



**UNIVERSITY OF LEEDS**

Leeds University Business School

# Accounting for Pensions

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## Foreword

*“Current accounting standards have been very damaging to defined benefit provision, leading many companies to close their schemes ... pension funds are long-term institutions but today’s accounting standards fail to reflect this.”*

Lindsay Tomlinson, Chairman, NAPF, March 2010

At the NAPF Investment Conference in March 2010 NAPF Chairman Lindsay Tomlinson said that fair value pension accounting has had a detrimental effect on defined benefit pension schemes and is not fit for purpose.

This report was subsequently commissioned from Leeds University Business School as an independent investigation into accounting for pensions. Our remit was to analyse the strengths and weaknesses of the current system of accounting for pensions and to propose alternatives to the current system that could improve the way defined benefit pensions are accounted for.

In preparing our report we consulted with finance directors, trustees, accountants and actuaries, and its conclusions are based solely upon the evidence gathered and the analysis that has been conducted.

We are grateful to all who those contributed to this report. In particular we would like to thank those finance directors who agreed to be interviewed as part of the writing of this report, Marcus Hurd for his help with the actuarial modelling, Alistair Byrne, Con Keating, seminar participants at the PRAG Summer Meeting, and other colleagues who have commented on the report at various stages. We are also grateful for comments by an NAPF Working Group chaired by Lindsay Tomlinson and comprising Peter Elwin, Ashok Gupta, Joanne Segars and Julian Le Fanu. Any errors and omissions remain our own.



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## Executive Summary

The decline of the defined benefit pension is a complex process. There has been a range of factors that have contributed to the current situation where the vast majority of private sector defined benefit schemes are now closed to new members and/or future accrual. Successive amounts of statutory overlay increased the cost of pension provision and rapid increases in life expectancy increased the ultimate liability faced by corporate sponsors. As such there is no one factor that can be solely blamed for the loss of the defined benefit scheme in the private sector. The current situation therefore has a number of key drivers and one of these is the way in which pensions are accounted for.

The International Accounting Standards Board (IASB) sets accounting standards within a conceptual framework of *Understandability, Relevance, Reliability, Comparability and Timeliness*. As part of this approach there is a strong emphasis on the use of market prices, whether they are actual market prices or derived market prices. Current pension accounting, under IAS 19, applies a mixed accounting model and can be viewed as a hybrid between financial economics and traditional actuarial methods as it applies discounted cash flow valuation via a market determined discount rate to estimate pension liabilities, and market prices to value pension assets.

The application of this approach has been detrimental to the sustainability of the defined benefit pension scheme as it removes the interaction that occurs between pension assets and pension liabilities and asset/liability cash flows when both are valued using discounted cash flows.

Consequently, this has led to greater volatility in Comprehensive Income (CI) and the recognition of substantial and often volatile pension deficits in the statement of financial position. The application of fair value accounting to defined benefit pension obligations has, therefore, expedited the decline of such schemes as corporate managers have increased the pace at which these schemes are closed to new members and to future accrual by existing members.

At a macroeconomic level, mandating the use of AA rated bond yields to discount the present value of pension liabilities has resulted in schemes purchasing greater amounts of financial investments which better match the estimated present value of their pension accounting liabilities. Pension schemes have been divesting real asset investments, such as equities, and investing in financial investments, such as long-dated index linked gilts and corporate bonds, that are a better match for the estimated accounting liability. The systemic effect of this has been to exacerbate the bubble in long-dated bonds and, in particular, index linked gilts.

Crucially, this move into financial assets feeds back into the long-term operations of the firm. If the assets held to meet the pension obligation are solely or predominantly bonds this will, in all likelihood, increase the cost of pension provision over the life of the scheme, as bonds have been consistently shown to generate lower long-term returns than equities. Consequently, any shortfall in pension plan funding that occurs over the long-term as a result of lower asset returns on bonds compared to equities will, all other things being equal, have to be met from corporate earnings.

In looking at how pension accounting can be improved, there are a number of potential solutions. First, pension accounting needs to apply a consistent model for pension valuation. As such, pension liabilities should be valued as the discounted present value of future net asset/liability cash flows, thereby correctly allowing for the asset/liability interaction that occurs over the life of a pension scheme. In doing so, corporate accounts would recognise amounts that better reflect the long-term nature of a defined benefit pension obligation.

Second, pension disclosures should include the actual cash contributions that a corporate sponsor is committed to as a result of negotiation with scheme trustees and/or the Pensions Regulator. Current disclosures with regards to the cash contributions firms have committed to pay to a scheme in the short to medium term are vague. To improve this, accounts should be required to present a schedule of past contributions and future contributions. Enabling users of financial accounts to understand these cash commitments would allow for a better assessment of the profitability of a firm, thereby increasing the decision usefulness of financial accounts, which is a key objective of the IASB.

Finally, the recognition of a discounted cash flow model of pension accounting through the accounts of the firm can be viewed as the long-term position of the scheme. To make this number useful, company accounts should also disclose the market value of scheme assets relative to a discounted pension liability. This will provide users of financial accounts with information about where the pension scheme stands today in relation to the expected long-term position that is recognised in the company accounts. Users of financial accounts will therefore be able to make some assessment of the probability of achieving the long-term target of fully discharging the pension obligation through time, and so financial accounts would be more relevant. This would improve pension accounting beyond where it stands today as corporate accounts would recognise the 'best' estimate of the long-term position of the scheme while allowing for an understanding of where the scheme is today relative to long-run expectations.



## Actuaries, Accountants and the Evolution of Pensions and Pension Reporting

For much of the past 60 years pensions have been largely ignored by corporate managers, regulators and accountants. Traditionally, occupational schemes were managed by life insurance companies and advised by actuaries, while the structure and nature of the benefits that could be offered were governed by the Inland Revenue to minimise potential tax avoidance by corporate sponsors<sup>1</sup>. Moreover, until the 1980s, pensions operated under a light touch regulatory regime in the belief that the underlying promise was a 'soft' obligation between the employer and the employee whereby a pension would be provided in retirement and that this was a form of deferred remuneration.

In looking at the historical structure of pension schemes and the valuation models that were originally applied, pensions were viewed in a similar way to life insurance policies. This in itself is not surprising given that the main advisors to schemes, for a large part of the time that pensions have existed, were actuaries and life insurance companies. As a result, the objective of the advisors was to estimate a low stable contribution rate, similar to a life premium. This contribution rate was intended to be sufficient so it accrued over an employee's working life and allowed for a pension to be paid over their subsequent retirement. It is also worth noting that the focus of the valuation model was the contribution rate that would allow for the promised benefits to be paid out, and not scheme solvency. One reason for this was that there was no statutory obligation on levels of scheme solvency<sup>2</sup> or on the preservation of the benefits accrued by members who left a scheme early. Again, this is similar to the arrangements for life insurance policies where any payment to a policy holder is substantially reduced if a policy is allowed to lapse before maturity.

Two crucial pieces of legislation during this period were the Social Security Acts of 1973 and 1985. Prior to the 1973 Act there was no legal obligation on a corporate sponsor to preserve the benefits of employees who left a scheme prior to retirement. As a result, employees who stopped paying into a pension scheme could lose any benefits they had accrued. However, the Social Security Act 1973 mandated the preservation of accrued benefits, and the 1985 Act introduced the indexation of preserved accrued benefits at 5% per annum, or the Retail Price Index (RPI) if it was lower.

As a result of these legislative changes, the cost of providing defined benefit pensions schemes was increased. These higher costs were, however, comfortably absorbed by pension schemes and their corporate sponsors as schemes appeared to be well funded. However, these high levels of scheme solvency resulted in the Inland Revenue scrutinizing pension plan finances. Consequently, Section 603 of the Income and Corporation Taxes Act 1988, required scheme trustees to eliminate any pension surpluses to a statutory maximum. Firms therefore took action to reduce the surplus. Some took contribution holidays and so surpluses were eroded over time as additional benefits were accrued. Others increased the level of benefits to be provided in retirement, thereby increasing the ultimate pension liability of the firm and thus reducing the amount of surplus assets in the scheme. While others undertook a combination of the two – benefit improvements and contribution holidays.

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<sup>1</sup> Dennett, L., *Mind Over Data: An Actuarial History*, Institute of Actuaries, London, (2003)

<sup>2</sup> This was introduced with the 1995 Pensions Act and the Minimum Funding Requirement (MFR)

## Accounting for Pensions

The first accounting standard for pensions in the UK was SSAP 24<sup>3</sup>. The standard was effective from 1988 and remained in force for 12 years. Underpinning the standard was the view that:

*From the point of view of the employee a pension may be regarded as deferred remuneration; from the point of view of the employer it is part of the cost incurred in obtaining the employee's services. The accounting objective therefore requires the employer to recognise the cost of providing pensions on a systematic and rational basis over the period during which he derives benefits from the employees' services. Many companies have until now, simply charged the contributions payable to a pension scheme as the pension cost in each accounting period. In future, in order to comply with this statement, it will be necessary to consider whether the funding plan provides a satisfactory basis for allocating the pension cost to particular accounting periods.*<sup>4</sup>

SSAP 24 therefore accepted that actuarial valuations were necessary to estimate the annual cost of a pension scheme. However, as a result of the long-term nature of pension liabilities, the valuation methods used to arrive at a regular pension cost for a defined benefit scheme are sensitive to small changes in assumptions. Therefore pension cost estimates can be affected significantly by the model used and the assumptions that underpin the calculation. Under SSAP 24 actuaries were given a substantial amount of discretion in how they arrived at these costs, reflecting a reliance on actuarial judgement:

*An actuary will therefore make assumptions about all of these factors as a whole. Any assumptions are mutually compatible, in the knowledge that, if experience departs from the assumptions made, the effects of such departures may well be offsetting, notably in the case of investment yields and increases in prices and earnings.*<sup>5</sup>

However, SSAP 24 was criticised on the basis that there were too many options available to the preparers of accounts and that the disclosure requirements did not ensure that the pension cost and related amounts in the balance sheet were properly explained in the accounts.

One of the main criticisms of the standard came from the Pensions Research Accountants Group (PRAG), which stated:

*...the standard in its present form allows employers a great deal of flexibility to adjust results on a short term basis, substantially impairs an uninformed reader's ability to make judgements about annual pension costs, and in practice prevents any general attempt to compare one employer's pension cost with another's by adjusting one or both to a common calculation basis.*<sup>6</sup>

In response to the criticisms the Accounting Standards Board<sup>7</sup> (ASB) undertook a comprehensive review of accounting for pensions<sup>8</sup>. As part of this process the ASB considered two methods of calculating pension costs

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<sup>3</sup> Proposals had previously been set out in two Exposure Drafts (ED), ED 32 (1983) and ED 39 (1986). Despite their limited scope the EDs raised issues around both disclosure and recognition of pension schemes in corporate accounts.

