

## THE CHANGING NATURE OF FIXED INTEREST FUNDS

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*The reduction in Australian Federal and State government debt and subsequent lower bond issuance over the past 15 years prompted market participants to look to the private sector (particularly overseas) to provide the supply of bonds. The massive fiscal stimulus packages of 2008/2009 however have seen governments step back into the bond market to fund ballooning deficits and use financial strength to help guarantee the borrowings of those entities deemed to be important. This research paper explains that the effect will be to produce a marked change in the risk profile of bond funds in regards to potential default risk and likely sources of future alpha. Will this change the risk profile of fixed interest funds forever and is it the end for cash-related funds?*

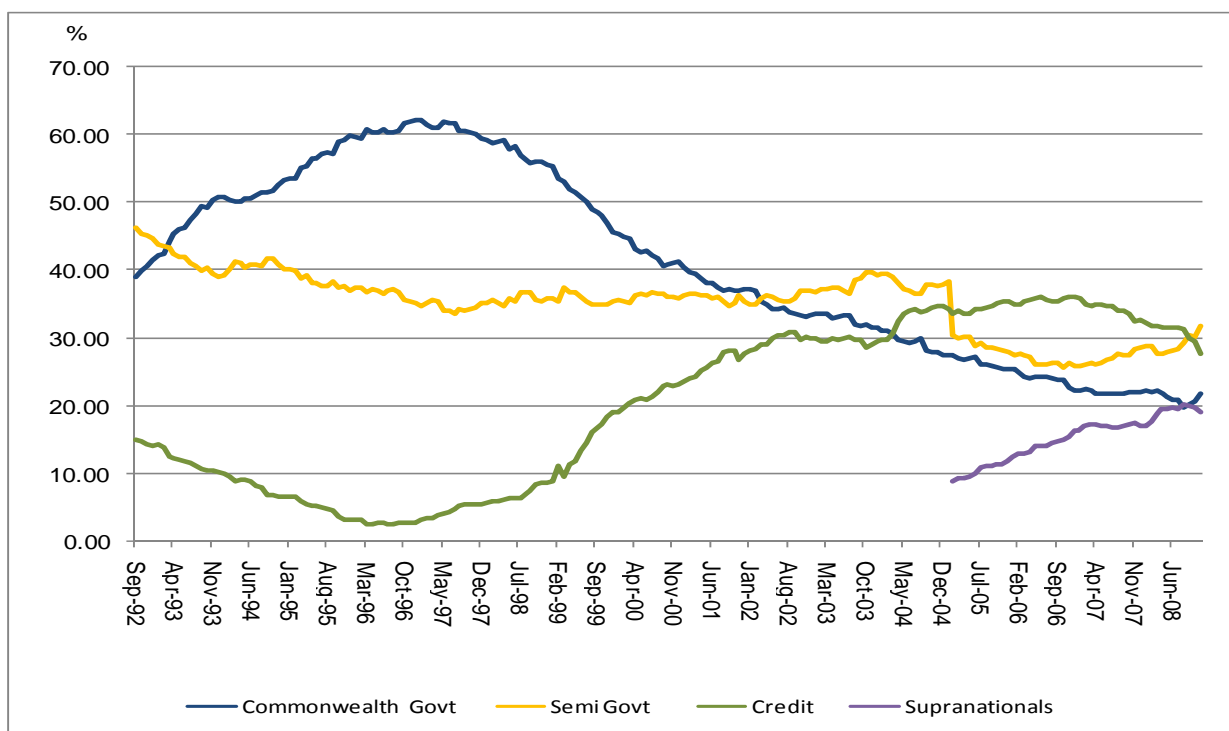
Global fixed income markets are undergoing a significant transformation as a result of the Global Financial Crisis. Surging government budget deficits, needed to help stimulate economic growth, have seen the volume of government securities issued increase on a massive scale with the Commonwealth government issuing between \$500 million to \$700 million of government bonds via two tenders per week. By contrast, credit securities (those issued by corporations) have decreased dramatically. After impressive growth over the past decade, there was a dramatic decrease in the supply of credit securities in 2007 and 2008, which was replaced in some respects by government or government-guaranteed securities. This is largely due to the private sector undergoing a process of de-leveraging, and the government sector needing to step in to replace declining private sector credit growth to help boost the economy.

As shown in Figure 1 below, the Australian UBS Composite Bond Index is beginning to resemble that of the late 1990s and early 2000s, with Commonwealth and government-guaranteed securities set to climb back to around 45% of the Index in the next few years (after falling to around 20% in 2008), while credit is set to fall to 27% (after peaking at 36% in 2006).

