Convertible Bonds: Frequently Asked Questions

Introduction

Q: What is a convertible bond?
A convertible bond differs from a regular bond in that it has an inbuilt option allowing the holder to trade it in for – or convert it to – shares in the issuing company should the share price rise by a predetermined amount. Like other fixed income instruments, the issuer pays a fixed coupon until conversion or maturity and the holder has a claim on the company. More uniquely, convertibles offer the investor the potential for upside participation should the company’s equity perform well.

Q: Is the issuer always the same as the underlying equity?
Not always. An exchangeable bond is a type of convertible bond with a different issuer to that of the underlying equity. This usually occurs when the issuer owns a stake in the underlying but wants to monetise a future sale at a premium to where the equity is trading today.

Q: Why do companies issue convertible debt?
By issuing a convertible bond a company receives a discount on the coupon they would pay on an equivalent “straight” corporate bond and effectively sells their equity at a premium to where it is trading at issuance. It is the only way a corporate can effectively monetise the volatility of its equity.

Q: When is a company most likely to issue a convertible bond?
When interest rates are either rising (to lock in financing at a lower rate for longer) or high and expected to be stable (to achieve a lower financing cost relative to issuing a straight), or when they consider the equity valuation fair to high valued (so that by issuing the convertible bond they are effectively selling equity at a premium) and/or that they expect any benefits brought about by the use of proceeds to more than offset the impact of any potential dilution for existing shareholders.

When interest rates are low the asset class competes with the straight bond market and management would want to avoid diluting shareholders when they consider the equity valuation to be low.

Q: What type of companies issue convertible bonds? Are certain sectors more prevalent than others?
Convertible bonds were first used in the 1800s to finance railroads in the US. Today, issuers can vary from pre-IPO deals to listed large cap names such as Microsoft and Siemens. While most sectors have representation, the asset class has historically been popular with growth sectors such as technology (e.g. Priceline and Tesla) and healthcare as they tend to have the most volatile underlying equities and hence can achieve larger savings on their interest expense.

FIGURE 1: SECTOR BREAKDOWN

Source: Thomson Reuters Global Convertibles Index, as at 30 June 2017
Q: How big is the overall market?
We estimate the overall global market capitalisation of the asset class to be c. $400bn.

Q: Which benchmarks are most widely used?
The Thomson Reuters (TR) Global Focus Hedged Convertible Bond Index (previously run by UBS) is arguably the most referenced index amongst the global long-only community. It selects the larger balanced convertible bonds (currency hedged) from the TR Global Convertible Index which attempts to define the broader liquid convertible bond universe.

Similarly the Merrill Lynch G300 Global Convertible Master Index concentrates on liquidity and size.

Within both index families these are then split to focus on characteristics such as region or credit quality and there are other providers such as Exane who produce their own variations.

Q: What have recent issuance trends been like?
Following a couple of lacklustre years convertible bond new issuance picked up over the summer of 2016 as an increase in long-term rates prompted corporates to take advantage of the low interest rate environment and strong stock market performance. Year-to-date, 2017 has seen a continuation of this trend.

Q: What determines the terms of a convertible bond at new issuance? What are the typical coupons and what are maturities at issuance?
We estimate that on average 20-25% of the convertible bond universe matures and is issued each year. However, supply and demand for new issuance can vary through the business cycle and so the terms at which convertible bonds come to market can be seen to reflect the extent to which these match, as well as the broader financial market dynamics present at the time.

Back in 2010 for example, when it was difficult for companies to raise financing, terms would be more in favour of the investor with higher coupons, lower premiums, short maturities or embedded put features, take-over protection and at attractive valuations. When interest rates are low (but starting to rise) and there’s much more liquidity in the financial system, terms are more in favour of the issuer with lower coupons, higher premiums, longer maturities, embedded call features and stretched valuations in some cases.

**FIGURE 2: ANNUAL CONVERTIBLE ISSUANCE**

![Annual Convertible Issuance Chart]

Source: UBS, as at 30 June 2017

**FIGURE 3: MONTHLY CONVERTIBLE ISSUANCE**

![Monthly Convertible Issuance Chart]

Source: UBS, as at 30 June 2017
Q: What is the credit quality of the asset class? Why is a large portion of convertible bonds not rated?

Of the Thomson Reuters Global Convertible Index 54.3% is non-rated, 27.3% is investment grade and 18.4% is rated high yield by S&P or Moodys (as at 31 May 2017). Within the non-rated portion there are many high quality companies with strong credit fundamentals such as Salesforce.com and British Land who do not want or need to pay for their convertible securities to be rated. They may however have a rating at the corporate level or on their “straight” corporate bonds where it is more customary for them to pay to be rated.

The Technicalities

Q: What drives a convertible bond’s valuation?

