

New thinking

✓ **As DB schemes approach their end game, Chris Bowie questions whether they should reconsider their approach to bond investments**

Pension funds traditionally like to immunise themselves against well-known risks such as maturity profile and cash flow matching risks, and hedge to some extent less quantifiable liabilities that have the capacity to impact funding levels, such as longevity and morbidity risks.

But do they really consider the opportunity costs of minimising some of those risks as carefully as they should? By that I mean does de-risking a certain type of risk in the fund increase the potential for underfunding, or at the very least put greater capital and therefore earnings pressure on the plan sponsor?

For many pension schemes, cash flow matching or interest rate risk immunisation means buying longer-dated bonds - sometimes just government bonds, but often a mix of government and corporate bonds. Often these assets are actively managed against benchmarks where the maturity date of those bonds is at least 15 years to maturity; indeed I have personally managed several rates and corporate bond portfolios against those very benchmarks many times in my career.

These longer-dated bonds of course have a higher duration, and therefore higher interest rate risk, than comparable medium and short dated bonds - but do they provide a good, or even commensurate level of return for the additional capital risks?

To answer this question, I have drawn on primary research that I conducted during the late summer, looking at the risk-adjusted returns profile for many different flavours of European investment grade credit, using daily data going

back to the turn of the century. What I found was astounding on many levels, but to summarise: there is no better risk-adjusted return source than short-dated sterling investment grade credit, and secondly, there is no worse risk-adjusted return source than long-dated sterling investment grade.

The return vs risk chart below (Chart 1) shows the annualised return versus the annualised standard deviation of 204 different iBoxx investment grade indices in both GBP and EUR, going back to the year 2000 where possible. Perhaps not surprisingly, the lowest volatility indices were of course short dated, but what surprised me was the highest Sharpe Ratio of all 204 indices (which of course is computed by comparing returns to risk) was in fact a 1-3yr GBP Corporate Bond ex-T1 index. Whilst 203 out of 204 indices were somewhat similar in terms

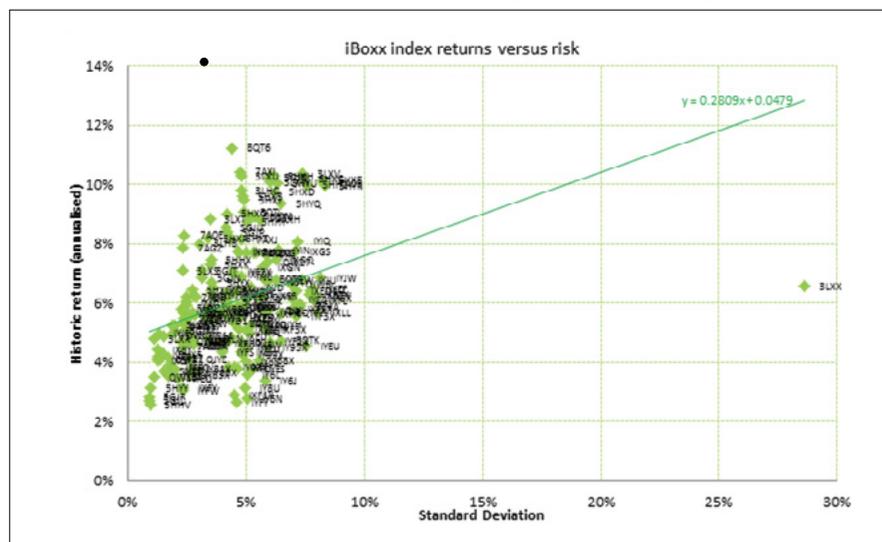
of their annualised returns versus annualised risk, one outlier really stood out as being an incredibly poor investment: having six times the volatility but no more return than the other indices. This index was another GBP ex-T1 series, but this one was the greater than 15 years to maturity version of this index.

By and large, the vast majority of these credit indices follow the generalised maxim, that extra return brings with it extra volatility - as confirmed by the linear line of best fit in the chart 1, showing a slope of approximately 1/3 with an intercept of close to 5%. "3LXX", being the "iBoxx GBP Corporates ex-T1 15+ Total Return Index", is so far away from every other index in volatility terms that it literally spoils the analysis of this chart. It is certainly a trend breaker - but not in a good way.

So this begs the question: is de-risking a scheme by cashflow matching so economically precious that it is worth pensioners and plan sponsors being subjected to six times the capital volatility with no more return? Are the risks of that not more damaging to plans and future pensioners?

In one sense, the attractiveness of these longer-dated assets to pension schemes has seen a tremendous transfer of wealth away from pensioners and plan

Chart 1: iBoxx index returns versus risk, Source: TwentyFour, underlying iBoxx data from Bloomberg



sponsors towards corporates and governments who borrow at the longer end of the yield curve. This excess demand, beyond the usual interaction of demand and supply for economic reasons, has pushed longer dated yields lower than they otherwise would have been, to the detriment of pensioners, and to the benefit of corporate treasurers and the UK Treasury.

