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Faculty of Actuaries Students' Society.

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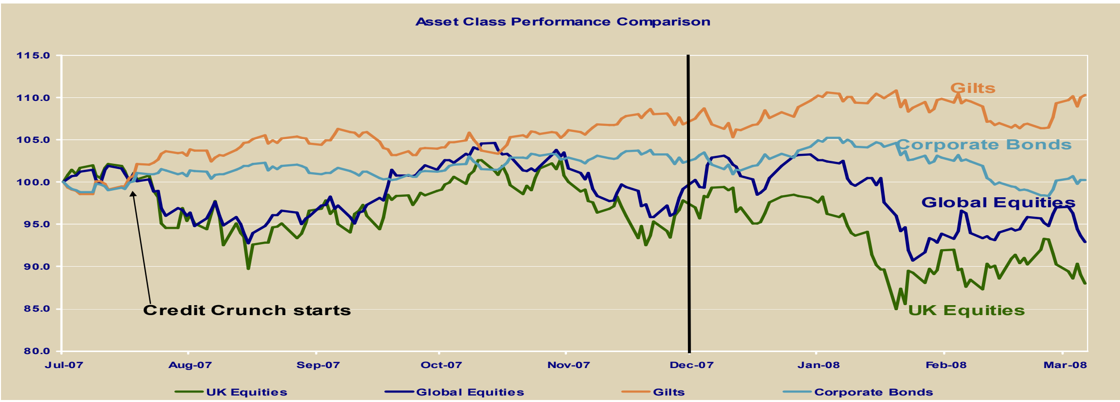
Audit. Tax. Consulting. Corporate Finance.

Macroeconomic Effects of the Credit Crunch for Pension Plans

Introduction

This paper is prepared for the Faculty of Actuaries Student Society and provides a commentary on some of the potential effects of the credit crisis on investment policy for UK Pension Funds.

The impact of the credit crisis is in evidence over all capital markets and asset classes as shown in the chart below, which summarises the performance of equity and bond market indices over the second half of 2007 and the first few weeks of 2008.



Source: Bloomberg, Markit

In this paper we focus on the effect on bond markets and the outlook for inflation, as changes in these have a direct impact on the value placed upon pension plan liabilities and the cost of matching those liabilities.

Whilst we would all recognise that predicting the economic future is uncertain, we highlight three key features of the current economic environment where there is some consensus:

- global economic growth is slowing down in the short to medium term;
- commodity price rises are acting against lower inflation rates that one would expect to be associated with the downturn in the global economy
- there is greater uncertainty around these two measures than there has been for a number of years.

This provides something of a challenge for central policymakers and for investors in setting the best investment policy to adopt from a macroeconomic perspective.

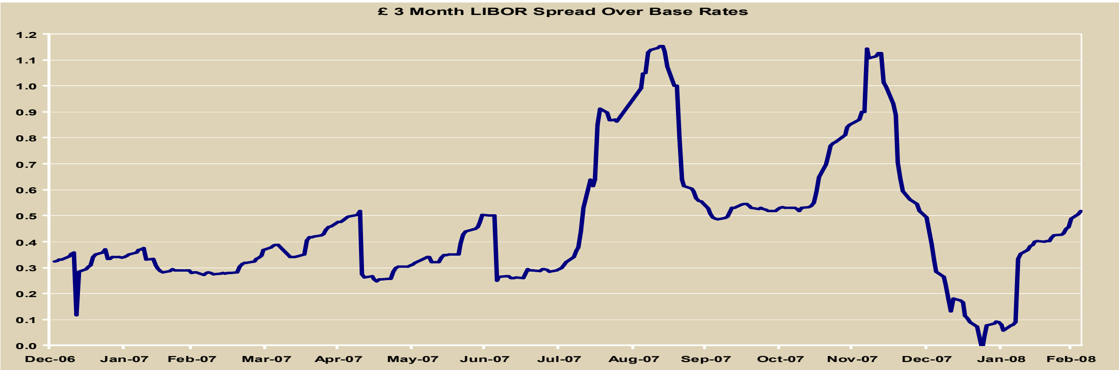
Importantly we emphasise the need for any investors to appreciate the implications of a range of potential outcomes rather than pinning their investment policy decision-making on a single “most likely” outcome.

Background to the Credit Crunch

Much has been written on the reasons leading up to the credit crunch and the complex unwinding of markets, starting back mid-2007 with the recognition of risks associated with the sub-prime mortgages. The purpose of this paper is to provide a broad and relatively high level overview, without delving too far into the depths of the potential perils, or opportunities, facing each of the now well used three letter acronyms (SIVs, ABS, MBS, CDO, etc) that we have come to recognise.

We start with some background on one of the key metrics in this credit crisis – the cost of short-term capital; Inter-bank lending during the past nine months has become significantly more expensive and the ability of financial institutions to (re-)finance their investments has become severely challenged and, in many markets, curtailed. The resulting fallout of this has been well publicised through a list of corporate and fund failures over the last few months.

