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**FUNDING AND ACCOUNTING RULES FOR PENSION ENTITIES
AND PLAN SPONSORS**

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SECTION 1 - INTRODUCTION

The focus of this paper is on Defined Benefit (DB) Pension Plans, as opposed to Defined Contribution (DC) Pension Plans. For purposes of analyzing the funding and expensing implications, the fundamental differences between the two types of plan need to be understood. These can be summarized in the following chart.

Defined Benefit v. Defined Contribution

	Defined Contribution	Defined Benefit
Employee's contribution	Percentage of salary	Percentage of salary
Employer's contribution	Percentage of salary	?????
Amount of Pension	?????	Defined in Plan Rules
Investment risks, etc...	Employee	Employer

This chart represents simple, but very typical plan designs. Obviously, employee contributions under both types of plans, and employer contributions under DC plans, are not necessarily a percentage of salary – but the formula for determining such contributions is clearly specified in the plan rules. For the purposes of this paper, it is much more important to focus on the unknowns (the retirement pension from a DC plan and the employer contributions to a DB plan). It is equally important to understand what happens when investment performance and other factors differ from the original expectations - who benefits from favorable experience, and who suffers in the event of poor experience?

Under the Defined Benefit plans that are the focus of this session, it is the employer cost that is the variable, and it is this same employer/plan sponsor that normally suffers in the event of poor investment performance and other negative experience. In most countries, employers would simply have to put more money into the pension fund in order for that fund to be able to deliver the retirement pensions and other benefits promised to employees under the plan rules and collective agreements. It is virtually impossible for a plan sponsor to reduce benefits already accrued, except by taking the drastic action of terminating the plan. It can even be quite difficult to reduce benefits to be earned in the future. Brazil may be a rare exception to these general rules.

SECTION 2 - PENSION FUNDING

There are many ways of “financing” the obligations created under a pension plan. These include the pay-as-you-go approach (generally used for financing social security benefits), book reserve arrangements, and termination funding at the time of retirement. However, in regard to regular occupational pension plans, “funding” (or more accurately “pre-funding”) is the most important subset of the various financing approaches. It is the topic of this session and of this conference.

Definition of “Funding”

In simple terms, “funding” involves setting aside assets in advance of the time when the plan benefits become payable to the retired employees and other plan beneficiaries. Funding recognizes the long delay between employees earning entitlements to benefits (during active service) and actually receiving the payments (on retirement, death or disability). Funding gives substance to the plan sponsor’s obligations.

Why Fund?

It is dangerous to assume that pre-funding is the only correct approach to financing pension plan obligations. It is even dangerous to assume that it is the inherently superior approach in all circumstances. However, there are some very clear and powerful reasons for such pre-funding, and these advantages have been recognized in a large number of developed economies. The basic reasons for a plan sponsor to adopt the funding approach include:

- Benefit security to the plan beneficiaries, namely the employees covered by the plan and their dependents. Borrowing from the Conference announcement material: “to collateralise the pension promises in ways to make it more likely that the promised benefits will materialise.”
- Funding is often required by law.
- Funding can be very tax effective and cost effective.

Another argument in support of funding has been that it creates greater equity between different generations of stakeholders - in particular, company shareholders. The fear is that promises are being made in one generation, but are effectively financed by subsequent generations. Pension expensing standards (see Section 3) remove, or significantly dilute, this particular argument.

Advantages of Funding (from the perspective of the Plan Sponsor)

In addition to the indirect advantage of protecting its employees, a plan sponsor needs to have some more direct and tangible reasons for implementing funding. Important considerations in this regard are:

- Tax deductibility of company contributions.
- Tax sheltering of the investment income earned on the fund assets.
- Employees being able to contribute towards the cost of the plan. In most countries, employee contributions are only possible when there is an external financing vehicle into which their contributions can be deposited.
- In summary, that pre-funding can be very cost effective.

