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ROBECO
The Investment Engineers

Dynamic duration management in times of rising yields

Olaf Penninga, Lead Portfolio Manager Robeco Lux-o-rente
Johan Duyvesteyn, Portfolio Manager & Quant Researcher

- Our dynamic duration strategy has proven itself over the years
- We investigate the strategy in a period of prolonged yield rises
- Extended backtest shows our strategy would perform equally well

Robeco Lux-o-**rente's dynamic duration management has proven its value in the** past decades of generally declining yields. An extended backtest now shows that the quantitative model that deter**mines the fund's duration positioning,** also performs well in prolonged periods of rising yields such as the bond bear market in the 1970s. Our research confirms that the model generally performs best when markets move significantly, both in periods when yields decline and when they rise. This means that dynamic duration management is an effective tool for protecting fixed income portfolios also in periods when yields rise.

Bond yields have declined to unprecedentedly low levels over the last few decades, resulting in stellar bond returns. This has also made the outlook for bond markets more challenging. In the current scenario, the negative effects of rising yields on bond returns could be more extreme, as current yield levels offer little cushion against capital losses. Active management of bond portfolios is therefore crucial in order to protect against rising interest rates.

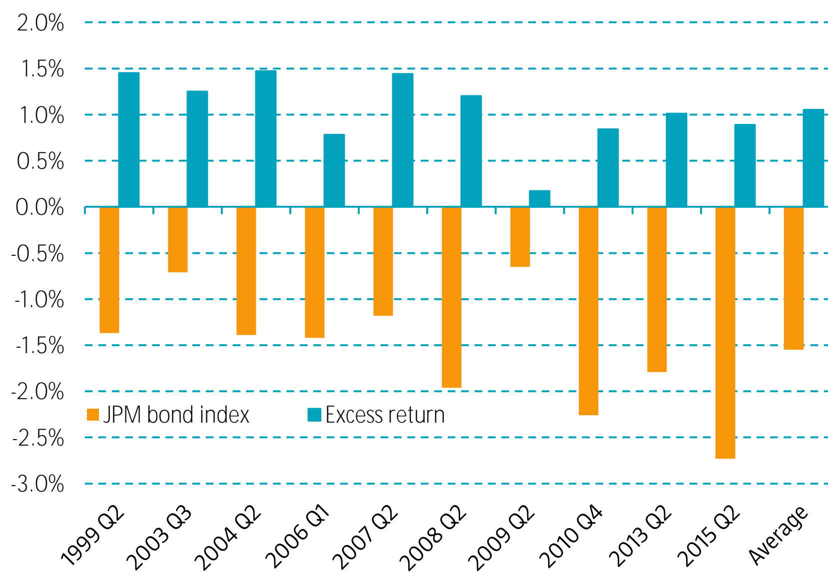
'Actively managing your duration is crucial when yields start to rise'

Focus on active duration management

Robeco Lux-o-rente is a global bond fund that focuses solely on active duration management. It offers protection against rising yields by reducing its interest-rate sensitivity

when yields are expected to rise. The active duration positions that the fund takes, follow directly from the outcomes of our proprietary quantitative duration model. This model has been proving its market-timing ability in practice since the 1990s. Figure 1 shows Robeco Lux-o-rente has generally outperformed in calendar quarters with rising yields.

Figure 1 | Robeco Lux-o-rente's outperformance in 10 worst quarters for bonds



Source: Robeco, JP Morgan. Bond market performance and Robeco Lux-o-rente's outperformance in the 10 worst calendar quarters for government bonds since fund inception July 1994.

Quantitative model

The quantitative model is symmetrical in design, so it has no inherent bias to be bullish or bearish on the bond markets. However, bond yields have generally declined since the model has been developed in the 1990s; periods of rising yields have been shorter and occurred less frequently than periods of falling yields. As a result of this, clients regularly ask us whether the strategy will still be as effective in an environment of generally rising yields. To answer this question, we discuss an extended backtest that includes decades with rising yields, notably the strong rise in yields in the 1970s. The box on page 5 gives an overview of the main developments in the US bond market in this period.

We have sufficient historical data (the Ibbotson dataset[1]) for the US to create a reasonable proxy for the model that goes back to 1951. Figure 2 shows the movements in US bond yields since 1951. The picture is quite symmetric: bond yields generally rose in the 30 years before 1981, much as they generally declined in the 30 years after that.

[1] Stocks, Bonds, Bills, and Inflation (SBBI) Yearbook

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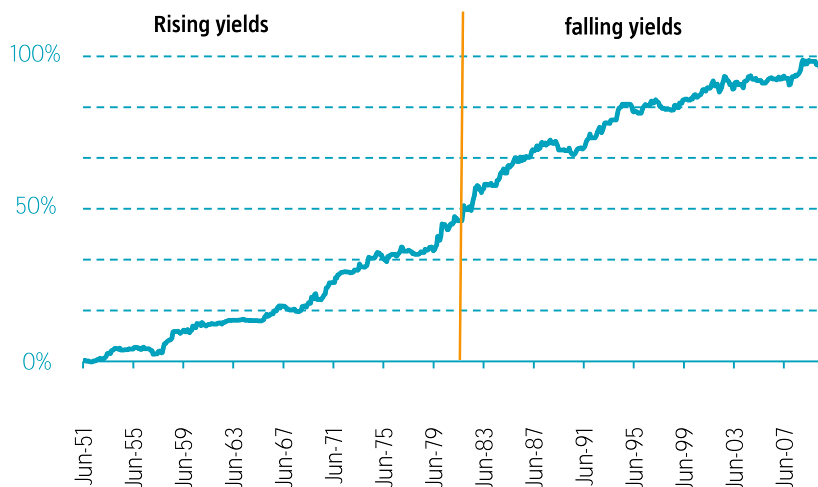
Figure 2 | US 5-year bond yields

