

Adding upside potential to insurance portfolios: Equity Enhanced Fixed Income

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1. Executive summary

Since the global financial crisis, persistently strong equity markets and muted volatility have led to a prolonged period of market complacency. Recent movements in equity volatility, combined with the prospect of rising interest rates may prompt investors to search for investment strategies that can help 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 insurers 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.

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.

2. 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.

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

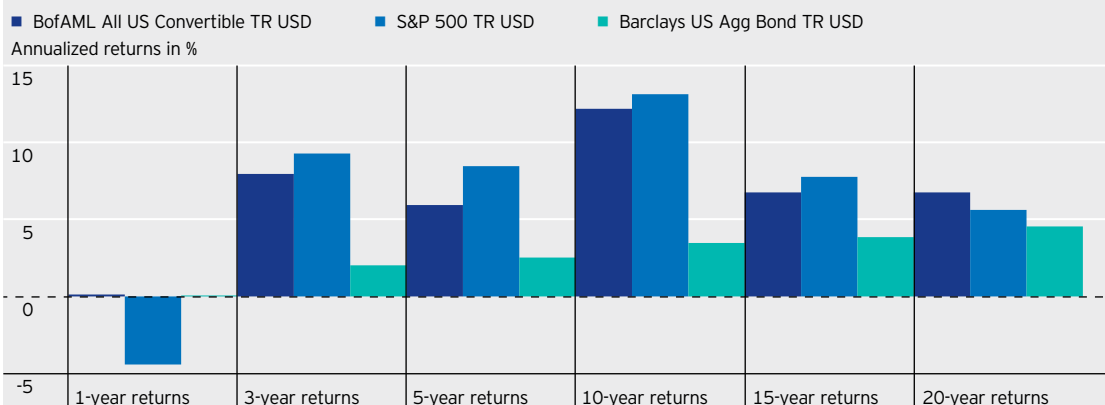
principal is repaid to the investor if the conversion feature is out of the money. This can help absorb equity drawdown risk.

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 12/31/18, 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.

B) Strong performance in rising rate environments

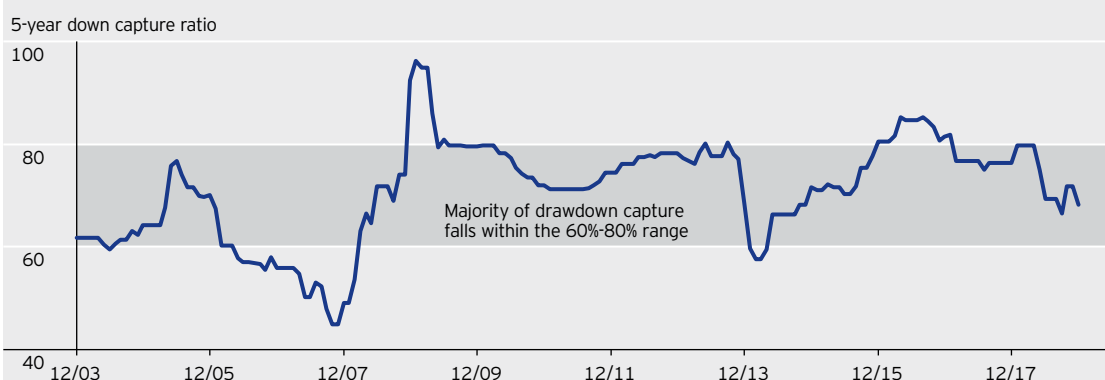
Convertibles have historically performed well during rising rate environments due to their lower interest rate duration and embedded equity exposure. Figure 3 highlights the attractive total return of convertibles during periods when the 10-year Treasury yield rose by more than 100 basis points over the past 25 years. The time periods when this

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



Source: Bloomberg L.P., as at 31 December 2018. Past performance is not a guide for future return.

