Investment insight

Fixed income – the what, when, where, why and how

Fixed income investments make up a large proportion of the investment universe and can form a significant part of a diversified portfolio but investors are often much less familiar with how fixed income works, than how shares work. The purpose of this article is to provide investors with a better understanding of the fixed income asset class and the benefits of having fixed income investments as part of your investment strategy. These include diversification, regular income, capital protection and the potential for capital gains.

What is fixed income?

The term 'fixed income' is another name for 'debt securities' or the more common term 'bonds'.

The simplest way to explain a bond is to liken it to an IOU. When you purchase a bond from a government, a semi government authority or a corporation, you are effectively lending them your money for a period of time. In return, the issuer of the bond agrees to make regular interest payments to you (also known as coupon interest) for the term of the bond and also to repay the face value of the bond to you at the end of the bond's life (when it matures).

A term deposit is a bond that usually has a short term until maturity. An investor in a term deposit lends the value of the term deposit to the bank for its term. The bank pays the investor interest on a regular basis, or upon maturity, and also repays the face value of the deposit when it matures. Bonds can be traded in the secondary market but term deposits are not tradable.

Bonds are issued by governments, semi-government bodies and corporations as a way of borrowing money. Governments issue bonds to fund spending on the economy and infrastructure. Corporations issue bonds to implement expansion plans and for capital investment.

The universe of fixed income securities is very large as it covers both government and non-government issuers, short and long maturities and a wide range of credit ratings. For simplicity, the main categories of fixed income securities are detailed in Table 1.

TABLE 1: DIFFERENT TYPES OF FIXED INCOME SECURITIES

Cash	Includes bank bills or certificates of deposit (CD), deposits and term deposits. The value of these securities is mainly linked to movements in short-term interest rates or the Reserve Bank of Australia's cash rate target.
Australian bonds	Investment-grade bonds issued by governments, semi government bodies and companies.
Global government bonds	Sovereign and treasury-issued bonds.
Global non-government bonds	Investment grade bonds. Issuers include companies and government agencies.
High yield bonds	Bonds issued by companies with a credit rating below investment grade, also known as sub-investment grade issuers. They usually pay higher rates of interest than more creditworthy securities because they have a higher risk of default.
Bank loans	A source of funding for companies to finance their operations and growth. Bank loans typically exhibit lower liquidity than the traded bond market but many loans have the added security of being senior secured debt.
Inflation linked bonds	Similar to conventional bonds except coupons and principal (or face value) are linked to changes in the Consumer Price Index (CPI) over the life of the bond.

Some important definitions –
yield, coupon, par, yield curve, duration and spread

Before explaining how fixed income securities work, it is helpful to have some knowledge of the following definitions associated with fixed income markets.

Yield – The yield of a bond is a measure of the total return (in per cent) that you receive from holding the bond to maturity. Yield can be broken down into:

- **Coupon yield –** This reflects the coupon return you receive annually on the bond. It is calculated by dividing the bond's annual interest payment by the value of the bond. So if you paid $1,000 for a bond when it was issued and that bond had an annual interest payment of $50, the coupon yield of the bond would be 5%.
- **Yield to maturity (also referred to as market yield**) – This is a measure of the return received by holding a bond until it matures. It includes all the interest payments received during the life of the bond and any gain or loss of capital. Calculating the yield to maturity for a series of bonds enables an investor to compare the potential return on bonds with different maturity dates, values and coupon payments. For example, if a bond is currently priced at 97.00, we know that it will mature for 100.00, producing a 'capital gain' of nearly 3%. This is combined with the coupon yield to calculate the yield to maturity.

