Investing Ideas

Institutional Insights

Convertible arbitrage: Offering niche alpha and diversification

Convertible arbitrage can offer asset allocators the opportunity to diversify traditional and alternative exposures, tap into idiosyncratic sources of alpha, and potentially take advantage of market volatility.

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KEY TAKEAWAYS

- Convertible arbitrage is a relative value alternative investment strategy that typically has had very low equity beta and low correlation with equities and interest rates. Convertible arbitrage alpha comes from mispriced securities, due to segmented market dynamics, and unexpected stock swings that can be monetized due to the positive convexity of convertible bonds.
- Convertible bonds are multidimensional instruments, having exposure to credit, volatility, equity and interest rates, packaged in complex and nonlinear structures. Therefore, successful implementation of a convertible arbitrage strategy requires a high level of sophistication, depth of experience, and informed analysis.
- The convertible bond market is small compared to credit and equity markets, constraining the capacity of convertible arbitrage strategies.
- Convertible arbitrage can be used by asset allocators to diversify traditional and alternative exposures, source idiosyncratic alpha, and take advantage of market volatility. The return profile of convertible arbitrage historically offers absolute return with low volatility and low correlation to the equity and bond markets, typically in a highly liquid format.
- We believe the current market environment offers an especially attractive risk-reward opportunity for convertible arbitrage driven by more active primary issuance, increased participation of arbitrage investors in the market and higher activity of corporate events.

Introduction

Convertible arbitrage is an investment strategy that hedge funds have successfully employed for many decades. This approach aims to generate alpha in a market neutral fashion by exploiting pricing inefficiencies in convertible securities. The key value proposition of convertible arbitrage is that it may provide investors access to uncorrelated niche alpha, typically with a lower volatility profile compared to many other hedge fund strategies.

The convertible market is liquid and sizable, but still relatively small compared to equity and fixed income markets. Therefore, convertible arbitrage strategies are typically capacity-constrained, in total representing approximately 10% of hedge fund assets.[1] Another barrier to entry is the requirement for active and specialized management to successfully extract alpha amid fluctuating credit spreads, volatility, and equity prices.

A comprehensive understanding of market dynamics and deep expertise in investment structuring are essential for successful results. While we believe that a well-implemented, diversified convertible arbitrage strategy can achieve its objectives across various market environments, we view the current market conditions as offering a particularly attractive opportunity set for convertible arbitrage investing.

Source of alpha

Convertible arbitrage is primarily implemented by investing in convertible bonds while shorting the underlying common stocks to hedge equity risk, and then dynamically adjusting those hedges. Sophisticated models are typically required to determine the appropriate amount of underlying equity to short against every convertible bond (also known as the bond's Delta), as well as the appropriate amount of bond futures or swaps to short to hedge the interest rate risk. Once the equity risk is hedged, the goal of the convertible arbitrage position is to have zero sensitivity to small movements in the price of the equity, leaving the investor with a position that is only long equity convexity and credit risk.

A convertible arbitrage position can generate alpha from several sources. The cheapness of a security can be monetized through shifting investor preferences, the credit spread of an improving company can tighten, and an underlying stock can be more volatile than the implied volatility priced in the bond, generating so-called "gamma trading profits." The risks are that a convertible security becomes cheaper or that its credit deteriorates without offsetting compensation from increasing volatility.

Because outright investors tend to focus on certain profiles of convertible bonds, different bonds will fall in and out of that preferred profile, and this creates consistent rotation and persistent opportunities for convertible arbitrageurs.

In a convertible arbitrage approach, in addition to position-level alpha, additional return can be extracted from the overall portfolio hedging, tilting, and directional portfolio overlays.

Convertible market structure

As illustrated in Exhibit 1, the convertible bond market is dominated by two very different types of investors—long-only or outright investors (also known as

EXHIBIT 1: Segmentation dynamics in the convertible bond market drive alpha opportunities.

