The Invesco White Paper Series
May 2019

Adding Upside Potential to Insurance Portfolios: Equity Enhanced Fixed Income

Robert Young,
Head of Institutional Convertibles

Peter Miller,
Insurance Research Strategist, Invesco Global Solutions

Steve Thompson,
Senior Client Portfolio Manager, Invesco Fixed Income

Since the global financial crisis, persistently strong equity markets and muted volatility have led to a prolonged period of market complacency. Some investors are concerned about equity valuations and are looking for investment strategies that can capture potential equity upside while also mitigating risk. Meanwhile, interest rates and credit spreads have remained low by historical standards, making it increasingly difficult to find attractive risk-adjusted returns in traditional fixed income markets. Many insurers have been moving further out the risk spectrum, allocating more to equity and alternatives – yet this naturally increases concern about downside risk.

Previously, insurers have used convertible bonds in their portfolios. The public convertible securities market has contracted meaningfully in size over the past decade (particularly the investment grade segment), often trades rich to theoretical value, and as a result, offers less opportunity to identify attractive investments. Traditional convertibles are also rigid in design and provide limited flexibility to adequately reflect a manager's investment views.

We believe a unique way to manage this challenge is by pairing fixed income securities with equity options that seek to attain the stability of fixed income securities with equity upside. This approach – what we call equity enhanced fixed income (EEFI) – can offer investors an attractive return profile while providing equity risk management capabilities. And importantly, it can be done in a capital-efficient way.

An EEFI strategy can be a complement or an alternative to traditional convertibles, providing the same attractive profile but through larger, more liquid investment universes with opportunities for greater portfolio customization. A critical advantage of EEFI is that the fixed income and equity components can be tailored independently to reflect compelling investment views, and the embedded equity exposure can be customized to introduce various degrees of equity sensitivity to a portfolio.

In this paper, we provide a brief refresher on the fundamental characteristics of convertible securities and then explore three compelling reasons why we believe an EEFI strategy can and should be part of a well-balanced portfolio.

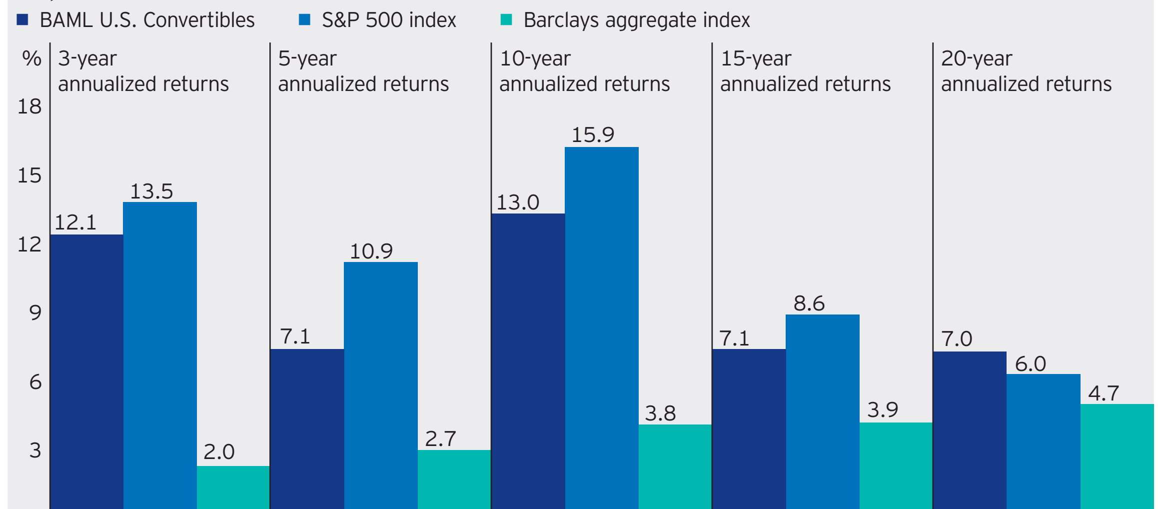
Traditional convertibles as a proxy for EEFI

Despite the current headwinds in the public convertibles market, in our view, the asset class offers an effective proxy to illustrate the attractive risk/return profile of a broader EEFI strategy.