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

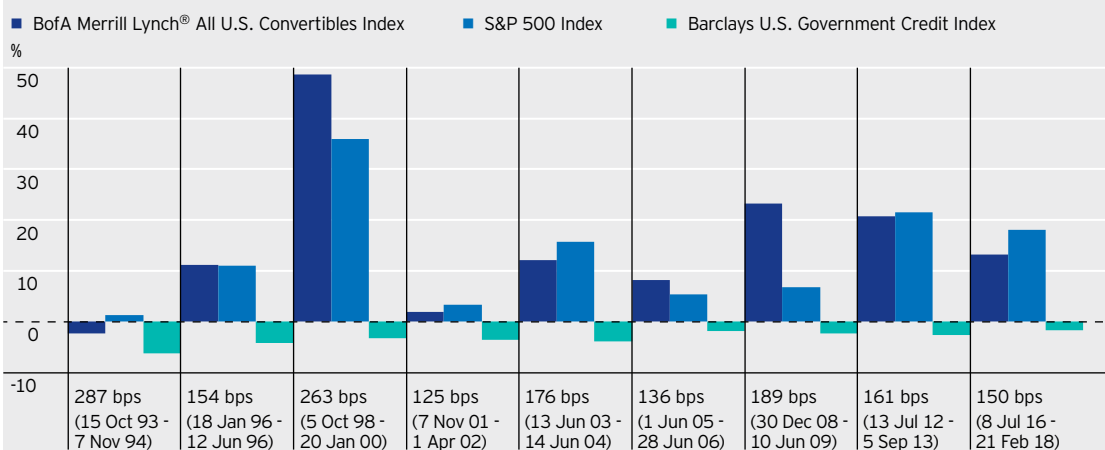


Asset class	Annualized volatility in %				
	3 year	5 year	10 year	15 year	20 year
ICE BofAML All US Convertibles	8.27	8.28	9.82	11.22	12.38
S&P 500	10.95	10.94	13.61	13.48	14.47
BBG BARC US Aggregate	2.88	2.79	2.84	3.20	3.38

Source: Bloomberg L.P., as at 31 December 2018. Past performance is not a guide for future return.

Figure 3

The embedded equity component drives outperformance vs. core bonds in rising rate environment, Convertibles also have lower interest rate duration, reducing the impact of rising rates



Source: Bloomberg L.P., as at 31 December 2018. All returns annualized for periods over 1 year. Rate changes measured by the US 10 Year Treasury Note. **Past performance is not a guide for future return.**

In all periods, convertibles significantly outperformed traditional fixed income.

occurred are of varying lengths; however, in all periods, convertibles significantly outperformed traditional fixed income.

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.

3. Three compelling reasons to consider an EEFI strategy:

A) Attractive risk/return profile

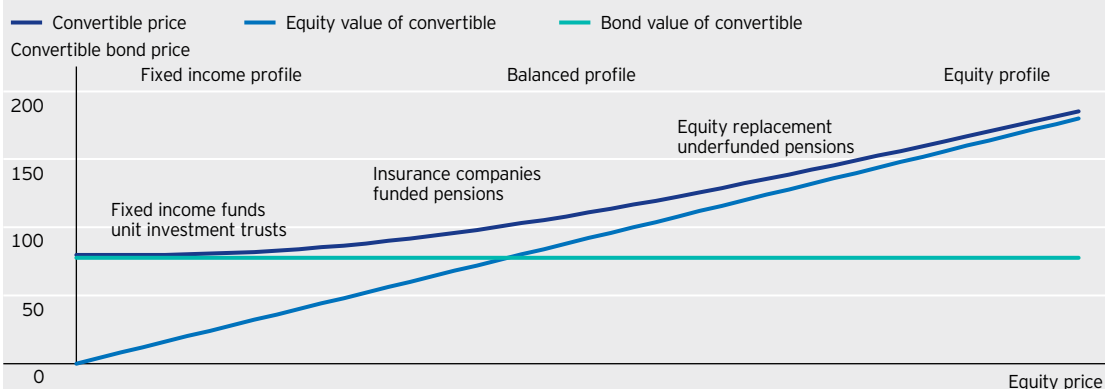
Unlike traditional fixed income and equity return profiles which are linear in nature, EEFI return profiles are convex (i.e., non-linear), as illustrated in figure 4. EEFI combines a bond (e.g., corporate bond or Treasury bond) with an equity option that together possess performance characteristics similar 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.

Combining fixed income and equity features may offer greater risk control.

EEFI and the embedded equity convexity feature can provide a number of advantages such as opportunities for customization, diversification, and yield potential,

Figure 4

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



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

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.