Convertible Market Size	
United States	**Global**
$250B	$370B

Market Participants		Facilitators	
Outright Investors (40%)	**Arbitrageurs (60%)**	**Issuers**	**Broker-Dealers**
Make directional bets on the underlying equities in balanced convertible bonds, or pure credit bets in more credit sensitive or "busted" convertible bonds	Agnostic to the direction of equity moves, and instead evaluate convertible bonds based on relative value of the embedded equity option and inherent credit risk	Looking for access to cheaper sources of capital	Underwrite new issuance and facilitate secondary market trading

Source: Fidelity Investments estimates.

"outrights") and arbitrageurs (also known as "arbs"). Additionally, corporate issuers and broker-dealers participate in the market, by providing the net new supply and the liquidity in the market. For many issuers, the convertible bond market may be the best, and sometimes only option to raise public capital.

Many convertible bond issuers are companies who would have to issue straight debt at prohibitively high yields and who do not wish to sell equity at current levels. The convertible market allows them an opportunity to have a very manageable coupon payment and, for example, only sell stock if it appreciates 30% or more (something management may not necessarily view as a problem).

The outright investors typically buy the convertible bonds for the equity sensitivity and some convexity. The thought process is that a new issue convertible bond priced at 100 should give an outright investor about 2/3 of the equity upside and about 1/3 of the downside for large equity moves up or down. Because the convertible price is so profoundly influenced by the underlying stock, outright investors focus much less on the structural cheapness of a convertible bond, as this will be immaterial relative to "getting the stock right." This is an important point. Outright investors are no less smart than arbitrageurs—they may be perfectly rational in overpaying by 3 points for a bond whose equity they believe will double over the next 2 years, and their bond will be up 75 points. Conversely, they may be equally rational to sell a bond 3 points cheap to fair value if they believe the stock will be cut in half. Because the outright convertible bond price is almost as volatile as the underlying stock, outright positions tend to be much smaller than arbitrage positions.

On the other hand, an arbitrageur has hedged out the equity sensitivity and so the structural cheapness is all that remains. That relative value, which is just noise to the outright investor, is the main source of alpha to the arbitrageur. Because the volatility of the hedged convertible bond is much lower than an outright position, convertible arbitrage funds tend to have much bigger positions as percentage of net assets, and often employ some amount of leverage on the overall portfolio.

The convertible bond market is shaped by two distinct groups of investors. Outright investors enter the market to broadly bet on appreciation of the underlying equities, and sometimes on improving credit, while arbitrageurs seek to capitalize on mispricing opportunities. The contrasting goals and objectives of these participants create market dynamics that drive compelling and continuous alpha opportunities. However, the complexity of the market and instruments involved creates a barrier to entry and demands specialized expertise.

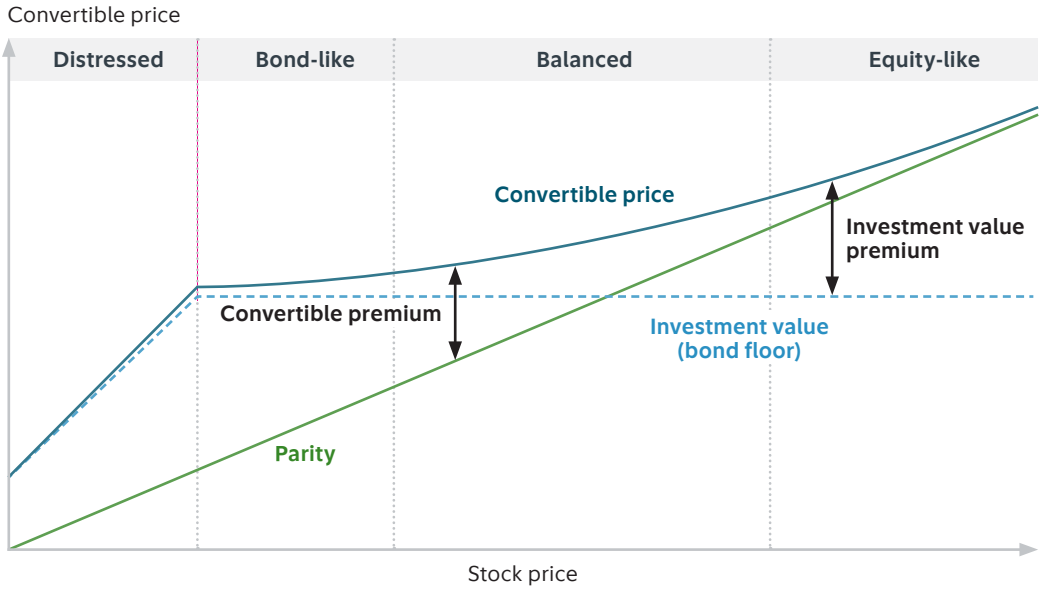
Types of convertible arbitrage opportunities