Not only is the composition of the Index changing, so too is its expected risk and return. Going forward, returns are likely to be achieved by assuming term risk rather than credit risk, a reverse of the trend in the 1990s. However, returns from fixed income portfolios may be lower than the equity-like returns investors have experienced in the past from credit-focused funds (and also the returns in 2008 from more traditional fixed income funds, as bond yields will not fall as they did when the Reserve Bank of Australia reduced interest rates to stimulate the economy). Diversification will also come back into vogue as investors rediscover the benefit of investing both across and within asset classes, in particular holding more defensive fixed income securities (government bonds) which generally increase in value when equity markets fall.

Fixed income funds will subsequently change in appearance, adopting a much more conservative profile than in more recent times. Government securities will return to favour in the asset allocation mix, partly due to the attractive yields on offer but also because of limited other options with credit expected to be cut back substantially. With a return to term risk, modified duration is also likely to increase.

**Figure 1: The changing composition of the Australian fixed income market**



Source: UBS

## A LOOK AT THE 1990S RECESSION

In order to understand how the risks embedded in the UBS Composite Bond Index have changed, it is important to analyse the effect the early 1990s recession had on the composition of the Index and how it is likely to change again as the Federal and state governments resort to deficit funding to stimulate the economy.

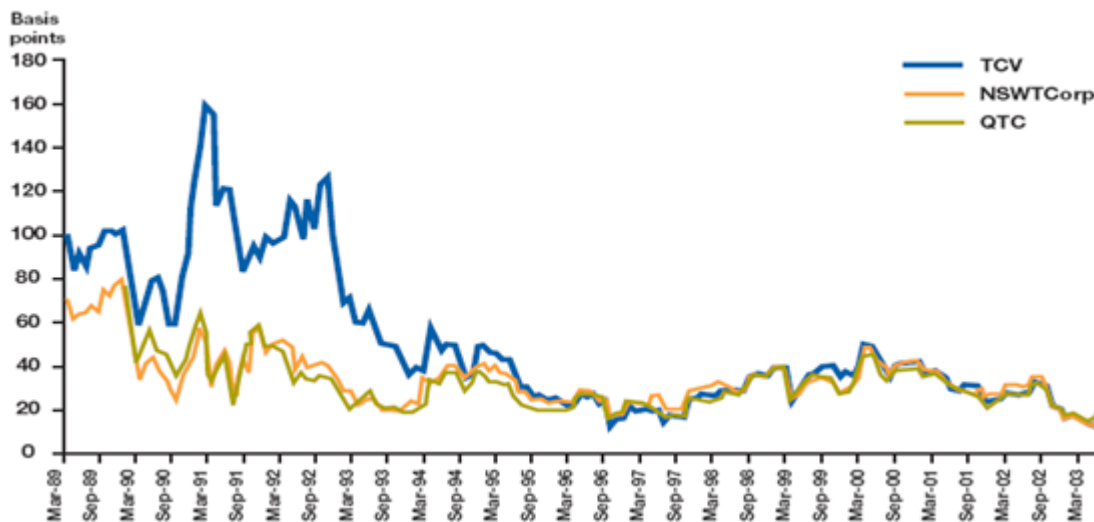
In 1996, when the full impact of the last deep recession (that is, the early 1990s) was felt, the Index was inherently a government bond index with government securities representing around 97%. Of this, Commonwealth debt accounted for 60%, semi-government debt accounted for 37%, while credit made up the 3% difference (as shown in Figure 1 above).

The increase in Commonwealth Government securities was largely driven by supply factors:

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- **An increase in Commonwealth bond issuance due to large budget deficits.** The long-lasting recession of the early 1990s resulted in the Federal Government issuing an increasing supply of Commonwealth Government Securities (CGS) to fund the budget deficit.
- **Uncertainty around the economic health of state governments reduced the demand for semi-government paper.** In the early 1990s, several state governments suffered the ignominy of not only losing the highly prized AAA credit rating but, in some cases, experienced multiple downgrades by both Moody's and Standard & Poor's. By 1994, only the New South Wales and Queensland governments were rated AAA, while Victoria was rated a lowly AA-. This uncertainty around the credit quality of the state governments meant spreads between semi-government securities and CGS traded at not only at historically wide levels (as shown in Figure 2 below) but that the level of spread volatility substantially increased. This changed investor perception of semi-government bonds from being a risk-free liquid asset to more of a credit security.

Figure 2: Semi-government spreads widened to historical levels in the early 1990s



Source: Treasury Corporation of Victoria Annual Report 2003

- **Limited corporate issuance.** With interest rates falling from a peak of 17.5% in January 1990 to a cycle-low of 4.75% in July 1993, banks' balance sheets naturally contracted as many mortgage holders continued to maintain their repayments at the previously high interest rate levels. This forced banks to look to alternative areas of asset growth. With the market saturated with government securities, corporate clients also relied on banks for funding rather than the capital markets. There simply wasn't a market for corporate securities and if they did try to issue securities, it would have been considerably more expensive than what the banks were offering.

