

Potential actuarial contributions to the redesign of employers' accounting standards for employee benefit plans (IAS 19 / SFAS 87)

Author : Jean-François GAVANOU

gavanou@yahoo.fr

Chairman of the IAS 19 workgroup of the
Académie des Sciences et Techniques Comptables et Financières (Ordre des Experts
Comptables)

with the support of Linda Thissier, FIXAGE Employee Benefits

*All terms followed by a * are defined in the "glossary" appendix.*

Abstract

The most important and widely used accounting standards for employer's cost (IAS* 19, US GAAP*) in respect of benefit plans rely significantly on actuarial methods and a significant portion of the actuarial profession is employed by benefit plans' sponsors to assist with the valuation of their long term accounting commitments.

Benefit plans which give rise to significant financial liabilities or assets are predominantly pension plans (and related pension funds or insurance contracts) and post retirement healthcare subsidy plans. Beyond this typology, a variety of deferred compensation arrangements – often mandatory by labour legislation – are subject to periodic actuarial valuations for accounting purposes.

Accounting standards applicable to employers sponsoring employee benefit plans have a very significant influence on their benefit policy, and the financial management of these funds which are also the main investors on many markets. Any evolution of these standards will therefore have a very significant impact on financial markets and coverage of employees.

These accounting standards are currently under profound revision by the respective standard setters – the IASB* and the FASB*. Actuarial methods and principles rank among the key topics which are likely to be significantly revised in 2006-2008. Any modification of current actuarial methods used will have a deep impact for our profession, and it is therefore very strategic that actuaries get involved in the underlying technical debates, even if the matter is predominantly accounting.

The projected unit credit method (PUCM) is currently the unique actuarial approach which can be used to report for employer's costs in respect of benefit plans under the above mentioned accounting standards.

This article intends to review and illustrate, based on the experience of the author with the implementation of IAS 19 or US GAAP principles to a variety of international benefit plans - the criticism which can be addressed to the PUCM, and make actuarial proposals for the future accounting standards to be developed.

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1) Introduction

The fundamentals of modern pension accounting

Specific standards have been developed over the past 20 years to account for employers' financial commitments in respect of pension plans and other form of long term or post employment benefit plans. The respective standards (SFAS* 87 and IAS 19) of the most commonly used accounting frameworks internationally – US GAAP* and IAS* / IFRS* - are based on similar actuarial and accounting principles which can be summarized as follows :

- benefit plans are classified between “defined contribution” and “defined benefit” plans, the latter being considered as generating long term financial obligations for sponsoring employers, and thus accrual (vs “pay as you go”) accounting;
- “defined benefit” plans liabilities are valued based on the “projected unit credit method”, introduced by SFAS 87 (1985) and adopted by IAS 19 (1998);
- funding assets accumulated in segregated contracts or entities are valued at fair value (IAS 19), SFAS 87 further permitting the use of smoothing mechanisms;
- the sponsoring employer's “net periodic cost” to be expensed in the profit and loss account (P&L) is based on the annual variations of the respective liabilities and assets of each benefit plans, with a very popular option offered to use a so-called “corridor” smoothing approach under which accumulated differences between actuarial / investment assumptions and actual developments are considered as normal long term fluctuations and do not need to be expensed in P&L as long as they are not greater than 10% of the underlying liabilities and assets, the portion exceeding this corridor being amortized over the remaining expected active life of beneficiaries (usually 7 to 20 years).

Restrictions

The above mentioned standards are far more detailed than these basic principles, and significant differences further exist between SFAS 87 and IAS 19, but we believe that the above summary is sufficient for the purposes of this article (the actuarial aspects of the “projected unit credit” method will be further detailed).

Scope and applicability

The most significant employers' commitments accounted for under this approach are in respect of pension plans, post-employment healthcare plans being a further significant issue in Northern America in particular, to be accounted for under SFAS 106, which is more recent but very similar to SFAS 87 except that it takes future contributions of beneficiaries in considerations.