Combines performance characteristics of stocks and fixed income securities

As illustrated in Figure 1, convertibles have captured a large portion of equity market returns over both short and longer time periods, across a wide variety of market conditions. Additionally, over these same periods, convertibles have outperformed the Barclays US Aggregate Bond Index.

Figure 1: Convertibles have consistently participated in equity upside and have also outperformed corporate bonds



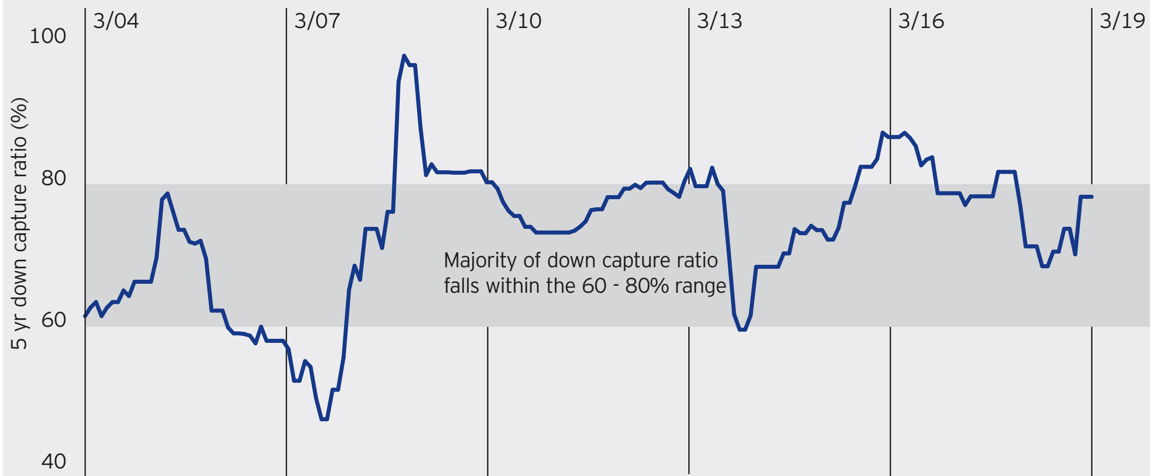
Source: Bloomberg L.P., as of March 31, 2019. Past performance is not a guide for future returns.

A) Strong defensive characteristics may help mitigate downside equity risk

Although convertibles offer equity-like returns, they have historically provided attractive defensive characteristics relative to equities. Convertibles have a coupon and a fixed maturity date at which time principal is repaid to the investor if the conversion feature is out of the money. This can help absorb equity drawdown risk.

Figure 2 illustrates the rolling five-year drawdown capture ratio of the Bank of America Merrill Lynch US Convertible Index relative to the S&P 500 Index. Over the 15-year period ending 6/30/18, the downside capture relative to S&P500 most often falls with the 60-80% range. Annualized volatility was also markedly lower compared to equities across these time periods.

Figure 2: Convertibles may offer lower drawdown and lower absolute risk than equities
Lower drawdown and lower absolute risk than equities