## THINGS CHANGED IN THE LATE 1990S

With the economy back on track, the Federal and state governments were keen to de-risk their balance sheets and reduce a large part of their outstanding debt by selling many publicly-owned commercial corporations. The credit ratings downgrades of state governments referred to above was related to the poor performance of a number of their publicly-owned financial corporations, in particular the state banks in New South Wales, Victoria and South Australia. The ownership of such organisations was a major risk to the states' balance sheets and had resulted in higher borrowing costs. In response, many of the state governments recognised the need to clean up and eventually sell off many of their commercial enterprises.

As a result, there was a wave of privatisations of many state-run enterprises in the 1990s. These included many well known enterprises from the banking and insurance sector, including the Commonwealth Bank of Australia (privatised between 1991 and 1996), the state banks of Victoria and New South Wales (sold in 1991 and 1994 respectively). Victoria also sold off its State Electricity Commission assets in 1994. The next wave was the privatisation of infrastructure assets including airports – Sydney airport was sold in 2002, Melbourne airport in 1997 and Brisbane airport in 1998.

During this period, state governments also removed themselves from the financing of infrastructure, resulting in the development of public private partnerships (PPPs) using private money to build infrastructure, as well as the commercialisation by the user pays principal of previously publicly-owned services. The most commonly known PPPs were toll roads, which helped state governments finance the building of freeways. The first was the M4 in New South Wales which led to the development of the M2, M5 and the M7, all of which were financed privately and paid for by the collection of tolls for a set period of time. Although this was not a new development, the use of private sector funding gathered momentum in the 1990s. As a result, there was less need for the governments to borrow to build new infrastructure and, at the same time, any outstanding debt could largely be paid off due to the sale of assets.

During this period, there was essentially a transfer of risk from the public sector to the private sector. The private sector took on a greater amount of risk which previously had been the responsibility of the public sector. As a result of the decline in the supply of government paper, the gap between supply and demand for fixed interest assets was largely filled by issuance from the newly privatised entities which had previously issued paper with state or Federal Government backing, as well as other privately-owned corporates. As a result, there were various mutually reinforcing trends:

- **Crowding in of private debt.** With the decline in the supply of government paper, the private sector needed to meet unsatisfied demand for fixed interest assets by issuing more securities. The increased supply saw the fall in the cost of private sector borrowing from the term money markets and therefore the 'crowding' of the private sector into the fixed interest markets. However, the vast majority of the new supply was mainly from financial institutions rather than from non-financial institutions. This is reflected in the credit indices where the financial sectors dominate. By June 2006, when credit peaked at around 36% of the UBS Composite Bond Index (shown in Figure 1), financial credit represented 22%, while non-financial credit represented the remaining 14%.