SFAS 87 and IAS 19 find particular application in countries where final / career average salary occupational pension plans have been set up to a large extent by employers, with the USA, UK, Netherlands, Canada and Switzerland ranking among the most typical locations for significant pension obligations to be valued under these standards. In these countries, it is not rare that pension obligations – gross or even net of the value of the segregated funding assets - are more significant than the sponsoring employers' total net equity.

IAS 19 and SFAS 87 are also applicable to a multitude of retirement / leaving service indemnity plans across various countries, with more limited employers' obligations to be valued but a real constraint for multinational and local companies to have to apply complex actuarial and accounting rules to benefit plans which are often legally defined (France, Italy, South Korea, Turkey, many African countries,...).

Impact for the actuarial profession

In many countries, these standards have led the actuarial profession to develop particular expertise to serve the needs of sponsoring employers, and a significant portion of our profession is employed in this area. For most employers, and especially large and multinational companies, the classification and valuation processes needed to comply with IAS 19 or US GAAP usually require the periodic involvement of qualified actuaries.

Expected developments : a revolution ahead

As a consequence of the pension funding "crisis" which has, in many countries (USA, UK, The Netherlands,...), triggered new – often stricter – solvency regulations for pension funds, IAS 19 and SFAS 87 have also been subject to significant criticism by influential members of the financial communities, and especially by users of financial information produced in this area by sponsoring employers.

The smoothing mechanisms of both standards in particular have been accused of creating artificial cushions in the related employers' financials, and a greater request for a more "full fair value" based approach has emerged from certain circles. The complexity of the underlying pension accounting and actuarial principles, and the difficulty, even for qualified analysts, to interpret corporate disclosure information about pension exposure and to process employee benefit plans' financial implications in cash-flow based models, have led to a broad call for a complete renewal of pension accounting.

These concerns have been addressed through successive amendments of the above mentioned standards, and an extension of disclosure information requested from companies, which have not been deemed sufficient by some financial commentators.

The intention is therefore now for the respective standard setters – the IASB* for IAS 19 and the FASB* for SFAS 87 - to review the actuarial fundamentals of pension accounting and initiate a "white page" process under which a completely different and new approach to employee benefit accounting could emerge. FASB has recently (November 2005) launched a comprehensive project in this direction, and it is expected that the IASB will take a similar direction in 2006. The EFRAG* has decided to set up a "pension accounting" workgroup to discuss the fundamentals of pension accounting in 2006, as a preliminary basis for the IASB project. A further "convergence" workgroup between US GAAP and IAS/IFRS is supposed to later agree on a common framework for pension accounting, which has been identified as a very important issue for corporate financial information.

Actuarial implications

Both standards are significantly influenced by actuarial considerations, and it is obvious in particular that the actuarial method which will be chosen to account for sponsoring

employers' obligations will be a key element of the technical debates which are going to develop in 2006.

The role of our profession in the practical implementation of these standards and the daily life of many of our colleagues will also be significantly impacted by any evolution in this area.

It is therefore very important that actuaries – internationally and in their respective countries – get involved in these technical debates, even if the prior objectives of these standards could be perceived as purely accounting.

Our proposed contribution

The objective of this article is to contribute to the above mentioned technical debates, based on our 10 year experience of the implementation of IAS/IFRS or US GAAP standards with employee benefit plans in more than 50 countries.

We have tried, in particular, to emphasize the actuarial inconsistencies / inaccuracies of the current IAS 19 or SFAS 87/106 rules, to help standard setters establish more rational actuarial and accounting basis. We have tried to focus on what we believe are the most significant and debatable difficulties of these rules as they stand. A more comprehensive summary will be found in the works conducted by the French Académie des Sciences et Techniques Comptables et Financières, which formed an “IAS 19” workgroup in 2005 to identify the items to be improved by the expected “new” IAS 19.

2) The projected unit credit method : accounting merits and... actuarial questions

2.1) A brief summary of the key principles of the projected unit credit method

Both IAS 19 and US GAAP are based on the so called projected unit credit method which has been invented more than 20 years ago to provide a “true and fair view” of the employer’s costs in respect of benefits granted to its current and former employees.

From discussions with actuaries who were involved in some of these technical debates, we understand that this method was not unanimously admitted – 20 years ago already - as the best possible method for such purposes, and that significant dissents have been expressed, especially from the actuarial side.

