CLWYD PENSION FUND

RISK MANAGEMENT FRAMEWORK
MONTHLY MONITORING REPORT
31 JANUARY 2019

February 2019

Peter Gent FIA

OVERRIDING OBJECTIVES

Stable and affordable contribution rate

versus

Achieve returns in excess of CPI required under funding arrangements

Objectives are two-fold but conflicting

- Risk needs to be taken in order to achieve returns, but risk does not guarantee returns

Need to ensure a reasonable balance between the two objectives

- Do you need to take the same level of risk when 70% funded (say) as when 110% funded?

EXECUTIVE SUMMARY

= as per or above expectations | = to be kept under review | = action required

Overall funding position

- Ahead of existing recovery plan
- Funding level below the first soft trigger

In absolute terms the funding position is c.9% ahead of target. However there is continuing uncertainty in the outlook for future returns which could impact on the future funding requirements.

Liability hedging mandate

- Insight in compliance with investment guidelines
- Outperformed the benchmark over the quarter and since inception
- Hedge ratios marginally below target levels

No action required.

Synthetic equity mandate

- Insight in compliance with investment guidelines
- Performed in line with the benchmark over the quarter to 31 December 2018
- Underperformed the benchmark over the month to 31 January 2019

A new dynamic protection structure was implemented in late May 2018. This is being monitored in terms of performance and protection levels.

LIBOR Plus Fund

- Underperformed over the quarter but ahead of target since inception
- Management team stable and no change in manager rating
- Allocation of £56m remains appropriate

No action required. The temporary limit on future investments into the Fund at any weekly dealing point remains in place - to be kept under review.

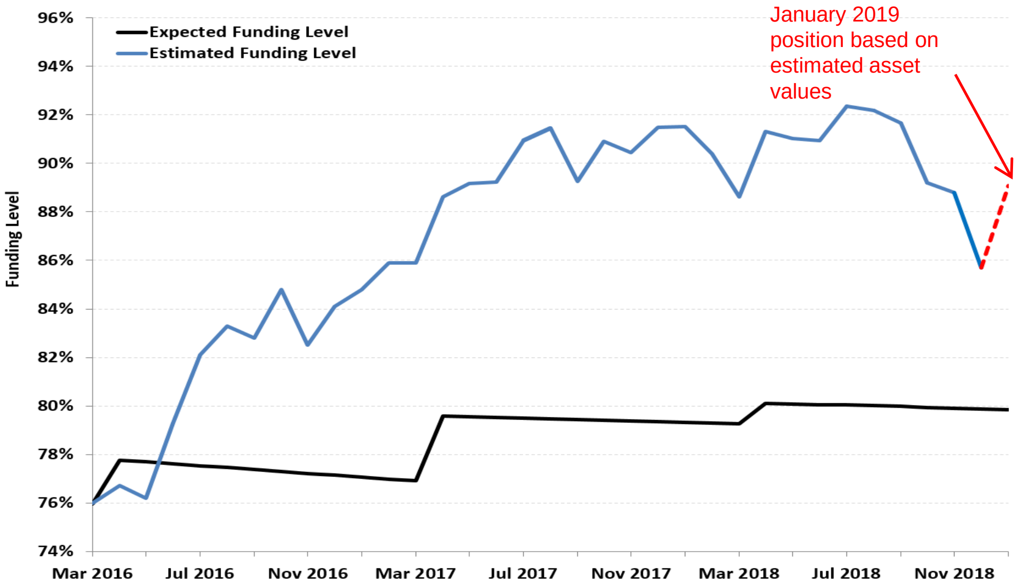
Collateral and counterparty position

- Collateral within agreed constraints
- The Insight QIF can sustain at least a 1.25% rise in interest rates and fall in inflation, in combination with a 35% fall in equity markets without eliminating all collateral

Collateral adequacy to be monitored quarterly. c.£80m to be released from the Insight collateral waterfall at the next available dealing date.

FUNDING LEVEL MONITORING TO 31 JANUARY 2019

Estimated funding position since 31 March 2016



The positions from April 2018 onwards have been adjusted to reflect the actual 2018 revaluation/pension increase awarded.

Funding Level Triggers

It was concluded at the FRMG on 20 June 2017 that the funding level is not currently sufficiently high to warrant de-risking in a traditional sense via a change in long term strategy.