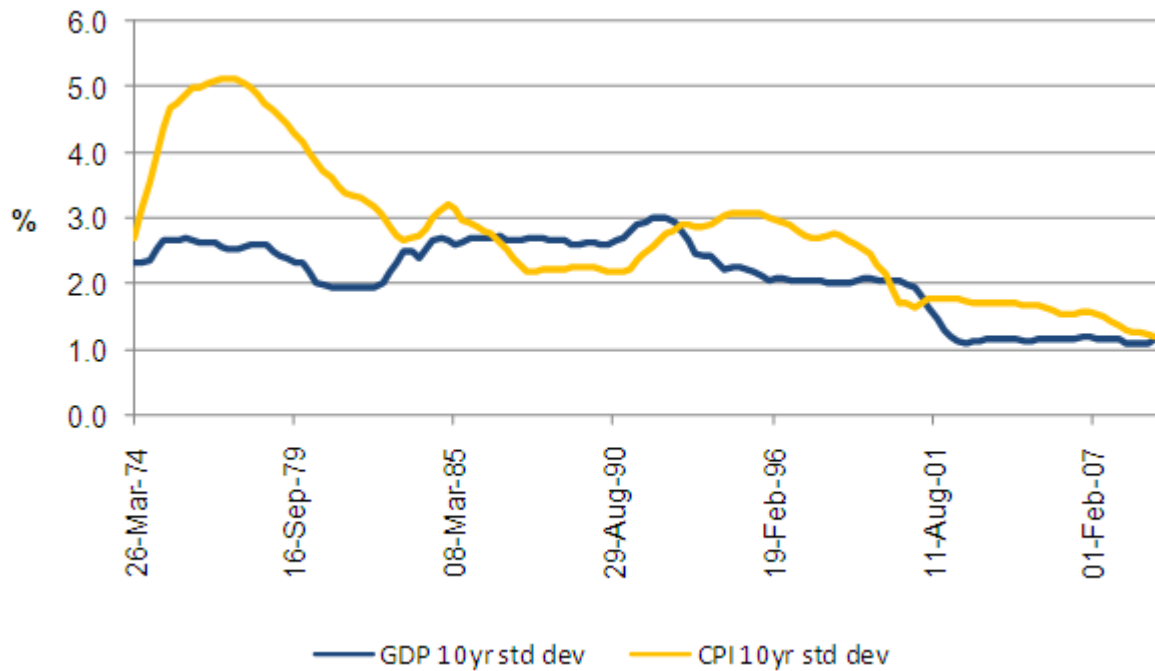
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- **Structured debt became accepted investment instruments.** The decline in government issuance meant investors looked to the structured market to try to artificially create AAA- rated assets. Demand for these was further fuelled by regulatory changes in Europe, such as Basel II, which encouraged banks to hold AAA-rated securities due to the capital relief on such assets. Structured investment products flourished as they provided an alternative source of AAA-rated assets to meet this excess demand. Unfortunately, such artificially-created assets relied on models using past data to create assets which had the same characteristics as AAA-rated assets, such as predicted default probabilities. This was a form of reverse engineering, whereby the type of assets being constructed were built to resemble the past history of AAA-rated assets. Unfortunately, the model incorrectly specified the characteristics, particularly the downgrade and default assumptions. The underlying assets of the structured debt products proved to be much more volatile than the traditional AAA-rated assets and the use of leverage meant that if they behaved differently than a government or corporate AAA-rated security, the resulting losses were magnified and much higher than predicted by the models.
- **Flight to risk.** This period was also known as the great moderation, reflecting the substantial decline in macroeconomic volatility (that is, GDP and inflation) in the 1990s. In 2001, Blanchard and Simons<sup>1</sup> showed that since the middle of 1980s, the volatility in US quarterly real growth numbers and inflation numbers had declined by half and two-thirds respectively. This trend was also evident in Australia as shown in Figure 3 below. There are many theories as to why this happened but the end result was undeniable. With the future seeming to be more predictable, the term risk on bonds declined resulting in a subsequent flight to risk by yield-hungry investors. Investors demanded either less return for risk or were willing to take on more risk for a given return via the use of leverage. As a result, investors not only invested in credit but they were willing to use leverage to increase returns.
- **Higher correlation between fixed income and equities.** As investors took on more credit risk, returns from what investors may have perceived to be fixed income funds (but were really pure credit funds) became more correlated with equities. Many credit spread models use a company's equity market volatility to derive the risk of default (for example, Merton's risk model or its derivative the KMV model). As credit spreads should be a function of the risk of default, there is therefore a direct relationship between credit securities and the performance of the equity market. Figure 4 below shows that the correlation between the worst performing credit funds in the Mercer database and the Australian equity market was actually positive in 2008. It also highlights the extreme divergence in performance that occurred between the worst performing credit funds and the traditional more diversified Australian fixed income funds.

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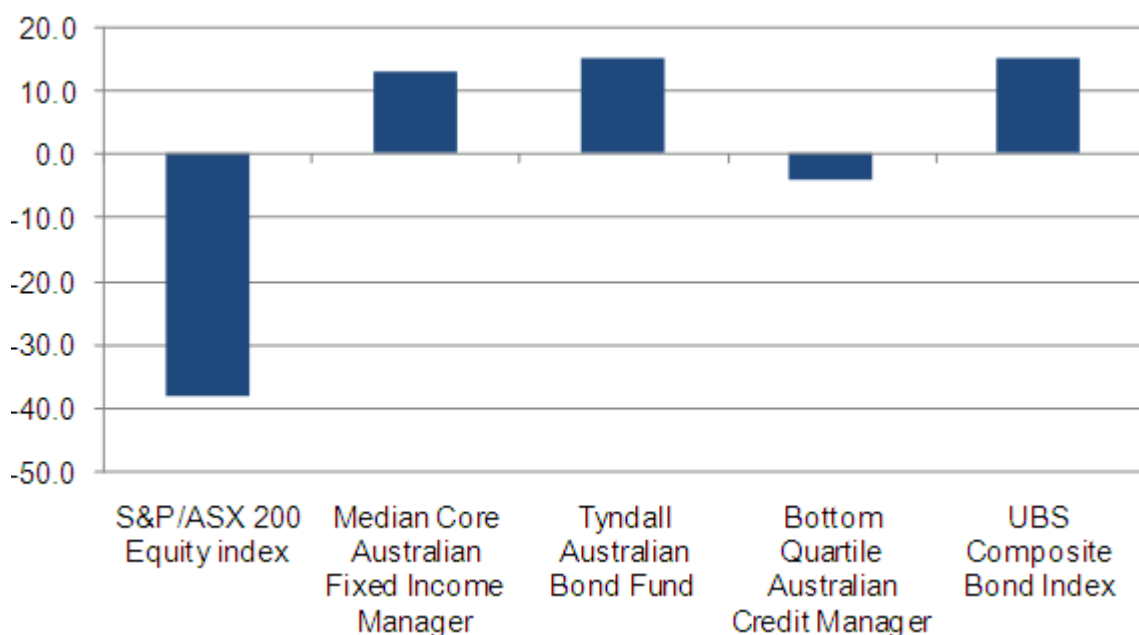
<sup>1</sup> "The long and larger decline in US output Volatility" Broking Papers on Economic Activity

Figure 3: The period of great moderation – Australian GDP and inflation volatility



Source: Bloomberg

Figure 4: Credit performance vs traditional fixed income & Australian equities – 1 yr to 31 Dec 2008



Source: Mercer. Past performance is not a guarantee of future performance.