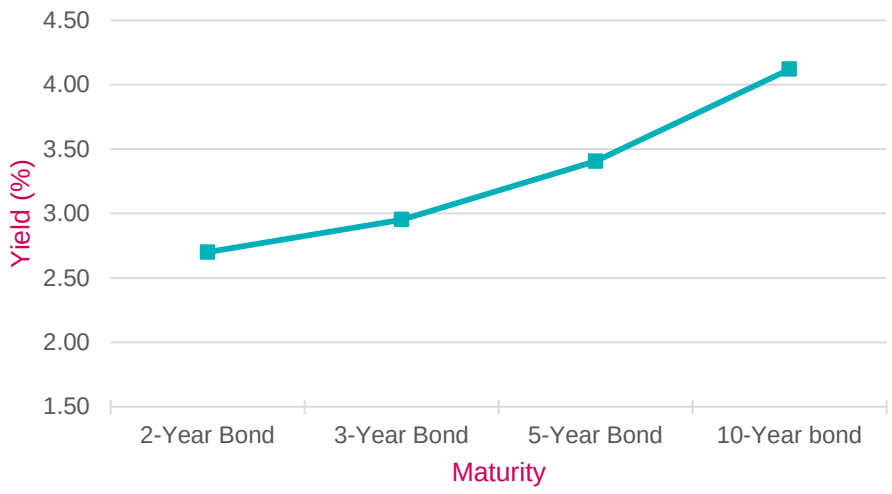
Coupon – Bonds pay interest to compensate the holder for lending money to the issuer. Fixed rate bonds pay an interest rate that is fixed until maturity (it does not change over the life of the bond) and it is calculated as a percentage of the face value of the bond. Fixed rate bond interest payments are usually made twice per year (i.e. semi-annually) and are called coupons. Continuing the example above, a bond with a face value of $1,000 and a 5% coupon rate will pay $50 per year in two $25 payments. These are called coupon payments. Floating rate bonds pay a coupon that adjusts (floats) in line with changes in short term interest rates. Floating rate bonds are attractive to investors who are expecting interest rates to rise and would prefer not to lock in a fixed rate.

Par – This is the term used for the final maturity price of a bond which is usually 100. When the market price of a bond is below par, the bond is trading at a "discount" to par. If the bond's current price is above par, the bond is trading at a "premium" to par.

Yield curve – Governments and other bond issuers usually have several bonds issued in the market with different maturity dates. Plotting the maturity dates of bonds from a single issuer against their interest rate creates a yield curve as shown in Chart 1 below.

The shape of the yield curve can give investors information about the prevailing economic environment. For example, the yield curve in Chart 1 is called a 'normal' yield curve because the yield rises as the maturity of the bond gets longer. Since bonds with longer maturity dates have higher risk (a lot more can happen to interest rates in 10 years compared to 2 years), one would expect them to have higher yields to compensate investors for their higher risk level. Normal yield curves suggest that growth is expected to strengthen over time.

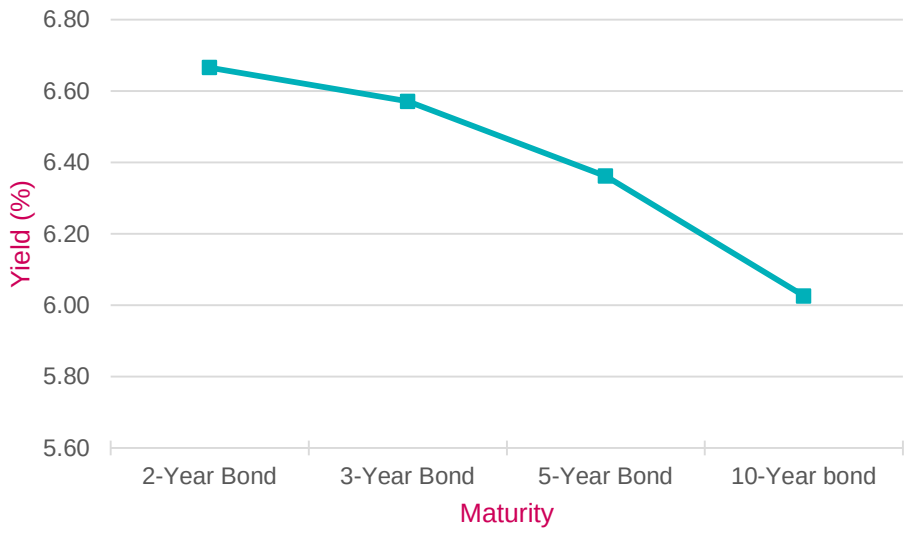
CHART 1: AUSTRALIAN GOVERNMENT YIELD CURVE – FEBRUARY 2014



