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USS Briefing: Using 'gilts+' and 'CPI+' pre-retirement discount rates

This note examines the difference between adopting a 'gilts+' or a 'CPI+' discount rate for the pre-retirement discount rate.

We have been asked by stakeholders to explain why we do not fix the pre-retirement discount rate relative to CPI, given arguments put forward in the Joint Expert Panel's (JEP) first report on the potential benefits of doing so. We have also been asked what impact using a CPI+ pre-retirement discount rate would have on the valuation outcomes.

Before discussing the relative merits of using gilts+ and CPI+ discount rates, it should be noted that, along with mortality, the valuation discount rate is the only assumption where we make an allowance for prudence. All other assumptions are best estimates of expected outcomes.

In setting the discount rate, prudence is viewed through a number of lenses allowing for the particular circumstances at each valuation date. As such the "+" varies at each valuation.

Our approach to prudence in the discount rate is discussed in more detail here – USS briefing: Prudence in the 2020 Valuation.

With this in mind the remainder of this briefing is focused on the difference in gilts+ and CPI+ discount rates.

The difference

Any assumed investment return and any discount rate at a given date can be expressed as the return on gilts plus a spread or alternatively as CPI plus a (different) spread.

The assumed investment return or discount rate at that date remains the same no matter how it is expressed. Expressing a discount rate as gilts+ or CPI+ at the same point based on consistent and up-to-date information will always yield the same Technical Provisions (TP).

So, at the valuation date, the Technical Provisions are independent of whether we take a gilts+ or CPI+ approach.

At times after the valuation date, the TP will also be independent of whether we take a gilts+ or CPI+ approach – but only if the spread over gilts and the spread over CPI are based on consistent and up-to-date market data at that time. That is, using either a gilts+ or CPI+ approach we would expect to update the spread above gilts or CPI (as applicable) to reflect changes in market expectations over time.

Under the dual discount rate (DDR) approach, we consider it appropriate to set the post-retirement discount rate, which relates to a portfolio that is mainly gilts and credit, relative to gilt yields at the valuation date. This ensures that the discount rate is consistent with the asset value (as required by regulation), as well as allowing us to easily compare the discount rate against credit spreads.

The Scheme Actuary has advised on this, and it is in line with the JEP's published views for the post-retirement discount rate.

So, the discussion in this paper (regarding the use gilts+ or CPI+) relates primarily to the question of ways of expressing the pre-retirement discount rate.

Fixing the spreads

If the spreads over gilts and CPI are kept fixed over time (i.e., held constant at their levels fixed at a valuation date), the above equivalence relationship breaks down after that valuation date. In other words, after the valuation date, the TP on a gilts+ and a CPI+ basis will be different because of the volatility of financial markets (including gilts) and CPI.

Because benefits are explicitly linked to CPI, if a CPI+ discount rate is used for the pre-retirement discount rate as mooted by the JEP, with a constant spread over CPI over time, then the volatility of the TP in respect of actives and deferred members will be reduced.

This is because any change in expected future CPI affects these benefit payments and discount rates in a similar but offsetting way. The same is true for the volatility of future service cost.

But this is not true for benefit payments corresponding to post-retirement liabilities because, as we mentioned above, these are discounted on a gilts-based approach.

The major challenge in using a fixed spread over CPI for discounting pre-retirement liabilities is that the assets that are notionally held for these liabilities will, as we move through time and as economic conditions change, effectively be valued reflecting a changing spread over CPI. If the spread over CPI used for valuing the liabilities does not also change then this creates a mismatch. Similarly, the investment of new contributions will be made at whatever spread over CPI is prevailing in the market at the time of the investment. This again creates a mismatch.

On the other hand, using a gilt+ discount rate with a constant spread leads to greater volatility in TP and future service cost than a CPI+ discount rate. This is because the volatility in gilts impacting the discount rate does not necessarily offset the volatility in CPI impacting the benefits.

While in an efficient market one might expect the return relative to gilts and CPI to move broadly together over the long term, this is not observed in reality.

A key advantage of the gilts+ approach rather than the CPI+ approach is that it provides insight on (i) changes in financial market conditions and (ii) changes in expectations for future investment returns. This is because the gilt element at each point in time is an indication of the return on a credit-risk-free investment that investors are willing to accept.

While acknowledging that differences in expected returns between gilts and other assets are not necessarily constant over time, the gilts+ approach with constant spread can provide an estimate of the discount rate prevailing at any particular time, the value of pension benefits (on a TP basis) at that time, and an indication of whether valuation assumptions remain appropriate.

Using a gilts+ discount rate does lead to more volatility in the TP and future service costs than the CPI+ approach, but it is a more accurate reflection of prevailing market conditions. The gilts+ approach with a fixed spread relies on the assumption that investors will require or accept the same fixed margin relative to gilts on other assets over time and in changing circumstances.

While this may be reasonable over the short term if market volatility is low, it has not been the case recently given the volatility in the markets around the time of the valuation date and movements since.

Conclusion

The conclusion we draw from the points above is that using a pre-retirement discount rate with a fixed spread either over gilts or over CPI is not necessarily appropriate – especially in changing conditions.

As a result, whilst we have expressed the discount rates as gilt yields *plus a spread*, in practice we would expect that spread to change over time. This is particularly so given that financial market conditions were unusual as at 31 March 2020, and discount rates relative to gilt yields were higher than we would expect in more normal conditions, particularly the post-retirement discount rate.

Following input and advice from the Scheme Actuary, we have chosen to express discount rates as gilts+ (with a variable spread dependent on expected returns which are updated from time to time) for the following reasons:

- Gilts are generally accepted as a credit-risk-free return benchmark. Further a portfolio of gilts can be structured to provide a close match for pension liabilities, so expressing discount rates as gilts+ gives a clearer view of the level of returns assumed in excess of a low risk return.
- The Trustee wishes to set the TP at a level such that it would be possible to move to a self-sufficiency approach if necessary, with the gap to self-sufficiency covered by contributions that are affordable for the employers. With this objective in mind, a consistent approach to the TP and self-sufficiency discount rates (both expressed as gilts+) helps to reduce the volatility between the TP and SS measures. It also makes it more likely that full funding on the TP basis would put the Scheme into a position where self-sufficiency would, if required, be achievable through affordable contributions. It also increases the transparency of the amount of investment returns being banked in advance under the TP approach compared to the self-sufficiency measure.
- Expressing discount rates as gilts+ is much more common than CPI+ and therefore offers a clearer benchmark for comparison with other schemes.

It is important to remember that the gilts+ and CPI+ approaches are equivalent and give the same answer – but only if the spread over gilts and the spread over CPI are based on consistent and up-to-date market data at a given point in time.

We would stress once again that it is not the intention to keep the spread over gilt yields constant. On the advice of the Scheme Actuary, we accept that a suitably prudent discount rate will vary over time relative to gilt yields based on changes in market conditions, and this will be reflected in decisions at future valuations as well as in monitoring the funding position *between* valuations.

Whether the resulting discount rate is expressed as Gilts plus a spread or CPI plus a different spread the Technical Provisions would be the same.