## BY MID 2000, THE INDEX LOOKED MARKEDLY DIFFERENT

These factors ultimately changed the composition of the UBS Composite Bond Index. By 2006, Commonwealth Government debt as a proportion of the Index had fallen to 22% (shown in Figure 1 above) and semi-government debt had fallen to 26%. However, these were matched by an increase in non-government debt (with corporate credit representing 36% and highly-rated sovereign and supranational issuers and securities issued by banks, guaranteed by a domestic or foreign government, rising from 0% to 16%). The increase in credit in the Index was also accompanied by a reduction in the minimum credit rating of the UBS Index from A- to BBB-, further increasing the possible risk inherent in bond funds.

Many investors were unprepared and ill-equipped to ride out the storm of the financial market disruption in 2007 and 2008. The increased risk investors had assumed in search of better returns had increased the correlation between credit funds and the equity market – which wasn't the way fixed income portfolios were designed to behave within a diversified portfolio.

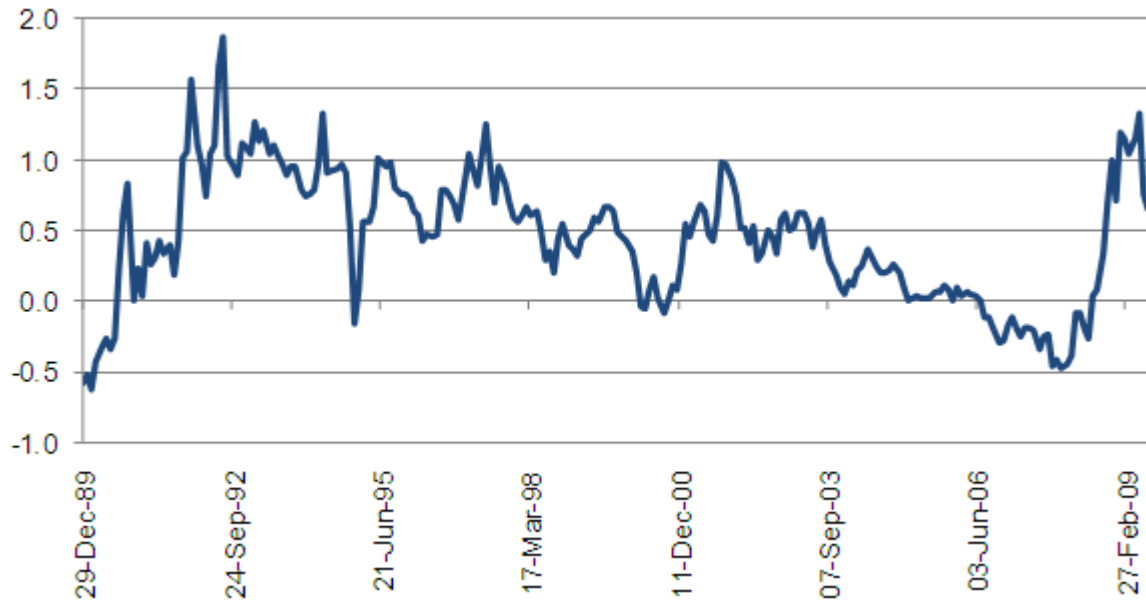
Despite the inverse yield curve and the assumption that investors were not being compensated for taking on term risk, the duration on fixed rate securities actually proved to be a lifesaver in 2008 due to the subsequent fall in bond yields reflecting a flight to quality in uncertain times, as well as dramatic cuts in the Official Cash Rate. As a result, the UBS Composite Bond Index returned a very respectable 14.9% in 2008, compared to the 1.9% return on the UBS Fixed Rate Credit Index and the 7.6% return on the UBS Bank Bill Index. This illustrates that traditional fixed income can provide risk diversification during a share market crash.

## A CHANGED LANDSCAPE TODAY

As fear subsided and the flight to quality waned, it has become clear that there has been a fundamental shift in the fixed income landscape.

