FRAB (116) 02
04 April 2013

Financial Reporting Advisory Board Paper

Update on discount rates

Issue:	At the last meeting, the Board requested more detailed analysis of current market movements and the impact that this could have on discount rates set by HM Treasury.
Impact on guidance:	None
IAS/IFRS adaptation?	Not applicable
Impact on WGA?	Not applicable
IPSAS compliant?	Not applicable
Interpretation for the public sector context?	Not applicable
Impact on budgetary regime?	Not applicable
Alignment with National Accounts	Not applicable
Impact on Estimates?	Not applicable
Recommendation:	The Board is requested to note that HM Treasury continues to track the potential impact on rates of market movements, and will keep methodologies under review to ensure that they are compliant with standards whilst taking into account the public sector context in which they are used.
Timing:	Rates will next be set in early December 2013 using market data as at 30 November 2013.

DETAIL

Background

1. At the last FRAB meeting, the Treasury provided a brief update on market movements since discount rates were set in early December 2012, and the impact that movements would have on its assessment of the year-end general provision and post-employment discount rates were those rates to be set then rather than using market data as at 30 November 2012.

2. The methodologies for determining both the general provision and post-employment benefit discount rates have changed in recent years. These changes have been made to better reflect the requirements of the accounting standards (by using market data and updating on a more regular basis) and to ensure that the public sector context has been taken into consideration (setting at the end of November to ensure that entities are able to take changes into consideration through Supplementary Estimates). At the same time as these methodological improvements have been made, unprecedented market volatility has meant that there has been the potential for the rates to move significantly both within year and between years.

3. HM Treasury has committed to updating the Board at each meeting on market movements and the impact that these would have on the discount rates. This paper provides a more comprehensive update on market changes following a request from the Board at the last meeting.

General provision discount rate methodology

4. IAS 37 *Provisions, Contingent Liabilities and Contingent Assets* requires that where the effect of the time value of money is material, the amount of a provision shall be the present value of the expenditures expected to be required to settle the obligation. The discount rate (or rates) used to calculate the present value shall be a pre-tax rate (or rates) that reflect(s) current market assessments of the time value of money and the risks specific to the liability. The discount rate(s) shall not reflect risks for which future cash flow estimates have been adjusted (IAS 37 para 43).

5. Reporting entities generally adjust future cash flow estimates related to provisions for risk and also express the cash flows in current prices, i.e. they are not inflated for the expected impact of future inflation. The FReM requires that where the cash flows to be discounted are expressed in current prices, entities should use the real discount rates set by HM Treasury that is promulgated in Public Expenditure System (PES) papers.

6. The previous methodology for determining the general provision discount rate required HM Treasury to set one rate based on the yield on long-dated index-linked gilts prior to each spending review, with the rate applying for the spending review period. In practice, however, this rate was not updated, and movements in the yield curve meant that the discount rate was no longer an accurate reflection of the risk free time-value of money. Over the course of 2011, therefore, HM Treasury refined proposals with the FRAB for a new methodology. This culminated at the December 2011 FRAB meeting with a methodology in which it was agreed that separate rates would be set for short, medium, and long-term cash flows.

7. HM Treasury now provides Departments with three discount rates in order to determine the present value of provisions:

(i) A real discount rate that is applied to the cash flows of general provisions in a time boundary of between 0 and 5 years. This rate is based on the real yield on UK index-linked Gilts as determined by examining Bank of England data for the spot

yield curve at 2.5 years to maturity. This is the short-term discount rate and will be reviewed on an annual basis at 30 November, with the rate to be applied to balances the following 31 March;

(ii) A second real discount rate that is applied to the cash flows of general provisions in a time boundary of between 5 and 10 years. This rate is based on the real yield on UK-index linked Gilts as determined by examining Bank of England for the spot curve at 7.5 years to maturity. This is the medium-term discount rate and will be reviewed and updated on an annual basis at 30 November, with the rate to be applied to balances the following 31 March;

(iii) A final real discount rate to be applied to the cash flows of all long-term provisions in a time boundary exceeding 10 years. This will be reviewed ahead of each spending review period instead of on an annual basis. HM Treasury has based the long-term discount rate on the real yield on UK index-linked Gilts as determined by examining Bank of England data for the spot yield curve at 25 years to maturity, with a comparison to the average of the redemption yields of the three longest dated index-linked Gilts according to Debt Management Office data to ensure it remains appropriate for extreme length provisions.