Almost every convertible arbitrage investment is a pair trade consisting of a long convertible bond position and a short equity position. There are some variations that use options or pure credit instruments, but the goal in every case is to try to extract the mispricing while hedging out all equity risk and without taking on too much credit, volatility, or event risk.

With each investment, the levels of various risk factors depend on where in the structural regime a bond exists. Exhibit 2 shows how the convertible bond price moves across the different regions as a function of the equity price. There are four distinct regions:

1. **Distressed:** A bond that is trading at a very high yield or near its default recovery value and has no equity sensitivity.
2. **Bond-like:** Also acts like a straight bond with very little equity sensitivity, as the conversion price is far from the current stock price. This bond will be much more credit-sensitive than volatility-sensitive. These are also known as "busted" convertible bonds.
3. **Balanced:** This is the preferred structure for outright investors; this bond will have a good balance of credit and volatility sensitivity and have maximum convexity.
4. **Equity-like:** A bond whose equity option is in-the-money and has less credit sensitivity than volatility sensitivity.

EXHIBIT 2: Convertible bond price movement as a function of the underlying equity price.



For illustrative purposes only. Source: Fidelity Investments.

Some of the potential constructs of convertible arbitrage investments include:

- **Classic convertible arbitrage trade:** Traditional convertible arbitrage opportunities are traded by establishing a delta-neutral position via buying a structurally cheap, balanced (i.e., delta in the range of 60%–80%) convertible bond, while simultaneously shorting the underlying stock to neutralize the equity sensitivity. The inherent realized volatility of the underlying common stock relative to the cheap implied volatility purchased through the convertible bond, as well as the positive convexity of the position, allows investors to monetize the realized volatility by closely monitoring and dynamically re-hedging the delta of the position (also known as Gamma trading).
- **Synthetic put trade:** Equity-like convertible bonds with embedded options that are deep-in-the-money trade with little to no investment premium, have high delta (upwards of 90%) and strong bond floor (solid credit). Through put-call-parity, a deep in-the-money call option, when combined with a short equity position, is equivalent to a deep out-of-the-money put option. Therefore, such bonds hedged at close to 100% delta behave exactly as out-of-the-money puts on the underlying equity, with some positive carry added. The primary intent behind a synthetic put trade is to capture the premium expansion in the event of a large stock decline. The secondary source of income is the carry from the trade. The carry is the positive cash flow earned from the combination of convertible coupon/dividend and the short stock rebate, less the financing cost and potential common stock dividend. Because such bonds typically have a very high dollar price and a delta hedged position has very little risk, they are typically larger positions and tend to consume more leverage than other trades.
- **Convertible yield trade:** This is implemented by purchasing bond-like or "busted" convertible securities that have a strong or improving credit profile (high bond floor), short duration, high convertible premium, and a low delta. For higher-premium and lower-delta bonds where we have concerns of credit deterioration, we would not hold the position unless we can hedge these bonds with cheap put options or a credit default swap (CDS), resulting in a positive carry position with a free call option, and providing positive convexity if the stock price moves meaningfully.