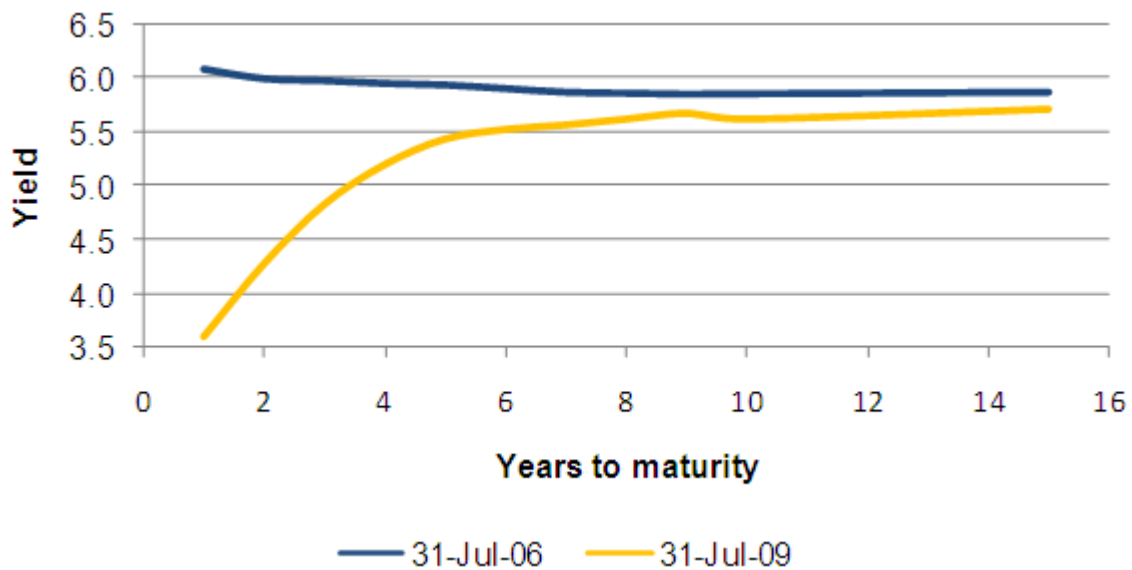
- **An increase in term premiums.** As governments have returned to the market to fund their increasing deficits, there was an increase in the term premiums to compensate investors on newly issued debt from December 2007 until January 2009 (Figure 5 below). The market demanded increasing yields on government securities and so for the first time since 2005, there was a steepening of the yield curve (Figure 6 below). With cash rates at 3.0% and the yield to maturity on 10-year bonds rising to 5.5%, term assets were much more attractive relative to cash (despite the uncertainty surrounding the economy, inflation and future cash rate movements).