As previously notified to the Board, the introduction of the new long-term rate has been delayed until the next Spending Review.

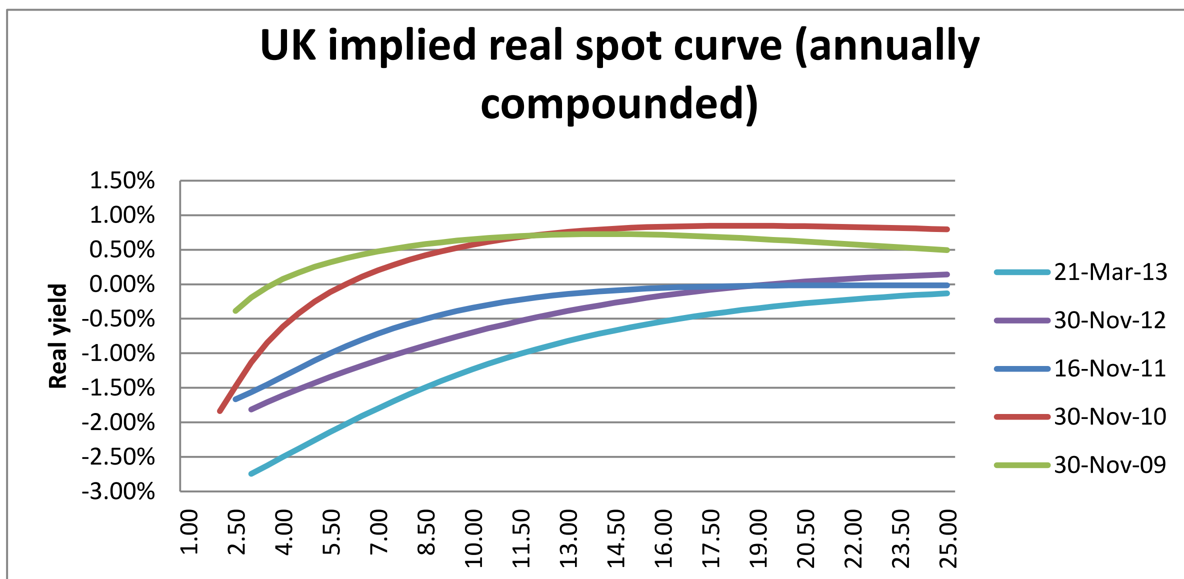
Review of market data

8. Since the last update to the Board there have been a number of significant developments that are relevant to the general provisions discount rate.

9. The first and most important development is the rating downgrade of UK Sovereign debt by Moody's from AAA to AA1. In accordance with IAS 37, the discount rates provided by HM Treasury for use by reporting entities represent risk-free rates, with UK index-linked Gilts used as a proxy for risk free assets. Unadjusted Gilt rates were considered the best proxy for risk-free assets despite some technical bias and illiquidity in the market and the uncertain impact of Quantitative Easing. With Moody's downgrade, however, some may question whether UK index-linked Gilts remain the best proxy for risk free assets.

10. The two other major rating agencies continue to rate the UK as AAA (S&P with a stable outlook and Fitch a negative outlook), so the downgrade by Moody's does not currently represent a consensus view amongst the major rating agencies. Furthermore, an examination of historical default rates from the past 30 years amongst non-corporate bonds rated AA1 by Moody's shows that that there is an approximately 0.05% risk of default amongst entities issuing these bonds. This equates to a one in two thousand risk, so effectively UK sovereign debt remains risk free even under the new Moody's rating. HM Treasury's view, therefore, is that unadjusted yield figures for UK index-linked Gilts remain appropriate as a proxy for the return on risk-free assets, although as previously noted to the Board we will continue to monitor this situation.