<sup>4</sup> SSAP 24 paragraph 16

<sup>5</sup> SSAP 24 paragraph 9

<sup>6</sup> Pension Research Accountants Group Report (PRAG) 1992, Paragraph 10

<sup>7</sup> Formerly the Accounting Standards Committee

<sup>8</sup> The first discussion paper issued was *Pension Costs in the Employer's Financial Statements in 1995*

to try and address some of the problems with SSAP 24. Underlying the two approaches were two different views of the pension cost:

- The pension is viewed as an obligation of the employer that emerges over the long-term because of the present commitment to provide pension benefits.
- The pension is viewed as an obligation of the employer as it exists now for the promised pension benefits.

The first view underpins a traditional actuarial valuation approach and results in a present value of the pension liability being calculated based upon actuarial assumptions. In this situation market values for assets are not appropriate as they do not represent the long-term outcome of providing pension benefits in retirement.

The second view is consistent with a financial economics methodology. Under this approach an employer would measure their assets and liabilities using market prices. In arriving at an assessment of a scheme, assets would then be valued at their current market value while liabilities would be calculated using the current value of deferred annuities. This would therefore allow for a market value based surplus or deficit to be estimated.

Despite a majority of the ASB Board initially preferring to apply a long-term actuarial method<sup>9</sup> the ASB, in a subsequent discussion paper<sup>10</sup>, recognised that there was both the desire to, and precedent for, applying a market value approach. After the consultation on the second discussion paper it emerged that there was a general desire by the ASB Board to apply a market value approach as opposed to an actuarial method. Consequently, and in line with the ASB's goal of international accounting harmonisation and the aim of reporting under International Financial Reporting Standards (IFRS), a market value approach was adopted.

The ASB issued FRS 17, which was a paradigm shift in pension accounting in the UK. The main changes under the standard were:

- scheme assets were to be measured at market value;
- scheme liabilities were to be measured applying the projected unit credit method;
- the interest rate used to discount liabilities should be the yield at the balance sheet date of a high quality corporate bond of equivalent currency and duration; and
- the resultant deficit was to be presented on the balance sheet, net of deferred tax and located after all other assets and liabilities.

The performance of the scheme was therefore to be measured by the change in the balance sheet figure i.e. the annual surplus or deficit in the scheme. There was also a much higher level of disclosure and so the current service cost, interest cost, gains and losses on settlements and curtailments<sup>11</sup>, and the past service costs were disclosed. However, actuarial gains and losses (experience gains or losses) were to be accounted for in the Statement of Total Recognised Gains and Losses.

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<sup>9</sup> Source: Ernst & Young UK GAAP Supplement, *FRS 17 – Retirement Benefits* (Page 5)

<sup>10</sup> The second Discussion Paper, *Aspects of Accounting for Pension Costs*, was issued in 1998

<sup>11</sup> A settlement is an action that relieves the employer of the pension liability such as lump sum cash payments in exchange for pension rights. A curtailment is an event that reduces the expected years of future service of employees such as termination of employment.

FRS 17 also required additional disclosure of the main actuarial assumptions underlying the scheme, the value of scheme assets within broad asset classes, and the expected rate of return on each asset class.

### *IAS 19, Employee Benefits*

On 1 January 2005 IAS 19, Employee Benefits, came into force for all listed companies in Europe. Its adoption was mandated by the European Union (EU). For UK corporations adoption was not as onerous as it was for corporations in other member states as IAS 19 and FRS 17 were similar in many respects. This was due in part to the ASB working towards convergence with International Accounting Standards with the result that many of the disclosures were similar.

The most recent developments with regards to IAS 19 were published in June 2011<sup>12</sup>. One of the most significant proposals is the abolition of the corridor approach and the smoothing of actuarial gains and losses with the result that there will now be immediate recognition of gains and losses through Other Comprehensive Income and the Statement of Financial Position.

The move to abolish the corridor approach was supported by the European Financial Reporting Advisory Group (EFRAG) which stated in their comment letter on the proposed amendments that “...EFRAG cannot find any compelling basis for the deferral or smoothing of actuarial gains and losses.”<sup>13</sup>

A second major change is the introduction of the net interest approach for estimating the finance cost of defined benefit pension obligation. Under the net interest method, the financing cost is estimated as the net interest on the defined benefit asset/liability. In applying this method, the financing cost will reflect whether there is a surplus/deficit in the pension scheme. The financial accounts of the firm will therefore reflect an interest cost when a scheme is in deficit and interest income where there are surplus assets in the scheme.

In addition to these two major changes, the new standard attempts to improve the presentation in the income statement. Most importantly, re-measurements will be taken out of Profit and Loss and moved to Other Comprehensive Income, thereby removing much of the market-driven volatility in the pension scheme from the Profit and Loss account.

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<sup>12</sup> The amended standard is effective for financial years beginning on or after January 1<sup>st</sup> 2013, although early application is permitted.

<sup>13</sup> Page 4, EFRAG Comment Letter, Exposure Draft Amendments to IAS 19 *Employee Benefits*, 15<sup>th</sup> September 2010.

## The Changing Nature of the Obligation

*"Pensions have been regulated to death"<sup>14</sup>*

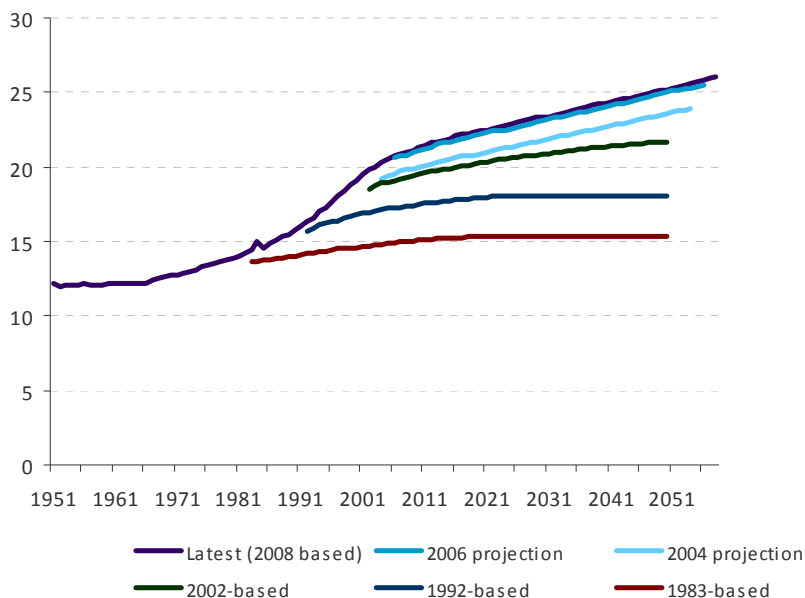
Originally defined benefit pension obligations were a 'soft' implicit agreement between employers and employees. However, from 1973 onwards the government has increased the volume of legislation that impacts on pension provision, with greater amounts of statutory overlay essentially increasing the cost of providing defined benefit pensions for employers. In particular, the mandatory preservation of accrued benefits (1973) and the indexation of accrued benefits (1985) substantially increased the cost of pension provision<sup>15</sup>. More recent legislative changes have further hardened the pension obligation with the Labour government legislating in 2003 that *'...no solvent corporation could close a defined pension obligation without fully funding the promise that has been made'*<sup>16</sup>.

In addition to these legislative amendments, modifications to the tax regime under which pensions operated have further exacerbated the cost of provision, most notably the change in 1997 to the system of dividend tax relief that pension schemes operated under.

### Changing Scheme Demographics

One of the most significant issues that emerged about the magnitude of the pension liability facing employers is the impact of increased longevity. Much of the work that has been conducted in this area has concluded that there have been rapid increases in life expectancy over the past 60 years and such increases are likely to persist.

**Figure 1: Male cohort life expectancy at 65 (in years)<sup>17</sup>**



<sup>14</sup> Comment from a finance director who was interviewed as part of the research for this report.

<sup>15</sup> The changes occurred as a result of the Social Security Acts of 1973 and 1985.

<sup>16</sup> Source: <http://hansard.millbanksystems.com/commons/2003/jun/11/occupational-pensions>

<sup>17</sup> Office for National Statistics and Government Actuarial Department.

As Figure 1 (above) highlights, not only has life expectancy at 65 been forecast to increase but the projections themselves have shifted sharply upwards over the past 30 years. The most recent estimate (2008) projects life expectancy at 65 to be over 25 years by 2051, which is 10 years higher than the 1983 estimate for life expectancy at 65 in 2051. The uncertainty around estimates of the future growth is captured succinctly by the Workplace Retirement Income Commission, '*... the overall trend is one of continuing improvement in life expectancy. However, these demographic changes have not always been captured by the latest forecasts of longevity*'.<sup>18</sup>

From the perspective of a plan sponsor, increased life expectancy means that the liability faced by the firm can be much greater. One estimate suggests an extra year of life expectancy increases the defined benefit liability by between 3-4%.<sup>19</sup>

Despite the considerable debate around future mortality and life expectancy, this is itself not an accounting issue. Part of the liability that the firm faces is simply a function of increasing longevity. In actuarial terms the scheme experience has changed, and the increased longevity raises two accounting issues:

- first, what is the appropriate discount rate to estimate the present value of the liability?
- second, what is the best method of accounting for the increased cost of changes in life expectancy i.e. immediate recognition or spreading over the remaining service lives of employees?

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<sup>18</sup> Workplace Retirement Income Commission final report 'Building a strong, stable and transparent pensions system', August 2011, page 24

<sup>19</sup> Coughlan G., D. Epstein, A. Ong, A. Sinah, I. Balevich, J. Hevia-Portocarrero, E. Gingrich, M. Khalaf Allah and P. Joseph, (2007), *LifeMetrics A Toolkit for Measuring and Managing Longevity and Mortality Risks*, JP Morgan, London.

## Finance Directors and Pension Provision

*“Fair value accounting was only the messenger, not the cause.”<sup>20</sup>*

As part of our investigation into the impact of pension accounting on defined benefit pension schemes and their sponsors, in-depth, semi-structured telephone interviews were conducted with finance directors across a range of private and public corporations and public sector bodies between October and December 2010. In addition to this, a number of questions were included in the 2010 NAPF Annual Survey to generate data on key issues with regards to the current system of pension accounting. In this section we synthesise the results of both the telephone interviews and the results of responses to the NAPF Annual Survey.

One of the most important results that emerged from discussions with finance directors was that fair value accounting has been a good thing in so far as it forced managers to examine the magnitude of the liabilities companies are faced with in providing a defined benefit pension to employees. One finance director stated *“There should be recognition of the deficit and it should go on the balance sheet given its size”*.