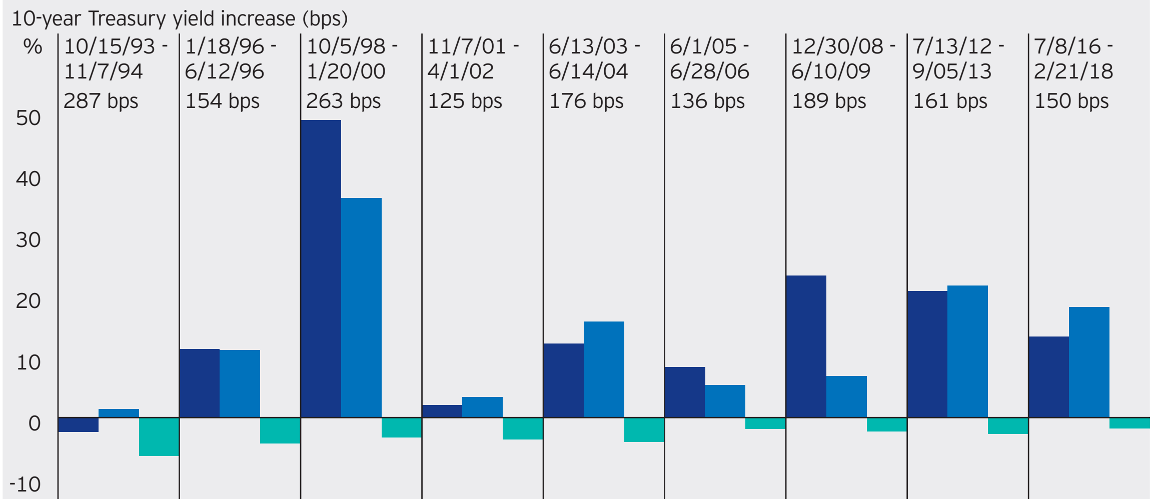
Asset Class	3 year annualized volatility (%)	5 year annualized volatility (%)	10 year annualized volatility (%)	15 year annualized volatility (%)	20 year annualized volatility (%)
BAML US Convertibles	7.86	8.63	9.86	11.35	12.37
S&P 500	10.73	11.18	12.68	13.61	14.51
BBG BARC US Aggregate	2.97	2.86	2.84	3.22	3.36

Source: Bloomberg; Morningstar, as of March 31, 2019. Past performance is not a guide to future returns.

B) Strong performance in rising rate environments

Convertibles have historically performed well during rising rate environments due to their lower interest rate duration and embedded equity exposure. Figure 3 highlights the attractive total return of convertibles during periods when the 10-year Treasury yield rose by more than 100 basis points over the past 25 years. The time periods when this occurred are of varying lengths; however, in all periods, convertibles significantly outperformed traditional fixed income.

Figure 3: Convertibles have performed well in rising rate environments
Strong performance in rising interest rate environments



Source: Bloomberg, as of March 31, 2019. Rate changes measured by the US 10 Year Treasury Note. All returns annualized for periods over 1 year. Past performance is not a guide to future returns.

Clearly, convertibles have offered benefits across various equity market conditions and were well positioned in rising rate environments. An EEFI strategy builds on these features. We believe it provides a more efficient way to replicate public convertibles and an expanded investment universe which, in turn, can offer greater ability to tailor solutions with specific risk/return characteristics.

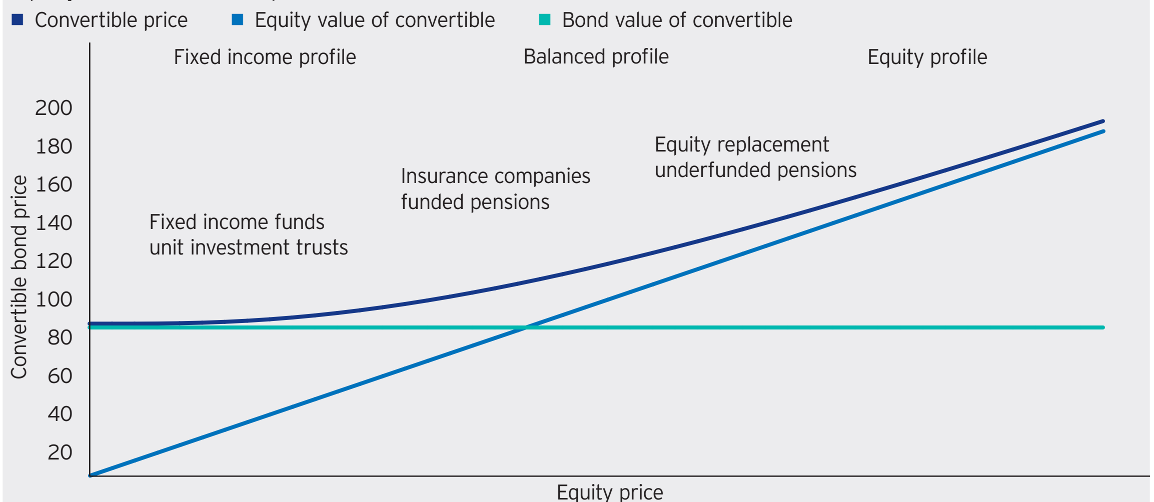
Why we believe there are three compelling reasons to consider an EEFI Strategy:

1 Attractive risk/return profile

Unlike traditional fixed income and equity return profiles which are linear in nature, EEFI return profiles are convex (i.e., non-linear), as illustrated in Figure 4., EEFI combines a bond (e.g., corporate bond or Treasury bond) with an equity option that together possess performance characteristics similar to a convertible security. This allows a manager to replicate a convertible security's return profile for a company that may not have any convertible debt outstanding.

EEFI and the embedded equity convexity feature can provide a number of advantages such as opportunities for customization, diversification, and yield potential, creating a very powerful risk/return dynamic typically not found in other strategies. By carefully combining fixed income and equity features, this strategy may offer greater risk control of the overall portfolio and allows for more efficient positioning at various points across the risk/return spectrum.

Figure 4: Convex nature of EEFI return profile provides a risk/return dynamic not found in traditional equity and fixed income products



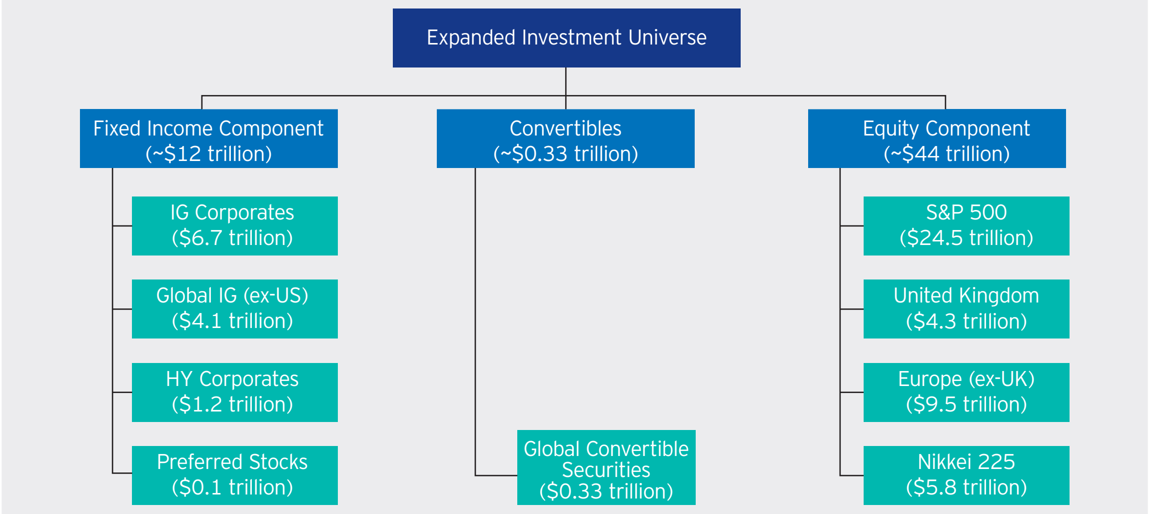
For illustrative purposes only. Sources: Invesco and Bank of America Merrill Lynch.