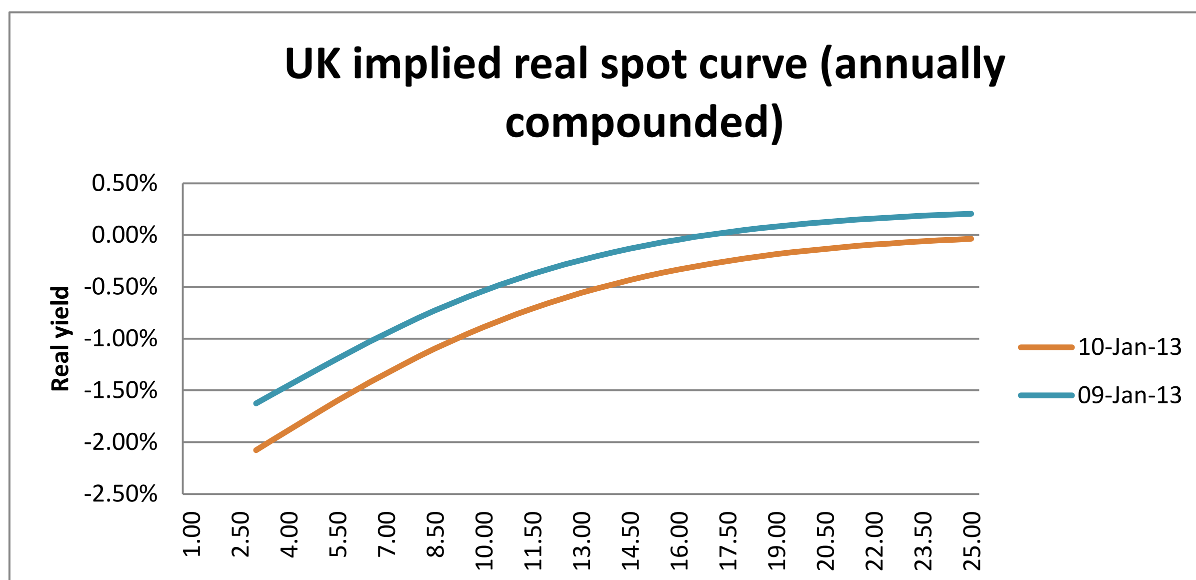
11. The second major development has been the continued fall in the yield on index-linked Gilts. The chart below shows the movement in the UK index-linked Gilts implied real spot curve on 30 November each year from 2009 to the most recent market data on 12 March 2013.



12. As the figure shows the real yield on index-linked Gilts continues to fall to historic lows, to such an extent that if we were to set the discount rates today the short, medium and long-term rate would be lower than those set on 30 November 2012 and all would be negative.

Discount rate	30 Nov 2012	12 Mar 2013
Short-term	-1.80%	-2.80%
Medium-term	-1.00%	-1.70%
Long-term	2.20% (would have been 0.14% if set)	-0.13%

13. What is the cause of this continued fall in yields? It is clear that the results of the ONS consultation on RPI have had a significant impact on yields, as market participants had priced in an expected change in the methodology used to determine RPI which would have reduced the returns on index-linked Gilts. Indeed Bank of England data shows that across the curve the decision to leave the methodology used to determine RPI unchanged led to an approximately 50bps fall in real yields overnight.



14. There is no consensus, however, among market commentators as to what other factors are continuing to drive demand for index-linked Gilts and falling yields in general. Since the start of the financial crisis, yields have been suppressed by a flight to safety, low interest rates, and low expectations of economic growth. Quantitative easing and regulations requiring financial institutions to hold less risky assets are also believed to have had some impact although it is impossible to quantify these.

15. From a review of market movements it appears that there is considerable demand for the greater certainty in returns and protection from inflation offered by index-linked Gilts, even if that certainty and security leads to a negative real return.

Impact on rates and balances

16. There is no immediate impact on the discount rates of these falling yields as the short and medium-term rates are not due to be updated until 30 November 2013, and the long-term rate not before the next spending review period. Were we to set rates today, however, there would be an increase in the value of provisions. This would be particularly significant for those provisions such as nuclear decommissioning and clinical negligence which have very long-term cash flows.

17. As we do not have individual cash flow data from Departments for their provisions it is difficult to accurately estimate the impact that changes in rates would bring. We would expect, however, a change in the net present value of provision liabilities in the tens of billions of pounds were the long-term rate to be changed to the level that market data would currently require.

Post employment benefit discount rate methodology

18. IAS 19 *Employee Benefits* requires the use of a discount rate that reflects the estimated timing of benefit payments and which is based on the rate of return on high quality corporate bonds. HM Treasury sets the discount rate for all the unfunded public service pension schemes in central government. Funded schemes are required to determine their own rates.

19. HM Treasury's methodology for determining the post employment benefit discount rate utilises a 15 year spot rate as an appropriate discount rate for a reasonable range of different profiles of the timing of benefit payments. The Bank of America Merrill Lynch

Sterling Corporate Securities AA Rated 15+ year index is used to determine the rate of return on high quality corporate bonds. As the duration of the index of AA-rated corporate bonds used is below 15 years, we extrapolate by reference to the yield curve for UK Government bonds published by the Bank of England. HM Treasury is satisfied that this is appropriate due to the term structure for AA corporate bond spreads.