Source: Reserve Bank of Australia

The yield curve in Chart 2 below is an 'inverse' yield curve as short maturity bonds have higher yields than long maturity bonds. Inverse yield curves typically occur when monetary authorities such as the Reserve Bank of Australia are tightening monetary policy in response to strong growth. In such situations, short term interest rates are being forced up but this is expected to eventually slow the economy, hence longer term rates are lower. The yield curve in Chart 2 reflects the situation in Australia in late 2008, just prior to the Global Financial Crisis that caused a sharp slowdown in global growth.

CHART 2: AUSTRALIAN GOVERNMENT YIELD CURVE – NOVEMBER 2008



Source: Reserve Bank of Australia

For completeness, the yield curve can also be referred to as 'flat' when there is little difference between the yields on short and long dated bonds. When the yield curve is flat, investors are not really being compensated for the risk of holding longer term bonds.

Duration - Duration is a measure of how sensitive the price of a fixed income security is to a change in interest rates. As interest rates rise, the price of a fixed income security falls and vice versa. So in rising interest rate environments, fixed income funds can make significant capital losses (as illustrated by the bond market sell-off of 1994). The longer the time to maturity, the higher a fixed rate bond's duration. So fixed income funds that have a higher proportion of their portfolio invested in long bonds (e.g. 5 to 10 year maturities) have higher duration risk and more potential to underperform as interest rates rise. However, fixed income funds that held long dated bonds through the Global Financial Crisis produced very strong returns as long term bond yields fell sharply.

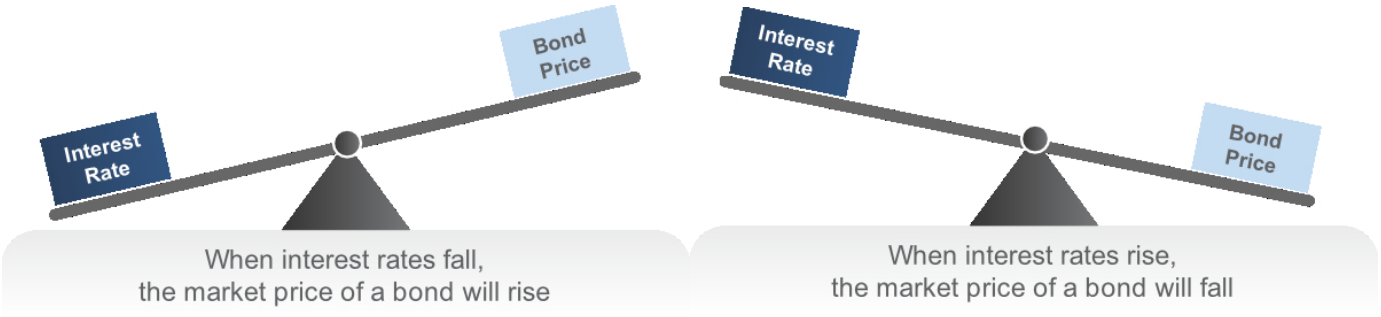
Spread – A credit spread is a measure of the credit risk of a particular bond. It is usually measured as the margin over a reference rate in the market, namely the swap rate. For example, a bond with a high credit rating, such as a major bank, may trade at 0.80% over the swap rate. A bond with a lower credit rating, such as Lend Lease, may trade at 1.50% over the swap rate. Risk free bonds, such as government bonds, usually trade at a margin under the swap rate. You can also compare the riskiness of corporate bonds with government bonds of similar maturity by observing their credit spreads. For example, 5-year bonds from a major bank trade at 0.80% over the swap rate whilst 5-year Australian government bonds trade at 0.15% below the swap rate. The difference is 0.95% which is a measure of the riskiness of the corporate bond relative to a comparable government bond.