The additional reward for additional interest rate risk that you would ordinarily expect to see along any yield curve is clearly not reflected in current UK Swap rates. Beyond 20 years, there is very little additional yield premium available to investors for the extra time risk, and beyond 30 years in fact the yield premium is negative.

So, if the past history shows long dated risk to be the worst rewarded risk from the universe of European credit, and the current yield curve shows very little to no additional yield premium for that longer dated risk, why should investors and schemes take the risk?

Under a scenario of falling yields, it may well make sense for investors and funds to be invested in the long end of the yield curve, given even small downward movements in yield can generate potentially significant capital gains. So

what is the potential for longer dated yields to fall, generating potentially large capital gains?

Putting long-dated gilt yields into context as shown below in Chart 2, you can see that the nominal 30yr yield roughly tracked a 4%-5% range throughout the first 10 years of this century (which was broadly in line with UK nominal GDP). After rising throughout most of 2013, gilt yields have once again fallen back and are now well below nominal GDP (which was +1.9% for Q2 2014, or nearly 8% annualised) as inflation expectations moderated throughout the year.

So could 30yr yields fall further? Taking a potential lead from Japan and Germany where deflationary risks are very real, 30yr yields could fall significantly from here: current long dated yields in Germany and Japan are 1.45% and 1.37% respectively. A fall from current 30yr yields in the UK of 2.55% to say 1.40% would generate a very strong capital gain of just over 22%, given a modified duration of 19.2 on the 30yr.

If you believe the UK could be at risk of a deflationary spiral, then it would potentially set the scene for a strong rally in long dated gilts of the order of 20%+ or so. However, this would seem unlikely

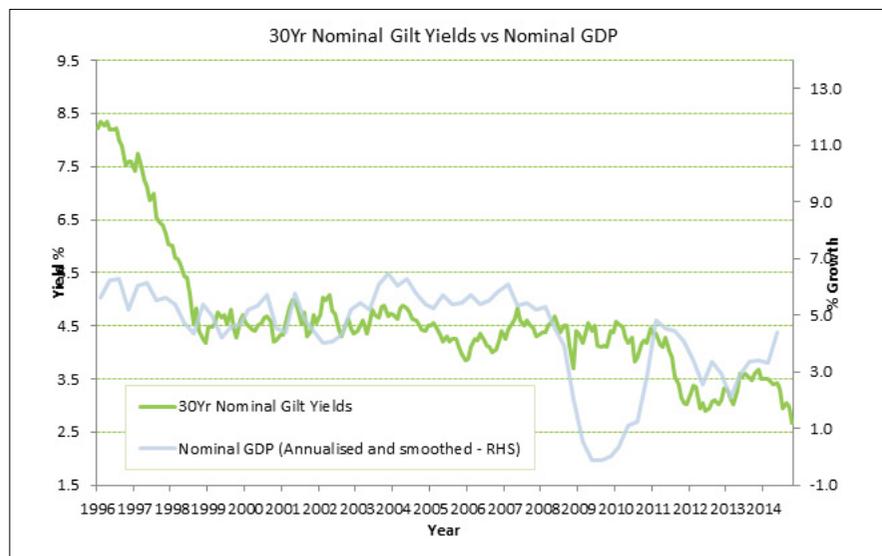
with the current economic backdrop. On the contrary, we believe interest rates in the US and UK are likely to rise over the next 12 months following improving economic data, and although we do not expect a significant rise in longer dated yields, investors need to be aware of the painfully thin breakeven yield on long dated gilts. Put another way, 30yr gilt yields only need to rise by 13bp to generate a capital loss of 2.55% which would offset the current yield on that bond – and therefore produce a zero total return.

So, just as the historic risk adjusted returns of longer dated credit have not been an efficient use of pension fund assets, so the current breakeven yields on longer dated government bonds leave only a wafer thin margin of error for pension funds owning those assets.

Furthermore, given the background of rapidly changing markets, technology, politics, regulation and investor preferences, are longer-dated assets (whether government or corporate), really the best place to invest capital?

History shows us the best risk-adjusted returns historically have been achieved by investing in lower rated investment grade bonds of less than five years to maturity – and given the steepness of the UK yield curve out to five years, we have every confidence that the trend will continue. As such, actively managed short dated investment grade will continue to be an excellent source of risk adjusted returns, even for pension funds that have traditionally sought longer dated assets and help provide the assured returns required as pension funds approach their end game.

Chart 2: UK 30yr Nominal Gilt Yields vs Nominal GDP, Source: TwentyFour, underlying data from Bloomberg



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