20. As public service pensions are uprated in accordance with CPI it is also necessary for us to determine a real discount rate. As there is at present no deep market in securities linked to CPI inflation, to derive a market consistent CPI inflation we first determine market expectations of RPI inflation and then adjust with a reduction of 1.00% We believe this is an appropriate reflection of the long-term difference between CPI and RPI. Market expectations of RPI inflation are based on yield curves for UK Government bonds published by the Bank of England.

Review of market data

21. The two market data indices that impact most on the post employment benefit discount rate are the AA rate corporate bond rate and market expectations of RPI. The figures for these two indices are noted in the table below.

Date	BoAML AA rate non-extrapolated %	Market expectations of RPI %
30 November 2010	5.36	3.40
30 November 2011	4.72	3.00
30 November 2012	3.92	2.70
21 March 2013	4.03	3.36

AA rated corporate bond rate

22. The table highlights that AA rated corporate bond rates in the UK have seen a fall over the past three years. This mirrors falls in AA rated corporate bonds in other similar markets including the US and the Eurozone. Indeed the Eurozone has seen the most significant decline (long-term AA rated corporate bond yields falling from 4.60% in December 2011 to 2.69% in December 2012) representing a flight to quality in that market.[1] It appears this flight to quality is also present in the UK (although to a lesser extent) resulting in a fall in yields between November 2010 and November 2012 of 144bps on the Bank of America Merrill Lynch Sterling Corporate Securities AA Rated 15+year index.

23. There has been a slight increase in bond yields during the first quarter of 2013. This increase is relatively insignificant and as yet the cause is uncertain, but will be monitored during the coming months.

Market expectations of RPI

[1] See Towers Watson Global Pension Finance Watch
http://www.towerswatson.com/DownloadMedia.aspx?media=%7B295FB9D6-0761-411D-908E-DEBB5F89A646%7D

24. Market expectations of RPI are derived using Bank of England data and the Fisher relationship between the real and nominal Gilt curves, with no adjustment being made for any inflation risk premium. As shown in the table above market expectations of RPI fell between November 2010 and November 2012, from 3.40% to 2.70%. These are expectations of inflation in 15 years time, so short-term one-off factors such as the VAT increase that led to a temporary rise in inflation over the period should not have had an impact here. Rather it appears that longer-term factors such as the ONS RPI consultation, lower than previously expected economic growth and continued expectations of pay restraint across the economy had led to reduced expectations of future inflation.

25. There has, however, been a sharp increase in RPI expectations in the first quarter of 2013. As noted in the discussion on index-linked Gilts above this is primarily due to the results of the ONS RPI consultation which led to approximately a 50bps change in inflation expectations overnight. There also appear, however, to be further underlying factors that are leading to increased RPI expectations. It is difficult to ascertain precisely what these are, but some market commentators are pointing to potential uncertainty over the future monetary policy framework as having an increasing influence. This may also help explain the continued fall in yields on index-linked Gilts.

Impact on rates

26. The post employment benefit discount rate will next be set on 30 November 2013. Were it to be set now the nominal rate would be higher than that which will be applied at 31 March 2013 (4.20% compared to 4.10%) but the real rate which has the most significant impact on the defined benefit liability figures would be lower (1.76% compared to 2.35%).

Date	AA rated corporate bond nominal rate	Real rate net of CPI	CPI	RPI
30 November 2012	4.10	2.35	1.70	2.70
21 March 2013	4.20	1.76	2.40	3.40

27. What impact would this have on defined benefit pension liabilities? Analysis of past movements in liability figures for the main unfunded public service pensions schemes shows that a 1% fall in the discount rate will lead to an increase in the liabilities of unfunded pension schemes of around 10 to 15% and vice versa. With total unfunded pension scheme liabilities of approximately £1 trillion within central government, we'd expect the liability to be about £75 billion greater if we were to update to the current rate rather than 30 November rate.

Recommendation

28. Continued market volatility is causing significant movements in the underlying indices that are used by HM Treasury to provide discount rates for general provisions and post employment benefits. The Board is requested to note that HM Treasury continues to track the potential impact on rates of market movements, and will keep methodologies under review to ensure that they are compliant with standards whilst taking into account the public sector context in which they are used.

HM Treasury

4 April 2013