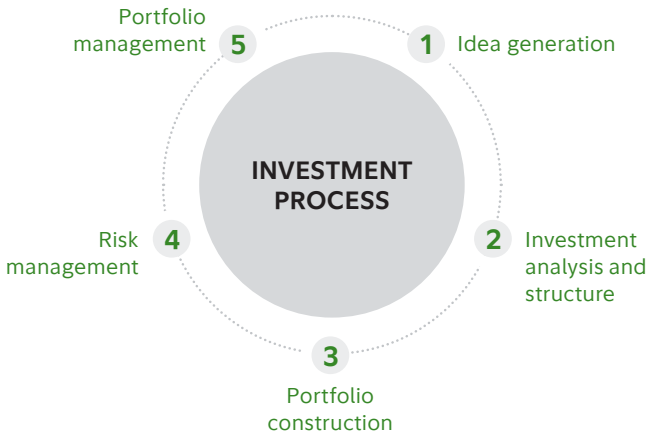
Convertible arbitrage investments can be implemented through a range of complex and multidimensional investment structures. We believe that a diversified approach is key to delivering consistent alpha and an all-weather strategy profile.

- **Event-driven/corporate trade:** Occasionally, situations develop where issuers are willing to pay a premium to buy back or exchange issues to alter the capital structure or to create tax savings. These situations can result in meaningful financial benefits to investors who are positioned appropriately.
- **Credit defensive trade:** This type of trade typically includes in-the-money convertible securities with a credit profile that is additionally hedged through credit default swaps or put options. These trades are similar to a classic/balanced convertible trade, but carry a greater downside credit hedge, creating a more symmetric convexity profile and allowing the investor to monetize volatility in both positive and deteriorating credit/equity scenarios.
- **Vega defensive trade:** This construct includes in-the-money convertible securities that have meaningful volatility sensitivity (Vega), where the implied volatility is very high and we believe the risk is that volatility will decline (for example, a deleveraging company or maturing business). In such cases, we can sell listed options that are trading at elevated volatility levels, creating a more credit-sensitive position but one that is less volatility-sensitive.

We believe that a diversified approach to convertible arbitrage investing offers the greatest benefits and the most opportunities to extract alpha regardless of the market cycle. Successful implementation hinges on the investment manager's ability to effectively capitalize across multiple investment structures described above. In contrast, narrow specialization can limit the opportunity set and diminish consistency of returns across varied market environments.

Furthermore, given the variety of possible investment structures, when analyzing investment opportunities, it is important to overlay fundamental analysis, confirm model assumptions, and understand market dynamics. A convertible bond is a highly complex instrument—no model can capture every unique structural feature or unique circumstances facing a company's senior management. Portfolio managers also need to be mindful that it is also not always possible to efficiently implement a complex trade because market liquidity for some of the components is not always guaranteed.

EXHIBIT 3: A structured investment framework may optimize results.



Investment process

Successful implementation of a convertible arbitrage strategy requires a process-driven approach. While the investment process needs to be structured at its core, in our opinion, it should be augmented by a more fluid and adaptive active management approach that responds to emergent and event-driven relative value opportunities.

As illustrated in Exhibit 3, there are typically several components of the convertible arbitrage investment process: 1) idea generation, 2) investment analysis and structure, 3) portfolio construction, 4) ongoing risk management, and 5) ongoing portfolio management.

1. **Idea generation:** On a daily basis, the investment manager screens the investment universe for securities that appear to be structurally cheap to theoretical value, monitors news flow for meaningful events that can impact valuation, thinks critically about industry trends for thematic ideas that can drive credit quality or equity volatility, and monitors situational opportunities through broker-dealer relationships.

   A pricing model, which takes as inputs the appropriate issuer credit spread, equity implied volatility, borrow cost of the common stock, as well as broad market inputs such as the U.S. Treasury yield curve, is usually utilized to source investment ideas systematically.

2. **Investment analysis and structure:** Once a potential investment opportunity has been identified, the investment manager performs fundamental, volatility, and structural analysis.

