

PENSIONS ACCOUNTING: ASSUMPTIONS AND DISCLOSURES

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Abstract

This paper discusses the Pensions Accounting Disclosures required for defined benefit pension schemes and the lessons to be learned for India. Section I looks at pensions accounting disclosures under the current global market conditions. Section II discusses an approach of setting the various assumptions for accounting disclosures. Section III elaborates on FRS 17 Accounting Disclosures for a sample scheme using best practices. Section IV discusses the lessons learned for Indian pension schemes considering the revised AS 15.

Keywords

Pensions Accounting Disclosures, benefit obligations, FRS 17, IAS 19, AS 15, FAS 158, mortality, retirement, sensitivities, actuarial gain and loss, service cost, interest cost, expected return on assets, Statement of total recognized gains and losses (STRGL)

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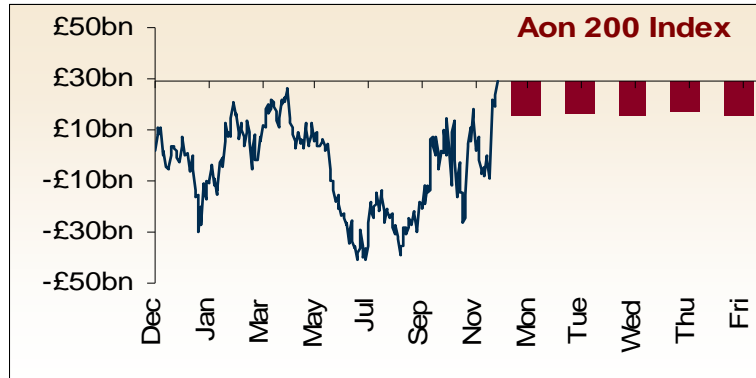
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Section I: Pensions Accounting in current market conditions

In the week ending 5 December 2008 the "Aon 200 Index" has lost ground as the £29bn surplus at the beginning of the week declined dramatically on 8th Dec 2008 after equity market falls. For the rest of the week, however, the position remained unusually steady given recent market volatility and closed the week at a £16bn surplus. Although the impact of the changes in underlying market conditions has been slight, there have been some milestones reached during the week. AA corporate bond yields have returned to below 7% for the first time since mid-September and expected future inflation (12 years) has fallen below 2.5% per annum for the first time since June 2003.

Each month, and more recently given the market turmoil weekly, Aon Consulting produces an estimate of the aggregate accounting surplus / deficit of the 200 largest UK pension schemes, which is called the "Aon 200 Index".



Aon 200 Index, Source: Aon

The x Axis is set at the position at the start of the week – ie an aggregate surplus of £29bn for the week commencing 1 December 2008. The line shows the progression of the Aon 200 index over the previous year. The bars to the right of the graph show the daily movement in the position over the week.

Over the past year the Aon 200 Index has been particularly volatile. Falls in world equity markets in December 2007 and January 2008 increased deficits to almost £30bn. The Aon 200 index then rallied as corporate bond spreads (and therefore corporate bond yields which determine the discount rate used for accounting purposes) increased to previously unprecedented levels, peaking in March 2008 at around 2%. Following this there were substantial falls in the Aon 200 index due to both falls in world equity markets, and increasing estimates of future price inflation (which most UK pensions are linked to, at least in part). As a result, over the summer of 2008 the Aon 200 index fell back to show aggregate deficits of around £30bn. Since September 2008 the Aon 2008 index has rallied, despite falling equity markets, as corporate bond spreads have widened further and estimates of future inflation have dramatically reduced.

In the light of current global volatile markets, global equities have fallen and corporate bond yields maintain their previously unprecedented levels as the credit crunch deteriorates into a recession. The trustees of defined benefit pension schemes are getting more interested in assessing the financial strength of the sponsoring employer, particularly when the size of the retirement obligation exceeds the size of the sponsoring employee in some cases. According to IAS 19, standard pension liabilities and assets are written down on the balance sheets at pre-defined levels. Effectively liabilities are 'marked to market' assuming future pension increases in line with long term market expectations (widely accepted as the difference between the yields available on fixed interest and index-linked gilts of appropriate duration) and discounted at the level of yields obtainable on AA corporate bonds. Assets are written down at their market value at the accounting disclosure date. However, it is worth noting, a large number of schemes invest in wide variety of asset classes, so valuing the liabilities with reference to only corporate bond results in volatile funding levels.