It has to be understood firstly that the topic under discussion is strictly limited to the employer’s financial reporting about employee benefit costs, and shall therefore be discussed as a separate subject from solvency or reporting rules applicable to benefit plans (like pension funds) themselves.

Accounting principles for employee benefit costs have long been based on the cash outflows (contributions to funds / insurance companies) paid or due by sponsoring employers in respect of each particular accounting periods, prorated based on services rendered, and, in particular cases, allocated to period of “recovery” when funding deficits are met through increased contributions over a particular period (3 to 10 years in practice).

This simplified principle has some merit, in particular in consideration of the fact that pension funds or insurance companies have their own actuaries who periodically recalculate the contributions needed from employers to cover current and future benefit accrual. The other merit of the cash-based approach is precisely to allow for a direct matching between cash outflows and profit and loss expenses.

The principal difficulties with this simplified approach, which have led to the invention of new accounting and actuarial method, are that :

- pension funds in surplus tend not to request contributions from employers (“contribution holidays”) which would lead to no pension cost being recognized in the profit and loss account, while employees continue to work and accrue rights under benefit plans;
- unfunded or non insured plans would not generate any costs in the profit and loss account of the employer until the actual payments of the underlying deferred benefits, which have been accumulated in compensation for services usually rendered over the entire career of the beneficiaries with the employer.

The projected unit credit method (PUCM) has been invented to try to better reflect the periodic compensation received by beneficiaries through long term or post employment benefit plans.

Its basis principle is to allocate the final cost of benefits over the periods of service which give rise to an accrual of deferred rights under each particular benefit plan.

It is important to understand at this stage that employee benefit costs resulting from long term or post employment benefits plans are analyzed as compensation costs to be added to periodic salaries and other “immediate” employee benefits costs.

To value this cost, the approach under the PUCM is to calculate :

- the present value of benefit payments to be made to beneficiaries, prorated (usually linearly) over the service periods which give rise to benefit entitlements : the resulting actuarial obligation is named “defined benefit obligation” (DBO)
- the fair value of any assets (or insurance contracts) segregated to fund future benefits can be deducted from the DBO
- the expense to be recorded in the profit and loss account of the employer is based on the increase or decrease in DBO and fair value of plans assets calculated over the respective accounting periods,
- as already mentioned, smoothing mechanisms (“corridor” method) are optionally available to employers to amortize changes in actuarial assumptions, experience adjustments or volatile expected returns beyond a 10% “corridor” conventional amount, over the remaining average service periods of beneficiaries.

2.2) Current criticism of the PUCM

Current accounting standards on employee benefits (IAS 19 / SFAS 87) are currently subject to sharp criticism by some financial commentators essentially because of the smoothing mechanisms which are available to companies.

These commentators are in favour of a more “fair value” type approach under which variations in assets and liabilities valuations from one period to the other would be immediately recognized in either profit and loss account or equity of the sponsoring employer.

For companies which are significantly engaged in defined benefit plans, this would lead to a very significant volatility in their financial statements.

This topic related more to accounting than actuarial principles, and we will therefore not make extended comments about it in this article, to focus on the more actuarial issues, but we would like to point out that smoothing mechanisms should not only be seen as “accounting tricks” but also as consistent with both :

- the accrual of benefits by employees, which is usually smoothed over long periods
- the funding of such benefits, which is also usually smoothed over long periods.

2.3) Other more “actuarial” criticism which can be addressed to the PUCM

We have illustrated the considerations expressed in the paragraphs below based on the results of an actuarial model analyzing the benefit accrual and accounting / funding implications for one particular beneficiary of a typical defined benefit plan. Details about the plan modelled and the underlying actuarial assumptions are provided in the appendix.

Discrepancies in valuation principles for assets and liabilities

To ensure comparability between reporting employers, it has been decided by both standards (IAS 19 and US GAAP) that the discount rate to be used to measure liabilities (DBO) shall be based on the returns on high quality corporate bonds.

Assets are measured at fair “market” value.

Anyone who is familiar with assets and liabilities analysis will immediately understand that this discrepancy in valuation principles is a big theoretical actuarial inconsistency, in particular when applied to large corporate pension funds.