It was agreed that a "soft" trigger will be put in place to prompt FRMG discussions regarding potential actions as the funding level approaches 100% on the current funding basis. This funding level will be monitored approximately by Mercer on a daily basis.

Comments

The **black line** shows a projection of the *expected* funding level from the 31 March 2016 valuation based on the assumptions (and contributions) outlined in the 2016 actuarial valuation. The *expected* funding level at 31 January 2019 was around 80%.

The **blue line** shows an estimate of the progression of the funding level from 31 March 2016 to 31 December 2018. The **red line** shows the progression of the estimated funding level over January 2019. At 31 January 2019, we estimate the funding level and deficit to be:

89% (£225m*)

This shows that the Fund's position was ahead of the expected funding level at 31 January 2019 by around 9% on the current funding basis.

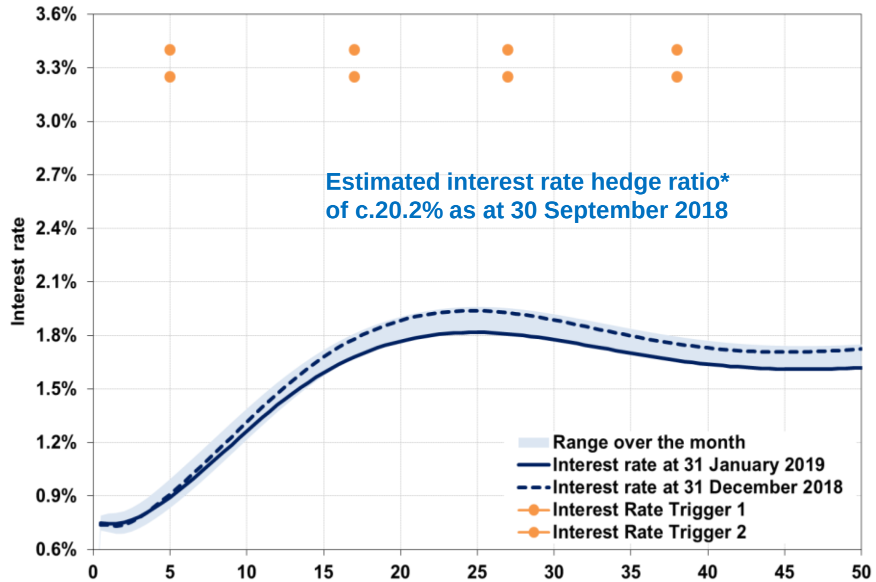
Uncertainty continues to be prevalent in the investment environment due to ongoing external political and fiscal factors. This could mean that the likelihood of achieving the assumed real returns going forward has fallen. To illustrate the impact, a reduction of 0.25% p.a. in the assumed future investment return/real discount rate would reduce the funding level by c.4% to c.85% with a corresponding increase in deficit of £96m to £321m.

This will be kept under review in light of changing market conditions.

**Asset values estimated based on market indices and an estimate of performance of the Insight liability hedging mandate from 31 December 2018 to 31 January 2019. We will monitor this estimate over time against the actual position once final asset values are available, and update the asset values on a monthly basis.*

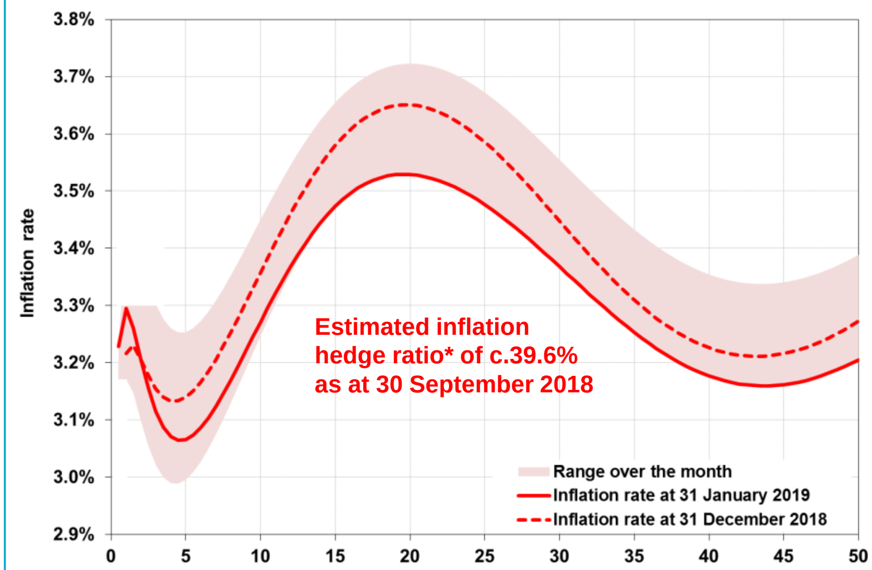
UPDATE ON MARKET CONDITIONS AND TRIGGERS