   These steps help to identify and understand the key components drivers of valuation and confirm that they are being modeled properly. Specifically:

   Fundamental analysis is important for understanding the credit risk. Is the credit spread assumption reasonable and is the credit quality likely to improve or deteriorate and why? Important aspects of this fundamental analysis include understanding the industry in which an issuer operates (including competition, suppliers, customers, barriers to entry, and substitutes), assessing the quality of the management team, understanding the capital structure, measuring leverage, liquidity, and developing forecasts about revenues and margins.

   Volatility analysis aims to test if the volatility assumption is reasonable. Is implied volatility likely to rise or fall, and is realized volatility likely to be above or below the current implied volatility?

   Structure analysis of the bond is focused on understanding make-whole features such as dividend protection and cash take-over protection, understanding contingent conversion and call features, and analyzing any risk associated with the exact mechanics of these structural features. Finally, the investment manager takes all this analysis and posits a range of possible scenarios and evaluates the risk/reward across the scenario range for a convertible arbitrage investment in the target issuer.

3. **Investment construction, expression, and implementation:** As we discussed in the previous section, trade construction and execution is an important step, given the complexity of the asset class and liquidity dynamics of the market. There is a wide range of possible trade constructions, depending on the portfolio manager's view about credit quality and volatility, as well as other available instruments in the capital structure (i.e., options, straight bonds, or CDS). The goal is to keep exposure to risks that the manager feels both comfortable taking and adequately compensated for, while efficiently hedging out the risks they do not want to retain. Efficient trade execution requires a good understanding of the microstructure of the convertible bond, equity, derivatives, and credit markets. The sizing of a trade has to be reflective of liquidity risk, market volatility, and the amount of capital one is willing to risk in a worst-case scenario. For this reason, the trade construction and implementation are not completely independent of risk management.

Implementing a successful convertible arbitrage strategy requires a process-driven approach. While the investment process should be structured at its core, we believe it must be enhanced by a more adaptive active management that responds to market opportunities.

Active risk management is crucial for the successful implementation of convertible arbitrage strategies. Although the strategy by design aims to hedge out unwanted risks, achieving this in practice is challenging due to nonlinearity of convertible bonds, whose risks evolve with time and market conditions. Therefore, dynamic adjustment of hedges at both the position and portfolio levels is essential.

4. **Risk management:** Every investment can be viewed as a collection of risk factors that are inherent in a convertible bond. These factors include equity price, credit spread, volatility (both level and skew), stock borrow, dividend growth, interest rates, change-in-control risk, as well as other structural and fundamental risk factors. Equity price risk is the biggest driver of risk for a convertible bond and the portfolio manager aims to neutralize it, as equity direction is not a factor on which a convertible arbitrageur takes an active view. Although there is an attempt to hedge out all other unwanted risk factors, in practice it is very difficult to do it exactly, as convertible bonds are highly complex and nonlinear securities with risks that are varying with time and with changes in market conditions. Therefore, it is important to monitor the risks continuously and adjust the hedges over time as needed.
5. **Portfolio management:** Once a portfolio has been constructed, there is an ongoing process of monitoring and surveillance on both the fundamental and technical aspects of each position. On the fundamental side, one must monitor corporate and industry developments via earnings calls, corporate presentations, industry conferences, and other developments. On the technical side, the manager and traders must actively track pricing of convertible bonds, and all parts of the capital structure that are observable in the market, as well as the relative value metrics that are computed daily. On a regular basis, including after any significant equity moves, the portfolio manager typically performs some manual checks of the volatility and credit spread assumptions. If the input parameters are adjusted, all hedge parameters are recalculated to determine if any trading adjustments are necessary.