More importantly, the equity convexity feature is most powerful and influential within the balanced portion of the return profile. Equity sensitivity in this region is dynamic (i.e., not static) because it changes as underlying stock prices change – as stocks rise, equity sensitivity increases by a greater degree, and as stocks fall, equity sensitivity falls. In other words, EEFI is designed to offer an asymmetric return: more upside participation than downside as equity markets move higher or lower. For investors who want to participate with rallying equity markets, but simultaneously want some level of downside risk mitigation should equity markets decline, the structural features of EEFI can potentially offer an attractive investment alternative. It is this feature that makes EEFI most unique.

2 Broader investment universe and greater liquidity

The universe of public convertible securities has become smaller and more concentrated over the last decade due to the large number of securities called, put or matured relative to the number of new issues brought to the market. Rather than being constrained by a small market size, an EEFI approach offers access to a broader set of liquid market securities. As illustrated below, these broader markets are significantly larger than the global public convertibles market. However, an EEFI strategy still has the ability to invest in the public convertibles market if there are compelling investment opportunities there, as the public convertibles asset class is simply a subset of the larger strategy.

Figure 5: Invesco Equity Enhanced Fixed Income
Access to Broader Capital Markets



Source: Bloomberg, as of March 31, 2019.

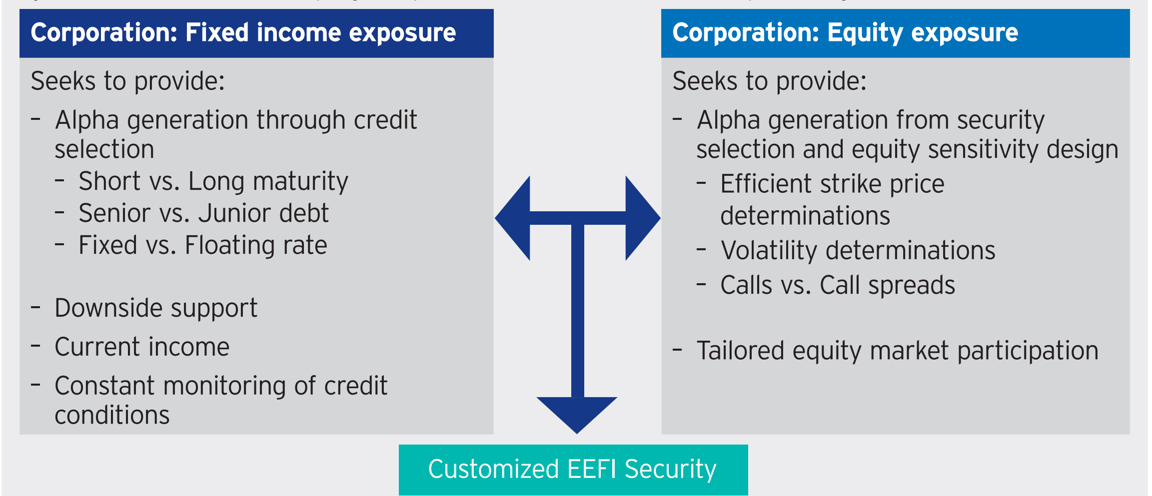
The larger universe also provides important liquidity features. The equity and fixed income components of the strategy can be bought and sold independently within their respective markets, rather than being sold as a combined, single security. This provides a significant liquidity advantage, especially during challenging market environments. In short, a manager can tactically pair securities in terms of the companies and individual security characteristics. This customization can help enhance alpha generation in more discretionary mandates.

3 Customizable to provide solutions for insurers

An EEFI strategy also has the flexibility to accommodate an insurer's unique requirements, such as duration, credit rating, country, or currency limitations.

We believe EEFI can achieve this due to the bifurcation of the risk and return elements, which allows for the maximization of research input. That is, a fixed income security can be chosen from a broad, liquid universe based on its overall attractiveness, considering macroeconomic views, sector calls, individual credit determinations, and specific investor requirements. The strategy pairs this with a separate equity option on a favorable equity, where there are also multiple opportunities to express views on optimal strike price, option structure, etc. This dynamic is illustrated below.