Change in interest rates



Date	Band 1	Band 2	Band 3	Band 4	Actual
30 September 2018	20.0%	20.0%	20.0%	20.0%	20.0%

Change in inflation rates (note: different scale)



Date	Band 1	Band 2	Band 3	Band 4	Actual
30 September 2018	40.0%	40.0%	40.0%	40.0%	40.0%

Comments

Interest rates were relatively stable at very short durations over January 2019, but fell by an average of c.0.1% at other durations.

Based on market conditions as at 31 January 2019, yields would need to rise by c.1.4% p.a. before the Fund would hit any of the revised interest rate triggers implemented by Insight in Q3 2017.

Comments

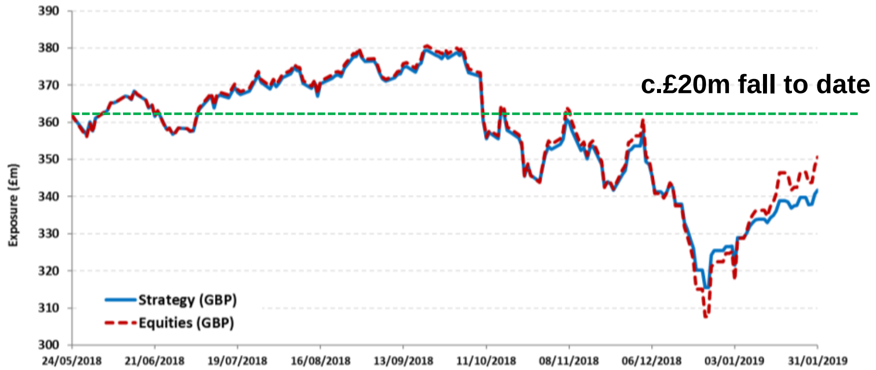
Inflation expectations at all but the shortest durations over the month, with falls of up to c.0.1% observed at medium durations.

It has been agreed that Insight will not resume monitoring of the level of inflation hedging until the interest rate and inflation hedge ratios have been aligned.

** Hedge ratios calculated with reference to 2016 valuation cashflow analysis and relying on a discount rate of gilts + 2.0% p.a..*

UPDATE ON EQUITY PROTECTION MANDATE

Strategy versus equity index

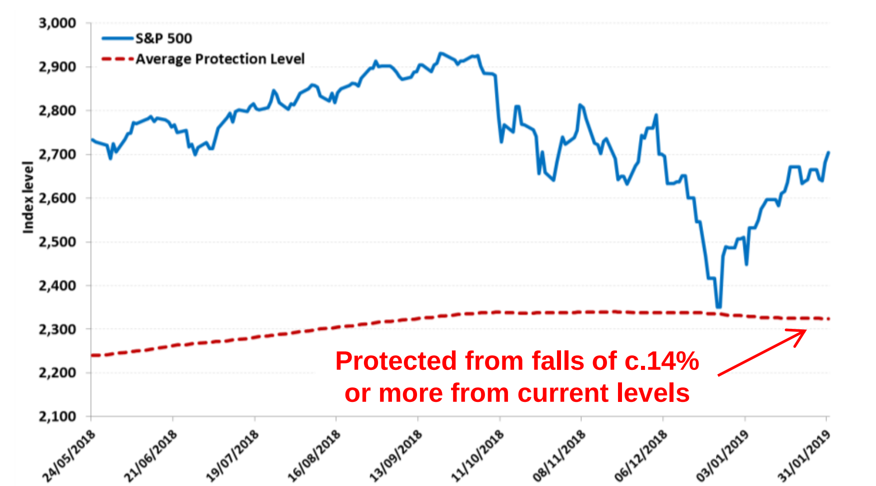


GBP returns	Equity return	Hedging return	Financing return	Costs	Overall return	Relative return
MTD	8.76%	(2.65%)	(1.41%)	(0.04%)	**4.66%**	(4.10%)
YTD	(3.43%)	(1.29%)	(0.59%)	(0.26%)	**(5.57%)**	(2.14%)