There was also the argument that, by making pension plan contributions to a fund, the plan sponsor is recognizing the true cost of doing business - “pension promises cost money, and the company’s funding contributions recognize this cost”. As already mentioned, this argument no longer holds water, and the accounting profession has assumed responsibility for determining the true costs. See Section 3.

Disadvantages of Funding (from the perspective of the plan sponsor)

There are numerous situations where funding is not necessarily the most favorable approach for a plan sponsor. Influencing factors are generally at the national level or at the specific company level. Potential disadvantages include:

- Employer’s cash flow. It may be illogical to put (more) employer money into a pension fund when the company has problems paying its bills and discharging other financial obligations.
- Higher internal rate of return. The company may be able to achieve a higher internal rate of return by using the money directly to reduce its borrowings, to finance internal expansion, etc... These considerations are particularly relevant in those countries where the investment income of the pension fund is taxed, thus reducing the external rate of return.
- Employee security. A major argument in favor of pension funds is that they increase the security of the benefit promise. Unfortunately, there are examples of this benefit security being achieved at the cost of basic job security. Although many of these situations arise from irresponsible plan design and administration, the end result is always that the pension fund is demanding more money from a company and a workforce that have more urgent priorities.
- Unhelpful legislative environment. We will return to this aspect.
- Poor choice of funding vehicles, either because the marketplace is unsophisticated or uncompetitive, or because national pension legislation creates impediments.
- Limited investment opportunities. Small stock market, severe restrictions on asset allocation, etc...

It is assumed that earlier sessions of the Conference will have addressed some aspects of these issues. We will focus on those aspects that directly affect the concept and practice of funding.

The Perfect Funding Vehicle?

Given all the issues described above, it should not be difficult to design the perfect funding vehicle for the plan sponsor. The important characteristics would include:

- Tax effective. The company contributions would be tax deductible. The employee contributions would be tax deductible. Company contributions would not be a taxable benefit in the hands of the employees. The investment income on the pension funds assets would be tax-sheltered. This is the essence of the so-called EET tax system (see Note 1)
- Low operating costs (administrator, actuary, accountant, etc...).
- Low compliance costs (government filings and other implications of government legislation).
- High investment yields (efficient markets, favorable legislation).
- Overall flexibility on funding levels and investment of assets.
- Independent and competitive third party services.

All of these factors combine to create a very cost-effective pension plan. Unfortunately, it is difficult to find a country where all of these factors are present!

Note 1. “EET” is an abbreviation for “Exempt-Exempt-Taxed”. The first “exempt” refers to the tax deductibility of employer and employee contributions. The second “exempt” refers to the investment earnings being exempt from taxation. The “taxed” refers to the eventual taxation of retirement pensions and other benefits at the time they are paid to the employees and other plan beneficiaries. EET is the most widespread tax regime in Western Europe, but there are some notable exceptions. EET is the system being very actively promoted by the European Commission as the cornerstone of efficient pension funding and cross-border pension funding.

The Pace of Funding

The introductory paragraphs of this paper have focused on defining “funding” and then analyzing whether such funding is desirable and efficient. Let us assume that these hurdles have been crossed, and that funding is to be the route forward. There is then the more complex aspect of the “pace” of funding. This needs to be explained and understood. (Finally, the actuary enters the scene.)

