Convertible bonds
A diverse and interesting investment proposition for insurers
Introduction

This paper explores the intricacies of convertible bonds and how this flexible asset class might be utilized by a variety of insurers looking to optimize their asset portfolio.

There are potential advantages to investing in convertible bonds compared to either equities or bonds dependant on the solvency position and product offering of the fund. Advantages may exist due to regulatory requirements or simply economically for example, on a return on capital basis. This paper investigates the relative attraction of convertible bonds to insurers compared to more traditional insurance investments.

The ideas in this paper do not purport to be investment advice and should not be relied upon for any decision making regarding decisions to invest in, or to issue convertible bonds, without appropriate additional diligence.
Interest in the convertible bond market is on the rise, with an increase in new issuances over 2013 compared to the prior year. This diverse asset class offers a spectrum of risk-return characteristics that could benefit insurers, depending on their individual asset portfolios and strategic investment criteria.

As the bond market develops its range of offerings, we see an opportunity for insurers to look at the upside and downside potential of investing in convertible bonds. We discuss three strategies to participate in this market through equities, de-risking portfolios and hedging equity exposures.

The illiquid asset opportunity

Current market conditions have made organic growth more difficult and helped drive institutional investors (including insurers) toward new and alternative opportunities. In their pursuit of higher risk-adjusted yields, many insurers are considering other approaches to add value. One such method is to sell high-quality liquid assets and invest in illiquid assets. This has led to an increasing interest from insurers in less liquid and alternative assets over the past year.

Increased exposure to higher yielding, illiquid assets is not the only concern for insurers looking to optimize their balance sheets. Most insurers are faced with the challenge of balancing a desire for greater returns with their risk appetite and compliance with new regulations. Therefore, both economic and regulatory factors must be considered to determine whether new investment opportunities exist.

Convertible bonds have often been a forgotten asset class in the insurance industry, but they offer interesting risk-return characteristics and possibly advantageous capital requirements when compared to certain more traditional insurance investments.

A common perception among convertible bond specialists is that the market is often not well understood. This may be due to the variety of different nuances of this complex asset, which can be difficult to interpret and to value. But is the insurance industry missing out on an opportunity by neglecting the convertible bond market?

An introduction to convertible bonds

A convertible security is a hybrid of a bond (or preferred stock) and the underlying stock of the originator (i.e., equity). Investors in convertible bonds receive regular fixed coupon payments and a principal repayment on maturity with an additional option to convert to equity, following specific future events. This has the potential advantage of providing investment characteristics of both fixed-income securities and equity. An investor, therefore, can participate when the equity market rises with limited downside exposure and potentially greater return on capital.

Figure 1 shows how the market value of a convertible bond changes with the value of the underlying equity. The convertible bond valuation and the behavior of bond values is described in four scenarios: default, bond-like, mixed and equity-like.

A convertible bond generally provides return characteristics similar to a corporate bond plus a call option on the underlying equity of the issuer. The option of the convertible bond is recognized through a lower bond yield than the equivalent vanilla
A convertible bond behaves like an equity when the option to convert is heavily in the money. Moreover, the convertible value may resemble what is shown in the “equity-like” scenario.

In the “mixed” scenario, a convertible bond behaves similarly to either equities or vanilla bonds depending on the behavior of the underlying equity price. The convertible bond will appreciate in value if the equity price rises and provide virtually no gain if the price stays constant or falls due to the protection provided by the bond floor.

A convertible bond behaves similarly to a vanilla bond under the “bond-like” scenario because the option to convert is heavily out of the money. As a result, the holder is likely to initially receive only the bond coupon and redemption amount; however, there is greater potential for substantial gains if equity markets perform well. Furthermore, convertible bonds are senior to equities in a company’s debt structure, so a convertible bond retains its bond-like characteristics if an originator were to default.
The convertible bond market may be fairly new to insurers but the market has existed in one form or another for the past 150 years. Originating from US railway firms that needed an inexpensive way to finance mass expansion of the rail network, convertible bonds are currently issued by a large variety of companies, including many large cap organizations. The US and European markets combined have about 75% of the global convertible bond market.

The global convertible bond universe is sizeable at around US$500 billion (Source: UBS AG). Figure 2 shows that the market peaked in 2007 at approximately US$700 billion. However, there has been an apparent slump in activity over the past several years as issues have not kept pace with the number of convertible bonds maturing.

**Comparative performance**

Figure 3 shows the comparative performance of an A-rated corporate bond index, global equity index and convertible bond index over the past decade. This particular convertible bond index has performed well against A-rated corporate bonds and equity holdings in top global firms in recent history.