This major inconsistency is further reinforced by the fact that employers are allowed to base the financial return they record in their profit and loss account as a reduction of the cost created by the increase in DBO on long term financial expectations.

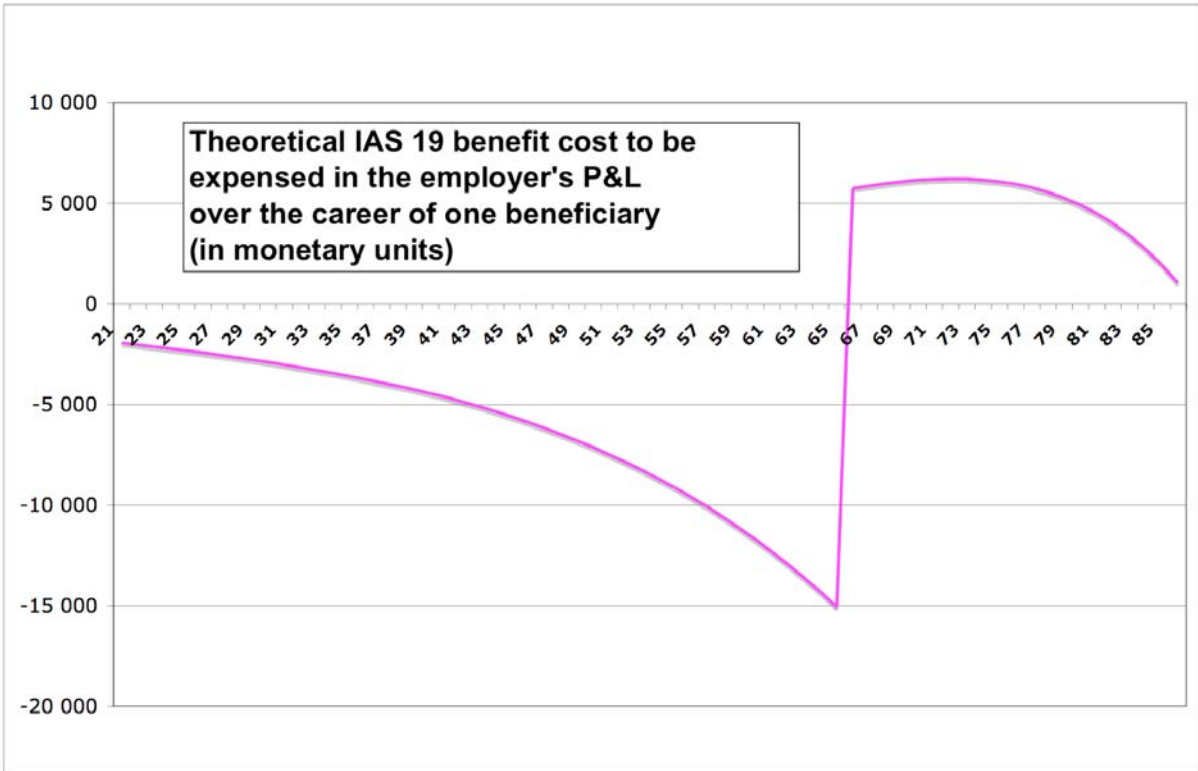
We have tried to illustrate, in a simple model reflecting :

- the benefit accrual of an individual beneficiary to a typical occupational pension plan :
 - pension based on a certain percentage of final salary depending on years of service rendered,
 - plan financed through 2/3 employer and 1/3 employee contributions,
 - plan assets invested in bonds (50%) and shares (50%)
- the related accounting (IAS 19) and funding (typical rules) implications, the resulting impact of the above described basic inconsistency of the PUCM approach.

The fact that liabilities are valued based on corporate bonds returns, and assets expected to grow based on financial returns which are expected (under IAS 19 principles) to be greater than corporate bonds on the average because of the equity portion of the portfolio, leads to excessive costs being recognized during the active life of the beneficiary (an excessive expense), which have to be reversed during its pension days (thus generating illogical profits for the employer).