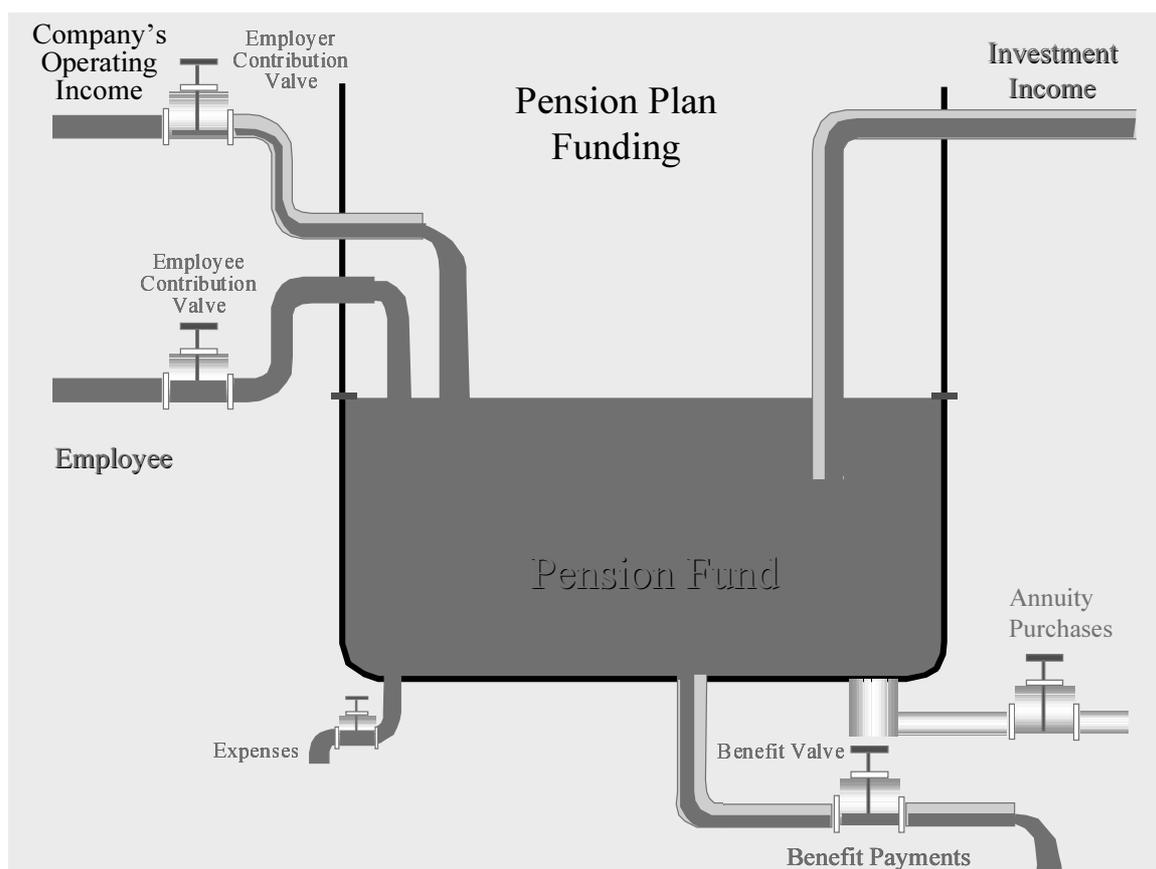
Contrary to a common myth, the actuary does not determine the “cost” of a pension plan. The ultimate cost of any pension plan to the plan sponsor/employer is simply:

$$\begin{array}{c} \boxed{\text{Benefit Payments}} \\ \text{less} \\ \boxed{\text{Employee Contributions}} \\ \text{less} \\ \boxed{\text{Investment Income}} \\ \text{plus} \\ \boxed{\text{Administrative expenses for operating} \\ \text{the plan and the fund}} \end{array}$$

There are no actuarial calculations or actuarial estimates in this formula. However, the figure derived from the formula cannot be definitively calculated until the last plan beneficiary has died. There are thus at least two immediate and important roles to be played by the actuary when performing actuarial calculation, namely:

- Calculations of various features of plan design. In this case, the actuary generates cost “estimates” for the current plan design and proposed plan changes. These calculations involve numerous economic and demographic assumptions that will eventually be wrong, but the figures are still a useful management decision tool. The plan sponsor is able to assess the relative merits and relative costs of different plan designs and is able to obtain some idea of the absolute magnitude of such costs.
- Recommendations for an organized approach to funding the plan obligations. In other words, developing a recommended employer contribution rate. This is the main, ongoing role of the actuary. It is also the responsibility that is most relevant to issues under discussion in this paper.