Despite this, the criticisms of fair value accounting were much greater in number and force. The biggest issue that finance directors raised with the current pension accounting standard is the snapshot problem that results from valuing assets at market prices, whilst discounting the pension obligation, and the volatility that this brings into the balance sheet of the firm. One finance director noted that:

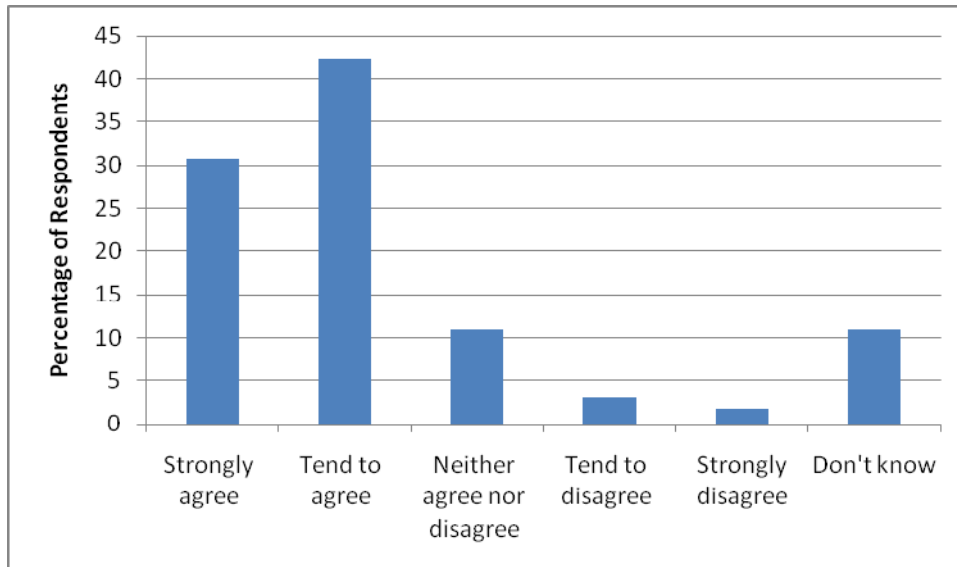
*It is difficult to explain to some investors what is actually going on. You can have paid large amounts of cash into the scheme to fund it, but when it comes to the corporate accounts this is not reflected as bond yields have shifted or the stock market has fallen. Investors then query where the money has gone and why the scheme appears to be no better off from one year to the next.*

This view also reflects the views of pension schemes themselves, as can be seen from the results of the questions included in the NAPF Annual Survey. As Figure 2 shows, over 70% of respondents tend to agree or strongly agree with the statement *“The snapshot method of accounting – valuing assets according to today’s market values - is inappropriate for long-term products such as pensions and generates too much volatility in the scheme valuation.”*

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<sup>20</sup> Comment from a finance director who was interviewed as part of the research for this report.

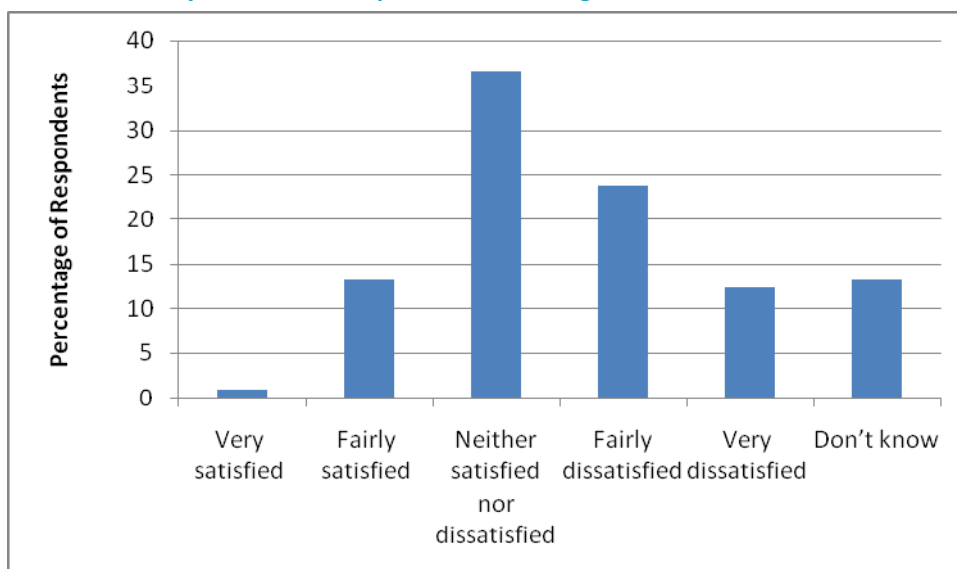
**Figure 2: Is the snapshot method of pension accounting inappropriate?**



**Base:** 214 respondents

A number of finance directors interviewed were considerably more forceful in their criticisms of current pension accounting standards and said that the reported numbers were “useless” and “meaningless”. These comments were, in many instances, driven by the fact that the numbers that were disclosed under FRS 17/IAS 19 bore no resemblance to the scheme account numbers that managers and trustees used for pension scheme management. Comments such as “The contributions that are reported under the standard do not bear any resemblance to the trustee agreement” and “It [IAS 19] is 6 pages of meaningless disclosure which goes overboard and is not a true and fair view of the pension scheme” highlight the strength of feeling that finance directors have with regards to the current system of pension accounting. Again this is mirrored by the results of the NAPF Annual Survey where only 14% of respondents described themselves as very satisfied or fairly satisfied with current pension accounting standards.

**Figure 3: How satisfied are you with current pension accounting standards?**

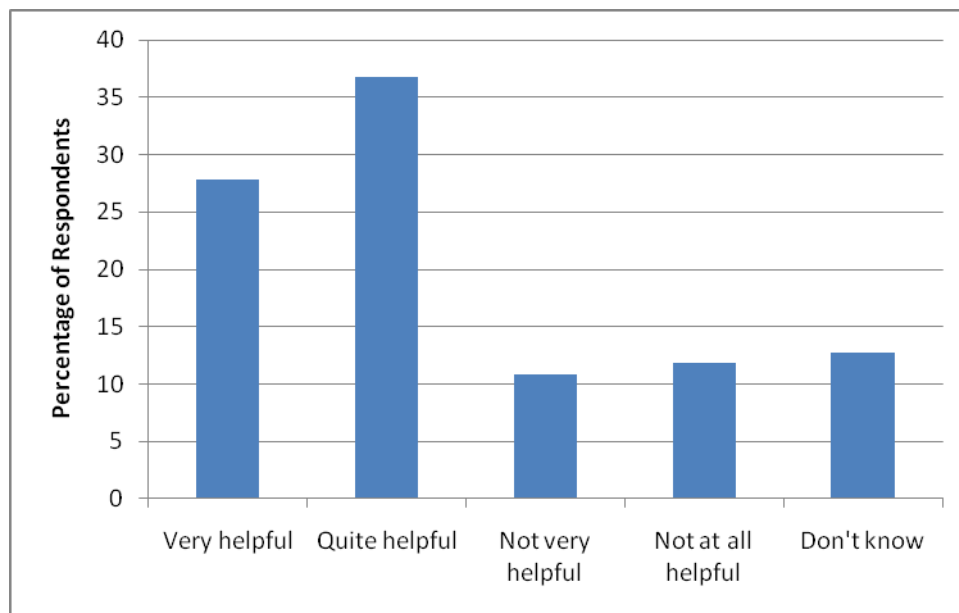


**Base:** 214 respondents



The view that the volatility that occurs as a result of the current method of pension accounting is a real concern is further supported by the number of survey respondents wishing to see a method of accounting that better reflects the long term nature of a defined benefit pension obligation (Figure 4). Around 65% of respondents said that it would be helpful or very helpful for corporate reporting to have an accounting standard that took account of the long term nature of a defined benefit pension liability. By contrast only 25% supported the retention of the current mark-to-market approach.

**Figure 4: How helpful would re-working current accounting standards to reflect the long-term nature of pensions be?**

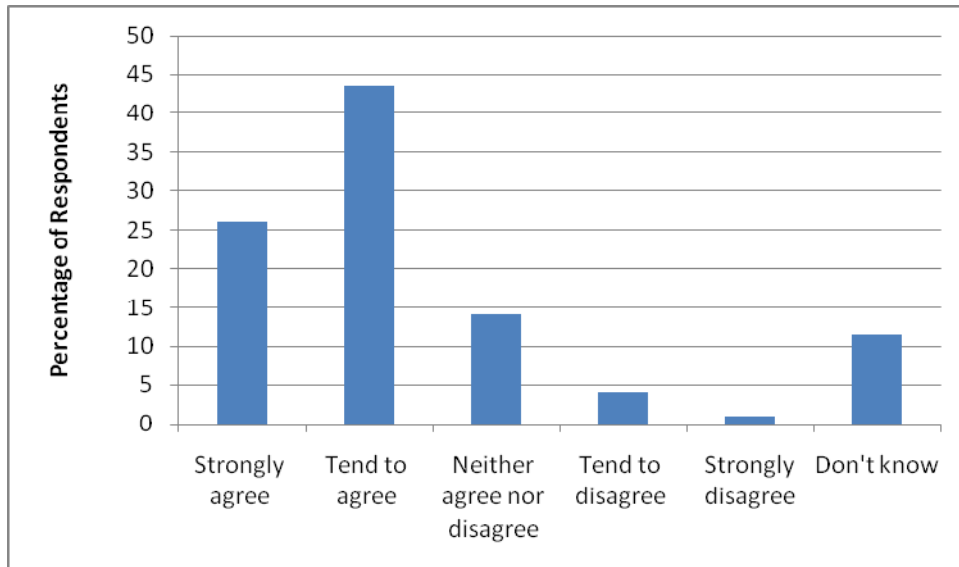


**Base:** 214 respondents

From the interviews that were conducted, the issue of smoothing volatility and taking a longer term view also emerged as an important issue. A number of finance directors felt that the corridor approach of IAS 19 should be kept as this limited the impact of transitory short-run fluctuations. There was also considerable support for the use of actuarial valuations. One finance director stated *“Actuarial values are good, they are more stable”*.

There is, therefore, demand for some sort of smoothing that reduces the volatility that occurs in the Statement of Financial Position and Comprehensive Income as a result of short-term fluctuations in asset values or assumptions. As Figure 5 highlights, over 65% of schemes also support some sort of smoothing.

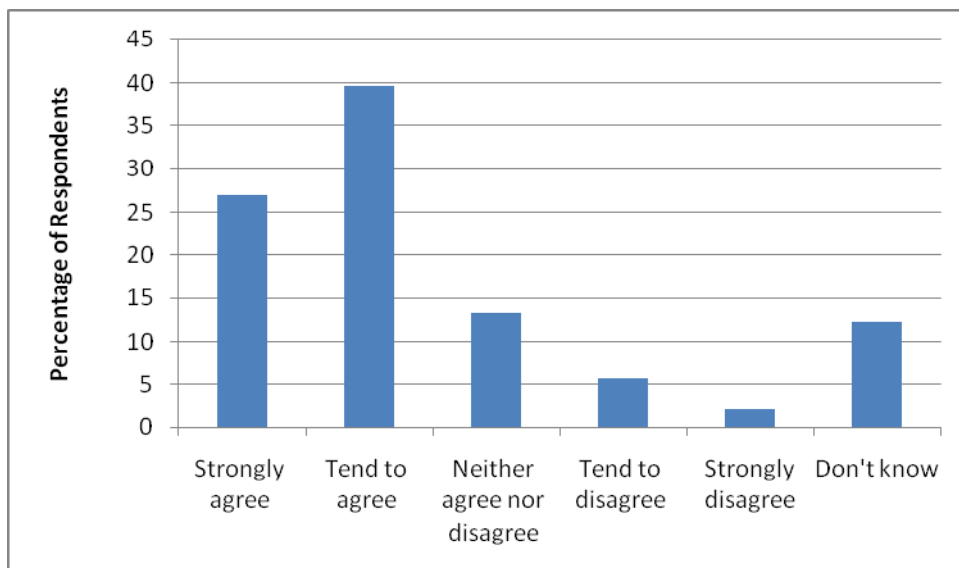
Figure 5: Should accounting standards permit smoothing in pension scheme valuation?