While benefit plan’s assets are valued under a fair “market” value approach, PUCM therefore does not provide a fair “market” value representation of employers’ liabilities, and the resulting discrepancy finds illustration in mergers & acquisitions situations, where it is rare to negotiate based on DBO values, and in external insurance situations, where the remuneration of the insurance carrier usually adds up to the employer’s estimated cost.

This inconsistency can be illustrated through the graph below :

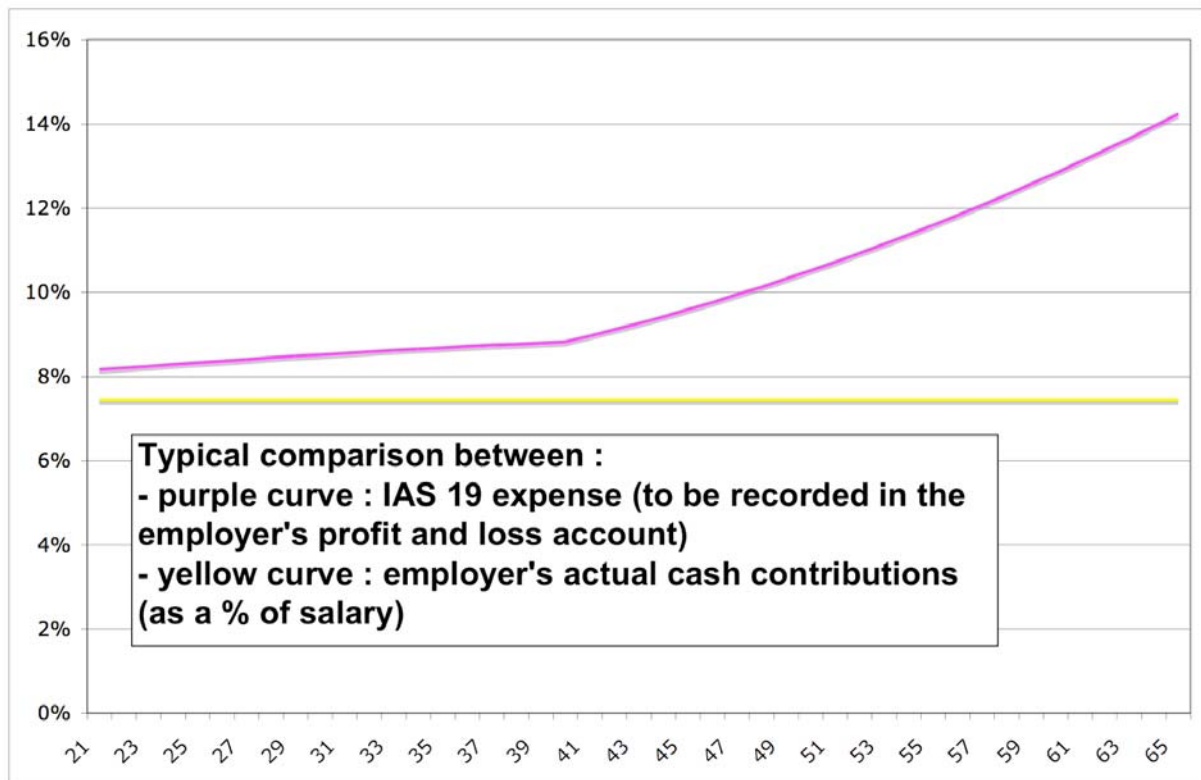


The cost valued through the PUCM is usually not the employer's cost, and therefore partially fictive

The PUCM calculated liabilities based on future benefit payments to be made to beneficiaries, and not on actual or future direct costs to the sponsoring employers, which, in the most typical situation, are made of contributions.

It is commonly assumed that these 2 approaches should reconcile at some stage, but this is not the case in the IAS 19 model, in particular because of the above mentioned inconsistency between discount rates and financial returns.