The following chart illustrates the premium of the London Inter-bank Offered Rate (LIBOR) over and above the Bank of England's Base Rate or Minimum Lending Rate (i.e. it represents financial sector cash rates over and above the true risk free rate available to banks and building societies):

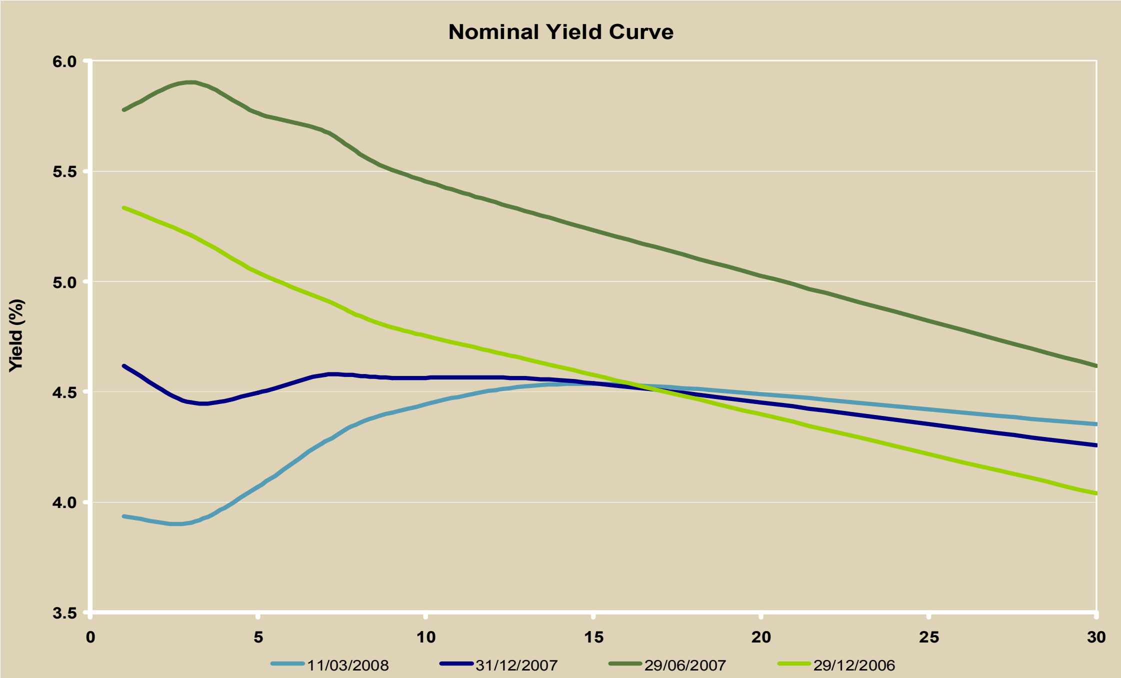


Source: Bloomberg

UK Government Bond Yields and Inflation

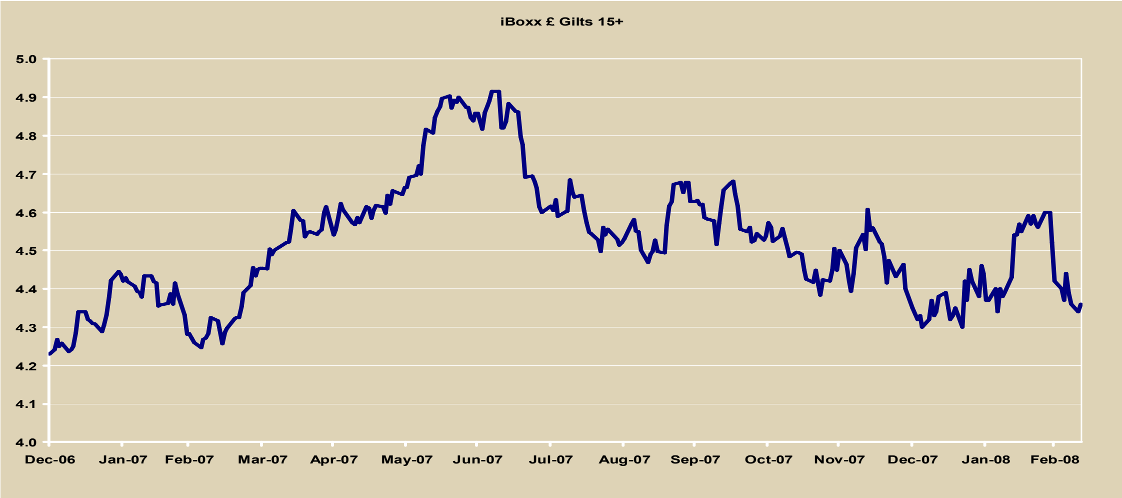
The next graph shows that nominal gilt yields rose in the first half of 2007, but as the credit crisis took hold in the second half of the year, there was a flight to the safety of gilts and a corresponding fall in yields.