Figure 5: Increase in term premium on bonds – 10-year futures – 3-year futures



Source: Bloomberg

Figure 6: Government bond yield curve changes – July 2006 vs July 2009



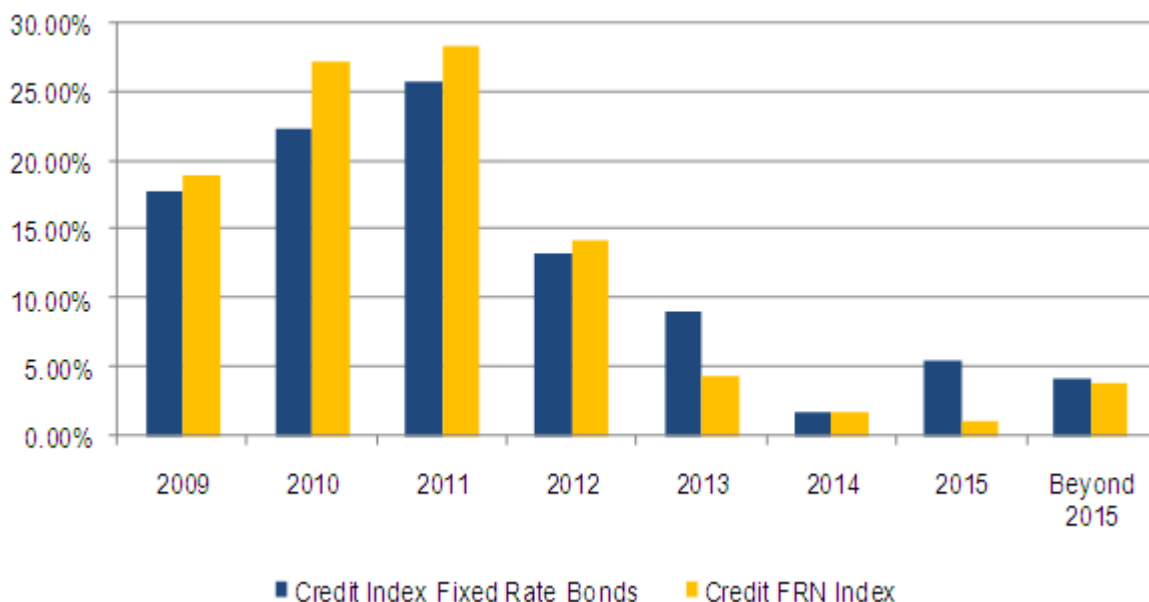
Source: Bloomberg



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- A possible increase in duration.** As a result of the increase in the supply of government paper, there is likely to be an increase in the duration of the UBS Composite Bond Index. The average modified duration of the Index has fallen from 3.9 years in 1997 to around 3.2 years at the end of July 2009. Much of this was due to the increase in credit securities in the Index. As credit securities generally have maturities of five years or less, they tend to have a shorter duration than government paper. This is one reason why modified duration reduced as the amount of credit on issue increased. This is now likely to be reversed. As the emphasis on government paper increases, the modified duration for the Index is also likely to increase.
- A decline in credit issuance.** According to research by UBS<sup>2</sup>, by June 2013, the number of Australian securities outstanding will be around \$710 billion (up from \$300 billion currently). Approximately 45% will be Commonwealth and government guaranteed debt, 28% will be semi-government debt and 27% will be non-government debt. In other words, the amount of government debt will climb dramatically and the amount of non-government debt will fall. The decline in credit has already begun. There were virtually no credit securities issued by non-financial institutions between 2007 and 2009 and the decline will only accelerate due to upcoming maturities (3.2% of credit securities in the Index mature between August 2009 and December 2009, and as mentioned earlier most credit securities are issued with a maturity of five years or less). Research by UBS shows that over 80% of the Australian fixed rate and floating rate credit indices is likely to mature by 2012 (as shown in Figure 7).

Figure 7: Fixed and floating rate credit due to mature

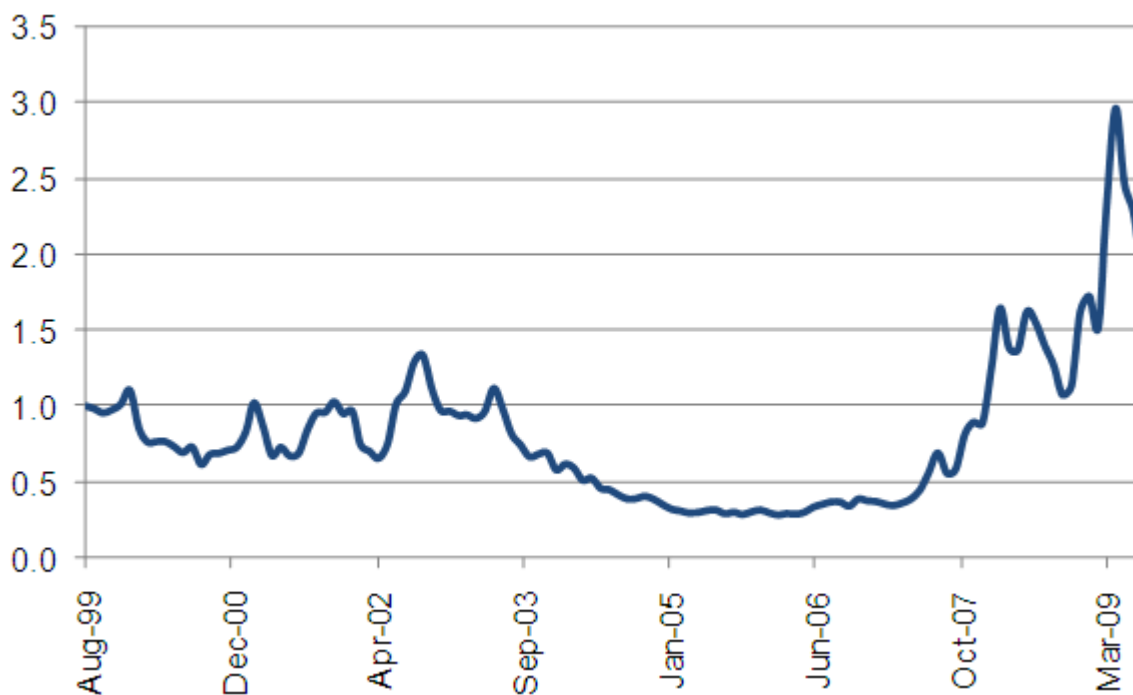


Source: UBS

<sup>2</sup> UBS Investment Research, ANZAC Rates Strategy, June 2009

Banks will be the primary source of non-government issuance – domestic corporate issuers have been baulking at the cost of borrowing from the fixed income market since 2007, and capital risings between 2007 and 2009 have largely been via bank debt or equity issuance. Non-financial institutions value diversity of funding and they do not like to rely solely on banks or equity raisings to increase capital. The bond market will therefore need to accommodate some issuance – however, this source of domestic corporate supply is going to be too small to satisfy investors (especially relative to the supply of government securities). Additionally, the credit ratings on these securities will not be high enough to satisfy demand for higher-rated securities. Investors are now more wary about investing in lower-quality securities as illustrated by the widening of the credit spreads between BBB and AAA-rated shown in Figure 8. Infrastructure projects are now likely to be undertaken by the government directly rather than using the private sector (the National Broadband Network highlights how the funding of infrastructure has been changed by the Global Financial Crisis).