Base: 214 respondents

Moreover, there is general agreement that defined benefit pensions have a disproportionate impact on sponsor decision making (Figure 6), with two thirds of pension schemes strongly agreeing or tending to agree that this was the case.

Figure 6: Does current pension accounting lead to pensions having a disproportionate impact on sponsor decision making?



Base: 214 respondents

The issue of short-termism was a theme that also arose in the interviews with finance directors. Many finance directors felt that they were making decisions based upon nonsensical numbers that resulted simply from the application of fair value pension accounting.

Despite these pressures, almost all finance directors interviewed reported good relationships between the management of the sponsor, the trustees, and employees. The general sense was that everyone was aware of the trade-off between the survival of the corporation and the ability of the firm to fund the scheme to the full extent that trustees and employees may desire. However, in some cases the issue of trustee power was raised. In some situations trustees are now seen as much more influential as a result of successive changes to legislation and interventions by the Pensions Regulator. Whilst this was the general view one finance director acknowledged that *“...fair value accounting is good for trustees, it allows them a better negotiating position with the firm”*.

In discussing ways in which current methods of accounting could be improved, there were two main areas suggested by finance directors:

- The first area is the burden of disclosure. Many of those interviewed argued that much of the disclosure that is required is not necessary and most users of financial accounts do not understand it. As such, a more informative narrative that explains the position of the scheme, the changes that have occurred within the year and a view on the long-term solvency of the scheme would be much more useful.
- The second area was in terms of numerical disclosure, directors interviewed almost universally agreed that having the pension liability on the statement of financial position is a good thing, and the disclosure of the scheme asset allocation is informative. However, managers felt that disclosure of actuarial assumptions and expected return on scheme assets is not useful and does not add to the informativeness of the current accounting disclosures.

## The Economic Consequences of Accounting Standards

Economic consequences have been a serious issue for accounting standard setters since the mid 1970s and the recent EFRAG discussion paper "*Considering the Effects of Accounting Standards*"<sup>21</sup> has once again raised this issue. The case for considering economic consequences was set out by Stephen Zeff in an article in the *Journal of Accountancy*, (1978)<sup>22</sup>. The argument is a simple one. By changing the way a corporation accounts for a particular transaction through the introduction of a new accounting standard, this may change that corporation's income statement or statement of financial position, which will then have an impact on relevant decision makers, such as investors, creditors and government. Simply put, changing an accounting treatment can have economic consequences, as interested parties behave differently once a change has been made.

Standard setters have tried to deflect arguments about the economic consequences of their decision by attempting to argue that accounting is a neutral activity and the task of the standard setter is to find the "best" accounting treatment based upon a deductive reasoning process. To help this process, both the Financial Accounting Standards Board (FASB) and the IASB have created conceptual frameworks for accounting that attempt to distil the objectives of accounting reports and create principles upon which accounting choices can be made. The standard setter can then argue that a particular accounting standard is the most appropriate treatment because it best fits the objectives and criteria set out in the conceptual framework used by the standard setting body.

The problem for accounting standard setters is that there is usually more than one way of treating a financial transaction from an accounting point of view. Choosing which method is to be preferred is therefore a matter of choice and will often depend on the views of accounting standard setters. Moreover, the argument that somehow a conceptual framework removes choice by focussing purely on logical arguments derived from the conceptual framework is false because both the FASB's and the IASB's conceptual frameworks are so loosely written that more than one interpretation is possible. In order to get a conceptual framework accepted by the influential powers connected with accounting standard setting (auditors, the corporations themselves, the user community of primarily analysts and government) standard setters have to make the conceptual framework acceptable to these groups and the only way to do this is to create definitions, such as what characterises an asset, that can be interpreted in more than one way.

Both FASB and the IASB now find themselves in the position where officially they try to find the best accounting treatment in line with the criteria laid down in their conceptual frameworks. In setting standards in this way the role of accounting is to provide neutral and reliable information to users of financial statements to enable them to make the most informed decisions. Thus the IASB and FASB believe that there is a best policy that can be deduced from the principles of conceptual frameworks and would thus question why they should deliberately mandate what they believe to be an otherwise inferior accounting policy in order to achieve what is perceived to be a better set of economic outcomes.

However, the concept of a superior accounting treatment is an illusion, based upon the subjective beliefs of the standard setters themselves. The criteria of decision usefulness, which is enshrined in both conceptual frameworks, cannot of itself identify which is the best accounting treatment, since usefulness will depend on

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<sup>21</sup> Considering the Effects of Accounting Standards, EFRAG Discussion Paper, January 2011

<sup>22</sup> Zeff, S., The rise of economic consequences, *Journal of Accountancy*, Vol. 146, December 1978

how the information created by the new accounting treatment is used, which in itself implicitly recognises that the consequences resulting from the selection of a particular accounting policy have to be considered.

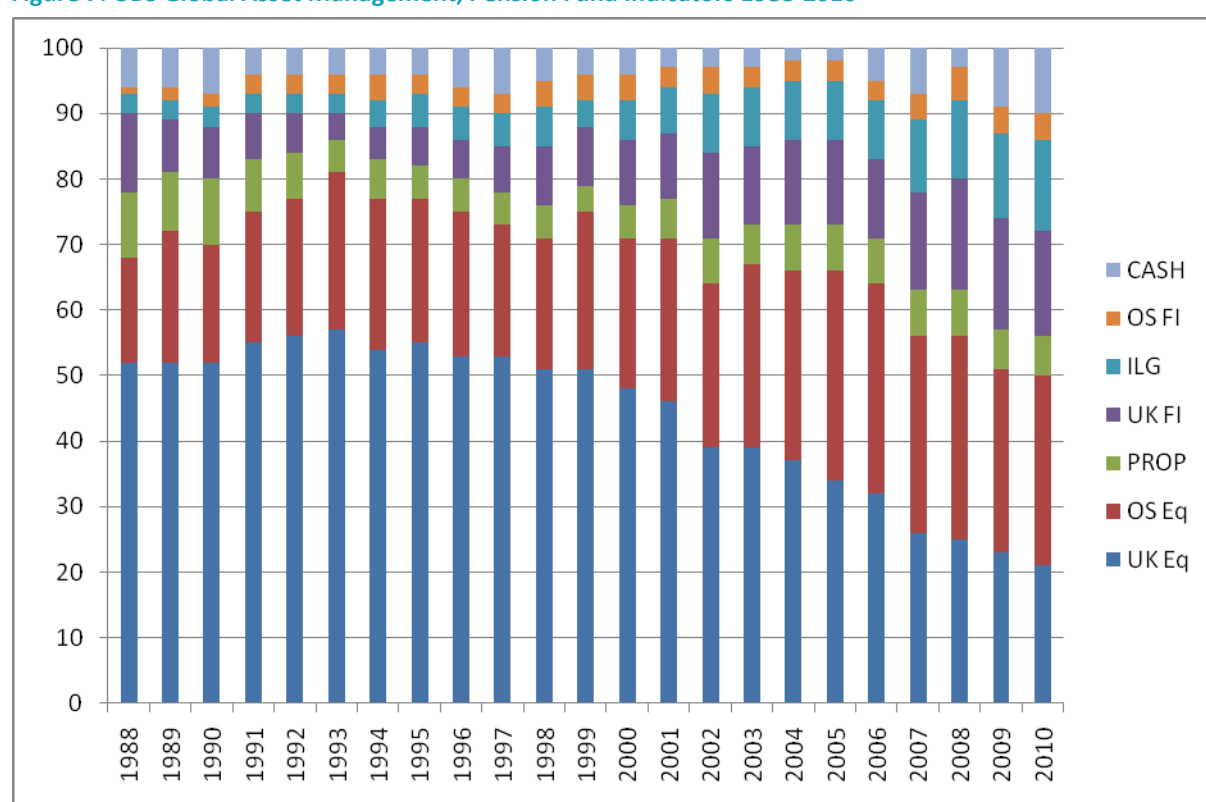
There is also the real politic of standard setting. Neither FASB nor the IASB is a product of a democratic process. Therefore, their legitimacy as a standard setting body depends upon their acceptance by the financial and business communities as well as governments. In order to maintain their status, accounting standard setters have to take account of representations made to them in the process of producing a standard when exposure drafts are issued and comments received. Hence, this process inevitably means that standard setters are implicitly taking account of some economic consequences by responding to representations made to them by concerned parties.

## Macro Economic Consequences – Changing Asset Allocation

One consequence of the introduction of market value accounting for pensions is likely to have been to accelerate a shift away from equities into bonds. As Figure 7 shows, there has been a move away from equities into bonds since the late 1990s. A number of trends can be seen to appear through time. One major shift is the move out of UK equities (UK Eq) into overseas equities (OS Eq). This trend, however, began in the 1980s and is a function of more integrated global financial markets, and is arguably desirable from a long term asset allocation strategy.

Another trend that has been particularly prominent over the last decade has been an increasing asset allocation to fixed income securities, in particular UK fixed income (UK FI) and Index Linked Gilts (ILG).

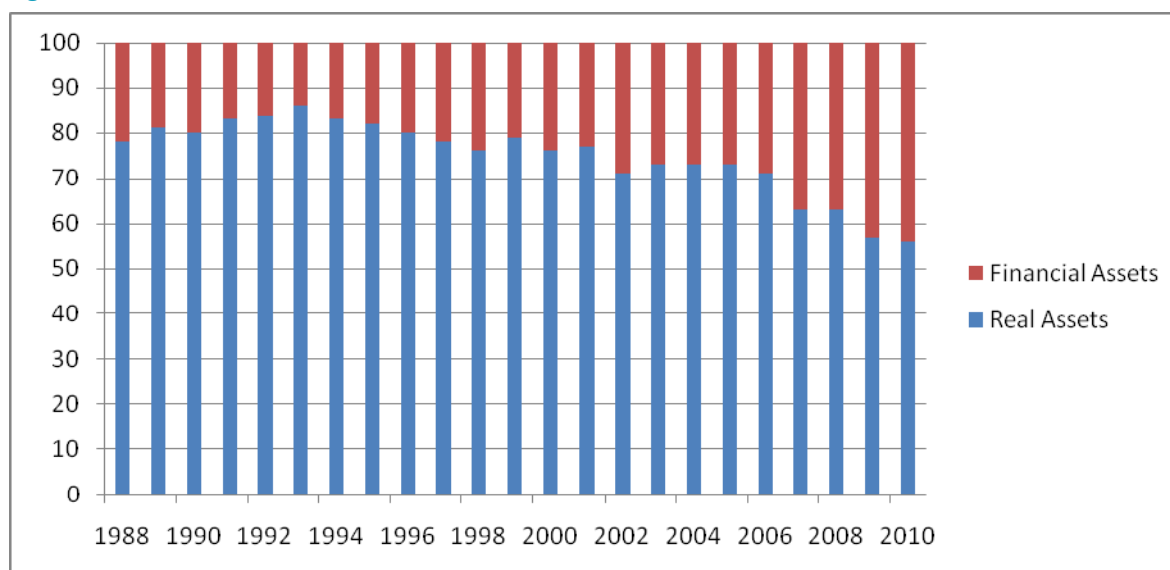
Figure 7: UBS Global Asset Management, Pension Fund Indicators 1988-2010<sup>23</sup>



Another way in which this shift can be represented is to split the average pension asset allocation into real asset investments and financial asset investments. Figure 8 presents the aggregated totals for all equity and property allocations (Real Assets) held over the period and the aggregated total for all bond allocations and cash (Financial Assets) and shows around a 15% decline in the average real asset investment of UK pension schemes between 1988 and 2009.