Gilt yields ended 2007 at only moderately higher levels than at the start of the year, but with a relatively volatile journey over the year. This has continued into 2008.



Source: Markit

The significant change has been in the shape of the yield curve resulting from the expectation that central policymakers would have to cut interest rates as one of their (few) levers to offset the impact of the credit crisis. Over the last six months of 2007 there has been a flattening of the Government nominal yield curve, with the front end brought down to the level of long-term rates. The chart below illustrates the nominal yield curve based on zero coupon gilts.

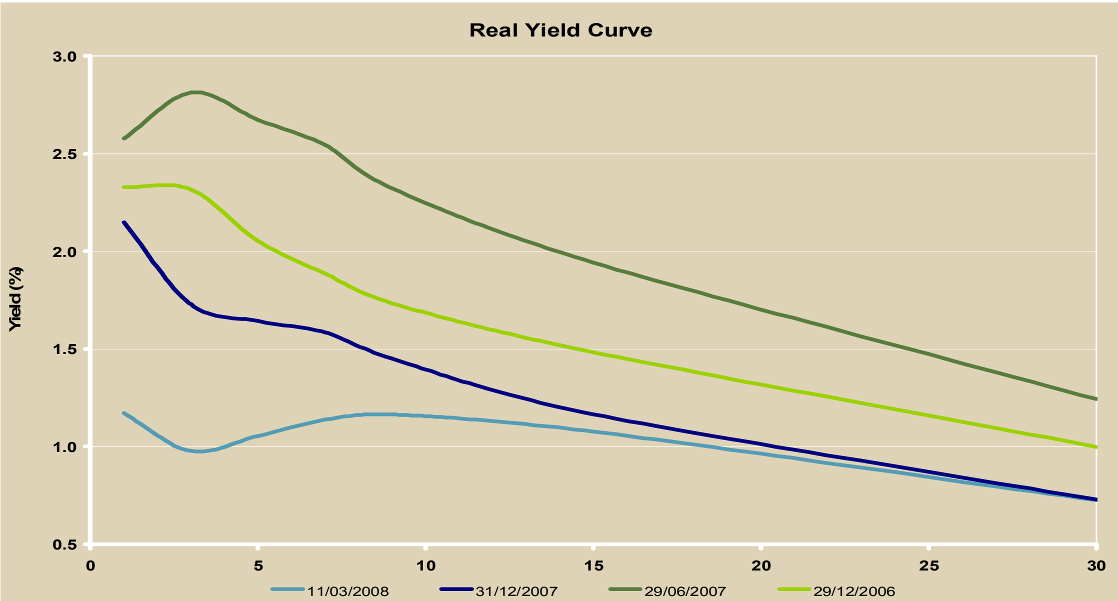


Source: Bloomberg

This flattening of the curve is significant for pension funds. Many funds have implemented or have considered implementing interest rate overlays to hedge out some of their interest rate risk over and above that they have hedged out by simply holding bonds.

The running cost of these overlay strategies depends on the differential between short and long rates, which can be thought of as a simple yield adjustment through borrowing at short rates to invest in long-dated rates. The flattening of the yield curve has the effect of reducing this running cost relative to if the yield curve remained downward sloping.

Turning to real yields, we have a similar picture with a flattening of the real yield curve. The fall in real yields (again based on zero coupon gilts) across the curve means inflation expectations have not fallen even though we have an economic environment of lower growth expectation. The cost of protection for inflation linked liabilities is now more expensive than previously.

