Volume 16 //

Acuity

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Spotlight on Bonds

> Investing in bonds requires attention to more than one event at a time. Driving requires a foot on the gas, hands on the wheel and eyes on the road. Navigating the bond market requires a foot on interest rates, a handle on the prospects of being repaid, and an eye on inflation.
>
> Steven Mintz – financial journalist

When you place a deposit with a bank, buy a gilt or a corporate bond, you are in effect lending your money to those with a need to borrow from you. In return you expect to be paid interest on your loan and get your money back. This edition of Acuity is a primer on understanding how bonds work and why it matters who you lend to, and how long for.

An introduction to bonds

Many investors get quite excited about equities but few stop to think much about the bonds that they own. They should. Bonds play a very important role in an investment portfolio. For many they represent the 'safe' part of their portfolio that will provide protection when times get tough in the equity markets - as they always do from time to time - or simply maintain the value of their portfolio. But classifying bonds as 'safe' and equities as 'risky' leads some into poor bond choices. In practice they range widely in character from 'cash-like' to 'equity-like', as we will explore below. Before moving on, it is important to make sure that the basic mechanics of how bonds work are clearly understood.

Basic bond mechanics

Simply put, bonds are IOUs issued by companies and governments to investors, which pay a fixed rate of interest to the lender, known as its coupon, and promises them that their principal will be returned at a set date in the future, known as its maturity date. In bond market parlance, the return that you expect to receive, on average per year, over the lifetime of a bond is known as its yield. Always remember that as an owner of bonds you are acting as a lender to borrowers – you need to be comfortable with who they are and how long you are lending to them for.

The relationship between yield and price

The yield that the bond will deliver to you will need to be attractive and reward you for the various risks that you are taking on, which may relate to the market as a whole or may be specific to the issuer and structure of the bond. At the time of issue the yield is more-or-less equivalent to the bond's coupon. As soon as the bond is issued, the bond market decides what the yield should be, based on how it perceives the risk of lending to the issuer of the bond. The Eurozone crisis has provided an extreme example, where Greek, Spanish and Italian bond yields rose dramatically as the markets worried about being repaid both interest and capital.

As the coupon (rate of interest) is fixed throughout the bond's life, the only way in which a change in yield demanded by the market can be delivered is through a change to the bond's price. If yields rise, bond prices fall. If yields fall, bond prices rise. This is sometimes referred to as the bond see-saw, with yields at one end and prices at the other.

For example: imagine a bond is issued with a one year maturity at a price of 100 (its 'par' value) and a coupon of 4% p.a. If after issue the market demands a 6% yield, the bond's price must fall to 98 to allow the investor to achieve a yield of 6% over the life of the bond. This will be made up of the 4% cash coupon payments made and a 2% capital gain achieved when the bond matures at its par value of 100.

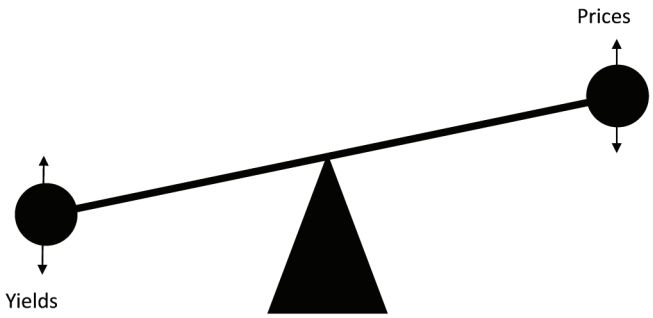

Figure 1: The bond see-saw

The components of a bond's yield

At its simplest, the yield on a bond can be broken down into six components, some of which relate to all bonds (the first two below) and some of which relate to the specific circumstances of the issuer and the characteristics of the bond. Let's first consider the lowest risk investment that we can make – lending on a short-term basis to the UK government:

- **Real yield:** The real (after inflation) return that you expect to be paid in compensation for supplying your capital to the government, as opposed to utilising it elsewhere to your benefit. Currently real yields are very low.
- **Inflation expectation:** The market's expectation for future inflation needs to be included to make sure that you receive the real return you are due, once inflation has been taken into account. Because this estimate for inflation has some uncertainty in it, investors expect a small premium for taking it on. Rising inflation leads to rising yields and thus negatively impacts bond prices. Changes in inflation expectations are a major component of high quality bond market movements.