<sup>23</sup> Source: UBS Global Asset Management, Pension Fund Indicators

Figure 8: Real assets v financial assets, 1988-2010<sup>24</sup>



This shift into fixed income is linked to the move to mark-to-market pension accounting. Amir, Guan and Oswald (2010) demonstrate a causal link between the introduction of fair value accounting and the subsequent shift in pension asset allocation<sup>25</sup>. Their analysis showed that between 2001 and 2005 UK defined benefit pension schemes that reported under FRS 17, and subsequently IAS 19, allocated more assets into bonds relative to a sample of US defined benefit schemes over the same period. Moreover, their analysis also showed that, subsequent to the introduction of SFAS 158 in the US, which requires the recognition of a fair value pension surplus/deficit on the balance sheets of US corporations, US defined benefit pension schemes allocated a greater percentage of their assets into fixed income securities. Corporate bonds are often deemed to be the 'best' hedge for accounting solvency as the assets in the pension scheme match the discount rate for the liability.

Although this observed shift in the UK occurred over the period where fair value pension accounting is applied, there is a further driver of this shift in asset allocation. Importantly in the Pensions Act 2004 the government established the Pension Regulator. In assessing pension scheme solvency for the purposes of issuing a clearance statement, the Regulator looks to the highest measure of the deficit<sup>26</sup>. One measure of this is whether the scheme is in surplus or deficit on an IAS-19/FRS-17 basis<sup>27</sup>. In doing so, accounting solvency was hard-wired into regulatory oversight, thereby making accounting solvency a regulatory risk as opposed to purely a corporate risk<sup>28</sup>. Greenwood and Vayanos (2010) highlight that, as a result of this change, pension funds significantly increased their exposure to gilts and index linked gilts.

<sup>24</sup> *ibid*

<sup>25</sup> Amir, E., Y. Guan and D. Oswald, The effect of pension accounting on corporate pension asset allocation, *Review of Accounting Studies*, Vol. 15, June 2010

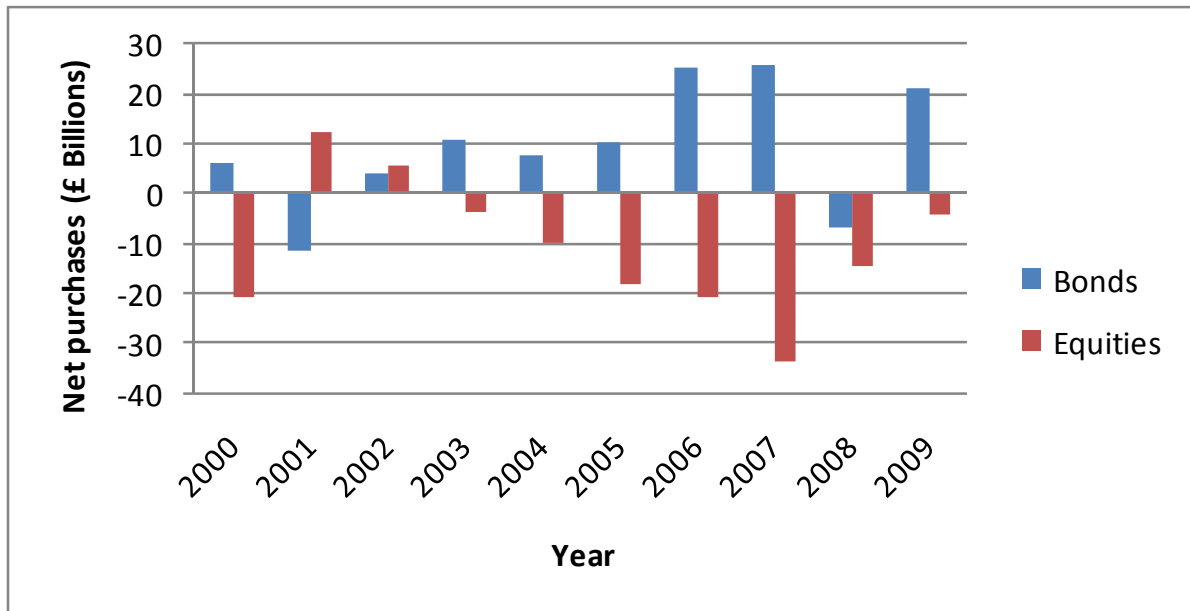
<sup>26</sup> Source: <http://www.thepensionsregulator.gov.uk/guidance/guidance-clearance.aspx>

<sup>27</sup> Greenwood, R. and D. Vayanos, Price Pressure in the Government Bond Market, *American Economic Review*, Vol. 100, No. 2, (2010).

<sup>28</sup> Byrne, A., D. Harrison, B. Rhodes and D. Blake, Pyrrhic Victory? The Unintended Consequences of the Pensions Act 2004, Pensions Institute Report 2005, presents evidence that the Regulator was using FRS 17 Solvency as a benchmark for clearance.

Figure 9 extends the time period that these authors considered, and aggregates both gilts and corporate bonds. It is clear that over the past 10 years UK pension funds have been net sellers of equities and net purchasers of bonds<sup>29</sup>. Greenwood and Vayanos (2010) also show a significant increase in the purchase of interest rate swaps in 2005 and 2006 with an estimated £50bn of interest exposure being swapped thereby increasing the duration of pension fund assets.

Figure 9: Net pension fund purchases, 2000-2009



This excess demand for bonds, whether government or corporate, is problematic for pension funds. As the demand for bonds increased, pension funds have been buying these bonds at higher prices. This in turn has pushed down the yields on bonds, thereby increasing the present value of the liabilities that these firms are trying to match; consequently even more bonds have to be purchased to match the liability creating a vicious circle.

<sup>29</sup> Source: UK National Statistics Release MQ5.

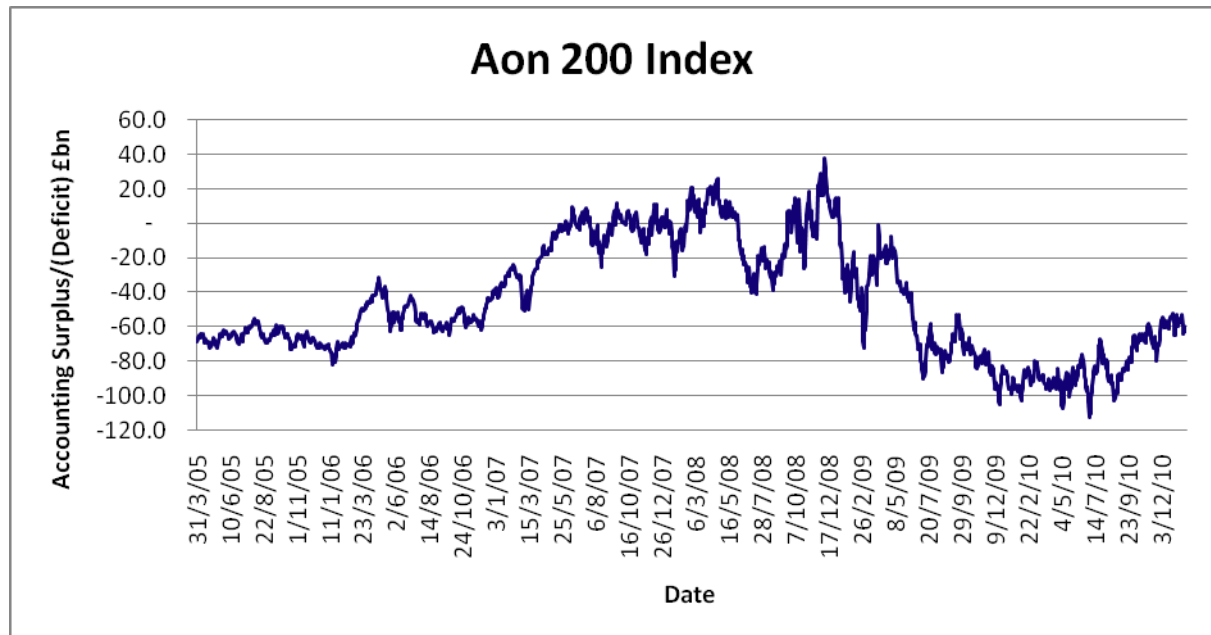


## The Micro Economic Consequences of Pension Accounting

In addition to the macroeconomic consequences of fair value pension accounting, there have also been a number of microeconomic consequences. One of the main issues that have resulted from the application of a mixed model for accounting for pensions is the volatility that occurs in the statement of financial position as a result of recognising a fair value pension surplus/deficit. The significance of this problem is borne out by the views of finance directors and the respondents to the NAPF Annual Survey with over 70% highlighting the snapshot method of accounting, and the transitory volatility that results being one of the main problems with current accounting standards. From the perspective of a corporate sponsor, such volatility is bad for corporate strategy and investment.

Figure 10 highlights the volatility in the solvency level of UK corporate defined benefit pension plans under IAS 19. One of the most interesting periods to consider is the credit crunch as this highlights the problem of using the current standard. After the collapse of Lehman Brothers in September 2008 the level of accounting surpluses was reasonably strong until March 2009. This estimated level of surpluses occurred despite asset values falling on fears of a global recession. However, at the same time as asset values were falling, bond yields were increasing in response to greater risks in the economy. Consequently, the estimated present value of the pension liabilities was smaller as the discount rate that was applied was higher. In March 2009 however, in response to the credit crunch and the global banking crisis, the UK government undertook a programme of quantitative easing. One consequence of this was to push down bonds yields and as a result the present value of the pension liabilities faced by firms increased as the discount rate on pension liabilities was reduced. In addition to this asset values remained depressed and so over 2009 aggregate accounting deficits fell to their lowest point since 2005.

Figure 10: Aon 200 Index, daily accounting surplus/deficit<sup>30</sup>



<sup>30</sup> Source: Aon Consulting

From the view of the corporation, the ultimate liability that they faced had not changed markedly between 2008 and 2009, as pension liabilities unwind over 50-60 years. Despite this, short-term volatility in bond yields that arguably did not reflect long-term economic trends, or the current or long-term reality of the pension scheme, substantially increased the pension liabilities on many corporate balance sheets.

