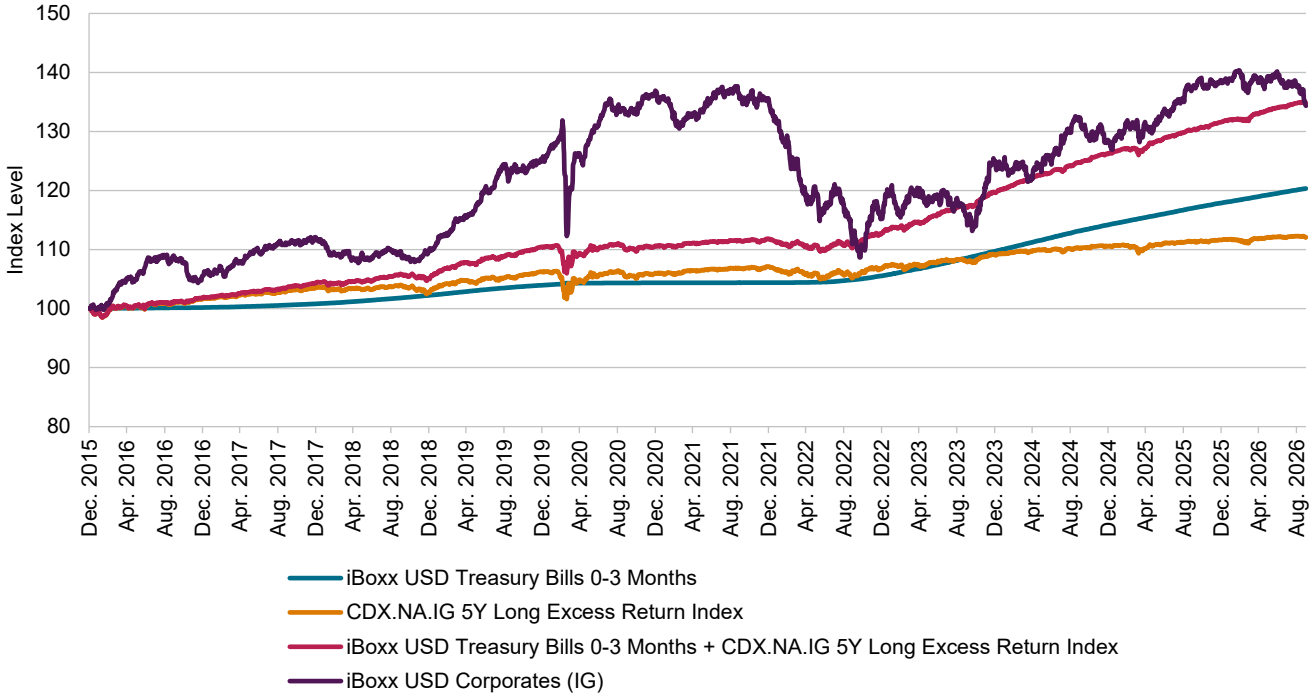
Exhibit 4: Components of a Short-Dated Treasury Bills with CDS Index Strategy

Component	Index	Yield/Conventional Spread (bps)	Duration (Years)
Rates	iBoxx USD Treasury Bills 0-3 Months	381	0.07
Credit	CDX.NA.IG 5Y Long Excess Return Index	60	-

Source: S&P Dow Jones Indices LLC. Data as of Sept. 30, 2026. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

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Exhibit 5: Historical Performance of a Hypothetical U.S. Treasury Bills + CDX North America Investment Grade Composition



iBoxx USD Treasury Bills 0-3 Months + CDX.NA.IG 5Y Long Excess Return Index is a hypothetical composition.
Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 2015, to Sept. 30, 2026. Indices were rebased to 100 on Dec. 31, 2015. Overall index performance based on total return in USD. The iBoxx USD Corporates was launched on June 28, 2005. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

As illustrated in Exhibit 4, this hypothetical construction measures U.S. investment grade credit while seeking to maintain a short-dated rates profile through U.S. Treasury Bills. Over the back-tested period, its performance was broadly aligned with the direction of a conventional U.S. corporate bond index, represented here by iBoxx USD Corporates, but with lower sensitivity to interest rate movements. Through the separation of the credit component from traditional bond duration, the approach may result in a less volatile performance profile and reduce sensitivity to duration-driven volatility, as seen in Exhibit 5.