Convertible bond valuations can be driven by a number of moving parts which determine the value of both the bond and the embedded equity call option.

The bond’s valuation is the net present value of the expected future cash flows of the bond and so is a function of the coupon, the relevant interest rate and credit spread used to discount the cash flows, and the time to maturity, any put or call features aside.

All else being equal, the higher the coupon and the lower the interest rate and credit spread, the higher the bond valuation will be.

The longer the time to maturity, the more sensitive the valuation will be to changes in interest rates and credit spreads.

The equity call option’s valuation is a function of the underlying issuer’s share price relative to the option’s strike, the underlying stock’s volatility, the time to maturity, any unprotected dividend yield and the interest rate.

All else being equal, the higher the underlying share price, the higher the volatility of the underlying stock, the longer the time to maturity, the lower the dividend yield that you are not protected for and the higher the interest rate, the higher the equity call option valuation will be.

The implied volatility can be calculated using the observable factors (namely the share price, time to maturity, dividend yield and interest rate) in an option pricing model such as the Black-Scholes Model. This indicates how rich or cheap the embedded option is relative to the underlying equity’s historic or expected future volatility.

Q: What are the “Greeks”?

The Greeks are a set of measurements which are used to calculate the sensitivity of a convertible bond’s option’s valuation to changes to various parameters.

| Delta: sensitivity to the underlying share price |
| Gamma: sensitivity of the delta to the underlying’s share price |
| Omega: sensitivity to credit spreads |
| Rho: sensitivity to interest rates |
| Vega: sensitivity to volatility |
| Theta: sensitivity to time to maturity or time decay |

Source: Thomson Reuters, as at 30 June 2017
**Q: Are convertibles more like bonds or stocks? When are they the most unique?**

Depending on how the bond was structured at issuance (if it were more bond- or equity-esque), and market moves since, convertible bond valuations can be more sensitive to the factors driving either the corporate bond or equity option valuations at any given time.

A “balanced” convertible bond is one that is trading in the range where its return profile is the most "convex" (typically in the delta range of 30-60%). Here a high gamma will both increase the delta or equity sensitivity of the convertible bond as the underlying’s share price rises and decrease the delta or equity sensitivity or the convertible bond as the underlying’s share price falls. It is a key differentiator for the asset class; the return profile is said to be asymmetric given that any gain would be greater than the loss for the same percentage move up or down in the underlying equity, all else equal.

**Q: When are currency exposures typically hedged and why?**

Currency exposures are usually hedged by managers running “balanced” convertible bond portfolios which typically have a volatility of between 5-7%. This is because currency volatility is usually higher and so would make the risk-adjusted returns less attractive.

**Q: What is liquidity like? How do convertibles behave in times of market stress?**

Given the hybrid and dynamic nature of the convertible bonds asset class, liquidity is significantly different to the more ‘vanilla’ corporate bond market. Within the more ‘investible’ portion of the asset class (typically greater than $250mm deal size) we find liquidity to be strong given the broad number and types of market participants at the various stages of a convertible bond’s life. For example, when a convertible bond is trading in the balanced range, outright funds similar to ourselves are active. As the stock performs well and becomes increasingly equity-like, equity replacement strategies or hedge funds may step in. On the flip-side to this, if the stock sells off and becomes increasingly bond-like, income investors such as insurance companies become involved.

Liquidity can vary significantly within the asset class and market environment however. Smaller deals can be tightly held, i.e. not traded by many market makers, and in a distressed period liquidity in these and the poorer quality credits can come at a high cost as the correlation between the equity and credit tends towards one.
Portfolio Management and Asset Allocation

Q: Can convertible bond portfolios be structured so that they have different risk profiles?

Yes – convertible bond portfolio managers can construct their portfolios to make them more bond-like, “balanced” or more equity-like and often have a high-yield or investment-grade bias. Some may convert the bond into equity and continue to hold it, buy listed equity options or use synthetics to create exposures that are inaccessible via the convertible bond market.

Q: How is a balanced convertible bond portfolio different from a 50:50 allocation to equities and fixed income?

The convexity, or gamma, within a balanced convertible bond portfolio is a differentiator and benefit of the convertible bond asset class relative to a simple 50:50 allocation to equities and fixed income. It can be seen to act as an ‘automatic’ asset allocator, making the convertible bond portfolio more bond-like in falling markets and more equity-like in rising markets, hence the asymmetric return profile.

On a bond-level basis, two more extreme real-life examples demonstrate the attractive downside protection and upside participation convertible bonds offer versus the corresponding equity.

From mid-September 2014 to February 2016 Twitter’s equity fell c. 70% whereas the two outstanding convertible bonds quickly reached their bond floors at c. 85-90%, a 15-20% participation to the equity downside given the strong credit fundamentals. The pull to par then swiftly kicked in over the following months as potential take-over chatter picked up.