As you move away from this risk-free position, the yield on the bond is going to rise as the risk of lending rises for some or all of the reasons below:

- **Credit (default) risk:** This is the risk of not being paid the coupon on the bond and receiving the par value of the bond at its maturity date. The lower the credit quality of the bond's issuer, the higher the yield must be to compensate for the higher chance of a default. Credit ratings provide a third party measure of how risky the borrower is.[1]
- **Maturity (interest rate) risk:** You would expect to receive a higher yield for lending longer, as you would when placing a deposit with a bank – in part because of the uncertainty about the rate at which you will be able to invest future coupons. This is not, however, a free lunch as the longer you lend your money for, the greater the impact a change in market yields (in response to changing risks) will have on the price of the bond. This is explored in a little more depth below.
- **Liquidity risk:** The size of the bond issue, and who holds it, will impact on how liquid it is i.e. how easy it is to sell at a fair price. The less liquid the bond, the higher the compensation an investor will demand for holding it.
- **Structural risk:** Certain structural features that may be more attractive to the borrower than to the investor, for which the investor needs to be compensated, such as an option for the borrower to repay the bond early if yields fall.

Tip 1: Always look out for the 'average credit quality' for any bond fund that you are invested in. Check out what the minimum average credit quality constraint is and review the distribution of the credit ratings of the holdings of the fund.

Longer maturity bonds are more volatile than shorter maturity bonds

The bond seesaw explains the generic relationship between yields and prices but not the magnitude of the price change for a given rise in yields. The sensitivity of a bond's price to a change in yields is known as its 'duration' and is a measure described in years. Put simply, it is the average time in which a bondholder is paid back and describes how far out along the price side of the bond see-saw you are sitting.

Rule of thumb to calculate gains or losses

Calculating a bond's duration is complex, but don't worry as you will never have to do it! What you do need to know is how sensitive the prices of the bonds you own are to movements in yields. A useful rule of thumb exists to estimate this.

Duration X rise (fall) in yield = Capital loss (gain)

Below you can see very clearly that the longer the duration of a bond or a portfolio of bonds, the greater the change in price for a given movement in yields. This is important to understand.

Price change	Duration					
Yield Rise	**1 Year**	**2 Years**	**3 Years**	**4 Years**	**5 Years**	**10 Years**
1%	-1%	-2%	-3%	-4%	-5%	-10%
2%	-2%	-4%	-6%	-8%	-10%	-20%
3%	-3%	-6%	-9%	-12%	-15%	-30%

Table 1: The longer the duration, the more volatile the price

Note: This does not take into account the coupon that you will receive.

Tip 2: Always find out what the 'weighted average duration' of any bond fund product is. Duration figures should be readily available on a fund's fact sheet. Once you know the fund's duration you can work out how much its price will fall for a given rise in bond yields. Never own any form of bond investment without knowing its duration.

Bond market sectors

The figure below provides an indication of the spectrum of bond investments. By and large, bonds in the lower left hand corner are the least risky and bonds in the top right corner are the most risky.

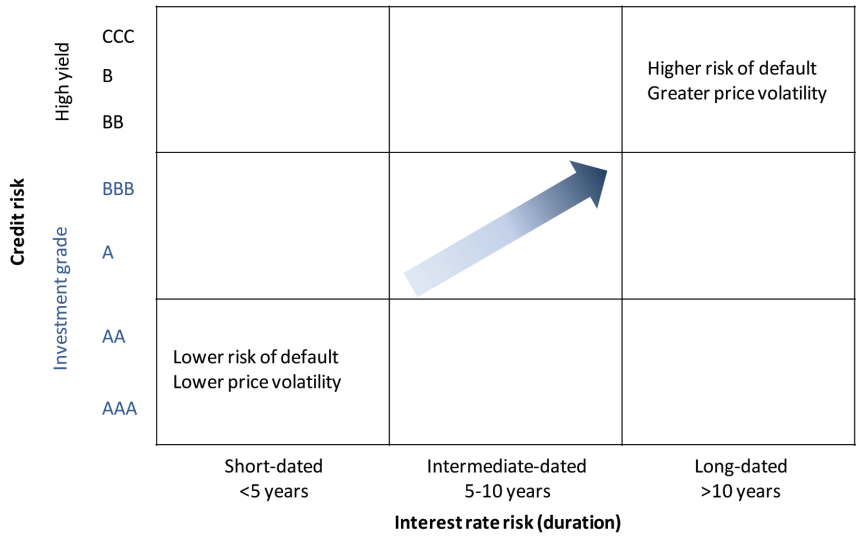

Figure 2: Bonds vary widely in risk and potential return

In practice the industry gives labels to different categories of bond investments, some of which are summarised in the table below:

Category	Attributes	Credit	Maturity
Government (UK)	• Knows as 'gilts' • Very liquid, high credit quality • Interest and capital repayment secure • Some inflation (index) linked issues available	AA	All – short to very long
Global government bonds	• Generally refers to investment grade • Indices structured in a number of ways • Often based on market capitalisation • Currency risk needs to be considered (hedged) • Growing number of inflation-linked issues	Investment grade	All
Corporate bonds	• Issued by companies • Tend to be less liquid providing a premium • A few inflation-linked issues	Investment grade	Mainly short & intermediate
High yield corporate bonds	• Issuers are in some sort of financial distress • Previously known as 'junk bonds' • Low liquidity and high transaction costs • Prone to large swings in yields • Equity-like losses possible e.g. > -25% in the Credit Crisis	Sub-investment grade	Mainly short & intermediate
Emerging market bonds	• Issued by governments and corporations of emerging market countries • Many economies have improved in recent years • Mainly issued in local currency • Previously issuance was often in US dollars • Prone to large swings in yields • Risk of contagion between markets • Risk of large losses at times of crisis	Increasingly investment grade	Short & some intermediate

Table 2: Common categories of bond investments

Using bonds effectively in portfolios

The big issue, then, is how should you position the bond investments that form part, or all, of your portfolio? That depends on what your objectives are. If we look at the far ends of the risk spectrum, we can begin to get a clearer picture. The generic needs of each type of investor are summarised in the figure below.

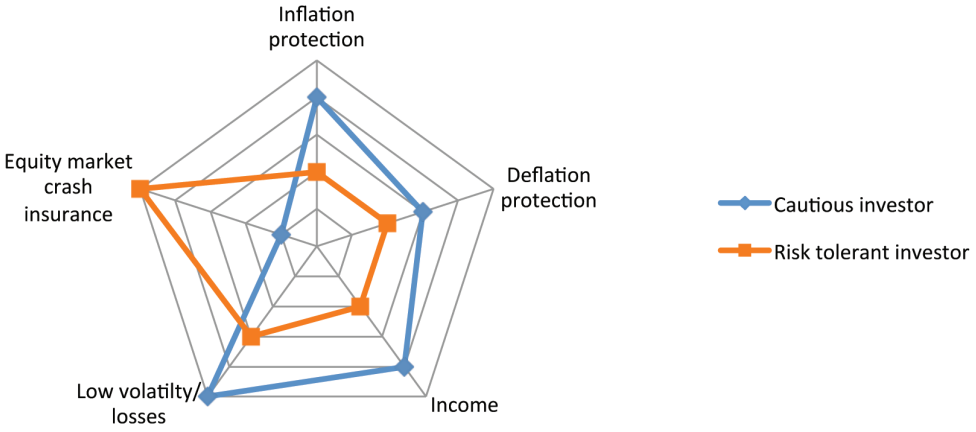

Figure 3: The needs of investors may differ

Source: Albion Strategic Consulting

Cautious investors worry about losses (and should worry about inflation)

By their very nature, cautious investors do not like to see large losses on their portfolios at any time. Most will accept that some small losses may occur as a result of bond yields rising and bond prices falling. Those that cannot bear the thought of any losses at all are not investors but savers. That introduces the other major concern – inflation. Long-term cautious investors are vulnerable to bursts of unanticipated inflation, and need to try and protect their portfolios from it.

The 1970s is a prime example of when bonds fared poorly, losing up to one third of their purchasing power, in the face of very high inflation. Even savers find it hard to avoid after-inflation losses - over the past three years they would have lost more than 10% of their purchasing power. Many want some form of income from their portfolio, which bonds provide via their coupons. The risk of deflation is also a concern.

Key dangers for long-term, cautious investors

- Owning high yielding bonds: it is tempting to slide down the credit ratings to try and pick up extra yield. The problem is that higher yielding bonds (weaker issuers) are prone to large yield movements at times of market stress. Concerns over their ability to survive and pay coupons and repay principal rise. Yields rise and liquidity falls. High yield bonds can suffer equity-like losses (covered below) – not what a cautious investor wants.
- Owning longer dated bonds: When yields are stable or falling, owning longer dated bonds is rewarded by higher yields than short-dated bonds and potential price appreciation. However, when yields rise, losses can be material (see Table 1 above).
- Inflation: potential loss of purchasing power if inflation spikes unexpectedly. Owning only conventional bonds could be problematic..

A sensible bond solution

- Low volatility: If you are a long-term, cautious investor you are well served by owning high credit quality (AA on average) shorter-dated bonds. This reduces the risk of uncomfortable losses, yet provides a little yield enhancement over the highest quality bonds, both through the lower (but still high) credit quality of the issuer, slightly lower liquidity and the longer duration (e.g. 3 years) compared to holding cash.
- Inflation protection: An allocation to shorter-dated inflation-linked bonds provides protection from unanticipated inflation and makes sense in many instances. In practice, however, good products in this space are limited. Government backed inflation-linked certificates would fit this space well, if only they were still available.
- Avoid currency exposure: All non-GBP currency exposure should be avoided by using products hedged back to GBP (or whatever the investor's base currency is)

Risk tolerant investors, who own material allocations to equities.