As the chart on the following page attempts to illustrate, the basic job of the actuary is to regulate the employer contribution rate in order to establish and maintain an appropriate level of pension funding. One early step in this process is often forgotten. It is the need for the plan sponsor, with assistance from the actuary and perhaps with input from the fund administrators, to develop a “funding objective” and a funding strategy. The funding objective often involves a fundamental choice between (a) a stable employer contribution rate and (b) a stable relationship between accumulating fund assets and accruing pension plan liabilities. In recent years, the latter objective has become the more dominant. The reasons should become apparent, once we review the fundamentals of the calculations.



In order to understand any strategy for maintaining harmony between the plan liabilities and the fund assets, it is necessary to describe two actuarial funding methods – the Traditional Unit Credit actuarial cost method and the Projected Unit Credit actuarial cost method. The good news is that these two methods share many common features, and the latter method underpins all the important pension accounting/pension expensing standards (see Section 3).

Both methods involve an estimate of the present value of the accrued benefits. In this context, “accrued benefits” means the benefits earned by the employees under the plan in respect of service already performed. For example, if an employee has already accumulated 10 years of pensionable service, and if the pension plan formula is 1.5% of final salary for each year of such service, then the accrued pension benefit is simply 15% of final salary (10 years x 1.5%). The accrued liabilities also include the present value of the benefits already being paid to retirees and other plan beneficiaries.

Both methods also involve the calculation of a Current Service Cost. This is the present value of the benefits to be earned during the next twelve months, i.e. by performing one additional year of pensionable service. In our earlier example, the Current Service Cost is calculated around a one-year pension benefit accrual of 1.5% of final salary.

The fundamental difference between the two Unit Credit methods is the treatment of the impact of future salary increases on the benefits being accrued under final earnings defined benefit (DB) pension plans. The Traditional Unit Credit method ignores the effects of future salary increases. In contrast, the Projected Unit Credit method makes an allowance for the estimated effect of future salary increases. It therefore demands more rapid funding and, in the early years, higher employer contribution rates. The relative merits of each method will become apparent.

Legislative Constraints on Pension Plan Funding

Legislative constraints can best be understood through a brief history lesson. In the early days of pension funds, when employers and employees were seeking tax relief on their contributions, it was the federal tax authority that set the rules. These rules were relatively simple. As regards funding constraints, they just imposed *maximum limits* on employer and employee contributions. Another government department then began to assert its authority. Through the introduction of pension benefits acts (Canada in 1965-67, ERISA in the USA in 1974, etc...), the pension supervisory authorities were more concerned with security of employee benefits and related matters. In other words, they were interested in setting *minimum* funding standards. The tax authorities subsequently re-appeared on the scene. Through a combination of conservative funding and extraordinary investment performance, pension plans had become extremely well funded. In the eyes of the tax authorities, these plans were overfunded, and they introduced new rules to curb such perceived abuses. The push-pull effect between the two government bodies then became increasingly apparent – one encourages more funding, while the other constrains funding. Governments in many countries then compounded the problem by imposing onerous requirements on the utilization of pension plan overfunding. The excess of fund assets over plan liabilities became known as “surplus” – a highly emotive word – rather than just being viewed as a temporary funding excess that would be adjusted through future employer contribution rates.

Minimum Funding Requirements

If there is no chance of the pension plan being terminated in the foreseeable future, and if the plan sponsor has a sound funding strategy, one can argue that there is no need for minimum funding standards. There is no need for point-in-time assessments of whether the plan is fully funded (however defined) and no need for drastic, overnight action to address any perceived underfunding. However, this debate is already lost. Most countries impose minimum funding standards, and the practical challenge now is to develop sensible standards.