Consequently, the assets and liabilities as disclosed in the books of accounts can create an impression about the financial health, which might be far from the reality. The true extent of the financial losses on pension scheme assets could be masked by the market assumptions used to value liabilities. After the September 08 meltdown, both the International Accounting Standards Board and its US counterpart, the FAS Board, have been asked by governments to consider proposals to suspend fair value accounting, (as the prevailing historically high corporate bond yields during the interim period, which are used to discount the pension liabilities), and allow companies to use higher asset values (particularly for illiquid assets) than implied by the market.

The real challenge comes in setting pensions accounting discount rates (and other assumptions) in the current economic uncertainty. The assumptions are the best estimates of the variables that will determine the ultimate cost of providing benefits. They should neither be imprudent nor excessively conservative and should be mutually compatible if they reflect the economic relationships between factors such as inflation, rates of salary increase, the return on plan assets and discount rates. They should also be market-related to be consistent with the asset values which need to be taken at a market value. The assumptions should consider the long-term view and so should not be expected to vary significantly from year to year.

We will discuss an objective assumptions setting exercise for accounting disclosures, based upon our experience in working with UK Pensions schemes.

Section II: Pensions Accounting Assumptions setting

The accounting disclosure assumptions are prescriptive and are set out in accounting standards, which try to incorporate the economic perspective, but also take into account the specific circumstances of the pension scheme. The following approach could be followed while deriving the key assumptions for Accounting Disclosures.

- **Discount Rate**

IAS19 guidance for setting discount rates states that it should be determined by reference to market yields on high quality corporate bonds.

The most common starting point for setting the discount rate is the yield available on an appropriate AA corporate bond index, for example the IBoxx indices. The yields on these indices as at 20 November 2008 and 31 December 2007 are set out below:

AA corporate bond index	20 Nov 2008	Duration	31 Dec 2007
IBoxx over 10 year	7.30%	9.8	5.80%
IBoxx over 15 year	7.10%	11.0	5.70%

The accounting standards state that the discount rate should be consistent with the term of the liabilities, so the discount rate should be adjusted if the duration of the index used is different from the average duration of a scheme's liabilities. A typical scheme has duration of 15 years and almost always will be longer than the duration of the above indices. In setting the discount rate by reference to an index yield it is appropriate therefore to consider whether any adjustment should be made to the yield derived from the index. In particular, pension schemes with very long durations (for example, a scheme where most members have not yet retired) will need to extrapolate the yield to longer durations, which will often be a subjective process.

- **Inflation**

In practice the assumption used for price inflation is often the same under IAS19 and FRS17. The accounting standards require that the price inflation assumption should be set with reference to market rates. The yields on appropriate Government gilt indices as at 20 November 2008 are set out below, along with the rate of price (market) inflation implied by the difference between the yields on fixed interest and index-linked yields.

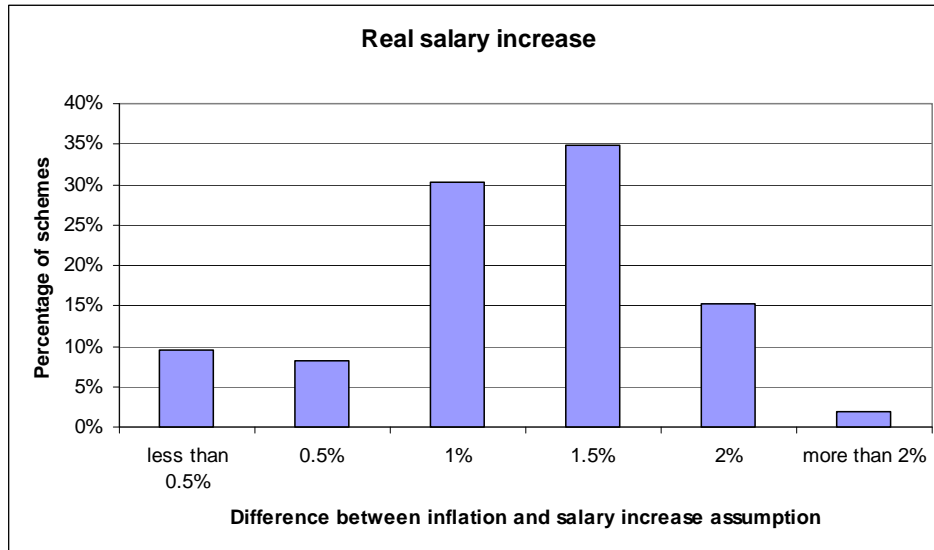
	20 November 2008
FT Actuaries 20 year gilt index	4.50%
FT Actuaries over 5 year index-linked gilt index (5% assumed inflation)	1.50%
Difference ("market inflation")	3.00%

It is widely accepted that index-linked gilts contain a premium to reflect the protection that they give against inflation and, in addition, their relative shortage of supply may make their yields lower than may be fully justified on pure inflation grounds. In the past, auditors have generally accepted a margin of up to 0.2% as being acceptable – ie an explicit deduction from the implied inflation as derived above. With future inflation expectations in the UK now anticipating a period of deflation (which makes index-linked gilts less attractive to investors), it may now be appropriate to use a lower deduction.