A traditional corporate bond index typically reflects credit spread sensitivity and interest rate duration, meaning performance may be affected by movements in underlying government bond yields even if credit fundamentals remain stable. By contrast, pairing CDX investment grade with a short-dated Treasury Bill component may keep the rates sensitivity close to cash-like duration, while still reflecting the credit risk premium. This distinction is evident in Exhibit 5 during the 2020-2022 period, when duration-sensitive bond segments faced significant pressure from shifting rate expectations.

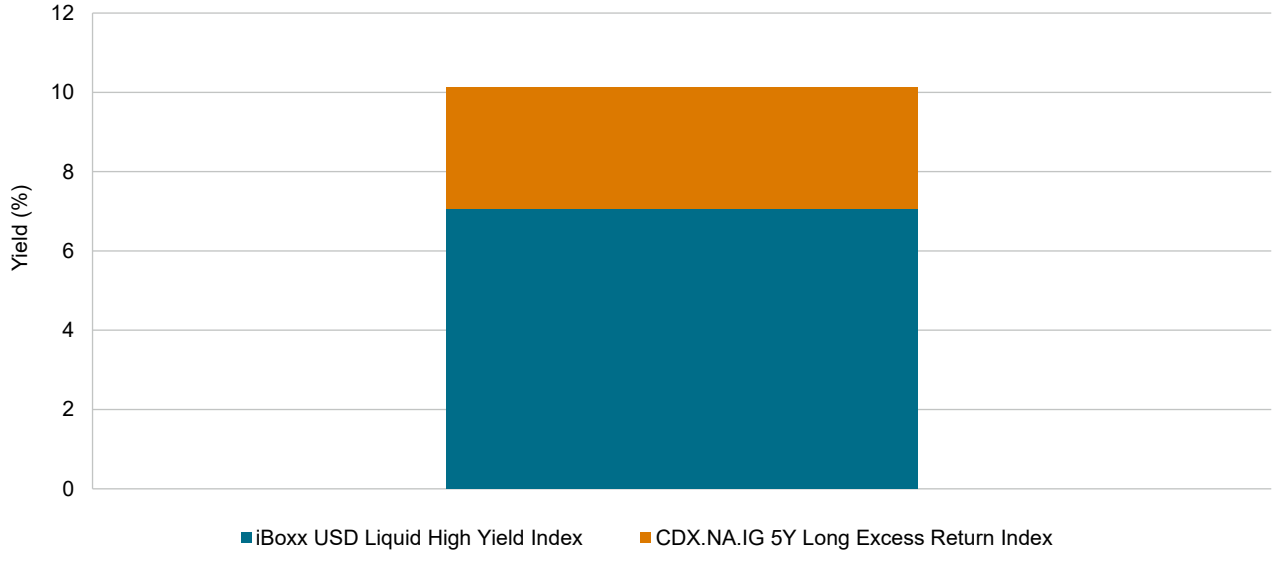
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Yield Focus: iBoxx USD Liquid High Yield Index Combined with the CDX North America High Yield Index

Another example of how iBoxx and CDX indices can be combined is in a levered, yield-focused strategy by adding a hypothetical unfunded credit position to a funded high yield bond segment. Consider, for example, a combination of the iBoxx USD Liquid High Yield Index with the CDX North America High Yield Index. In practice, this would reflect a funded position linked to the iBoxx USD Liquid High Yield Index and simultaneously selling protection on the CDX North America High Yield Index (going long credit via the CDS index).