Minimum funding standards are usually focused on either (a) the plan termination liabilities, assuming the plan were to be terminated tomorrow, or (b) the accrued liabilities calculated without allowance for the effect of future salary increases. In most circumstances, these two measures are very close together. If the value of the fund assets (usually, the market value) is less than the value of these liabilities, then the plan sponsor is required quickly to make additional contributions. In most jurisdictions, the shortfall must be addressed immediately or within a very short period of time (e.g. five years). The problem with the “immediate correction” route is that the shortfall may disappear as quickly as it had arrived. For example, there could be a correction in the stock market, with the fund assets rapidly returning to their former values and beyond. The plan sponsor has made all the additional contributions, which were never really needed, and the plan then has substantial overfunding. This roller coaster effect needs to be avoided.

Maximum Funding Standards

Tax authorities in a number of countries (e.g. Canada the USA and the UK) impose maximum limits on the fund assets. More specifically, on the excess of the fund assets over the accruing liabilities. The authorities do not want to see pension funds being used as a convenient, tax-sheltered depository for surplus company assets. Here, the liabilities are often calculated on the Projected Unit Credit basis, i.e.

with allowance for the effect of future salary increases on accrued benefits. If the funding excess exceeds the prescribed limits, then the plan sponsor will be required to reduce contribution rates or even withdraw assets from the fund. In the latter case, the proceeds are paid to the plan sponsor and become taxable income on the company books.

In recent years, the pension supervisory authorities (and sometimes the tax authorities) have made life even more complicated for plan sponsors. They started to tell these plan sponsors that substantial portions of such funding excesses must be used to improve plan benefits for the active employees and, sometimes, for other plan beneficiaries. It is now important to remind ourselves of the basic principle underlying the pre-funding of defined benefit pension plans in the majority of countries. The balance of the cost, as borne by the plan sponsor, is an unknown that can only be estimated. If the experience is worse than originally assumed, the plan sponsor must pay additional contributions. If experience is favorable, then it is able to reduce its contributions for a period of time. However, the approach being mandated by the authorities in some countries involves (a) the company assuming additional costs when experience is poor and (b) the employees being given additional benefits when the experience is favorable. It is not surprising that, in this unbalanced environment, employers are beginning to question the logic of implementing and maintaining DB pension plans. Of course, a less drastic solution for plan sponsors is to avoid such high levels of funding excesses (surpluses) in the first place.

Artificial Funding Standards

There are still some countries that require funding, or at least minimum funding, to be based on a completely artificial set of calculations. For example, the actuarial calculations could be based on an artificially low interest rate and no recognition of the effect of future salary increases, whilst assuming that all employees will remain with the company until normal retirement age (no deaths, disabilities, employee turnover, early retirement, etc...). These measures are artificial and lacking in transparency. Legislation of this type is often found in countries where the responsibility for regulating and supervising pension funds has been allocated to the authority that is already responsible for supervising insurance companies.

Conclusions

If it is still possible to influence the thinking of tax authorities and pension supervisory authorities, then so much the better. Unfortunately, there are many funding, investment and other legal constraints that poorly serve the interests of the plan sponsor, the plan members and other stakeholders.

One way or another, the plan sponsor needs to develop, implement and monitor a **“corporate funding strategy”**. For example a target funding objective for the plan sponsor would be to maintain the assets of a pension fund at such a level that they:

- exceed, by an appropriate contingency margin, either the plan termination liabilities or the accrued liabilities calculated on the Traditional Unit Credit basis (basically, the ABO in American accounting language); and
- do not exceed a predetermined percentage of the accrued liabilities calculated on the Projected Unit Credit basis (the PBO in US accounting parlance) – this percentage would depend on company philosophy and local legislation concerning deficits and surpluses - it could be as low as 85% of the PBO or as high as 110%, with the implications being carefully evaluated in advance.

There is then the difficult question of how to place a value on the fund assets – a value that is appropriate for these purposes. Some smoothing of the asset values may be desirable.