Salary Increases

The assumption for the rate of increase in salaries should reflect the general rate of price inflation and the expectations of the company. We have compared the salary increase assumption to the price inflation assumption for all the companies in Aon's survey who have published accounts on or after 30 March 2007. The average has been to assume salary increases of 1.5% pa above price inflation. This is shown graphically below:

Distribution of salary inflation relative to price inflation



- **Pension increases**

As pension increases are usually linked to inflation, the pension increase assumption will reflect the level of price inflation assumed. However, it might be adjusted to reflect caps / collars. In addition it is common to have some elements of fixed pension increases.

- **Expected return on assets**

FRS17 states that it expects the monetary amount of the expected return to be stable. This implies, but does not require, that when equity values fall, the expected return assumption will increase and vice-versa.

IAS19 simply states that the assumption should be based on market expectations for returns over the entire life of the liabilities

Over the last year, the following has happened:

- UK equity markets (represented by the UK FTSE All share) fell by around 40% between 31 December 2007 and 20 November 2008. If the view for the level of the equity market in 20 years' time, say, is similar to last year, then this would suggest an increase in the expected return over the next year.
- Two measures that give an indication of the level of the equity market are the dividend yield and the price earnings ratio. The dividend yield is higher than last year suggesting that the expected return on equities should be higher. The price earnings ratio has fallen suggesting that the level of the equity market is lower than last year and therefore, from this lower level, future equity returns may be higher.

- However, given the significant falls in equity markets over the year, we may revise our outlook for the long-term level of the market and not increase the equity return as far as the above arguments would perhaps imply.

Demographic Assumptions

- Post retirement mortality

Until very recently, many companies did not disclose the mortality assumption adopted for accounting purposes. However, many companies are now disclosing this information and, indeed, it is a requirement of the FRS17 best practice disclosures. The life expectancy disclosed for a current (male) pensioner aged 65 ranges from 18 years to 24 years.



Source: Aon Consulting's survey year 2008

However, the mortality assumption adopted by a given scheme will reflect the characteristics of the membership of that specific scheme and adopting the average mortality assumption used by other companies will not necessarily be appropriate for a scheme. For example the mortality of a heavy pension scheme for an employer conducting heavy industry would be expected to be higher than that of a professional firm or high tech industry. In the UK there is evidence of mortality rates being correlated to lifestyle, with those in higher socio economic groups exhibiting lower rates of mortality. Therefore the mortality table adopted should reflect the make up of the workforce (past and present).

Now, we will take a case study and discuss the best practices used in the Accounting Disclosures.

Section III: XYZ Pension Scheme: FRS 17 Accounting Disclosures for Year Ending 31 Dec 2008

Under FRS17 the assumptions used are the responsibility of the directors, after taking actuarial advice. The financial assumptions used should reflect market conditions at the accounting date. The following assumptions were used for the accounting disclosures of XYZ scheme, which was derived as per the methodology prescribed by FRS17.

Basis summary

	Provisional assumptions at 20 Nov 2008	Assumptions at 31 Dec 2007
Discount rate	7.1% pa	5.7% pa
Price inflation (RPI)	2.8% pa	3.3% pa
Salary increases	3.8% pa	4.3% pa
Pension increases		
- LPI (max 5%)	3.8% pa	4.3% pa
- LPI (max 2.5%)	2.5% pa	2.5% pa
Rate of return on equities	8.0% pa	7.8% pa
Rate of return on bond portfolio	6.3% pa	6.3% pa
Rate of return on cash investments	5.0% pa	5.0% pa
Pre/Post retirement mortality	PNA0092 MC birthyear with 1% Underpin and a weighting of 130%	PNA0092 MC birthyear with 1% Underpin and a weighting of 130%
Cash Commutation	No Allowance	No Allowance