Figure 6: Fixed income and equity components can be customized independently



For illustrative purposes only. This does not constitute a recommendation of any investment strategy for a particular investor.

A unique element of Invesco's EEFI strategy is its capital-efficient structure. We combine the bonds and options in a trust structure, when necessary for insurers that require it for accounting or capital purposes. This trust is then rated by a rating agency, whereby the trust's rating equals the rating of the underlying bonds. The result is that insurers can customize the mandate's credit profile to their specifications and obtain equity exposure without incurring the high charges for holding equity shares or funds directly, all via a single trust structure that is easily reported in regulatory filings. The investment is held in a separate account structure.

Conclusion

Insurers who are looking to increase returns without adding incremental credit risk should consider an allocation to EEFI. Given the flexible aspects of this type of strategy, a customized portfolio can be constructed for a broad array of investor needs, introducing various levels of risk/return and asymmetric upside potential. In our view, the case for EEFI includes:

- **Access to entire capital markets –** source exposures from both the traditional convertibles market as well as the broad, liquid traditional debt and equity markets
- **Greater potential for alpha –** a larger investment universe creates more opportunity to diversify credit risk and potential to generate outperformance
- **Customized solutions –** portfolios can be customized for specific investor equity and fixed income risk tolerances without changing the investment process or security selection, and can be done in a capital-efficient way
- **No capacity constraints –** an EEFI strategy has theoretically no capacity constraints

We believe that these factors could provide insurers a way to help strengthen their overall asset allocation and navigate today's complex markets.

About risks

The value of investments and any income will fluctuate (this may partly be the result of exchange rate fluctuations) and investors may not get back the full amount invested.

Investments in convertible securities are subject to the risks associated with both fixed-income securities, including credit risk and interest rate risk, and common stocks. Convertible securities may have lower yields because they offer the opportunity to be converted into stock and if the stock is underperforming and the bond does not convert then the bond may have a lower return than a non-convertible bond. Convertible securities may be affected by market interest rates, issuer default, the value of the underlying stock or the right of the issuer to buy back the convertible securities.

A decision as to whether, when and how to use options involves the exercise of skill and judgment and even a well-conceived option transaction may be unsuccessful because of market behavior or unexpected events. The prices of options can be highly volatile, and the use of options can lower total returns.

An issuer may be unable to meet interest and/or principal payments, thereby causing its instruments to decrease in value and lowering the issuer's credit rating.

Interest rate risk refers to the risk that bond prices generally fall as interest rates rise and vice versa.

Important information

This overview contains general information only and does not take into account individual objectives, taxation position or financial needs. All material presented is compiled from sources believed to be reliable and current, but accuracy cannot be guaranteed. This is not to be construed as an offer to buy or sell any financial instruments and should not be relied upon as the sole factor in an investment making decision. As with all investments there are associated inherent risks. This should not be considered a recommendation to purchase any investment product. This does not constitute a recommendation of any investment strategy for a particular investor. Investors should consult a financial professional before making any investment decisions if they are uncertain whether an investment is suitable for them. Please obtain and review all financial material carefully before investing. Past performance is not indicative of future results. This portfolio is actively managed. Portfolio holdings and characteristics are subject to change.

Data as at June 30, 2018, source Invesco, unless otherwise stated. The whitepaper is written by Invesco professionals. The opinions expressed are that of Invesco Fixed Income and may differ from the opinions of other Investment professionals. Opinions are based upon current market conditions, are subject to change with notice.

Invesco Advisers, Inc. is an investment adviser; it provides investment advisory services to individual and institutional clients and does not sell securities.

FOR INSTITUTIONAL INVESTOR USE ONLY – NOT FOR PUBLIC USE

NOT FDIC INSURED | MAY LOSE VALUE | NO BANK GUARANTEE

invesco.com/insurance Invesco Advisers, Inc. II-INSEEFI-WP-1 05/19 NA4851