The relationship between interest rates, the price of a bond and its yield

After bonds have been issued, they can be bought and sold in the secondary market, mostly via brokers but some bonds are also listed on public exchanges (like shares). The price paid for a bond is partly determined by the current level of market interest rates.

The price of a bond and interest rates are inversely related – when interest rates rise, bond prices fall and vice versa (see Figure 1 on the next page). A simple example is the best way to explain why this happens. The price of a bond really reflects the value of the income stream that it will provide over its lifetime via its coupon payments. When market interest rates rise, new bonds will be issued with higher coupon payments to make them attractive to investors. In this environment, old bonds will be less attractive due to their lower coupon payments so their prices need to fall to make them attractive again in the new higher interest rate environment.

FIGURE 1



Source: MLC

Conversely, when market interest rates fall, old bonds with higher coupons are more attractive to investors as they are paying more income. Hence their prices rise to reflect the higher return they are offering.

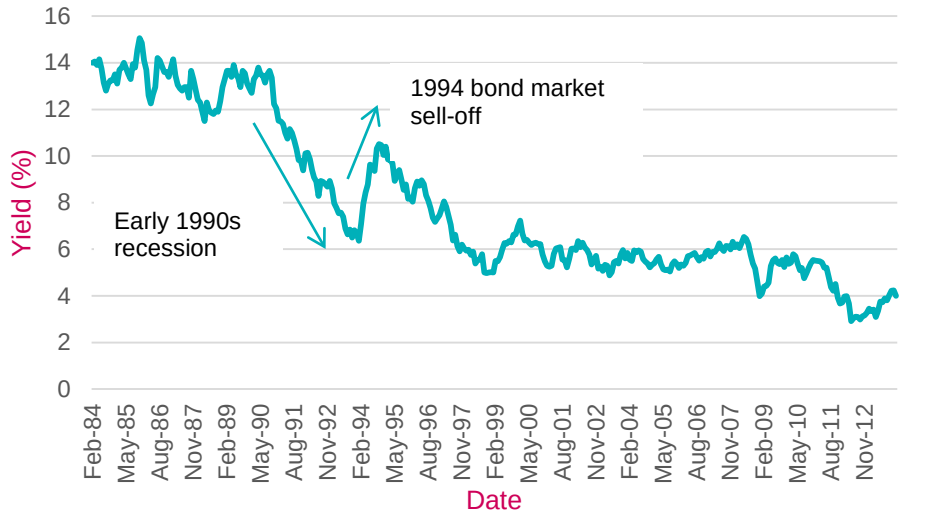
The price of a bond and its yield are also inversely related. As mentioned above, the coupon yield is calculated by dividing the bond's annual interest payment by the value of the bond. So when the price of a bond rises, the bond's annual interest payments are being divided by a larger denominator in this calculation. Hence the yield is lower. Similarly, when the price of the bond falls, the yield rises as the bond's annual interest payments make up a larger proportion of the value of the bond.

Drivers of fixed income returns

Chart 3 below shows the movement of Australian 10-year government bond yields over the past 30 years. Clearly, there has been a structural shift towards lower bond yields over this period, although it has not been a continuous decline. So what drives such movements in bond yields?

The most significant drivers of bond yields are expected economic growth and expected inflation. Bond yields tend to rise (and bond prices fall) as economic growth accelerates. This is because central banks often respond to strong growth and inflation pressures by raising short term interest rates to prevent the economy from over-heating and causing a rise in inflation. High inflation is bad for the economy as it creates uncertainty and undermines the value of money which deters people from saving. In such situations, bond markets become very sensitive to economic data releases, with any signs of stronger growth causing yields to rise further. A good example of this pattern is the 1994 bond market sell-off that is marked on Chart 3.