FRS 17 - Accounting Disclosure of XYZ Pension Scheme for Year 2007-08

(a) Reconciliation of the present value of the defined benefit obligation	£'000s 2008*	£'000s 2007
Present value of defined benefit obligation at beginning of year	2,244	2,224
Service cost (Employer Cost)	112	138
Interest cost	131	120
Members' contributions	25	38
Actuarial (gain) / loss on scheme liabilities	(934)	(260)
Benefits paid	(13)	(15)
Past service cost	0	0
Business combinations	0	0
Curtailments and settlements	0	0
Present value of defined benefit obligation at end of year	1,565	2,244
(b) Analysis of the defined benefit obligation	£'000s 2008	£'000s 2007
Present value of unfunded defined benefit obligation	0	0
Present value of funded defined benefit obligation	1,565	2,244
(c) Reconciliation of fair value of scheme assets	£'000s 2008	£'000s 2007
Fair value of scheme assets at start of year	2,031	1,727
Expected return on scheme assets	163	230
Actuarial gain / (loss) on scheme assets	(853)	(131)
Contributions by the company	144	182
Contributions by members	25	38
Benefits paid	(13)	(15)
Business combinations	0	0
Settlements	0	0
Fair value of scheme assets at end of year	1,496	2,031
(d) Amounts to be recognised in the balance sheet	£'000s 2008	£'000s 2007
Present value of funded obligation	1,565	2,244
Fair value of scheme assets	(1,496)	(2,031)
	69	213
Present value of unfunded obligation	0	0
Net liability in balance sheet	69	213
(e) Amounts to be recognised in the income statement	£'000s	£'000s

	2009 projected	2008	2007
Current service cost	71	112	138
Interest on obligation	114	131	120
Expected return on scheme assets	(118)	(163)	(230)
Net actuarial losses/(gains) recognised in the year	0	0	0
Past service cost	0	0	0
Losses/(gains) on curtailments and settlements	0	0	0
Effect of the limit on the net asset to be recognised	0	0	0
Total expense	67	81	28

(f) Total amount recognised in the statement of total recognised gains and losses (STRGL)	£'000s	£'000s
	2008	2007
Actuarial gain / (loss)	81	129
Effect of the limit on the net asset to be recognised	0	0
Actuarial gain / (loss) recognised in STRGL	81	129

(g) Cumulative amount of actuarial gains and losses recognised in STRGL	£'000s	£'000s
	2008	2007
Cumulative gain / (loss) recognised in STRGL	210	129**

(h) Scheme assets	Planned	£'000s	%
		2008	2008
Equities	60%	1,496	100%
Gilts and Bonds	30%	0	0%
Property	5%	0	0%
Other	5%	6	0%
Total scheme assets		1,496	100%

Expected rate of return on scheme assets	7.98%
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* 08 figures are based on provisional assumptions at 20/11/08

** Assuming the amount of actuarial gains and losses recognized in STRGL in 2006 was 0

Sensitivity to alternate assumptions on the Disclosure items:

We have set out discount rates, price inflation, salary inflation and equity returns as key assumptions and the following table illustrates the effect of each on the key disclosure items.

Profit and Loss (2009 projected)	As at 20 Nov 2008 assumptions	Discount rate +0.5% (£k)	Price inflation +0.5% (£k)	Salary inflation +0.5% (£k)	Equity return +0.5%
Service Cost	71	61	83	78	71
Interest Cost	114	108	123	120	114
Expected Return on Assets	(118)	(118)	(118)	(118)	(126)
Pension cost	67	52	88	80	60

- 1) Service Cost is the cost to the company of the liabilities accruing in the year
= Employer's share of the SCR*Pensionable Salaries paid over the year

The future service contribution rate is calculated as the total present value of the expected benefits accruing over the coming year divided by the expected salary roll over the same period. The service cost will tend to increase for a scheme, which is closed to new entrants and remain stable for open schemes.

- 2) Interest cost is the change in the liabilities due to the removal of one year of discount
= $i \times (\text{Liabilities at start} + \frac{1}{2} \times (\text{ServCost} + \text{Employee conts} - \text{Benefits Out}))$

The higher discount rate derived from the AA rated corporate bond yields the lower the liabilities, but the higher the interest factor used in the interest cost.

- 3) Expected Return on Assets is the investment return expected over the year
Expected Return on Assets at the start of year $\times (\text{Assets at start} + \frac{1}{2} \times (\text{Employer conts} + \text{Employee conts} - \text{Benefits Out})) - \text{Expected Expenses}^*$

The Expected Return on Assets at the start of year is weighted average of asset allocation and expected returns

If the scheme is heavily invested in equities and equity returns fall, the Actual return of assets will be substantially lower than the Expected Return on Assets. The difference will be experience loss, which will the STRGL entry

The table below shows the impact of the changes in the assumptions on the surplus/deficit

Balance Sheet	As on 20 Nov 2008	Discount rate +0.5% (£k)	Price inflation +0.5% (£k)	Salary inflation +0.5% (£k)	Life expectancy +1 year (£k)
Assets	1,496	1,496	1,496	1,496	1,496
Liabilities	1,565	1,388	1,687	1,647	1,608
Surplus/(Deficit)	(69)	108	(191)	(151)	(112)

The impact of price inflation affects the funding level considerably by increasing the liabilities to £ 1687 K from £ 1565 K with a +0.5 % increase.