SECTION 3 - PENSION PLAN EXPENSING

The subject of pension accounting standards has become increasingly important in recent years. This is simply because compliance with these accounting standards has had positive, negative and unforeseen impacts on the design and operation of pension plans. These issues will be analyzed, but first we must clearly define the subject under discussion. We are not talking about pension fund accounting. In other words, we are not talking about the important, but routine obligation to maintain accurate records of the pension fund's income and outgo; "income" being the employee and employer contributions and investment income; "outgo" being benefit payments and operating expenses.

Instead, pension accounting standards are focused on the steps that need to be made by a plan sponsor to recognize, on an accurate and timely basis, the costs of its pension plan obligations. Pension accounting is also called pension plan expensing. It has impacts on both the income statement (P&L) and the balance sheet of the employer (the sponsoring company).

Although pension accounting standards have been around for decades in some countries, they only came into prominence in the mid-1980s. The US and Canadian accounting standards boards introduced far more detailed and specific standards than had previously been the case, and FAS87 and CICA3460 came into effect on 1 January 1986. The consequences were immediate and significant. Employers were suddenly required to be more aware of the real costs of maintaining pension plans for their employees. The dominance of the actuary over the funding of the plan quickly disappeared – "The actuary told me the cost was 19.61% of payroll. I do not really understand how he reached this figure, but anyway I just paid the money into the fund." This is not necessarily an acknowledgement that the pension expensing calculations are more accurate than the actuary's funding calculations, but the company's senior management certainly had to be better-educated and more involved on pension matters. The impacts were particularly significant for US and Canadian multinationals and their overseas subsidiaries.

The accounting profession had concerns that the employer's funding contribution was not necessarily an accurate reflection of the cost of the pension plan. Some of the concerns were:

- obscure actuarial costing methods that did not accurately allocate costs to the years in which the employees accrued their retirement benefits;
- overly conservative or artificial actuarial assumptions that produced distorted figures;
- the year-to-year volatility of the funding contribution, including the plan sponsor's quite legitimate flexibility to reduce or increase short-term contributions to satisfy internal cash flow, tax and other company needs and objectives;
- tax and pension regulations that inhibit the calculation of realistic pension funding costs.

The accounting standards boards thus set themselves a number of important objectives regarding realistic and timely recording of employer pension costs, including:

- consistency of expense from one year to the next (FAS87);
- comparability between different companies (FAS87);
- expensing over employees' working lives – not after they have already retired (FAS87);
- a level playing field between different financing vehicles (IAS19);
- a common approach throughout the European Union (IAS19 and European Commission).

Note - IAS19 is the international pension accounting standard developed by the International Accounting Standards Board. This standard will be the focus of the rest of this section. National standards in Brazil, Canada, Ireland, UK, USA, etc... are very similar to IAS19.

The Three Key Figures

IAS19 mandates the use of the Projected Unit Credit actuarial costing method (see Section 2). It thus requires the calculation of three key figures. If one can understand these three figures, then the rest of the pension accounting standard should be relatively easy to follow.

- **Accrued Liabilities.** As already discussed, this is the present value of the accrued benefits, including an allowance for the effect of future salary increases on such accrued benefits. Under IAS19, these accrued liabilities are called the “present value of the Defined Benefit Obligation” – which we will abbreviate to the DBO. This is the same as the Projected Benefit Obligation (PBO) under FAS87.
- **Value of Plan Assets.** This is the “fair value” of the fund assets, usually the market value.
- **Current Service Cost.** This is the increase in the DBO resulting from employee service in the current plan year. In other words, the value of an additional year of benefit accruals.

Calculations of the DBO and the Service Costs must be made using economic and demographic assumptions that are “unbiased and mutually compatible”. Furthermore, financial assumptions must be based on market expectations. Finally, the all-important discount rate (interest rate) used to calculate present values of future benefit payments must be a function of the “market yields on high-quality corporate bonds, with a currency and term consistent with the obligations”.

The Annual Pension Expense to be recorded in the Company’s income statement (P&L).