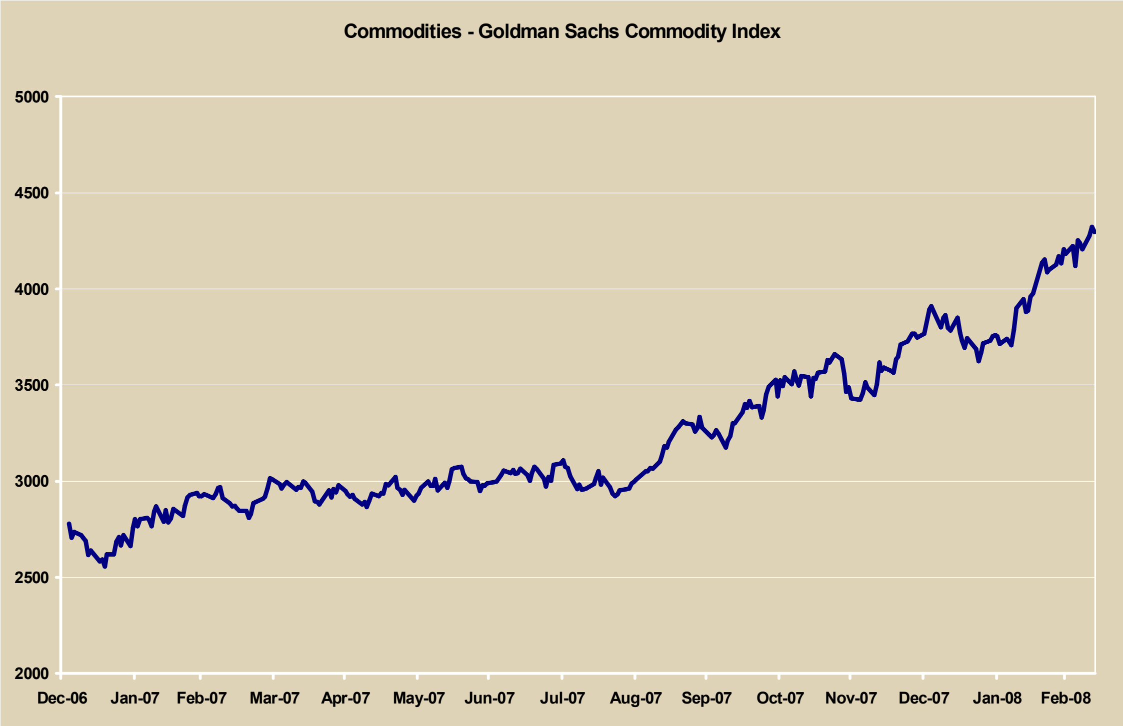


Source: Bloomberg

There are a number of reasons why this may be happening:

- Investors may simply be willing to pay more for inflation protection as they are more uncertain about the outlook for inflation and have become more risk averse i.e. the inflation risk premium is now higher;
- The number of investors, particularly pension funds, seeking to hedge out their inflation risk has increased - anecdotal evidence is that hedging by UK Pension Plans has trebled over the last 3 years – and the supply chain of inflation protection may be struggling to meet this demand;

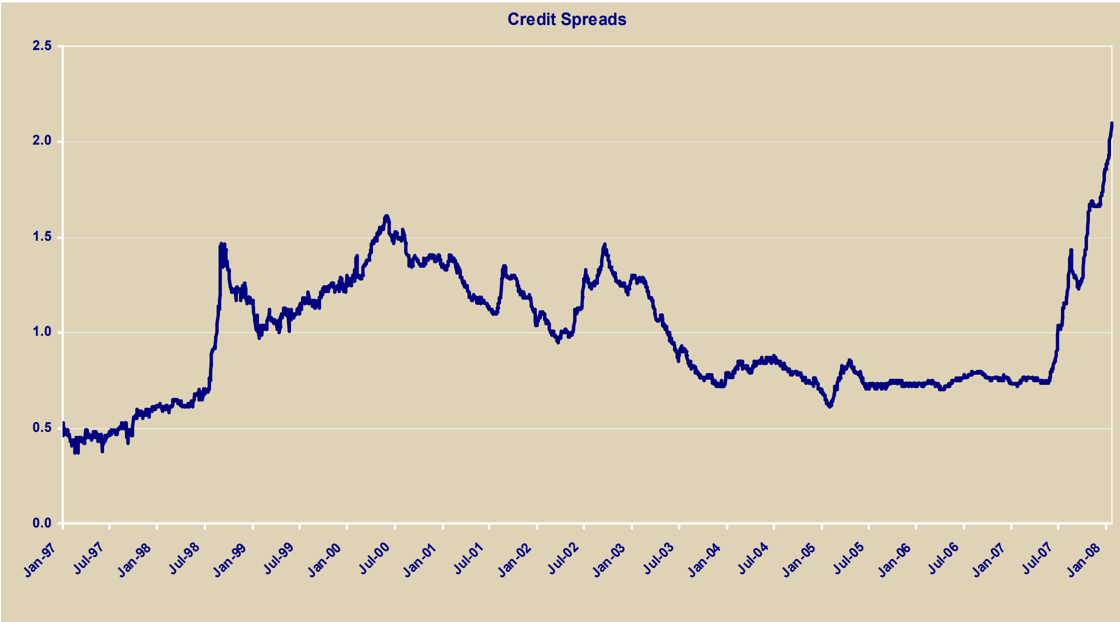
- Inflation expectations may have actually increased. Some investors expect a "stagflationary" environment, characterised by increased inflation, low economic growth and low interest rates. The key issue here is whether a continued increase in energy and basic material commodity prices fuels inflation, but a weak growth outlook constrains the central bank's ability to increase interest rates/yields. The following chart illustrates the increase in commodity prices over recent times.