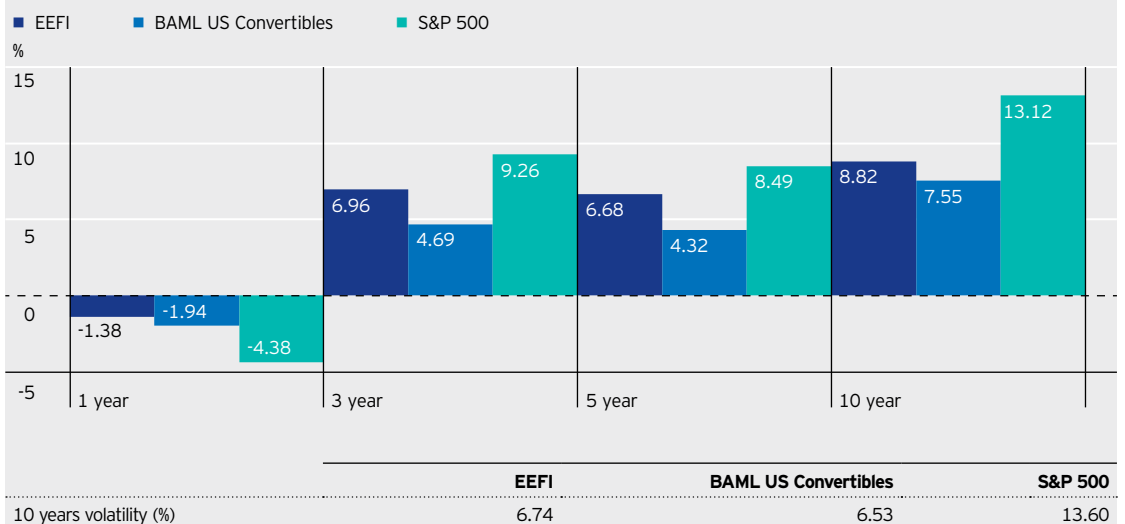
More importantly, the equity convexity feature is most powerful and influential within the balanced portion of the return profile. Equity sensitivity in this region is dynamic (i.e., not static) because it changes as underlying stock prices change – as stocks rise, equity sensitivity increases by a greater 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.

B) 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 in figure 6, these broader markets are significantly larger than the global public convertibles market. However, an EEFI strategy

Figure 5
Performance of the strategy VS equities and bonds
High participation to the equity upside with limited downside



Source: Invesco. Benchmark: ICE BofA Merrill Lynch Non-Investment Grade Convertible Index. As at 31 December 2018. Gross of fee performance is before the deduction of management fees. Net returns will be lower. The above characteristics are based on a representative portfolio from the composite and it is actively managed. These representative portfolio characteristics are subject to change. **Past performance is not a guide to future returns.**

