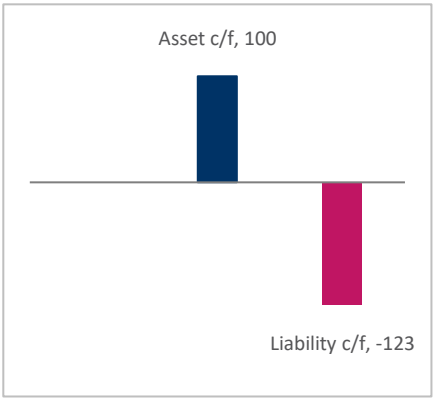
momentum

Assessing the adequacy of cashflow matching strategies

1. Introduction

Many pension schemes are moving towards cashflow generating assets to generate excess returns but with a lower range of outcomes. The purpose of this short note is to set out an alternative way of determining whether a predominantly cashflow generating portfolio can be expected to meet liability obligations over time in place of traditional funding level projections which rely on forward-looking return assumptions.

A cashflow generating strategy doesn't necessarily seek to "match" a scheme's cashflow obligations. As such, the key is to recognise that any cashflow can be moved from one maturity to another (longer) maturity using hedging techniques.



In the example that follows, we will use 10 year (1.7%) and 20 year (1.9%) zero coupon gilt yields at 21 March 2022. We will also assume a simplified asset portfolio which generates a single cashflow of £100m (net of expected loss given default) in 10 years' time and a simplified liability profile with a required cashflow of £123m in 20 years' time. However, the conclusion can be generalised.

2. Moving a cashflow

The steps required to move the cashflow described in the introduction are as follows:

1. 'Swap' the unwanted 10-year cashflow to a floating rate cash flow.

   In practice gilt repo would be used instead of swaps, so we will use gilt rates in this example. The 10-year cashflow has a present value (on a gilts flat basis) of £84m (i.e. £100m × 1.017^-10). Later in this paper we explain why a gilts plus X%pa basis can also be applied as long as X<0.5%pa.

   So, the 10-year fixed cashflow can be 'swapped' for a floating rate exposure of £84m.

   This transaction secures a floating rate of interest on £84m for 10 years. In 10 years' time the fixed cashflow received (£100m) will be used to pay the fixed leg of the 'swap' in return for £84m plus the accumulated floating rate of interest over the 10 years. This cash balance can then be held in cash to continue to generate a floating rate of interest for as long as required. After 20 years, the cash balance will be £84m plus the accumulated floating rate of interest over the full 20 years.

2. The floating-rate exposure that has been created in step 1 can be 'swapped' for a fixed cashflow at the required maturity (20 years in this example).

   The fixed cashflow that can be generated is £123m (i.e. £84m×1.019^20).

3. Assessing the sufficiency of asset cashflows

What this example illustrates is that if the liability obligation in 20 years is £123m, then receiving a cashflow of £100m in 10 years' time is sufficient to meet the liability obligation, as long as it is combined with the liability hedge described above (i.e. pay fixed, receive floating for 10 years; and pay floating, receive fixed for 20 years). This is equivalent to saying that as long as the present value of the asset cashflow and the liability cash flow are the same, using risk-free rate discount rates, asset cashflows are sufficient to meet liability cashflows.

We believe this is **a superior way of assessing whether assets are likely to be sufficient to meet liability obligations** than forward-looking funding level projections using expected returns.

It is also **a superior way of assessing the risk of failing** to meet liability cashflow obligations, as the cashflows themselves can be stressed for different levels of loss given default. We believe this is a much better way of assessing the risks associated with a cashflow based strategy than traditional approaches based on return distributions which typically overstate the fundamental risks associated with these types of assets.

4. Discount curve

We also note that this methodology remains valid using a gilts + X% discount curve as long as it is reasonable to assume that LDI assets will always be able to generate an excess return of at least X%. We believe this is the case for X<0.5% as LDI assets can be invested in high quality credit (including securitised credit) and/or CDS exposure can be added on top of risk-free assets. This constraint is required because the cash received (after 10 years in this example) needs to generate at least X% above the floating rate of interest to pay the floating leg on a 20 year 'swap' receiving a fixed rate of X% pa above the 20-year ZC gilt rate (the first 10 years net off as floating + X% is received under the 10 year 'swap' and paid under 20 year 'swap').

5. Summary

We have shown that discounting asset and liability cashflows using a single discount curve (using a gilts + X% pa discount rate) provides a robust guide to whether asset cashflows can be expected to be sufficient to meet liability cashflow obligations in an 'average' loss given default scenario. It can also be used to 'stress' loss given default assumptions to provide a useful perspective on the fundamental risk being run in a cashflow driven investment policy.

Richard Cooper, Senior Partner
Momentum | Investment Solutions & Consulting

Important Notes

This document is only intended for use by the original recipient, either a Momentum Global Investment Management (MGIM) client or prospective client, and does not constitute an offer or solicitation to any person in any jurisdiction in which it is not authorised or permitted, or to anyone who would be an unlawful recipient. The original recipient is solely responsible for any actions in further distributing this document, and in doing so should be satisfied that there is no breach of local legislation or regulation. This document should not be reproduced or distributed except via original recipients acting as professional intermediaries. This document is not for distribution in the United States.

Prospective investors should take appropriate advice regarding applicable legal, taxation and exchange control regulations in countries of their citizenship, residence or domicile which may be relevant to the acquisition, holding, transfer, redemption or disposal of any investments herein solicited.

Any opinions expressed herein are those at the date this document is issued. Data, models and other statistics are sourced from our own records, unless otherwise stated. We believe that the information contained is from reliable sources, but we do not guarantee the relevance, accuracy, validity or completeness thereof. Unless otherwise provided under UK law, Momentum GIM does not accept liability for irrelevant, inaccurate, invalid or incomplete information contained, or for the correctness of any opinions expressed.

The value of investments in discretionary accounts, and the income derived, may fluctuate and it is possible that an investor may incur losses, including a loss of the principal amount invested. Past performance is not generally indicative of future performance. Investors whose reference currency differs from that in which the underlying assets are invested may be subject to exchange rate movements that alter the value of the investments.

MGIM (Company Registration No. 3733094) has its registered office at The Rex Building, 62 Queen Street, London EC4R 1EB. MGIM is authorised and regulated by the Financial Conduct Authority in the United Kingdom (registration no.232357). ©MGIM 2022.