Source: Bloomberg

Non-Government Bond Yields

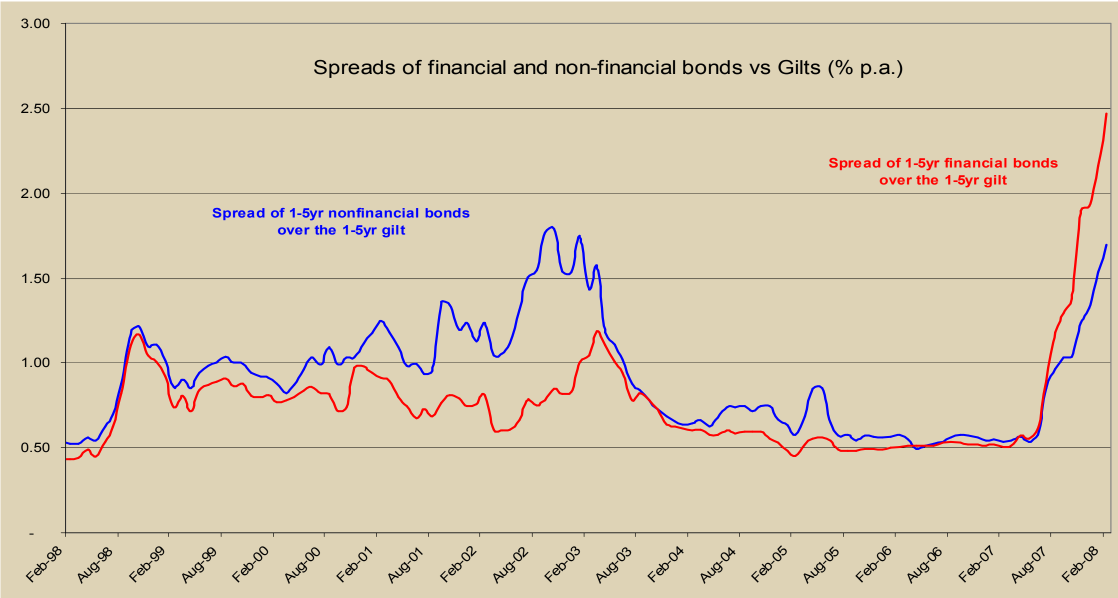
As investors have grown increasingly risk averse this has manifested itself in the yield spread between non-government bonds and gilts (the "credit spread") widening significantly since mid 2007. The extent of the widening when compared with historic changes to the credit spread is indicative of the increasing level of compensation being demanded by investors for the perceived credit risk.



Source: Merrill Lynch

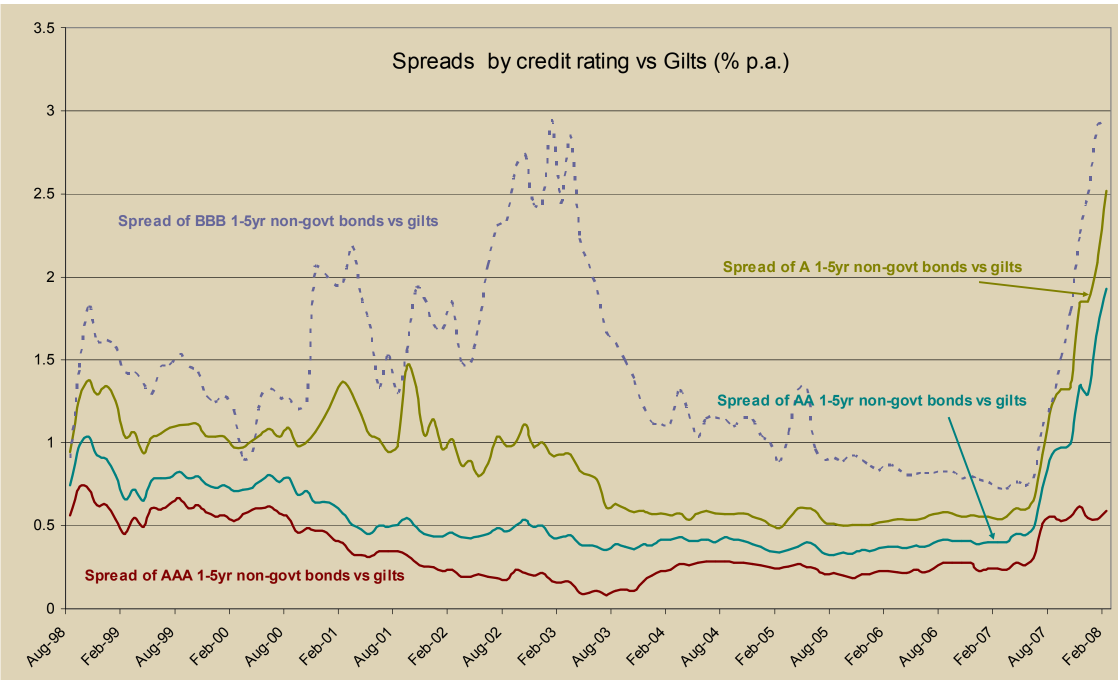
It is important to recognise that not all parts of the market have been treated equally in this credit crisis. The impact has varied both by the sector of the issuer and by the credit rating of the issuer. This can be seen from the charts that follow.