Current accounting standards do try to minimize the impact of volatility on the income statement and so actuarial gains and losses are reported through other comprehensive income rather than profit and loss. However, as Amir *et al* note, “... these standards [FRS 17, IAS 19] introduce volatility in Comprehensive Income”.

From a corporate reporting perspective the underlying assumption here that users of financial accounts do not look below the line and so the main focus is on the profit and loss.

## Modelling Alternative Methods of Pension Accounting

*“The efficient markets hypothesis does not mean that prices are always right, how could they be?...the fundamental principal of valuation is that a stock ought to be worth the discounted present value of the whole stream of cash flows, that is, future cash flows.”<sup>31</sup>*

*Professor Burton Malkiel*

The application of market prices for accounting relies on the belief that the price of an asset in a well traded market is always the ‘best’ estimate. Markets are arguably efficient in the long-run and difficult to beat consistently, as can be seen by the outperformance of low cost index funds over actively managed funds<sup>32</sup>. However, the idea that today’s price is correct is to misinterpret the efficient markets hypothesis. In an efficient market a company’s share price fairly reflects what is publicly known about a company. How this information is reflected in a company’s share price however will depend on the prevailing sentiment in the market. With hindsight the market may view a company as over or undervalued and so prior prices have not been ‘correct’ from a longer-term perspective. Recent examples of overvaluation include high tech, miners and bank stocks. Hence the reliance by the IASB on point-in-time market prices is unlikely to serve the best interests of users of financial statements.

In addition there are two principal ways of viewing a set of financial statements based on their two main constituents, the balance sheet and the profit and loss account. Thus, depending on which of these two statements is viewed as being the more important has significant implications for standard setters. Hence, if the balance sheet view is taken then accounting policies focus on ensuring that the balance sheet fairly reflects the value of the company at the end of an accounting period. Profit then becomes the movement between the current period’s balance sheet and the previous period’s balance sheet. From the perspective of the IASB, their focus is on the balance sheet of the firm. Therefore, if the assets and liabilities of the firm are properly measured, this will allow users of financial statements to understand the ‘true’ value of the firm. However, this approach is not without its problems. First, it diminishes the usefulness of the profit and loss account. Moreover, the goal of this approach is to estimate a value for the different assets and liabilities of the firm and so different methods of valuation can be used for different asset and liabilities within the financial accounts of the firm.

In applying the balance sheet view of accounting, the IASB measure pension assets at market prices and pension liabilities as the discounted present value of the pension obligation. Although the discount rate is a market based rate, this approach is, for all intents and purposes, a mixed model. The problems associated with such an approach are succinctly summed up in Keating (2010), *“Applying different measures to different parts of an object will, in the absence of a way of unifying these measures, lead to a distortion of reality.”*<sup>33</sup>

One of the biggest problems with the current method is its focus on the value of assets and the value of liabilities. Current standards are not concerned about the difference between these two values. Consequently, the gap can be volatile where the measures used to estimate each component is uncorrelated. The volatility in the measurement of pension assets and liabilities can be highlighted by looking at Figure 11 below which presents the 5-day standard deviation in the daily surplus/(deficit) of the Aon200 Index.

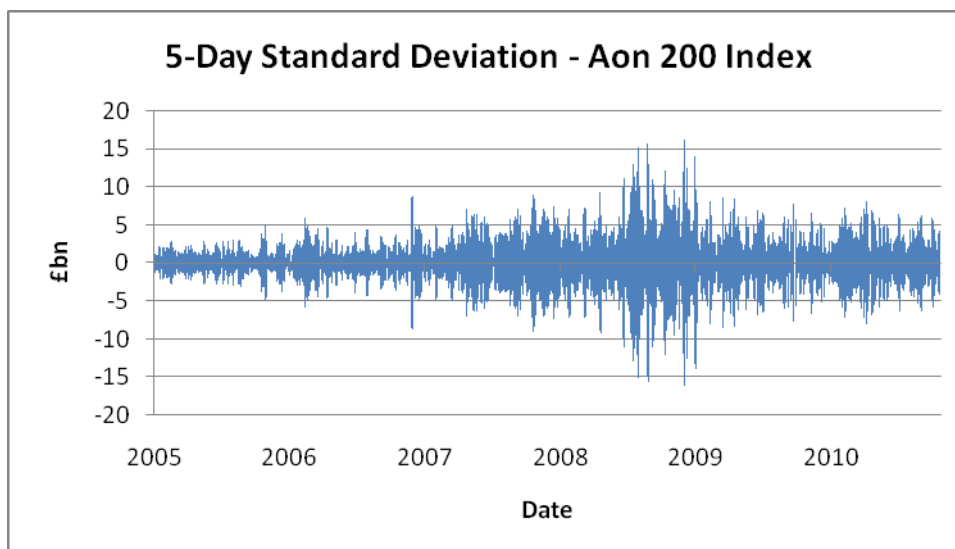
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<sup>31</sup> An Interview with Professor Burton Malkiel, January 2011, [www.marketobservation.com](http://www.marketobservation.com)

<sup>32</sup> For evidence of the long-term performance of low cost index funds see A Random Walk Down Wall St. by Burton Malkiel

<sup>33</sup> Keating, C., Don’t Stop Thinking About Tomorrow: The Future of Pensions, *Long Finance*, (2010)

Figure 11: 5 day standard deviation: Aon 200 Index Accounting Surplus/Deficit



Moreover, the level of volatility can also be seen from the PPF funding index. Keating (2010)<sup>34</sup> reports that the PPF funding index has a standard deviation of £68bn; however, over the same period the average surplus is only £0.2bn.

In contrast to the balance sheet approach there is the revenue and expense approach which places greater emphasis on the profit and loss. This approach applies a matching principle where revenues are matched to the expenses incurred to generate those revenues and this allows for a 'fair' estimate of profit for the period. The balance sheet meanwhile is created from the conventions used to determine profits. Under this approach it is the gap between asset and liabilities that matters.

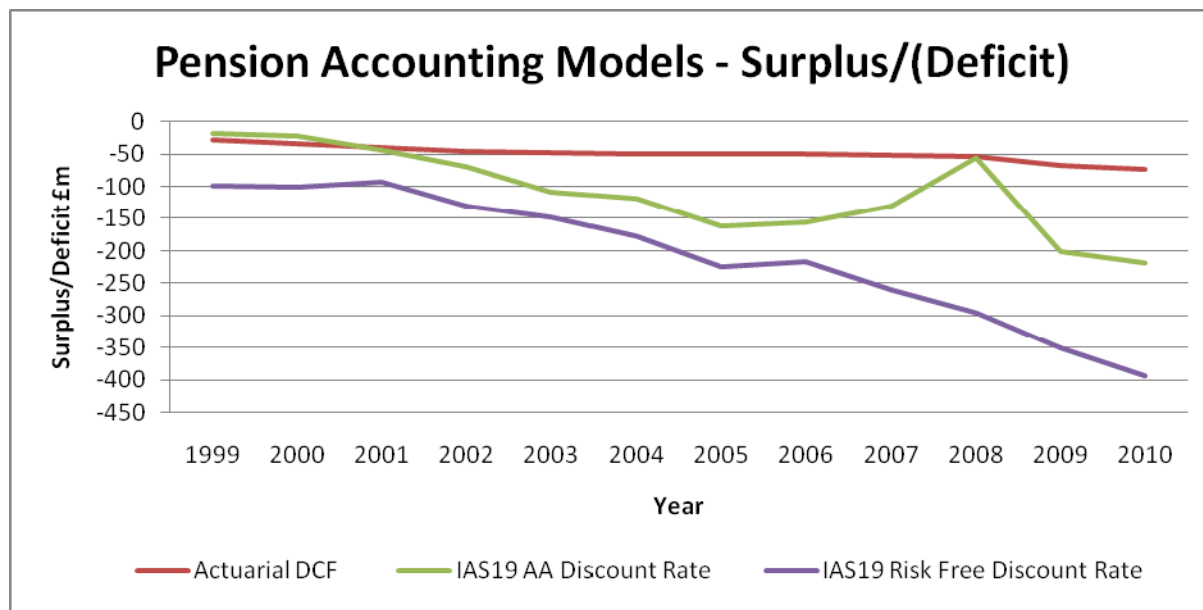
We believe that it is the gap that matters. To arrive at a better method of accounting for pensions we believe that a consistent model of accounting needs to be applied<sup>35</sup>. Pension liabilities need to be measured as the discounted present value of expected cash outflows. To get consistency with a discounted value of liabilities, we therefore believe that pension accounting should value pension assets as the discounted present value of expected cash inflows. Pension accounting would therefore reflect the discounted value of future net asset/liability cash flows, the result of which is an actuarial surplus/deficit. The impact of such an approach can be seen from Figure 12 (see over)<sup>36</sup>.

<sup>34</sup> *ibid*

<sup>35</sup> This is a view that is not unique to this report and has been put forward by a number of groups. See for example the Pensions Research Accountants Group submission to the ASB 28<sup>th</sup> July 2008

<sup>36</sup> The modelling and assumptions for each simulated accounting method are presented in Appendix VI

Figure 12: Pension Accounting Options Simulations 1999-2010



The Actuarial DCF line represents an actuarially estimated discounted cash flow approach (DCF) and illustrates our proposed method of accounting recognition for defined benefit pension obligations. In looking at this method it is clear that it results in a much more stable level of accounting solvency. There is an intuitive logic behind such an approach. First, this approach allows for the interaction that occurs between asset and liability cash flows of a scheme. Pension assets are discounted based upon their expected return and pension liabilities on the asset allocation of the scheme. Second, treating pension assets in this way takes account of the long-term nature of the investments that are made to meet a pension obligation. The imposition of market prices on the value of assets does not capture the long-term fundamental value of the investments that a pension scheme holds to discharge the pension promise. Moreover, pension liabilities unwind in a relatively stable way through time and so to apply an approach that reflects this on both the asset and liability side leads to better accounting recognition.

The IAS19 AA Discount Rate line shows how the accounting surplus/(deficit) of the scheme would have evolved if IAS 19 had been applied, and the IAS19 Risk Free Discount Rate line shows the impact of applying a risk-free discount rate as opposed to a AA bond yield. The IAS 19 number is clearly more volatile, and the impact of Lehman Brothers' collapse in 2008, and the subsequent impact of quantitative easing which pushed bond yields lower resulting in the "perfect storm" for pension schemes of low asset values and low interest rates is also apparent.

We have also included the risk-free rate as there are a number of proponents who argue this is the 'best' discount rate. However, this is another poor estimate of the 'correct' discount rate for a corporate pension liability. In looking at the impact that such a rate would have had on the accounting deficit of our simulated scheme, it would in all likelihood further exacerbate the closure of schemes, and result in a much higher demand for assets that match the discount rate for liabilities, while not properly reflecting the correct position of the scheme.