**Recent activity**

Interest in the convertible market, however, appeared to be increasing in 2013 with new issuances to 31 May 2013 of US$34bn over the calendar year, compared with US$24bn over the same period in 2012 (Source: UBS Index Group).
The market also seems to be developing in terms of the range of offerings, with exchangeable bonds contributing over half of issuances in Europe in the year to 31 May 2013. Exchangeable bonds are convertible bonds with the option to convert to equity originating from a firm other than the convertible bond issuer.

**Figure 3. Global equity and convertible bond performance**

Equity v convertible bond indices (Dec 01 to Dec 11) (US$b)

Note that following the financial crisis of 2008, the convertible bond index decreased by a smaller proportion than the equity index. This could be interpreted as the effect of the extra downside protection provided by convertible bonds in comparison to equivalent equity investments.

Source: UBS AG/Thomson Reuters/Markit iBoxx
Convertible bond solutions

Convertibles are a diverse and interesting asset class that offer a wide spectrum of risk-return characteristics. As discussed previously, the value of the convertible bond varies with the value of the underlying equity. This allows investors to take a variety of positions depending on the convertible bond strategy deployed. Furthermore, convertible bond funds can offer an increased exposure to equity and liquidity risk compared with more traditional fixed interest insurance investments and can lead to competitive capital requirements.

**Solution 1: Equity participation with downside protection**

A convertible bond fund with an investment strategy at the bond-like end of the spectrum can provide the opportunity to maximize equity upside from a convertible bond strategy. Meanwhile, the investor also receives a fixed income from the bond yield. It is likely that the capital requirements of a convertible bond fund, such as the one described here, will generally be less onerous than equivalent equity investment due to the downside protection provided by the bond component. However, it is important to note that the bond yield will be less than an equivalent vanilla bond from the same issuer due to the options included in the bond price.

The upside potential of convertible bonds for a particular index relative to a benchmark equity index is shown in Figure 3. Figure 4 demonstrates the potential downside protection provided by convertible bonds, especially in 2002 and since the financial crisis of 2008. It should be noted that under the most extreme economic scenarios (such as in 2008), convertibles still suffered significant losses. Annuity providers could benefit in a low interest environment from investing in a convertible bond fund with bond-like characteristics to generate excess yield. The convertible bond fund would be expected to increase in value over time (due to the growth potential from an increasingly valuable equity conversion option) and may therefore produce risk-adjusted returns in excess of equivalent vanilla bond holdings.

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![Figure 4. Convertible bond and equity index monthly price volatility](chart)

**Figure 4. Convertible bond and equity index monthly price volatility**

Equity v convertible bond price volatility (Dec 01 to Jun 11)

- FTSE 100 Global Equity Index volatility
- UBS Global Convertible Bond Index volatility
It is important to consider the regulatory implications of investing in convertible bond funds to determine the full impact. For example, it is likely that the gross redemption yield of a convertible bond will be lower than an equivalent corporate bond, which may reduce the benefit of such investments under Solvency I for companies deriving a discount rate from the yield on the backing assets. There may also be short-term constraints for Solvency II. However, analyzing empirical returns may make a more appealing economic case for an annuity provider – and this will obviously be important in any investment decision.

With-profits providers preferring to implement a de-risking strategy could also benefit from investing in bond-like convertible bonds. Investment in a convertible bond fund using a strategy based on bonds, with out-of-the-money conversion options, may provide the benefit of altering the risk profile of the portfolio by moving from equities to bonds (or vice versa). This could be achieved without sacrificing the entire additional expected return from equities or increasing the level of risk for a full transition to equities.

**Solution 2: Convertible bond arbitrage**

Convertible bond arbitrage is perhaps the most popular strategy in the convertible bond market. It involves taking a long position in convertible bonds that are at the money where the option-value is maximized (i.e., in the mixed scenario in Figure 1). The convertible bond fund will then take a short position in the underlying equity.

In general, the position will be created to be delta-neutral (where delta is defined as the change in price of the portfolio over the change in value of the underlying equity, all else being equal). This approach partially hedges the investment, depending on the strike price of the short position, as a fall in the equity value will increase the amount of the short holding and reduce the impact of the decrease in option-value of the convertible bond.

Profit arises from this strategy in three ways:

- The convertible bond yield, i.e., the yield received from the coupons and principal of the bond component
- Possible gains from identifying undervalued convertibles, where the option-value on the equity is mispriced
- Potential gains from rebalancing the hedge ratio for large price movements in the underlying

Ideally, convertible bonds should be mispriced and volatile so that all three aspects of profit generation are possible.