The next chart illustrates the significant widening of short-dated financial and non-financial credit spreads (all investment grades) over the last six months. The increase in credit spreads over the period has been driven by (but is not exclusive to) financial issuers.



Source: Bloomberg, Markit

The following chart illustrates the change in spreads by credit quality - the credit spreads of different quality short-term bonds have recently fanned out as they have widened relative to government bonds. However, there has been a proportionately greater widening of AA and A bonds, which reflects the high weighting to financials in these rating bands (circa 80% and 65% respectively of the short-dated bonds).



Source: Bloomberg, Markit

Within some market sectors there has been fairly indiscriminate marking down of prices. This reflects a crucial point – the sell-off is not just about investors choosing to off-load credit risk; the majority of sellers in the market are distressed sellers – they have to raise money to meet commitments. Often this relates to leveraged positions where interest payments have to be met or where refinancing is not being granted.

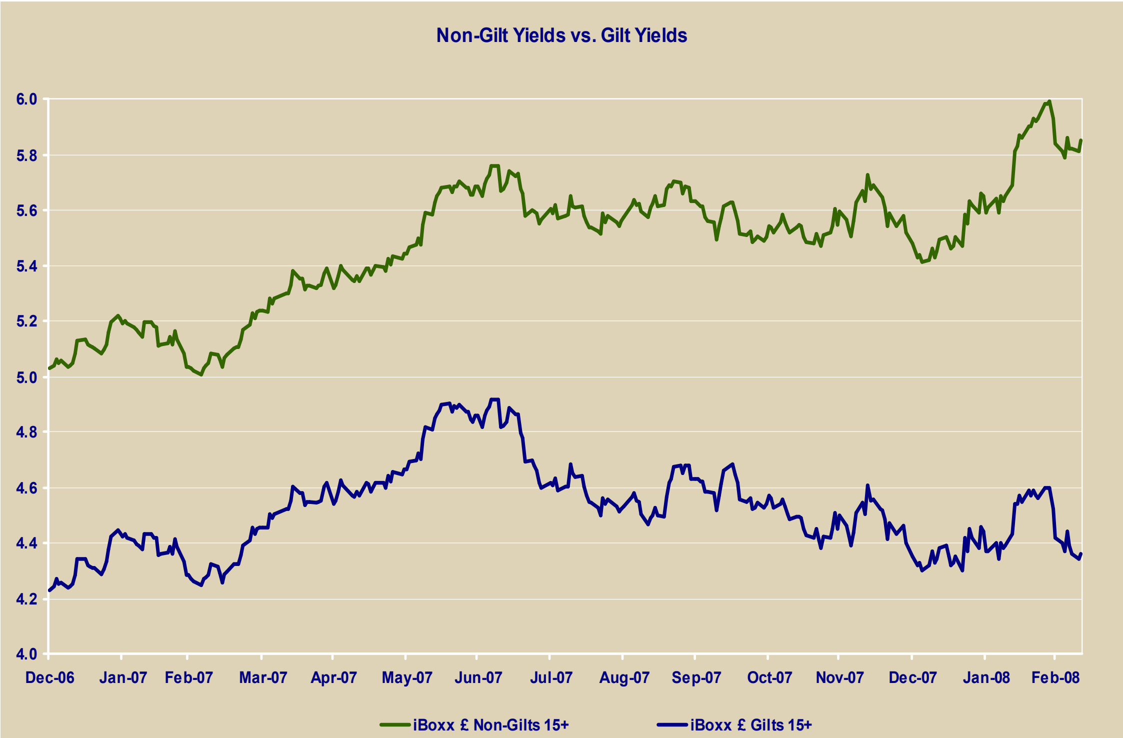
The net result is that the distressed sellers are forced to off-load what may be perfectly good stock in fire sales. In many cases they are being forced to sell the higher quality stock first – that is all the market will buy.

In this environment liquidity is king. Pension funds typically have liquidity and they can use this liquidity to their advantage in this environment. Thus, as long term investors, some pension funds will seek to benefit from buying and holding credit at these higher yields, especially if they extrapolate the apparent willingness of central banks to prevent large scale defaults e.g. the Northern Rock "Darling put".

Naturally, all investors have to decide what credit risk (rating and sector of issuer) is "money good" and what is risky, and consider their appetite and scope to take risk. They must also recognise that when marked to market, prices are likely to remain volatile and spreads could get wider. These are challenges facing investors.

Moreover, even for those investors who view gaining exposure to credit as desirable, the scope to buy a desired portfolio of bonds is challenging. Brokers who are typically expected to provide liquidity in the market are reluctant or unable to hold stock on their own books, and therefore the traditional supply chain has dried up.