CHART 3: AUSTRALIAN 10 YEAR GOVERNMENT BOND YIELDS



Source: Datastream

Bond yields tend to fall (prices rise) when economic growth slows, as a weaker economy is usually associated with monetary policy easing from central banks and decelerating (or subdued) inflation. The weaker growth becomes, the more yields tend to fall. In the extreme case of a recession, bond yields can fall a long way as evidenced by the early 1990s recession that is also marked on Chart 3.

The huge fall in bond yields from around 14% in 1984 to around 4% currently mainly reflects a structural shift in investors' inflation expectations. Back in the early 1980s, inflation was high (e.g. 10-11% in Australia) and investors expected it to remain high. Central banks had no track record of keeping inflation in check and investors needed to receive a relatively high yield for holding bonds to compensate them for the risk that accelerating inflation would erode their returns.

However, over the past 30 years, there has been a significant change in the way central banks operate and this has helped to build their credibility as "inflation fighters" and caused a significant fall in investors' inflation expectations. A good example of this is the way the Reserve Bank of Australia (RBA) capitalised on the sharp fall in inflation that occurred during the early 1990's recession. In mid-1993, the RBA and the then Labor government introduced an inflation target range of 2-3% that the RBA had to achieve, on average, over the economic cycle. This was viewed as being "a rate of inflation sufficiently low that it does not materially distort economic decisions in the community". This target range provides the RBA with a framework for making monetary policy decisions as well as helping to anchor private sector inflation expectations at low levels. In this environment, the risk of holding bonds has fallen significantly as high inflation is no longer a perceived threat. Hence bond yields are structurally lower.

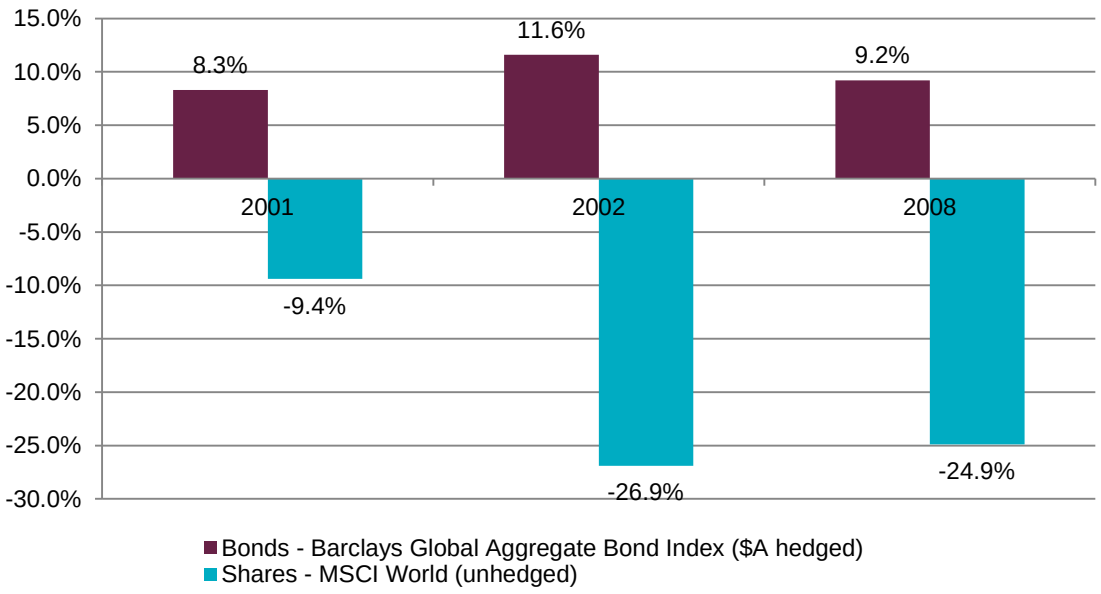
Benefits of investing in fixed income – why have it in your portfolio?