Return profile attributes of successful convertible arbitrage strategies

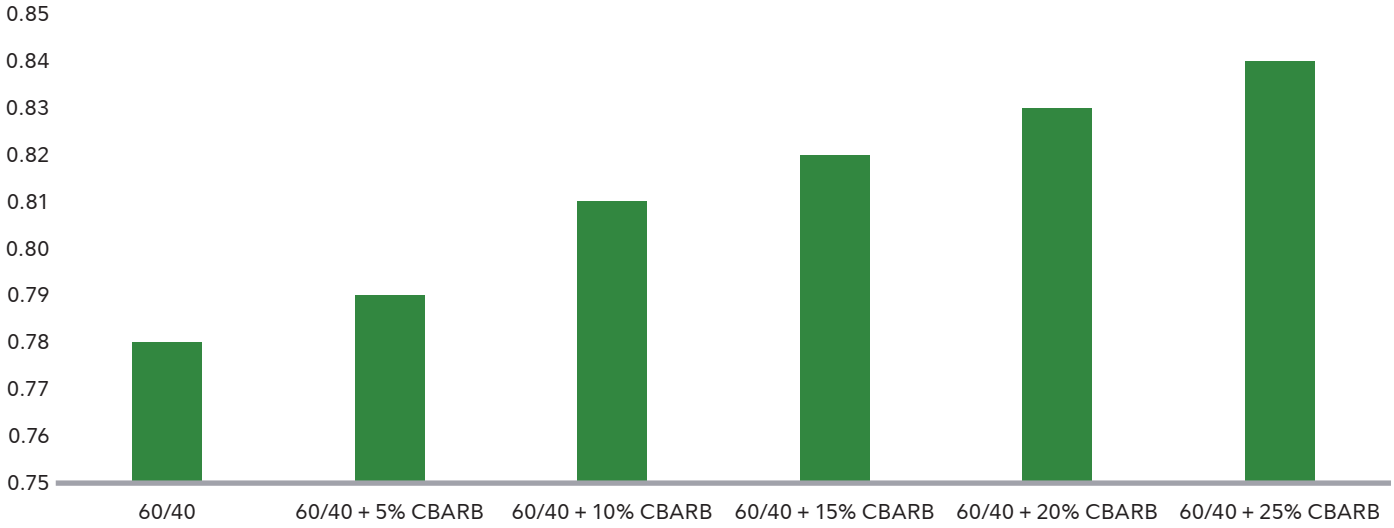
The return profile of a well-designed and effectively implemented convertible arbitrage strategy offers several compelling attributes:

- **Non-correlation:** Since convertible arbitrage strategies derive returns from the interplay of fixed income, equity, and volatility, they typically may exhibit low correlation to equity, fixed income, and hedge funds. Explicitly, there may be very little equity beta in a convertible arbitrage strategy by construction because the equity sensitivity of every convertible bond in the portfolio is typically hedged out.
- **Absolute return:** Strategies seek to derive alpha from diverse sources thus aiming to produce attractive risk/adjusted returns regardless of the direction of the broader market.
- **Low volatility:** The use of position-level and portfolio hedges typically may result in a lower volatility profile compared to traditional equity investments and many hedge fund strategies.
- **Ability to benefit from increased market volatility:** Strategies can benefit from elevated levels of stock market volatility as they aim to generate yield from fluctuations in underlying stock prices. Increased volatility typically offers more dispersion.
- **Liquid:** Convertible arbitrage strategies are typically offered in liquid investment structures. This feature is especially valuable to investors who need the liquidity to meet the cash flow needs or to allow for portfolio reallocation.

Given these attributes, an investment in a convertible arbitrage strategy can help investors potentially improve the overall risk/return profile of their portfolio, as illustrated in Exhibit 4. Depending on how investors construct their portfolios, convertible arbitrage can be used alongside traditional investments such as traditional corporate bonds or nontraditional bonds, to lower interest rate sensitivity or alongside alternatives investments. Such a combination may help to lower the beta of the portfolio and enhance returns.

EXHIBIT 4: Adding an allocation to convertible arbitrage can improve the risk/return profile of a 60/40 portfolio.

Return to volatility ratio of a 60/40 portfolio with increasing allocations to a convertible arbitrage strategy (2002–2024)



Return to volatility ratio measures portfolio's return per unit of volatility. Source: Bloomberg Finance L.P., Fidelity Investments, HFR Inc., www.HFR.com, © 2024 HFR, Inc. Stocks represented by the S&P 500 Index and bonds represented by the Bloomberg U.S. Aggregate Bond Index. Convertible arbitrage strategy represented by HFR Convertible Arbitrage Index (CBARB). See endnotes for index definitions. As of June 30, 2024.