The following graph shows that corporate bond yields increased by approximately 0.5% over the year 2007. This is of some "comfort" to pension plan sponsors as the liabilities on an accounting basis may actually be lower. However, this is offset if the higher yields and a wider spread between corporate and Government bond yields is symptomatic of poorer business conditions generally.

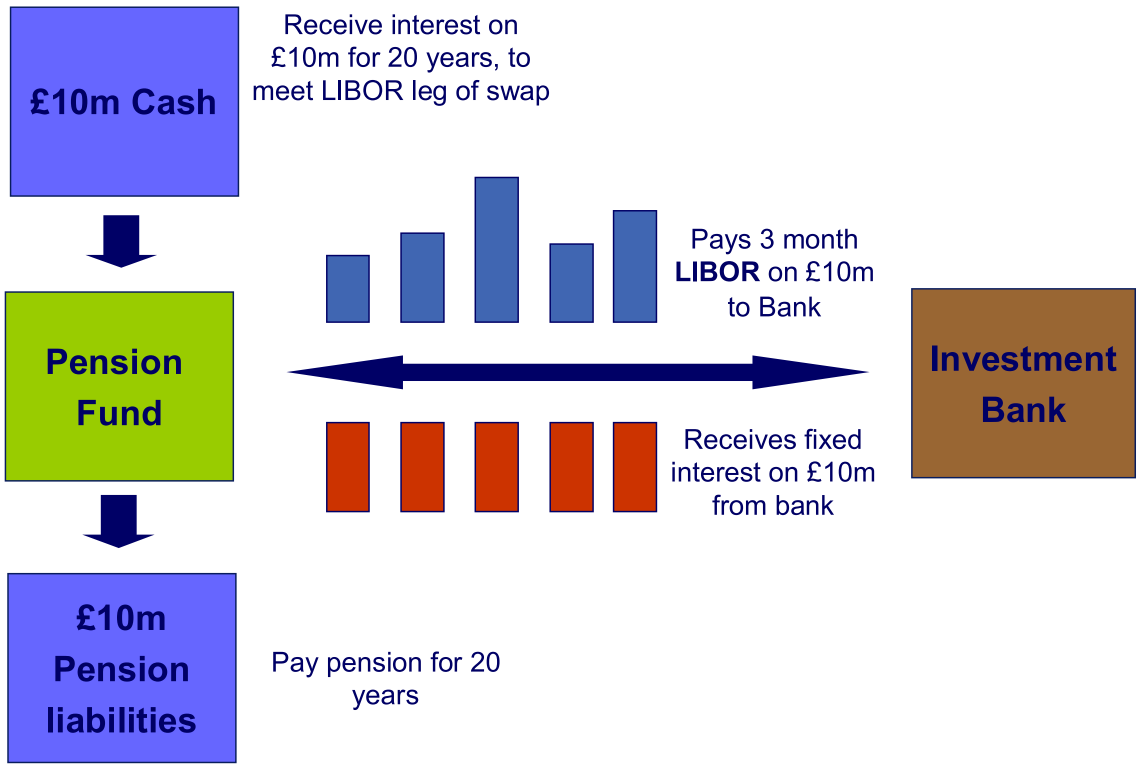


Source: Markit

Ironically, of some small comfort to pension fund sponsors, the returns on corporate bonds were actually positive in absolute terms over the second half of 2007 following the emergence of the credit crisis, even though they underperformed government bonds.