Current Service Cost (net of employee contributions)
plus
One year’s interest on the Accrued Liabilities
less
One year’s expected return on the Plan Assets
plus/minus
Various Amortizations*

* The “amortizations” recognize that there is never a perfect match between the accruing liabilities and the value of the pension fund assets. The differences are divided into: (a) those existing at the adoption of the accounting standard, (b) those created by retroactive benefit increases and other changes in plan design, (c) those resulting from special events such as a partial plan termination, and (d) experience gains and losses.

Balance Sheet Implications

In most regular situations, the amounts paid by the company as contributions to the pension fund will not be the same as the annual pension expense determined under IAS19. There are then implications for the company’s balance sheet. If the company contributes less than the IAS19 expense, the difference must be recorded on the balance sheet as an “accrued pension expense”. In contrast, if the company contributes more than the IAS19, it is deemed to have “prepaid” a pension expense, and an asset accrues on the company’s balance sheet.

After a few years, these amounts can become significant. The practical effects can then be quite interesting. Let us consider a plan that – *according to international accounting standards* – has a deficit (assets less than IAS19 liabilities). If the employer does not increase its contributions to cover the perceived deficit, then the full deficit will eventually become a liability on the company’s balance sheet. Similarly, if the plan has a surplus and future employer contributions are not reduced, then that surplus moves to the company’s balance sheet.

SECTION 4 - WHEN FUNDING MEETS EXPENSING

A brief reference has already been made to positive, negative and unforeseen implications of the new pension expensing standards on the regular operations of the pension plan and the pension fund. Some of these issues will now be highlighted.

Positive Impacts

- Company management must now be better educated on actuarial calculations. The crazy mystique surrounding the work of the actuary needs to be destroyed. The implications of the actuarial costing method need to be understood – fortunately, the Traditional Unit Credit and Projected Unit Credit methods are easier to understand than some of the more historical approaches. The economic and demographic assumptions also need to be reviewed and agreed. Finally, and most importantly, the plan sponsor needs to understand that there is a range of choices concerning short-term employer contribution rates. There is no single, correct, magical figure. The actuary needs to be a good communicator and needs to explain the implications of different funding scenarios. Unfortunately, actuaries have a reputation as poor communicators; this is slowly beginning to change.
- The IAS19 calculations highlight the importance of good investment returns. In the four-box table on the previous page, the largest figure is usually “expected return on the plan assets”. It is then easy to see the enormous positive effect of achieving an increase in the investment yield of just 1% per year. The company’s pension expense reduces dramatically.
- The IAS19 calculations destroy the myth that improvements in pension benefits are “free” – that they have no cost implications for the plan sponsor. In this scenario, the actuary and the pensions manager were trying to tell the company and the trustees/board of foundation that there is enough surplus in the fund to cover the cost of these benefit improvements. However, to describe them as free was a serious distortion of the facts. Under IAS19, whatever the funded position of the plan, retroactive benefit improvements will cause an immediate and significant increase in the company’s pension expense.

Negative Impacts

- There are fears that pension accounts standards can adversely impact the investment of the plan assets. The discount rate used to calculate the accrued liabilities is a function of long-term bond yields. In order to reduce volatility in the company’s pension expense, some plan sponsors would be tempted to favor long-term bond investments. For active employees under final salary DB pension plans, this asset class is of limited use – equities are better.
- The IAS19 calculations clearly identify any excess of fund assets over accrued plan liabilities. This “surplus” - calculated on a realistic basis, rather than the actuary’s usually conservative basis – can then seem very attractive both to the company senior management and to the plan members. The emotive issues and practical problems surrounding surpluses have already been addressed in Section 2.
- The complex pension expense calculations apply only to DB pension plans. DB plans are already over-regulated compared with their DC equivalents. Thus, there is one more reason for employers to consider converting their existing DB plans into DC plans. This criticism has been levied primarily at the new UK accounting standard (FRS17), which is different from IAS19.

In summary, pension accounting standards increase awareness of many important pension issues.