On the flip-side, US 3D graphics processor NVIDIA’s stock has appreciated c. 830% since it brought its 1% 2018 convertible bond to the market at the end of 2013. Correspondingly the bond has appreciated c. 615%, a 75% participation rate.

An active manager typically rebalances their portfolio back into the “balanced” range to ensure that it continues to exhibit high convexity or gamma at all times. Such a process means that they are a buyer of risk in falling markets and a seller of risk in rising market; the benefits of which can be seen to compound attractively over time, see Figure 8 overleaf.
Q: Where should an asset allocator position the convertible bond asset class within their portfolio?

Financial mathematics (put-call parity) demonstrates that a convertible bond can be thought of equally as a bond with an embedded equity call option, or an equity with an embedded put. As such, a convertible bond portfolio can be positioned as alternative fixed income or equity replacement as long as an investor is comfortable with the other risk factors that they are introducing to their portfolios. Further to this, due to the product’s asymmetric return profile and superior Sharpe ratio it is often added to a multi-asset portfolio to improve the overall risk adjusted return.

Please see our note by Arthur Grigoryants on “The asset allocator’s challenge” for further information.

Q: When would the asset class be considered cheap? Is this when I should buy?

The implied volatility of a convertible bond indicates how rich or cheap the embedded option is relative to the underlying equity’s historic volatility, listed option volatility (although this is typically shorter dated) and/or future volatility assumptions. As such, investors often look at this value as an indication as to whether it is a good time to make a tactical or strategic allocation to the asset class.

Whilst it makes sense that an investor would want to make an allocation at or below fair value we feel that this metric is often misunderstood and monitored a little too closely by strategic investors who run the risk of missing out on the long-term benefits of owning the asset class through a cycle.
**Q:** Why did convertible bond valuations collapse in 2008? Is it possible that this could happen again?

Prior to 2008, hedge funds dominated the convertible bond asset class at c. 70% of the market. Following Lehman Brothers’ bankruptcy in September 2008, many were forced to rapidly de-lever as short-selling restrictions were imposed by regulators and prime brokers pulled the leverage they supplied to the convertible arbitrage strategy. Outflows from outright funds further compounded the demand for liquidity as the creditworthiness of some of the asset managers themselves came into question. As supply overwhelmed demand, convertible bond valuations fell through their theoretical bond floors irrelevant of the credit quality. At this point convertible bonds were trading with a yield greater than that of an equivalent straight corporate bond with an effective free option on the equity.

Given that most convertible bonds are senior unsecured claims on the companies with a relatively short duration, the pull to par kicked in from November 2008 through to March 2009, shielding investors from any further capital loss. The asset class then recovered through the remainder of the year.

Today the asset class is more equally balanced in the US and outright dominated in Europe (c. 70%) today. The hedge funds that are present are unable to obtain significant leverage to deploy in the space and the proprietary trading desks within the banks themselves no longer exist. As such, a repeat of 2008 is unlikely to occur and cause a significant cheapening of the asset class that would make attempting to tactically trade the asset class on a valuation basis worthwhile. Recent market dislocations have proven to be much less extreme as supply and demand discrepancies have been quick to correct themselves when new issuance comes to the market. Further to this, institutional or more traditional fixed income or equity investors are quick to step in where they feel there is value and so lend support to the asset class.

**Terminology**

**Bond floor:** the value of the convertible bond if the equity option was worthless.

**Conversion ratio:** the number of shares received at the time of conversion for each convertible bond.

**Conversion price:** the price at which a convertible bond can be converted into shares.

**Mandatory convertible:** a type of convertible bond which must be converted into the underlying stock i.e. conversion is not optional so there is no theoretical bond floor. Typically pays a higher coupon to compensate the holder.

**Parity:** the current market value of the underlying shares of the convertible bond.
Esther Watt, CFA

Esther is a portfolio manager on the RWC Convertible Bond team where she is involved in all parts of the investment process from idea generation to portfolio construction, trade execution and risk management.

The team is a dedicated provider of convertible bond solutions. The RWC Global Convertibles Fund, RWC Asia Convertibles Fund and RWC Core Plus Fund aim to provide attractive risk-adjusted returns for investors with varying degrees of risk tolerance. The active approach to the dynamic asset class and strict investment process seeks to protect capital to the down-side and participate well to the up-side so that returns accrue with reduced volatility over time.

Esther joined RWC as an investment analyst in 2009 having previously worked as a global fixed income product specialist at Fortis Investments. Prior to Fortis, Esther was an analyst within the global credit risk management division at JP Morgan. Esther graduated from the ICMA Centre at Reading University with first class honours in BSc International Securities, Investment and Banking.
CONTACT US

Please contact us if you have any questions or would like to discuss any of our strategies.
E invest@rwpartners.com | W www.rwpartners.com

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