Figure 12 clearly shows one of the biggest problems with any accounting solution: what is the correct number? Our solution is not one that excludes the IAS 19 estimate but utilises some of the strengths of IAS 19. For accounting recognition we would apply an actuarial estimate as this approach allows for the interaction that occurs between the asset and liability cash flows of a scheme, and it evolves in a relatively stable way which captures how pension liabilities unwind.

An actuarial estimate can therefore be classified as the long-term position of the scheme. However, it is also important to understand the position of a scheme today. By enabling users of financial accounts to make some assessment of the probability of achieving the long-term target of fully discharging the pension obligation through time, financial accounts would be more relevant. Our solution therefore includes the disclosure of the fair value position of a pension scheme and so the market value of assets should be disclosed with the present value of the pension liability in a manner similar to current accounting standards. This would improve pension accounting beyond where it stands today as corporate accounts would recognise the 'best' estimate of the long-term position of the scheme while allowing for an understanding of where the scheme is today relative to long-run expectations.

The application of fair value accounting for pensions has increased the verifiability of the numbers that are produced. However, in doing so this has reduced the relevance of the numbers that appear in the annual report. We believe that the approach suggested redresses this balance as the numbers become more relevant in terms of where the position of a long-lived obligation stands today and over the long-term and so both relevance and verifiability can be achieved.

One final disclosure issue we believe will improve pension accounting is the cash contributions to the scheme which have been agreed as a result of negotiations with trustees and, in some cases, with the Pensions Regulator. This information is important as it shows the near-term obligation of the firm to the scheme and allows for users of financial statements to understand the cash commitments of a firm to a scheme for the next 3-10 years. Although both IAS 19 and FRS 17 require some sort of disclosure with regards to this<sup>37</sup>, the standard is vague on its requirements and so we would go further than the current standard by requiring disclosure of a contribution schedule that shows past contributions and future contributions both from triennial valuation and deficit recovery that has been agreed with the Pension Regulator.

We believe this approach would reflect the long-term position of a scheme and this would be recognised through the accounts of a corporate sponsor, as well as improving the overall usefulness of the reported amounts through disclosure of the current position of the scheme and the near-term obligations of the firm.

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<sup>37</sup> See FRS 17 Section 76 Paragraph (c) and IAS 19 Section 120A Paragraph (q)

## Conclusions and Recommendations

### *Conclusions*

Pension accounting has to reflect better the long-term nature of the pension liability. Current pension accounting fails to take adequate account of the long-term nature of the assets held to meet the pension obligation and the systematic way in which pension liabilities evolve through time. Current accounting standards apply a mixed-model approach and so pension assets and pension liabilities are not accounted for in a consistent way.

From the perspective of the company, market value pension accounting has resulted in substantial volatility in comprehensive income and in the balance sheet. The recognition of a pension surplus/(deficit) in the company's balance sheet is good as the pension obligations of firms are in many instances substantial and should be apparent to investors.

However, the year on year volatility in the balance sheet surplus/deficit that arises from the application of fair value pension accounting is undesirable from a corporate perspective and does not necessarily reflect the 'true' position of a scheme at a given point in time. Although this is not the only driver of the decline of the defined benefit pension it is a significant contributory factor.

From the perspective of users of financial statements the disjoint between the actual cash contributions that are being paid into a scheme and the reported pension costs under current accounting standards obscures the true cost of funding a defined benefit pension scheme. For investors meanwhile this issue potentially impairs their ability to make fully informed decisions about the future value and risks of their current and future investments.

By modelling of a range of pension accounting options, it is clear that volatility in the statement of financial position occurs under IAS 19 as a result of accounting for asset values at market prices and discounting pension liabilities using AA bond yields. The setting of the discount rate at the AA yield therefore disadvantages schemes that have higher equity allocations. For such schemes the expected long-term returns on the assets held to meet the pension liability and the present value of the liability are not properly matched. Moreover, the lack of correlation between the asset valuation and liability valuation under IAS 19 and the resultant volatility feed through into volatility in the comprehensive income of the firm. Pensions accounting as it stands is therefore distorting both the statement of financial position and comprehensive income.

Moreover, the use of accounting solvency in regulatory oversight has pushed companies to seek assets that better match their accounting liabilities. Consequently, there has been a significant sell-off of equities by pension schemes and large purchases of bonds. This has occurred as these financial assets better match the duration of the pension liabilities faced by corporate sponsors as a result of the application of an AA bond yield for discounting pension liabilities.

## *Recommendations*

For accounting recognition the value of plan assets should be smoothed to reflect the long-term nature of the pension obligation. If pension assets are accounted for on a discounted cash flow basis this allows for the long-term nature of the investments that are held to meet the pension obligation to be accounted for in the same systematic way that pension liabilities unwind. Moreover, discounted cash flow removes the volatility that results from the marking-to-market of plan assets. In addition to this, pension liabilities should be discounted at a discount rate that reflects the investment strategy of the pension scheme as this is the appropriate rate to arrive at a consistent value of the assets and liabilities.

Applying an actuarial approach to the valuation of pension assets and liabilities would introduce a matching principle and so, from an accounting perspective, the mixed model problem of current methods is removed. This approach would allow for the recognition of an actuarial value for of a pension surplus/deficit in the statement of financial position of the firm.

In addition to recognising actuarial values for assets and liabilities, pension disclosure should change to allow for better information to be presented about annual changes in the pension scheme. If annual reports were to more closely follow sponsor funding statements, this would provide better information to the users of financial accounts with regards to the unwinding of the pension liability and the long-term impact of the scheme on the corporate sponsor.

One of the key issues with regards to usefulness is a discounted cash flow approach to pension accounting is that it represents the long-term view of where the pension scheme is. A scheme can therefore be fully funded on an actuarial basis but this does not reflect the actual position of a scheme today. To make the long-term position of the scheme useful for users of financial accounts, annual reports should also disclose the market value of assets and present value of the pension liability. This serves two purposes. First, it allows for an assessment of the pension today relative to its long-term position. Second, it allows for comparisons with other firms to be carried out by users of financial statements.

One of the biggest criticisms of current pension accounting is the disjoint between actual cash payments into the scheme and the pension costs that are reported in the annual report. Consequently, accounts should disclose a contribution schedule of the actual cash commitments that the firm has made in previous years and is committed to in future years as a result of the trust deeds of the scheme, agreements with trustees and any deficit recovery that has been agreed with the Pensions Regulator.

Current disclosure requirements of such agreements under IAS 19 do not go far enough and subsequently do not provide enough information. This approach would allow for a clear presentation of the past cash payments and future commitments that the firm has made to the scheme and is obligated to pay in the near future. Such explicit disclosure allows for a better understanding of a firm's obligations and the potential impact that this will have on corporate strategy and the future investment opportunities of the firm.



## Appendix I

### *IAS 19, Employee Benefits: A Dutch Perspective*

Pension arrangements in the Netherlands are markedly different from pensions in the UK. Although Dutch pension arrangements are similar in that the pension is separated from the plan sponsor, as a result of the Dutch 2006 Pension Act the levels of scheme solvency and contributions are notably different. Moreover, the regulatory estimate of scheme solvency on which the contribution rates that firms are required to pay are based upon the accrued benefit obligation (ABO) which is a different actuarial model to the model applied under IAS 19. Consequently, the reported numbers under IAS 19 bear no resemblance to the actual solvency of a scheme or the pension costs that the plan sponsor must incur as a result.

In the Dutch pension system many schemes are now 'career-average', with employees contributing around 30%<sup>38</sup> of the cost to the pension fund. Further, the pension liability, as a result of local legal convention, is estimated with a fixed discount rate that can be no higher than 4%, while assets are valued at market prices. In addition to this, the pension fund is supervised by the Dutch Central Bank which, as a prudential regulator, mandates that the value of scheme assets must be 105% funded based on the accrued benefit obligation (ABO) as well as having a risk reserve on top of this. Essentially this means that a firm must hold enough reserves to offset a 40% equity price drop and a 10% fall in bond prices.

Davis *et al* (2007)<sup>39</sup> report that for their sample of more than 500 Dutch pension schemes, between 1996 and 2005, almost all Dutch schemes were fully funded in all years except in 2002 where 10% of schemes were underfunded. Where a plan falls below the minimum mandated solvency level, a firm has to agree a recovery plan with the Central Bank. Crucially, recovery plans can reduce the promised level of benefits to scheme participants through the conditional removal of indexation or, in some cases, by curtailing the promised level of benefits. As a result, the Dutch system is much more akin to a hybrid scheme that fits somewhere between a defined benefit or defined contribution plan. The level of benefits provided in such schemes is likely to be higher than under a defined contribution plans but lower than a defined benefit plan. However unlike full defined benefit plans there is a far higher level of risk sharing in the scheme.

The Dutch system essentially falls outside of IAS 19 as many of the obligations are treated like defined benefit pension obligations, but the risk profile is much more akin to a defined contribution scheme. In applying IAS 19 to the Dutch system a number of problems similar to those highlighted for the UK arise. First, the relationship between the corporate sponsor and the pension scheme, and the rules that govern the provision of a pension, are not adequately taken account reflected under IAS 19. Second, the regulatory environment in which Dutch schemes have to operate is neglected and so the funding requirements that are placed on a corporate sponsor are inadequately reported in the annual report. Consequently, the usefulness of IAS 19 numbers for Dutch pension obligations is questionable as they do not fully reflect the cost borne by the firm.

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<sup>38</sup> Page 2, Dutch Accounting Standards Board (DASB), Comment on Exposure Draft Defined Benefit Plans-Proposed amendments to IAS 19, 6<sup>th</sup> September 2010

<sup>39</sup> Pension Fund Finance and Sponsoring Companies: Empirical Evidence on Theoretical Hypotheses, Davis, E. P., S. Grob and L. de Haan, DNB Working Paper No. 158, December 2007.

The comment letter by the Dutch Accounting Standards Board (DASB) to the IASB succinctly captured this issue when they stated:

*It is also obvious....that the cost to the entity (normally the sustainable premium) will differ substantially from the one calculated under IAS 19, although this will not always be lower for any year. More importantly, the costs calculated under local legal requirements determines current and future cash outflows in relation to the pension arrangements of the entity. As a consequence, it is patently clear that the IAS 19 information for such arrangements has no bearing at all on cash flow. That is exacerbated by the fact that IAS 19 ignores future premium contributions from employees.<sup>40</sup>*

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<sup>40</sup> Page 2-3, Dutch Accounting Standards Board (DASB), Comment on Exposure Draft Defined Benefit Plans-Proposed amendments to IAS 19, 6<sup>th</sup> September 2010

## Appendix II

### *Accounting for Provisions, Contingent Liabilities and Contingent Assets – IAS 37*

Many firms have very long-term liabilities that have to be met at some point in the future and as such make provisions to meet these obligations when they fall due. IAS 37 and IAS 19 bear a number of similar, though fundamentally different, principles for the treatment of long-term liabilities, of which one prime example is the recommended accounting treatment for the provision of nuclear decommissioning. Under IAS 37 a provision is a liability of uncertain timing or amount<sup>41</sup>. Further the standard states that a provision should be recognised when the firm has a present obligation, arising from a past event, the future settlement of which will result in an outflow of economic resources that can be estimated reliably<sup>42</sup>.