*IAS 19 specifies that expected expenses are deducted from the expected return on assets

Section IV: The Lessons learned for India

Accounting Standard (AS) 15 (revised 2005) on Employee Benefits is based on the current IAS 19. The Appendix C of AS 15 (revised 2005) discusses the comparison with IAS 19, Employee Benefits (as amended in December 2004). The revised AS 15 (2005) differs from IAS 19 in the treatment of actuarial gains and losses and does not admit options and requires that actuarial gains and losses should be recognized immediately in the statement of profit and loss. However, IAS 19 provides options to recognize actuarial gains and losses as follows:

- (i) a 'Corridor Approach', which results in deferred recognition of the actuarial gains and losses, or*
- (ii) Immediately in the statement of profit and loss, or*
- (iii) Immediately outside the profit or loss in a statement of changes in equity titled 'statement of recognized income and expense' (SORIE).*

Under the FRS17 methodology, the Statement of Total Recognised Gains and Losses (STRGL) entries is an account used to reconcile balance sheet changes which do not form part of a company's normal trading i.e., the difference between the expected and actual returns on assets, and any liability gains / losses. The items in the STRGL do not pass through the company's profit and loss accounts and used as an alternative means of adjusting the balance sheet without affecting the disclosed profitability of day to day operations. FRS17 mandates recognizing changes in asset and liability values in the accounting period in which they arise and essentially doesn't allow spreading actuarial gains / losses, which arise from experience adjustments and the effects of changes in actuarial assumptions. However, this results in a significant amount of volatility in the Balance Sheet. The surplus/deficit under the scheme is likely to be volatile from year to year because of the mismatch between the assets held (which are often a mix of equities, bonds and other asset classes) and the way in which the liabilities are valued under FRS17, which is based on corporate bond yields.

In essence, the AS 15 is similar to FRS 17 with regards to treatment of actuarial gains and losses in a financial year. However, FRS17 requires that a five-year history of the gains and losses passing through the STRGL is disclosed. This could be included as part of best practices in AS 15, which should highlight areas where pension costs are consistently being overstated or understated, for example the actuary consistently using an over cautious basis leading to profit consistently being understated.

Another requirement under FAS158, which could be incorporated as best practice, is to disclose Accumulated Other Comprehensive Income (OCI), which (ignoring transitional assets and prior service costs for simplicity) is Accumulated OCI at year start + recognized net loss over year + new unrecognized losses over year. It represents the amounts that have not yet been recognized as components of net periodic benefit cost and gives a indication of the net gain or loss, net prior service cost or credit, and net transition asset or obligation over the year (unrecognized losses over year would be null in AS 15).

With regards to demographic assumptions on pre and post mortalities, use of appropriate tables should be encouraged keeping in mind the scheme experience besides using the standard Indian Assured Lives mortality - 1994-96 (modified).

AS 15 assumptions on discount rate prescribes that the rate used to discount post-employment benefit obligations (both funded and unfunded) should be determined by reference to market yields at the balance sheet date on government bonds (largely due to inactive bond market in India).

In an article featured in Global Pension, Helene Poirson, economist at the International Monetary Fund anticipates that *NPS would facilitate development of the country's inactive bond market - inactive mainly due to the stringent disclosure requirements and high level of interest that ward off potential corporate debt issuers. At the end of 2006, Indian bond markets accounted for just 3.5% of the country's GDP, compared with 140% and 189% in the UK and US, or 200% and 35% of Asian peers Japan and China, according to Watson Wyatt.* Hopefully, the NPS should expand the bond market leading to more market consistent discount rates set for valuing long term liabilities. However, as we have seen in the UK, as a result of the credit crunch, as corporate bond spreads widen, the liabilities disclosed for accounting purposes reduce, resulting in a much weaker measure. Given that widening corporate bond spreads reflect increasing market expectations for defaults, for which none of the accounting standards make allowance, a more appropriate measure of liabilities may be to discount based upon the yields on government bonds, possibly with a fixed addition to reflect that pension schemes will usually seek returns above this level.

Conclusion:

All companies are legally obliged to keep accounting records, which allow judgements to be made by the users of this information on the financial state of the Company over that particular accounting period. The disclosure items are standard. The assumptions are prescriptive although they should incorporate the scheme specific circumstances while working within the framework provided by accounting standards. This could imply using different adjustments to various assumptions in agreement with the auditors to bring the true financial state of the scheme.

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