Figure 5 demonstrates that convertible arbitrage has historically proved to be an attractive alternative to some equity investments, especially since the financial crisis.

As with solution 1, convertible bond arbitrage could be used by a with-profits fund that aims to alter the risk profile of its portfolio by moving out of equities to bonds (or vice versa). This is achieved without sacrificing the entire additional expected return from equities or increasing the level of risk for a full transition to equities.
Solution 3: Hedging equity exposures

Investment in a convertible bond fund where the options to convert are largely in the money could provide hedging opportunities.

Funds are available that combine long positions on convertible bonds (with in-the-money options) and short positions on the underlying equity to effectively create out-of-the-money equity put options. This position can be used to hedge equity downside exposure and could also lead to reductions in capital requirements for an investment portfolio with equity holdings.

Unit-linked funds could benefit from using convertible bonds in a hedging strategy to protect their future annual management charge (AMC) income streams. Under Solvency II, the present value of the AMCs will be explicitly counted toward the insurer’s own funds, so there may be a greater need to protect the value of the asset than has historically been the case.

Convertible bond funds, using a strategy based on bonds with significant in-the-money conversion options and short positions in the underlying equity, could provide a way for unit-linked investors to hedge their AMCs. The investment would be sized according to the value of the AMCs rather than the size of the fund, and so a relatively small investment could provide a useful hedge.

Investment in a convertible bond fund using this strategy may also provide with-profits insurers with a strategy for hedging their cost of guarantees. This strategy effectively creates an out-of-the-money equity put. In practice, this investment may be held in a guarantee fund pool to give increased benefit from an equity hedge, similar to that described for unit-linked fund AMCs. As equity markets fall, the cost of providing the policyholder guarantees rises, but not at a one-to-one level in most cases. The level of this dampening will depend on the amount of the guarantees, but will be greatest when guarantees are either heavily in or out of the money. As such, the benefit of holding this type of fund can be optimized by effective asset liability management (ALM) strategies.
Concluding thoughts

Investment in the convertible bond market could provide insurers with a number of benefits depending on their individual asset portfolios and strategic investment criteria. In particular, investors could utilize convertible bonds for the following:

- Equity participation with downside protection – Convertible bonds can provide equity-like returns with lower risk than the corresponding equity investment due to the bond floor provided by the convertible bond. Such a long convertible bond strategy could complement existing fixed-income investments by increasing portfolio correlation with positive trends in equity markets.

- Portfolio de-risking strategies – Insurance providers aiming to de-risk portfolios by opting out of equities may benefit from investing in a hedge fund specializing in convertible bond arbitrage. Participation in convertible bond arbitrage strategies could optimize the overall risk-return of an investor’s portfolio. Performance of these strategies is generally not expected to correlate with the performance of other assets.

- Hedging equity exposures – Convertible bond funds can be constructed to hedge equity exposures and are available from specialist asset management firms. This may be of particular interest to firms wishing to hedge the future value of AMCs or the cost of guarantees.

In conclusion, convertibles are a diverse and interesting asset class that could offer a wide spectrum of risk-return characteristics and may benefit insurers across a range of different insurance business.
Contacts

Insurance Investment Global Contacts

Jeff Davies
Global optimization lead
+44 20 7951 7227
davies7@uk.ey.com

Gareth Mee
Insurance Investment Lead
+44 20 7951 9018
gmee@uk.ey.com

Insurance Investment Country Leads

Jaco Louw
Africa lead
+27 21 443 0659
jaco.louw@za.ey.com

Amit Ayer
Americas lead
+1 212 773 7391
amit.ayer@ey.com

Abhishek Kumar
Asia lead
+65 6309 6895
abhishek.kumar@sg.ey.com

Saskia Goedhart
Canada lead
+1 416 943 2332
saskia.goedhart@ca.ey.com

Arthur Chabrol
France lead
+33 1 46 93 81 54
arthur.chabrol@fr.ey.com

Lisa Kallert
Germany lead
+49 (89) 14331 24257
lisa.kallert@de.ey.com

Anna Kozhevnikova
Italy lead
+39 027 221 2239
anna.kozhevnikova@it.ey.com

Wim Weijgertze
Netherlands lead
+31 88 407 3105
wim.weijgertze@nl.ey.com

Andrew Stoker
UK lead
+44 20 7951 4473
astoker@uk.ey.com

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ey.com

Additional white paper authors

Anthony Plotnek
Manager
+44 20 7951 5178
aplotnek@uk.ey.com

Sam Tufts
Associate
+44 20 7951 6671
stuffs@uk.ey.com