Diversification

Bonds usually provide higher returns than cash, however they aren't generally included in an investment portfolio for the purpose of generating high returns like shares (although they can provide capital gains and have done so over the last 30 years). Rather, the role of bonds is to increase diversification, as bonds tend to perform well when shares are doing badly and vice versa. So bonds help insulate against the worst kind of market risk − the risk that share markets plunge suddenly and unexpectedly. This is why bonds are referred to as defensive assets whereas shares are growth assets.

For example, in 2008, global share markets seemed to be heading toward another year of gains, while bond prices were experiencing 30-year lows. With bond investments so unattractive, it is tempting to question why investors should continue to hold bonds in such an environment. The reason is that market trends can change quickly, and they did. By the end of calendar year 2008, a mixed portfolio of bonds had achieved a 9% positive return, while shares were losing 25% − meaning bonds outperformed shares by 34%. A similar drop in share prices and surge in bond returns happened in 2001 and 2002 (see Chart 4 below).

CHART 4: BONDS OFTEN DO WELL WHEN SHARES FALL IN VALUE



Source: MLC

The stabilising effect of bonds means that over time, investors holding bonds and shares enjoy a smoother ride and experience lower losses in share market downturns than investors that are just holding shares. Although returns on some types of bonds are currently low, especially compared with the strong returns of recent decades, bonds are still likely to help cushion a diversified portfolio against the volatility of share market returns. This alone can make bonds worth holding.

Regular income

Another reason to invest in bonds is the regular income they provide. The interest payments (coupons) that a bond investor receives are usually a fixed amount, rather than being paid at a company's discretion like dividends on shares. This makes them attractive to investors, particularly retirees.

In recent years, low interest rates have reduced bond yields to historically low levels and this has made it necessary to look beyond government and even corporate bonds to other bond markets to find higher yields. These markets include US high yield bonds (corporate bonds with a sub-investment grade credit rating and therefore higher risk) and bank loans (debt of companies that typically exhibits lower liquidity than traded bonds and may be secured by sub-investment grade companies).

Capital protection

Unlike shares that provide no capital guarantee, most bonds do repay principal at maturity. This makes them attractive to investors who do not wish to lose capital or those that have a particular need for their funds at a future date. However, capital preservation is only assured if you hold a bond until maturity and the issuer of the bond does not default (see the Key Risks section below). Selling a bond before maturity can result in capital losses (or capital gains) depending on how bond markets have performed since your purchase date.

It is also important to note that bonds are valued on a daily basis to enable people to sell their investments on the secondary market if required. Hence the value of bond investments does move from day to day.

The potential for capital gains

Bond prices can rise for many reasons, including falling interest rates, slowing growth, lower inflation expectations and an upgrade to the issuer's credit rating. If you sell a bond after it has risen in price and the higher price exceeds the price you paid for the bond, you will make a capital gain on your investment. Capital gains increase the total return you can potentially make from a bond investment. Most bond funds trade bonds (buy and sell them before maturity) in an attempt to make capital gains for their investors.

If there is the potential for capital gains from bonds, then there is also the potential for capital losses. This occurs when you sell a bond before maturity but its price has fallen below where it was when you purchased it. The unexpectedly sharp rise in yields (fall in bond prices) in 1994 (see Chart 2 on page 4) caused many bond funds to incur capital losses for the first time. Although their values eventually returned to previous highs, investors need to be prepared for all sorts of market conditions. It is rare for bonds to experience significant capital losses, but it can happen.

Key risks of investing in fixed income – interest rate risk, credit risk, default risk

Whilst fixed income investments are often viewed as being much less risky than shares, investing in fixed income still carries some risk. The most significant risks that need to be considered are as follows:

Interest rate risk – Interest rate risk refers to the risk that market interest rates change and this impacts the price of a bond. As mentioned above, when interest rates rise, bond prices fall and there is the potential for capital losses on bond investments if they are sold at a price below where they were purchased. Conversely, when interest rates fall, bond prices rise, hence bond investments become more valuable and can provide capital gains. The longer the term to maturity of a bond, the higher the interest rate risk. This is due to the bond's duration which is discussed in the definitions section above.