This two-pronged strategy combines the full cash coupon and spread of the high yield bonds, plus an additional synthetic credit spread from the CDX index. The result over the period observed was a higher total yield than that of the cash bonds alone, where interest rate duration is unlevered and credit exposure is increased above 100%. For illustrative purposes, as of Sept. 30, 2026, the iBoxx USD Liquid High Yield Index had an annual yield of 8.31% and the five-year contract on the CDX North America High Yield Index had a conventional spread of 341 bps. In combining them, this would imply an estimated all-in yield of approximately 11.7%. The simple additive calculation does not account for transaction costs, financing or collateral/margin requirements, collateral returns, CDX roll effects, or other implementation considerations. Actual returns may differ.

Exhibit 6: All-In Yield of iBoxx USD Liquid High Yield Index Combined with the CDX North America High Yield Index

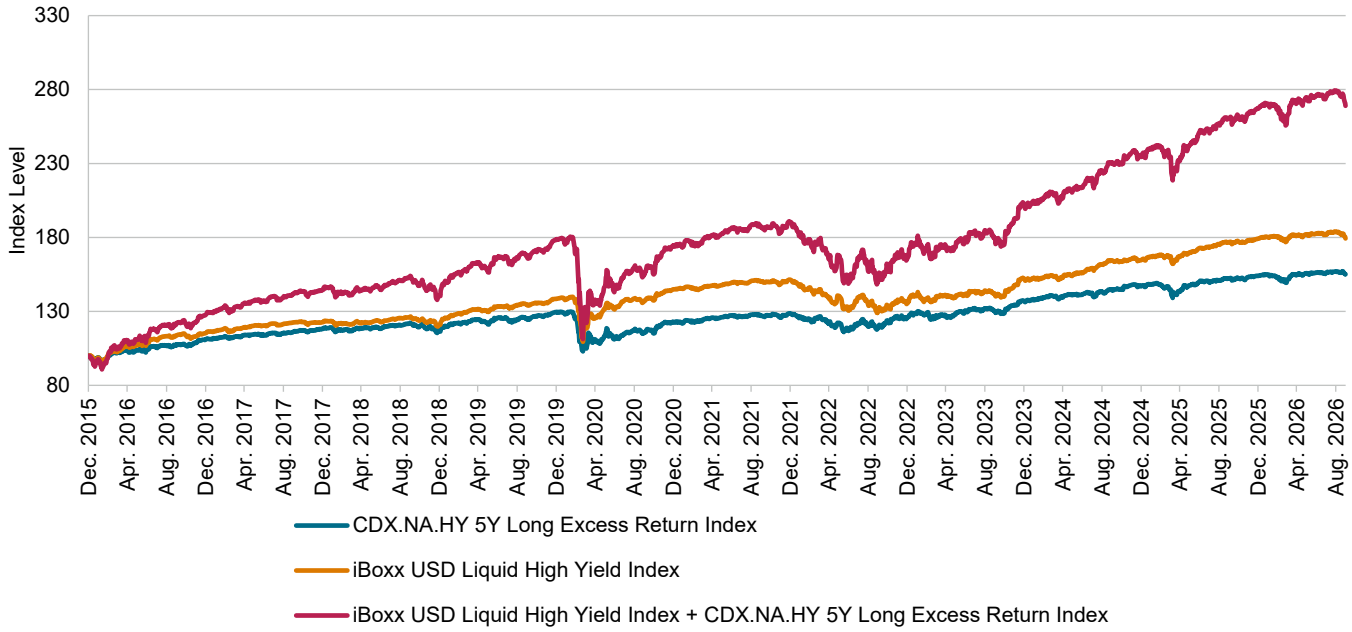


Source: S&P Dow Jones Indices LLC. S&P Global Market Intelligence. Data as of Sept. 30, 2026. Overall index performance based on total return in USD. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

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The CDX overlay adds credit exposure with limited interest rate duration, allowing credit and interest rate exposures to be adjusted somewhat independently. Looking at performance from Dec. 31, 2015, to Sept. 30, 2026, this modular, leveraged, hypothetical strategy significantly outperformed the iBoxx USD Liquid High Yield and CDX.NA.HY 5Y Long Excess Return Index.