The main role that bonds play in these portfolios is to provide insurance against material equity market falls that will inevitably occur from time to time.

Key dangers for long-term, cautious investors

- Owning high yielding bonds: Again it is tempting to slide down the credit ratings to try and pick up extra yield and make the bond portion of the portfolio deliver a little more return. However, when equity markets fall there is usually a flight to safety and liquidity, out of more risky assets. Money floods into high quality, liquid bonds, such as gilts, driving prices up and yields down. Conversely, money floods out of more risky bond assets (lower quality corporates) pushing prices down and yields up.

A sensible bond solution

- Own high quality bonds: It makes sense to own high quality bond assets (e.g. AA average credit quality) as these are likely, on most occasions, to perform better than other more risky bond assets when equity markets crash. In terms of maturity, logic suggests that longer-dated bonds, due to the greater positive impact of yield rises on their prices, will provide the most protection. However, shorter-dated high quality bonds do a pretty good job too without the additional volatility.
- Inflation is less of a worry: Due to their longer-term hedge against inflation, equities and other assets, such as commercial property, provide protection from inflation, so the risk of inflation to the portfolio is less than for more cautious investors. Inflation-linked bonds could be included, as long as they are high quality.
- Avoid currency exposure: Again, all non-GBP currency exposure should be avoided by using products hedged back to GBP.

Take a look at Figure 3 on the next page. It provides support for why high quality bond assets make sense at times of equity market crisis, in this case driven by the Credit Crisis. While this is an extreme period, it does illustrate the point well.

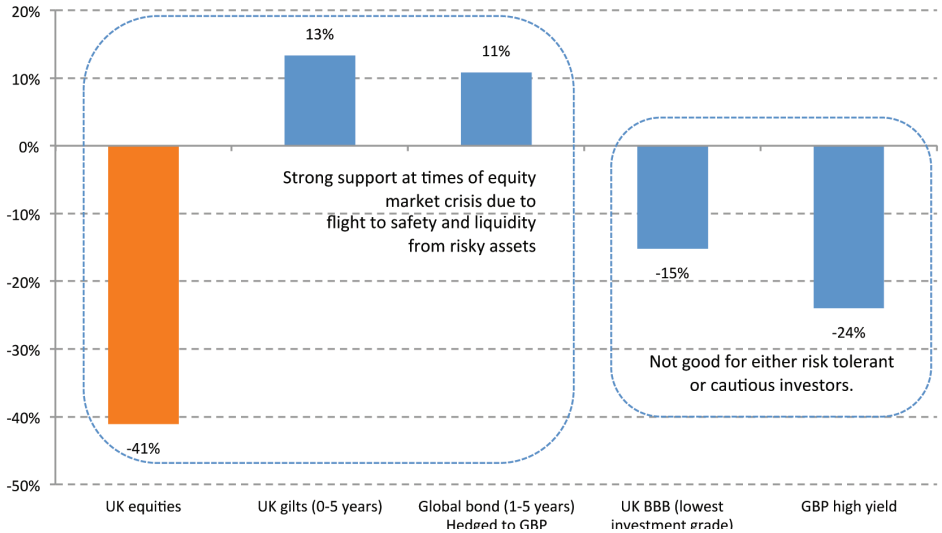

Figure 3: Bond performance during the Credit Crisis (Nov. 2007 to Feb. 2009)

Data source: Morningstar Encorr 2013. Copyright. All rights reserved.[2]

Conclusion

Bonds are a very important part of your portfolio. In a nutshell:

- Bond prices are inversely related to bonds yields;
- The longer the duration of the bonds the more volatile they are;
- Hunting for yield in high yield and emerging market bonds risks high losses;
- At times of market crisis, investors tend to flee to high quality liquid assets and out of lower quality bonds.

A sensible allocation should be made to high quality (e.g. average AA), shorter-dated bonds, avoiding all non-GBP currency exposure. As the old saying goes 'the amount of interest you want should depend on whether you want to eat well or sleep well'. Fortunately a well structured portfolio constructed to meet your goals should allow you to do both.

End notes

1. Rating agencies assign credit quality ratings to companies and government who issue bonds. You will have heard the term 'Triple-A rated', which refers to the strongest issuer and is often used in everyday conversation. UK government debt has recently been downgraded from AAA to AA by one of the rating agencies. Ratings from AAA to BBB are known as investment grade and BB and below are known as sub investment grade, high yield or junk.
2. UK equities – FTSE All Share Index; UK gilts – FTSE British Govt. Index (up to 5 years); Global bond – Citigroup WGBI 1-5 years hedged to GBP; UK BBB – Barclays Sterling non-Gilts Baa Index; GBP high yield – BofAML GBP HY Index.

Other notes and risk warnings

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