Figure 6
Investable universe overview

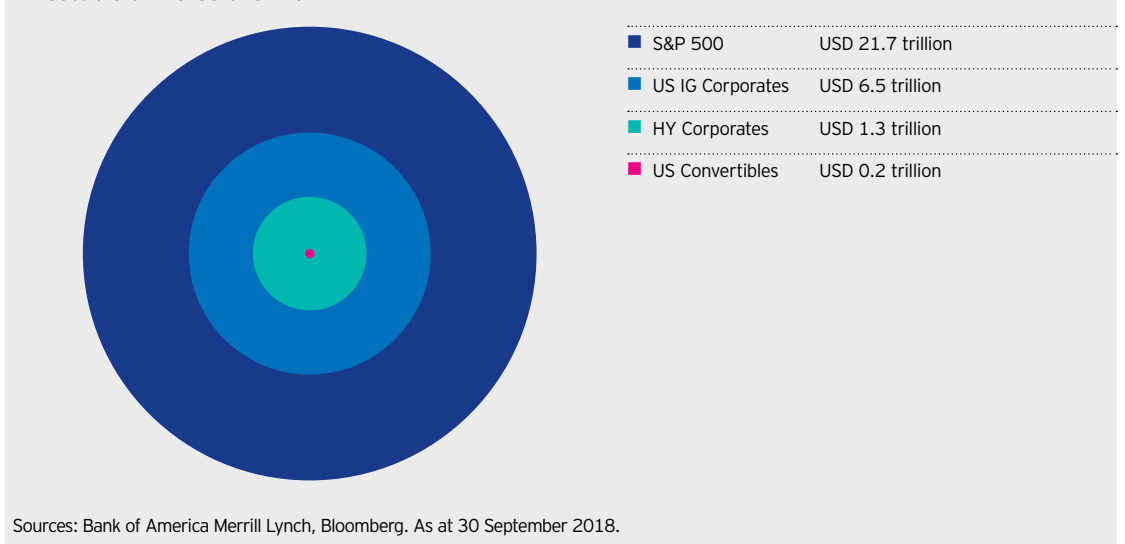
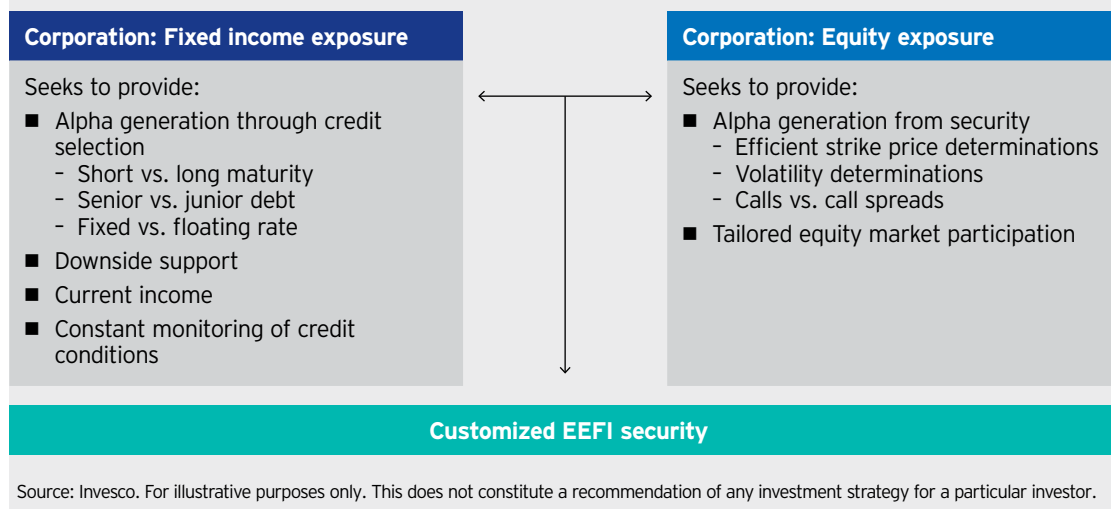


Figure 7

Pairing a bond and an equity option to customize an EEFI

Fixed income and equity components can be customized independently



EEFI approach offers access to a broader set of liquid market securities.

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.

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.

C) 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 in the figure 7.

The fixed income element of the strategy and the equity options are two separate instruments which allows an insurance entity to account for the components separately. The buy and maintain fixed income portion of the strategy can be accounted for using amortized cost, while the equity option component impacts net income under IFRS framework.

A unique element of Invesco's EEFI strategy is its capital-efficient structure. Combining bonds and equity options in a dedicated structure, results insurers being able to design the fixed income component to fit their requirements in terms of credit selection, duration and strategy, such as buy

A unique element of Invesco's EEFI strategy is its capital-efficient structure.

Figure 8

Solvency and accounting considerations

Instrument	Realized volatility ¹	Return on Solvency II capital ²	IFRS 9
Enhanced Equity Fixed Income ³	9.69%	28 - 35%	✓
Equities ⁴	16.99%	21%	=

1) Based on the historical average return since 1994; 2) Based on the historical average return since 1994; 3) Using the IG quality for the fixed income bucket of the strategy; 4) For illustration on S&P500 Index.

✓ Bonds eligible for amortized cost and call options impacting P&L

= Equity investments are accounted for in P&L as a general rule. It is possible for the company to make a choice (which must apply to all the equity investments) to account for equities in Other Comprehensive Income.

Sources: Capital Market Assumptions, Invesco and Standard Solvency II report. Data as at 30 September 2018.

and maintain. Additionally, the insurance company will obtain equity exposure without incurring the high charges for holding equity shares or funds directly.

As an illustration in figure 8, the capital charge under Solvency II is expected to fall below 20% with an investment grade quality on the fixed income component of the strategy. This compares favorably to 39% to 49% subject to symmetric adjustment standard capital charge for equities.

4. 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

- **Customizable to meet specific objectives of insurers** – 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.

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