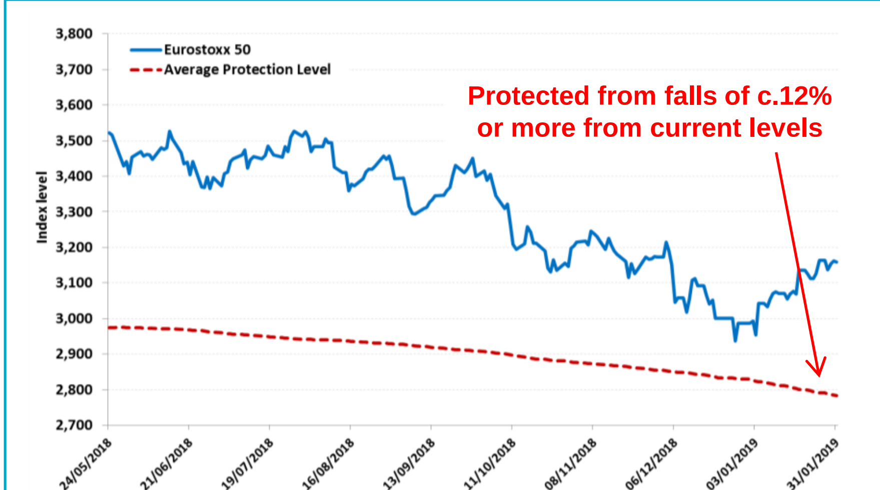
Comments

- The Fund implemented a dynamic equity protection strategy on 24 May 2018 with exposure of £362m. As at 31 January 2019, the value of the synthetic equity exposure was £342m, an increase of c. £15m since the end of December. Relative to investing in passive equities (with no frictional costs), the strategy has underperformed by £7.8m since inception.
- Positive equity returns meant that the strategy exhibited a negative hedging return over January due to the decrease in the intrinsic value of the options. This was the main driver in underperformance.
- The financing return was also negative as markets rose rapidly towards the cap.
- The rise in equity markets over January means that the strategy is c.14% from the protection levels at a combined level.

US equity exposure



European equity exposure



GLOSSARY

- Actuarial Valuation - The formal valuation assessment of the Fund detailing the solvency position and determining the contribution rates payable by the employers to fund the cost of benefits and make good any existing shortfalls as set out in the separate Funding Strategy Statement.
- Collateral – Liquid assets held by the Fund as security which may be used to offset the potential loss to a counterparty.
- Counterparty – Commonly an investment bank on the opposite side of a financial transaction (e.g. swaps).
- Deficit - The extent to which the value of the Fund's liabilities exceeds the value of the Fund's assets.
- Dynamic protection strategy – Strategy to provide downside protection from falls in equity markets where the protection levels vary depending on evolution of the market.
- Equity option – A financial contract in which the Fund can define the return it receives for movements in equity values.
- Flightpath - A framework that defines a de-risking process whereby exposure to growth assets is reduced as and when it is affordable to do so i.e. when "triggers" are hit, whilst still expecting to achieve the overall funding target.
- Funding level - The difference between the value of the Fund's assets and the value of the Fund's liabilities expressed as a percentage.
- Funding & Risk Management Group (FRMG) - A subgroup of Pension Fund officers and advisers set up to discuss and implement any changes to the Risk Management framework as delegated by the Committee. It is made up of the Clwyd Pension Fund Manager, Pension Finance Manager, Fund Actuary, Strategic Risk Adviser and Investment Advisor.
- Hedging - A strategy aiming to invest in low risk assets when asset yields are deemed attractive. Achieved by investing in government backed assets (or equivalent) with similar characteristics to the Fund future CPI linked benefit payments.
- Hedge ratio – The level of hedging in place in the range from 0% to 100%.
- Insight QIAIF (Insight Qualifying Investor Alternative Investment Fund) – An investment fund specifically designed for the Fund to allow Insight to manage the liability hedging and synthetic equity assets.
- London Interbank Offer Rate (LIBOR) - An interest rate at which banks can borrow funds from other banks in the London interbank market.

IMPORTANT NOTICES