Figure 8: Spread between BBB and AAA-rated securities



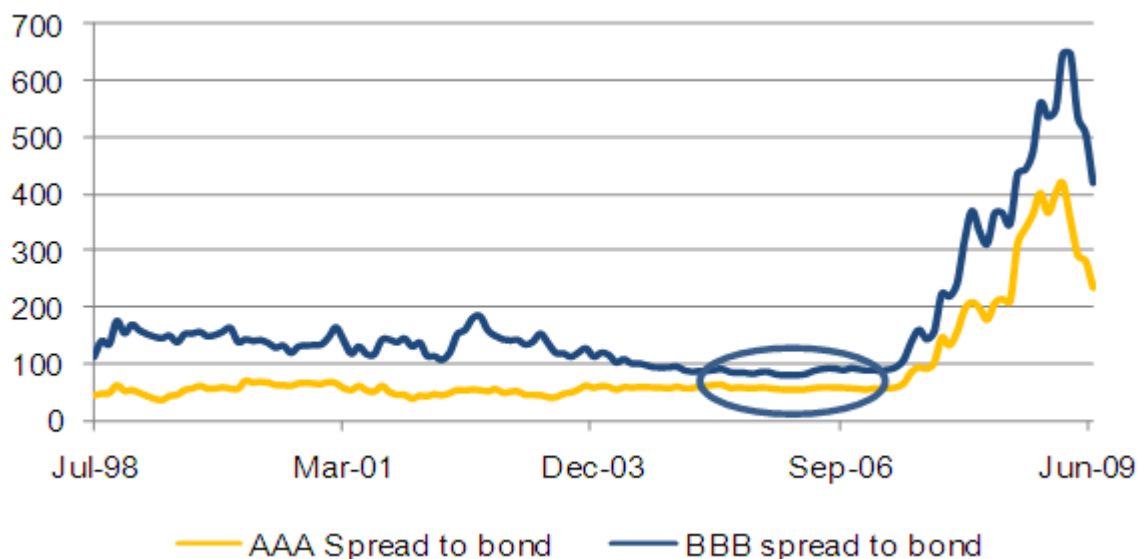
Source: CBA Spectrum

### Understanding the true risk in the fixed income market

The fall in government debt and the decline in economic volatility during the period of the great moderation in the late 1990s and early 2000s led to a noticeable re-pricing of risk. This was first illustrated by the flattening of the yield curve as investors initially purchased longer-dated bonds to increase returns, resulting in investors not being compensated for the term risk. Investors then looked for other ways to increase their returns, and the focus turned to credit products. With

demand proving to be greater than supply, credit margins declined to the point that the margins earned covered very little of the risks inherent in these securities, particularly those rated BBB and lower (Figure 9). The problem was that in the hunt for greater returns in a low yield environment, many investors mistook the higher returns provided by credit as alpha, when it really was just greater risk, as highlighted by Global Financial Crisis and subsequent dramatic widening in credit spreads and the increase in the number of defaults. According to Standard & Poor's, in the six months to June 2009, there were 159 global corporate defaults, compared to 37 defaults over the same period in 2008<sup>3</sup>.

Figure 9: AAA and BBB spreads to government bonds



Source: CBA Spectrum

## CONCLUSION

The rise in the term premium has increased the attractiveness of holding government securities for investors wanting to be compensated for investing in longer-term investments. In other words, the process of the 1990s is being reversed. Going forward, the return on bond funds is expected to become less about credit risk and more about term risk. The underlying return from fixed income funds is likely to eventually come from the term structure of the curve, at the expense of the liquidity and credit premiums available on non risk-free issues.

During previous cycles, either the public or private sector has dominated domestic issuance. The impact on the Index has been profound let alone the overall move by investors to defensive assets (particularly cash). As the private sector undergoes a period of de-leveraging, the public sector has had to step in to keep the economy from stalling. Once the economy stabilises, however, it will be

<sup>3</sup> Source: Bloomberg

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the turn of Federal and state governments to reduce outstanding debt. When this happens, it will be interesting to see where supply comes from. It is likely to be dominated by banks, particularly the four majors. Issuance from non-financial institutions has to be encouraged but it will likely have a lower credit rating than previously, given the rout caused by the Global Financial Crisis. The problem will be sourcing high-quality credit securities as a large number of AAA-rated credit no longer exists. To fill the void, it is likely that there will be a re-emergence of structured debt, although at least initially it will be of a more robust quality to attract investors, who are now wary of these products. Supranational issuance will possibly remain strong. Investors looking for high-quality debt will not want the governments to completely withdraw from the market as they have done in the past. Complete withdrawal would again send investors down the path of chasing yield through pure credit funds and once more moving away from the defensive advantage provided by traditional fixed income securities.

The optimal mix of fixed income sectors has changed over time. From the late 1990s up until 2007, credit securities provided higher returns than government bonds, however between 2007 and June 2009, government and semi-government bonds have provided higher returns<sup>4</sup>. A diversified fixed income portfolio comprising government, semi-government, credit and supranational securities can provide a better defence against falling equity markets and a higher return over the long term than an investment in any one sector alone.

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<sup>4</sup> Based on the annual returns of the UBS Credit, UBS Semi-Government and UBS Treasury Indices