Credit risk – Fixed income securities are rated by Credit Rating Agencies (e.g. Standard & Poors and Moody's) according to the credit quality of the issuer. Sovereign bonds have historically had the highest credit ratings as they are backed by the vast resources of a government (e.g. Australian government bonds are rated AAA). Corporate bonds have a vast array of investment grade credit ratings depending on the strength of the issuer's balance sheet and, consequently, the perceived risk of default. Bonds issued by companies with highly leveraged balance sheets, or companies seen to have a higher risk of default, can be rated below investment grade ('high yield' bonds). Credit spread risk refers to the risk that the credit spread (the margin that the bond yield trades over a market benchmark) rises or widens. This is called spread duration and has a similar impact to interest rate duration mentioned above. If the credit spread widens, it negatively affects the market value of that bond. Conversely, when credit spreads are narrowing, there is a positive effect on the market valuation of the bond. Credit spread moves are driven by the market's perception of the likelihood that a particular bond issuer will default. In order to generate higher returns for investors, some fixed income funds invest in lower grade government and corporate bonds as they trade at higher spreads and pay the fund higher interest payments. These lower rated governments and corporates are associated with higher credit risk.

Default risk – This is the risk that a bond issuer defaults on its obligations. Defaulting includes failing to make interest payments during the life of the bond and /or failing to repay the principal of the bond at maturity. If the balance sheet position of a government or company deteriorates to the point where bankruptcy is possible, the yield on its bonds will rise sharply (and the bond's price will fall) to reflect the increased risk of default.

For fixed interest funds, these risks can be measured and quantified so that investors can assess the risk associated with making an investment. In particular,

- interest rate risk is measured by the fund's duration; and
- credit risk is measured by the fund's spread duration and the average credit rating of the bonds that the fund has in its portfolio.

The fund's benchmark is also important in assessing risk as it strongly influences the bonds that the fund invests in. For example, a fixed interest fund which has a sovereign bond benchmark would be less risky than a fixed interest fund that is benchmarked to a high yield index.

Fixed income funds – passive versus active

Fixed income funds aim to deliver returns to investors by investing in bonds and other fixed income securities. These funds can either be passively or actively managed.

Passive fixed income funds invest in a portfolio of bonds that is the same, or very similar to, the fund's benchmark index. Managers of passive bond funds only change their portfolio when there is a change in the benchmark index. They do not buy and sell bonds based on their views of economic growth and interest rate trends. One of the advantages of passive bond funds is that their returns will be very similar to the benchmark index. However, there are also disadvantages. In particular, passive managers will usually hold all the bonds in the index even if it is clear that some may underperform. A good example of this is the European sovereign bond crisis in 2010-11. Passive global bond funds would have held bonds in the peripheral European countries such as Greece, Ireland and Spain whereas active managers may have chosen to avoid these countries due to the problems of excessive sovereign debt.

Active fixed income funds use a range of investment techniques with the aim of outperforming the fund's benchmark index. There are many different ways to add value in fixed income markets but the most common strategies include:

- buying or selling bonds based on the fund managers' macro-economic views;
- lengthening or shortening the fund's duration;
- taking varying degrees of credit risk;
- holding bonds that are issued in different countries (e.g. global bond funds);
- diversifying across a number of sectors (e.g. holding government and corporate bonds) or moving bond exposure from one sector to another;
- taking views on the shape of the yield curve.

The benefits of active fixed income funds include the potential to provide returns above the benchmark index and the flexibility for the fund manager to choose to focus on higher yield or capital gains (or both)! The disadvantage, of course, is that the fund manager may not always call the market correctly. Hence actively managed fixed income funds do have the potential to underperform.