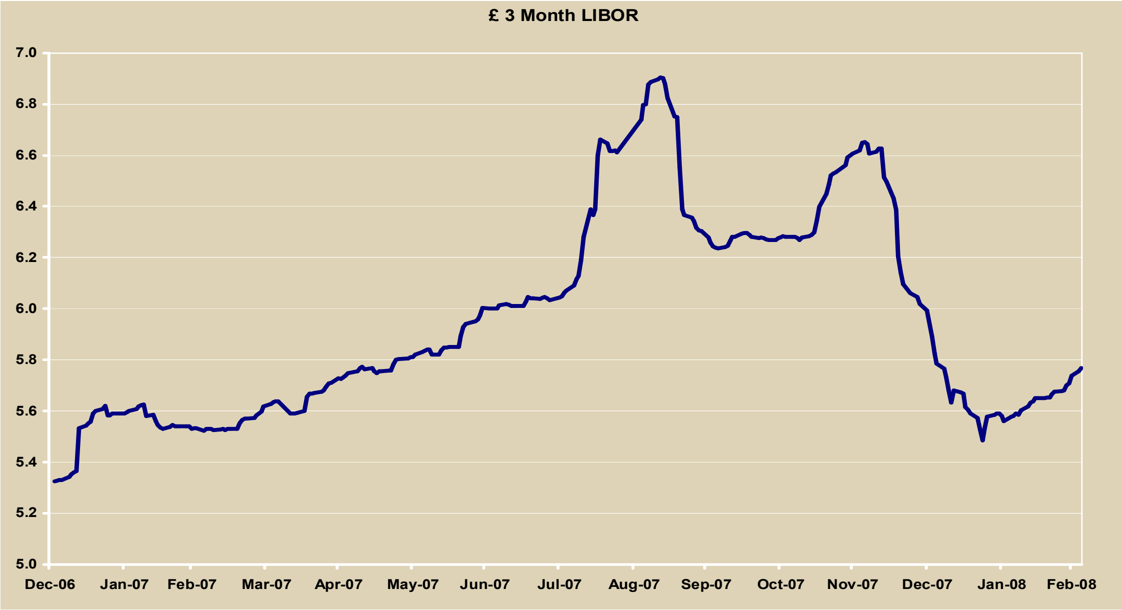
LIBOR Generation

Finally, it is worth making a few comments on those pension funds with exposure to interest rate swap contracts within their investment policy. Many pension funds have implemented swap based strategies under which they are required to generate a return of at least 3 month LIBOR from their assets to fulfil their obligation under the swap agreement. In return, the fund receives the desired exposure (typically either inflation or interest rate linked cash-flows), as illustrated below:



Historically, 3 month LIBOR has been a relatively stable target, typically 20bps to30bps above the Sterling Base Rate. However, since July 2007, 3 month LIBOR has been a much more challenging target (so far rising to as much as 115bps over the base rate) and it is also a far more volatile target.

The graph on Page 2 illustrates how volatile the premium of 3 month LIBOR above the UK Base Rate has been over the period while the following graph illustrates how 3 month LIBOR has increased in absolute terms, a period during which interest rates have been cut.



Source: Markit

The consequence for pension funds with swap programmes is that they are finding it harder to maintain their swap-related LIBOR commitments. Despite significant and coordinated Central Bank intervention to remedy the dysfunction in the credit markets since last July, there is little evidence to suggest that such problems are about to disappear in the near future.

Unfortunately to meet 3 month LIBOR the investor needs to take some risk. This may take the form of duration risk, credit risk, liquidity risk or market risk, and a number of solutions are offered by investment managers and investment banks capturing these features to differing degrees, ranging from cash funds targeting 3 month LIBOR to total return swap facilities.

Conclusion

Within the confines of hedging pension fund liabilities, trustees have to consider management of 4 investment risks/opportunities:

- Interest rate risk
- Inflation risk
- Credit risk
- Liquidity risk

We set out our conclusions on each of these below. In addition, they have to consider how they manage their return seeking assets, but that is not the subject matter of this paper – a whole new subject!

1. Interest rate risk

The credit crunch has led to lower short term rates, thus reducing the cost of interest overlays associated with a downward sloping yield curve. But offsetting this, the economic outlook implies lower economic growth in the short to medium term and this may mean lower interest rates across the curve, increasing the cost of any further hedging a pension fund might be considering.

With the increasing popularity of liability hedging strategies, generating LIBOR under swap contracts is growing in importance. The credit crunch means LIBOR is a more difficult target to achieve, at least in the short-term, and is therefore becoming a bigger issue for trustees to deal with.

2. Inflation risk

The outlook for inflation is potentially more uncertain, but cost of inflation hedging appears to have built in an even higher premium at present. The challenge for trustees is to assess whether it is worth paying that premium to hedge out the liability inflation risk.

3. Credit Risk

Credit spreads are as wide as they have been for over 10 years, but this has occurred to differing extents to different credit ratings of issuers and to sectors of the market. Wider spreads may provide opportunity, but there are two key hurdles to exploiting this opportunity. The first is timing i.e. when is a good time to invest –credit spreads were also at their widest a few months ago, and have got wider! The second is the difficulty in accessing the market, given the low levels of liquidity.

4. Liquidity Risk

In addition to credit risk, there should be a premium being paid for liquidity and pension funds provide a substantial potential supply of liquidity. The challenge for trustees is how to access and benefit from this liquidity premium.

Deloitte Total Reward and Benefits Limited
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Risk Warnings

- Past performance is not necessarily a guide to the future.
- The value of investments may fall as well as rise and you may not get back the amount invested.
- Income from investments may fluctuate in value.
- Where charges are deducted from capital, the capital may be eroded or future growth constrained.
- Investors and sponsors should be aware that changing investment strategy would incur some costs.
- Our advice will be specific to your current circumstances and intentions and therefore will not be suitable for use at any other time, in different circumstances or to achieve other aims or for the use of others. Accordingly, you should only use the advice for the intended purpose.
- Our advice must not be made available, copied or recited to any other person than you and no other person is entitled to rely on our advice for any purpose. We do not owe or accept any responsibility, liability or duty towards any person other than you.