Exhibit 7: Historical Performance of a Hypothetical iBoxx USD Liquid High Yield + CDX North America High Yield Index Composition



The iBoxx USD Liquid High Yield + CDX.NA.HY 5Y Long Excess Return Index is a hypothetical composition.
Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 2015, to Sept. 30, 2026. Indices were rebased to 100 on Dec. 31, 2015. Overall index performance based on total return in USD. The iBoxx USD Liquid High Yield Index was launched on 01 Nov 2006. All data prior to such date is back-tested hypothetical data. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Importantly, iBoxx high yield ETFs trade with significant volume and tight spreads daily, and the CDX North America High Yield Index commands billions in notional turnover every day and bid-offer spreads around 2 bps.[4] In other words, the strategy has historically offered increased yields while retaining the ability to enter or exit positions efficiently. This combination reflects full high yield rate risk alongside double the credit exposure, delivering the combined strategy in a liquid form.

Portable Alpha: JGBs with iTraxx/CDS Indices

Portable alpha is another use case for the iBoxx/CDX toolkit. It allows for the separation and recombination of different sources of performance—such as credit spreads, currency and

[4] S&P Dow Jones Indices, "2025 Fixed Income Index Products Report," Feb. 16, 2026.

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interest rate duration—rather than their combination as a single package through a traditional bond portfolio.

In this example, North American investment grade credit risk is paired with Japanese yen currency rates. The credit component is represented by a long position in the CDX North America Investment Grade Index, while the rates component is represented by Japanese government bonds, as measured by the iBoxx Global Government Japan index. The result is a strategy that overlays U.S. corporate credit yield onto a Japanese rate base.

This structure illustrates the flexibility of index derivatives. Unlike a conventional corporate bond index, which combines credit and domestic rates risk, CDX indices provide targeted credit sensitivity that can be paired with the chosen rates market.

Together, these features can be used to implement cross-market credit ideas, with control over currency, duration and credit risk.

Potential Risks and Considerations

While the above discussions demonstrated strategies used to provide efficient and liquid access to broad credit beta, market participants remain exposed to credit spread risk and may experience periods of negative performance. Depending on the implementation, the strategy may exhibit a different mix of duration and credit spread exposure relative to traditional cash bond portfolios, which can lead to differences in performance across varying interest rate and credit market environments. In addition, basis risk may arise between the CDS and cash bond markets, as valuations can diverge due to differences in liquidity conditions, market technicals, supply-demand dynamics and investor positioning.

Conclusion

iBoxx and CDX/iTraxx indices underlie some of the most liquid index derivatives in the market. Combining them can unlock new, unique structures and sources of risk and performance that wouldn’t exist otherwise. By doing so, market participants can seek different yield profiles or bespoke risk profiles while preserving the core characteristics of index-based investing: liquidity, diversification and transparency. Such index combinations move “beyond cash bonds” and may be used to create alternative strategies that utilize the liquidity and flexibility of index-linked instruments, providing different combinations of yield, risk and flexibility that were once out of reach.

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Performance Disclosure/Back-Tested Data

The iBoxx USD High Yield Developed Markets was launched on April 30, 2018. The iBoxx USD Treasuries was launched on June 28, 2005. The iBoxx USD Liquid High Yield Index was launched on 01 Nov 2006. The iBoxx USD Corporates was launched on June 28, 2005. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance, and is based on the index methodology 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. In addition, forks have not been factored into the back-test data with respect to the S&P Cryptocurrency Indices. For the S&P Cryptocurrency Top 5 & 10 Equal Weight Indices, the custody element of the methodology was not considered; the back-test history is based on the index constituents that meet the custody element as of the Launch Date. Also, the treatment of corporate actions in back-tested performance may differ from treatment for live indices due to limitations in replicating index management decisions. Complete index methodology details are available at www.spglobal.com/spdji. 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.

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