Source: Robeco, Ibbotson

Figure 3 shows the cumulative performance of the model's active duration positions in this backtest. The model performs well in the period after 1981, when yields generally fell. The backtest shows that the model also performs well in the decades before 1981, when yields generally rose. Actually, the results are very similar for the periods before and after 1981. This finding confirms that the model works as well in periods when yields rise as it does when yields fall.

Figure 3 | Cumulative performance duration model



Source: Robeco, Ibbotson. Cumulative performance duration model, extended backtest

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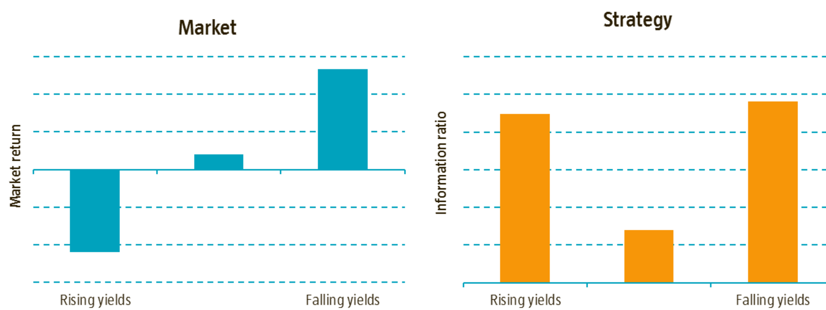
Market timing

As active duration management is a form of market timing, it can add most value in periods when markets move most. We have documented this in our research paper 'Standing out in difficult markets'. Our extended backtest confirms this result. To demonstrate this, we split the model's monthly returns into three equally-sized groups: the months when yields rose, the months when yields fell and those 'in between' – i.e. when markets did not move much. The left-hand panel of Figure 4 shows the market returns for these three groups. The right-hand panel shows the model's relative performance for these groups.

Figure 4 | Performance in months with rising, stable and falling yields



Each group contains 1/3rd of the months; left-hand panel shows market returns (bond returns in excess of cash), right-hand panel shows strategy returns (risk-adjusted relative performance).

This clearly demonstrates that in terms of the models' performance, it doesn't matter whether yields rise or fall: the model can deal with both environments equally well. What does matter is whether markets move significantly or trade in a narrow range: the active duration management performs best when markets really move.

Obviously protection against rising yields is most vital when they rise strongly. The extended backtest confirms that the model can signal rising yields as well as falling yields. As the strategy is at its best when markets move most, the dynamic duration management is well placed to protect against rising yields, especially if these are set to rise strongly.

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US bond market history

After the Second World War, the aim of the US government and the Federal Reserve was to avoid another depression and to facilitate employment creation (Employment Act of 1946). Therefore official interest rates were kept close to zero and the Fed continued its war-time policy of purchasing Treasury bonds, keeping long-term interest rates stable at below 2.5%. However, after inflation spiked in 1947 (14%) and 1948, and the Korean war caused a renewed rise in inflation, the Fed started wanting to pursue an independent monetary policy. The 1951 Accord made this possible. Between 1953 and 1960 the Fed gradually stopped intervening in the pricing of longer term Treasury bonds. In 1961 the Kennedy Administration wanted higher short-term interest rates to curb the outflow of gold and the balance of payment deficit, while at the same time keeping long-term interest rates low to encourage growth. This led to the introduction of 'Operation Twist, 'where the Fed sold its holdings of short-dated bills and replaced these with longer-dated bonds. This lasted until 1963. The growing prosperity in the second half of the 1960s started to cause an upward pressure on prices. In 1971 the Nixon government decided to freeze wages and prices and to suspend the direct convertibility of the US dollar to gold. This effectively ended the Bretton Woods system, but did little to curb the structural rise in inflation. During the 1970s the federal funds rate became more important and money growth was used as a means of steering the fed funds rate. Treasury yields gradually trended higher amidst very strong GDP growth (on average 4.2% between 1960 and 1972) and a rise in inflation from 1.5% to circa 5%. When the oil crisis hit, inflation rose to 12% in 1974 and 14% in 1980, sending shockwaves through the bond market. High levels of inflation and volatility caused dissatisfaction with the Fed's policy. Fed Chairman Paul Volcker raised official interest rates to as high as 20%. Initially bond markets responded and long-dated bond yields rocketed up to 16% in 1981. Sticking to this policy in spite of its negative economic consequences gradually restored confidence in the central bank and its ability and willingness to control inflation. This enabled interest rates to decline strongly again from 1981 onwards.

Source: Bloomberg, Ann-Marie Meulendyke, Federal Reserve Bank of New York, U.S Monetary Policy and Financial Markets (1989)

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