Current opportunity for convertible arbitrage

We believe that the current market environment presents an expanding opportunity set for convertible arbitrage investing, supported by the notable increase in primary issuance. As illustrated in Exhibit 5, there was $50 billion in convertible bond issuance year-to-date (as of Aug. 6, 2024), which indicates increasing appetite by companies to explore alternative financing in the current high-rate environment and signals a potentially broader spectrum of issuers. An active and expanding primary market presents an opportunity for convertible arbitrage investors to capitalize on price discrepancies and to broaden and diversify portfolio investments.

Finally, we expect that the increase in corporate events activity and significant amount of maturing bonds originated at the beginning of the COVID pandemic should result in additional opportunities for convertible arbitrage.

While we believe that there is a significant opportunity for convertible arbitrage investing, it is also important to understand that as with any investment strategy, there is risk involved. Convertible arbitrage strategies can be subject to both idiosyncratic risks, such as a credit downgrade or a deteriorating stock borrow for example, and systematic risks such as a liquidity crisis (as seen in 2008). Therefore, a regimented and active risk management framework to mitigate position-level and aggregate portfolio risks is necessary for successful implementation.

Conclusion

Convertible arbitrage strategies offer investors potential for niche and uncorrelated alpha that can be generated by taking advantage of inefficiencies in convertible bonds. Convertible bonds are multi-dimensional instruments, containing elements of credit, volatility, equity, and interest rates, packaged in complex and nonlinear structures. Successful implementation of a convertible arbitrage strategy requires a high level of sophistication, depth of experience, and informed analysis. While we are optimistic about the current environment for convertible arbitrage investing, we believe a diversified approach offers the greatest benefits and the most opportunities to extract alpha regardless of the market cycle.

EXHIBIT 5: U.S. convertible bond issuance has notably increased, creating potential for arbitrage investors to capitalize on discrepancies and diversify portfolio investments.

U.S. convertible issuance, billions of dollars

Source: Barclays Research, as of Aug. 6, 2024.

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Mitch Livstone is the chief investment officer of the Arbitrage and Hedging Solutions group at Fidelity Investments. In this role, Mr. Livstone is responsible for leading a team that develops and runs alternatives investment vehicles, focusing primarily on relative value arbitrage strategies and defensive hedging solutions.

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Sladja Carton partners with the investment teams, product teams and distribution channels to support, enhance and expand Fidelity's growing suite of liquid alternatives products and solutions. The strategies cross asset classes and investment styles for varied portfolio uses and investor types.

Fidelity Thought Leadership Vice President Martine Costello Duffy provided editorial direction for this article.

Endnote

[1] Preqin Global Report, Hedge Funds 2024.

Index definitions

The S&P 500 index is a market capitalization-weighted index of 500 common stocks chosen for market size, liquidity, and industry group representation to represent U.S. equity performance.

The Bloomberg U.S. Aggregate Bond Index is a broad-based flagship benchmark that measures the investment-grade, U.S. dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, mortgage-backed securities (agency fixed-rate pass-throughs), asset-backed securities, and collateralized mortgage-backed securities (agency and non-agency).

The HFR Convertible Arbitrage Index is a hedge fund index from Hedge Fund Research (HFR) that tracks convertible arbitrage strategies.

Risks

Equity options entail the risks that purchased options expire worthless and sold options incur significant losses depending on market moves. It is possible to lose money if the underlying security moves dramatically in price in an unfavorable direction. Options trading entails complexities, resulting in the possibility that investors will make mistakes. Certain options may be less liquid, trading in lower volumes. The direct costs of trading options can be higher than other types of investments. There are also indirect costs based on the bid price and ask price; or the prices received for writing and buying them. Another risk is the risk of time decay, which is the declining time period until expiration.

Past performance and dividend rates are historical and do not guarantee future results.

All indices are unmanaged. You cannot invest directly in an index.

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