In many respects the costs of a nuclear decommissioning liability are comparable to a pension obligation. First, there is a present legal obligation to pay staff pensions in terms of underlying contractual agreements between the employer and employees for services rendered. For the operator of a nuclear power plant, there is a legal obligation to clean up any contaminated land<sup>43</sup>. Second, there will be a future outflow of resources embodying economic benefits when either the pension fund or the power plant settles these obligations. Third, a reliable estimate of the future obligations can be made by actuaries, for the pension fund, or by independent experts, for the power plant.

The key difference between IAS 19 and IAS 37 and the accounting treatment of the obligations each standard addresses centres on their respective methods of measurement for liability that is recognised in the annual report. IAS 37 clearly states that the present value of future obligations should be calculated using a pre-tax discount rate reflecting “...current market assessments of the time value of money and the risks specific to the liability”<sup>44</sup>. Conversely, IAS 19 stipulates that the discount rate that must be used by the actuaries should be “...determined by reference to market yields at the end of the reporting period on high quality corporate bonds”<sup>45</sup>.

These differences are best highlighted by the juxtaposed disclosures of pension obligations and the provision for nuclear waste management reported in the 2009 RWE annual report<sup>46</sup>. Two stark contrasts emerge here, first is the simplicity of the disclosure of the provision for nuclear waste management. Despite the fact that these costs in 2009 stood at over €9.4 billion, the actual disclosure for the provision in the annual report is relatively small, though arguably informative and useful. While the gross pension obligation of approximately €16.3 billion was disclosed over five consecutive pages of detailed narrative and tables. Second, the key difference between the measurements of these obligations was the choice of discount rate. These were disclosed in two separate comments informing the reader of the accounts that the pension obligations were discounted at rate of 5.25% on domestic schemes and 5.70% on foreign pension obligations whilst the provision for nuclear waste management was discounted at an arbitrary rate “...as in the previous year...” of 5%.

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<sup>41</sup> Paragraph 10, IAS 37, Accounting for Provisions, Contingent Liabilities and Contingent Assets, (2011).

<sup>42</sup> Paragraph 14, IAS 37, Accounting for Provisions, Contingent Liabilities and Contingent Assets, (2011).

<sup>43</sup> Illustrative Example 2A, IAS 37, Accounting for Provisions, Contingent Liabilities and Contingent Assets, (2011).

<sup>44</sup> Paragraph 47, IAS 37, Accounting for Provisions, Contingent Liabilities and Contingent Assets, (2011).

<sup>45</sup> Paragraph 78, IAS 19, Employee Benefits, (2011)

<sup>46</sup> RWE Annual Report, (2009), Note 25

Although pension obligations and future nuclear decommissioning costs are not perfectly comparable and pension obligations are likely to be the more substantial cost, there appears to be a significant disparity between IAS 37 and IAS 19 in the measurement and disclosure of these two obligations.

## Appendix III – The Political Process of Setting Accounting Standards: The Case of IAS 39

In trying to become the global accounting standard setter the IASB needs the majority of the World to endorse the use of International Financial Reporting Standards (IFRS). This can only be achieved if national governments choose to mandate the application of IFRS within their country. For the IASB one of the most significant moves towards achieving this goal was the decision by the European Union (EU) to mandate the use of IFRS for all listed companies of the 25 member states. However, as a result of the need for government endorsement, this creates a further group who can lobby the IASB for or against a particular accounting standard: national governments.

One of the most controversial areas that the IASB has tried to set accounting standards for is financial instruments with IAS 39, Financial Instruments: Recognition and Measurement<sup>47</sup>. The key issue with the new standard was the application of market values for reporting the value of derivatives and financial instruments. For banks the standard did not allow for fair value hedges of deposit liability holdings this resulted in a substantial amount of controversy. Although this was not the only concern about the standard the issuance of the standard resulted in a substantial amount of lobbying by French, German, Italian and Belgian Banks. Moreover, many banks spoke out publicly against the IASB<sup>48</sup>.

However, despite all of the pressure and lobbying from banks and other interested parties, the case of IAS 39 highlights the impact of government level lobbying. The Accounting Regulatory Committee (ARC) advised the European Commission on the decision to adopt IFRS. As part of their guidance on IFRS adoption was the view that there should be a carve-out of certain parts of IFRS and in particular this included the 'fair value option' for IAS 39<sup>49</sup>.

As the lobbying process continued EU institutions entered the fray and became more vocal about the ongoing debate with the IASB. Jacques Chirac, the then president of France, wrote a letter to Romano Prodi, the President of the European Commission, in which concerns were raised about the potential threat to stability that IFRS posed to European firms and the wider European economy<sup>50</sup>. Moreover, the EU Financial Commissioner, Frits Bolkenstein, was reported to have said that, *"...there is growing unease concerning the standard setting process itself. The perception seems to be that there is a lack of willingness on the part of the IASB to move away from theoretical concepts and to accept solutions that are based on solid, practical experience"*<sup>51</sup>.

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<sup>47</sup> This standard is in the process of being superseded by IFRS 9 and so accounting for financial assets and derivatives is split across a number of standards.

<sup>48</sup> For example, the Chairman of AXA was reported to have said to shareholders that, '...bankers and insurers need to fight the ayatollahs of mark-to-market [accounting]'. Source: [www.bloomberg.com](http://www.bloomberg.com), August 7<sup>th</sup>, 2003.

<sup>49</sup> The fair value option allows for firms to choose whether a financial asset or liability is recognised as fair value through profit and loss. Under the original fair value option this designation was permanent.

<sup>50</sup> Source: Financial Reporting – IFRS Countdown – Burning Issues, *Accountancy*, 20<sup>th</sup> October, 2003.

<sup>51</sup> Source: The Accounting Argument Continues, The Hindu Business Line, 2<sup>nd</sup> October, 2003.

Although the IASB still issued the standard based on its August 2003 version, for the European Union it was that the 'carved-out' version of IAS 39 came into effect for all publically traded EU companies in 2005.

However, the process of 'carving-out' was not widely wholly endorsed. John Tiner, the then chair of the Financial Services Authority in the UK, said that this was *"...a very slippery slope responding to vested interests...I think the politicisation of accounting is really quite damaging for Europe..."*<sup>52</sup>.

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<sup>52</sup> Source: House of Commons Minutes of Evidence before Treasury Committee, 16<sup>th</sup> September, 2004.

## Appendix IV – Modelling Methodologies and Assumptions

### *Key Model Assumptions*

The various accounting measures have been assessed on a sample scheme starting with £100m assets and £100m liabilities at 31 December 1999.

Calendar year accounting dates are used based on market conditions at close of business on the last working day ahead of the year end. This is consistent with the approach that would be used for companies with calendar year-end accounting dates.

### *Scheme investment strategy*

The assumed equity allocation to the Scheme is 60%, with the remaining 40% invested in bonds. No diversification of equity or bond returns is assumed. The equities are assumed to perform in line with the total return on the FTSE All-Share. The bonds are assumed to perform in line with the total return on the FTSE 15 year gilt index.

### *Scheme demographics*

The sample scheme is open to new members and the non-pensioner average age remains constant at 45. We have therefore assumed a stable population so that, as members retire, they are replaced with younger members to keep the age profile constant.

The scheme Normal Retirement Age is assumed to be 65. Given the nature of the analysis, which is to analyse the progression of assets relative to liabilities, scheme mortality is not expected to be a significant assumption as it is out with the scope of the modelling.

The pensionable payroll of the scheme is 10 units relative to the 100 units starting liability/assets for the first year and increasing at a fixed 3% per annum, thereafter. Members are assumed to contribute 5% of pensionable payroll to the scheme per annum.

The scheme members are assumed to behave in line with the underlying demographic assumptions. They experience mortality in line with the assumed mortality table, they do not withdraw from the scheme prior to retirement, they experience salary growth in line with expectations and realised inflation (hence revaluations to salary and increases to pensions in payment) from year to year is assumed to be in line with the assumptions. These assumptions are considered reasonable, given the goal of the research is to model the asset liability interaction.

### *Core assumptions*

Pensioner mortality is assumed to be in line with the recently published SAP mortality tables with CMI projections. The table concerned is based on national mortality for pensioners and includes the CMI's 2009 projections allowing for a minimum of 1% per annum improvement in future mortality rates. The tables apply to pensioners born in 1945.

More importantly, it is assumed that expectations of mortality remained fixed over the period concerned. Whilst, there have been significant changes in the expectations of mortality over this period, the purpose of the goal of the research is to model the asset liability interaction and so this volatility is excluded.

Pre-retirement mortality is ignored on the grounds of immateriality.

Salary inflation is assumed to be 1% above assumed inflation.

### *Specific Model Assumptions*

#### **DCF Basis**

The discount rate used to value the scheme liabilities is fixed at 7% per annum and inflation is assumed fixed at 3% per annum. This is in line with a typical SSAP24 funding basis that the author believes would have been appropriate over this period. It can be argued that the basis would have moved in line with market conditions, but under SSAP24 actuaries typically tried to maintain stability with the assumptions in these areas.

Equity returns are assumed to be 8% with dividend growth of 4%. Bond returns are assumed to be 5%. These assumptions are held constant over the period considered. This is not an unreasonable assumption as actuaries again typically tried to maintain some stability in the assumptions applied and made changes when it was clear that scheme experience was actually different. The value of equity assets is based upon a dividend growth model where

$$AssetPrice = \frac{Div_0}{r - g}$$

As such, the discounted cash flow valuation of equities is taken as dividend payable / (8% - 4%) = MV x NDY / 4%.

Bonds are valued by multiplying the market value of the bonds by a market value adjustment designed to convert the value from market value valuation to discounted cash flow valuation. This formula is MVA = Price of notional DCF bond / Price of notional bond at current market rates.

The notional bond assumes 5% coupons and 20 year redemption. The relevant market yield used is the yield available at the relevant date on the FTSE actuaries 20 year gilt index; the discount cash flow yield is taken as the expected return on bonds of 5% per annum.

DCF Surplus/(deficit) is the basis using a typical funding basis during that period, similar to the assumptions used for SSAP24 purposes. There is no smoothing incorporated so the difference between the assets and liabilities (known as the "funded status") are taken at the valuation date without adjustment.

#### **IAS19 basis**

On this basis, the discount rate is taken as being the yield available on the iBoxx over 15 year AA corporate bond index at the relevant date. This is a standard benchmark measure for most UK companies. No allowance has been made for duration of constituent changes, as this would vary considerably by company.



Inflation is derived as the differential between the over 15 year fixed interest gilt yield and the over 5 year index-linked gilt yields at the date concerned. No allowance for market distortions or duration differentials is allowed for. Again, this is considered to be reasonable, given the over-riding purpose of the model.

Assets have been taken at market value.

**“Risk-free” basis**

This is assumed to be in line with the IAS19 basis, except that the discount rate is derived to be the yield available on the FTSE 20 year fixed interest gilt index. This is technically, not risk-free, but may be better regarded as a self-sufficiency basis.







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