A comparison between IAS 19 expense and employer's contribution, in our model, is particularly illustrative of this phenomenon :

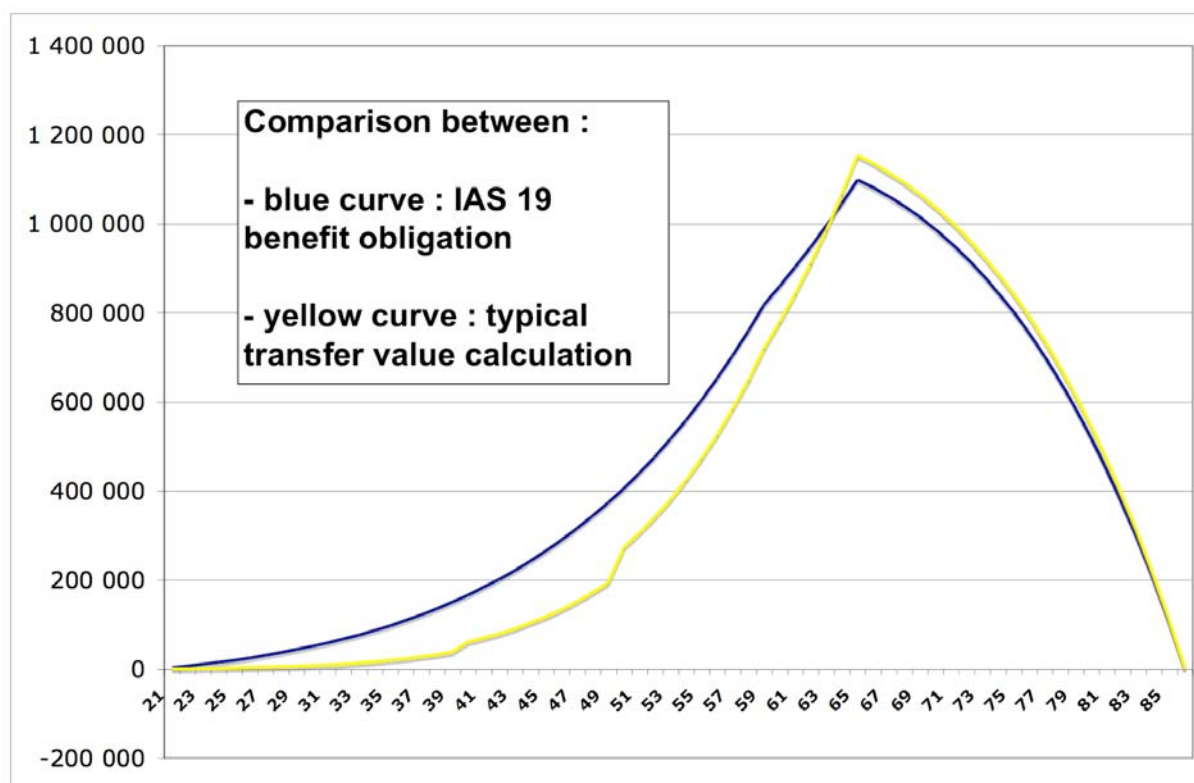


Projecting future trends over very long periods (salary, turn over, plan continuation,...) leads to a questionable quality of actuarial results

To measure the expected value of total benefit accruals by beneficiaries, the PUCM implies projections over very long term periods, usually 15 to 40 years, and assumptions about likely developments of salary increases, turn-over, and other variables (state pensions, medical inflation,..) which are very difficult to predict over such long periods.

The resulting reliability of calculations performed is poor. In other words, the likelihood that costs will develop as assumed is miserable. It is our view that the reliability of results produced under this approach, if appraised based an interval of confidence approach, would not meet the minimal accounting requirements for reasonable estimation.

Further to this, it is common experience to notice that transfers between pension funds give rise to actuarial gains under IAS 19, because transfer values calculated by pension funds



This difficulty could be solved through either :

- the use of (requirement for) stochastic vs deterministic modelling to enable the user of financial information to appraise the fragility of the “average scenario” implicitly used in the commonly used deterministic approach
- a valuation focused on benefit entitlement effectively (contractually or legally) accrued by beneficiaries at the end of the accounting period : the actuarial valuation of an accrued deferred pension is far less subject to deviations (turn over, salary increase,...) than the PUCM’s pro rata of total expected benefit accruals.

The exclusion of employee contributions in actuarial projections is highly debatable

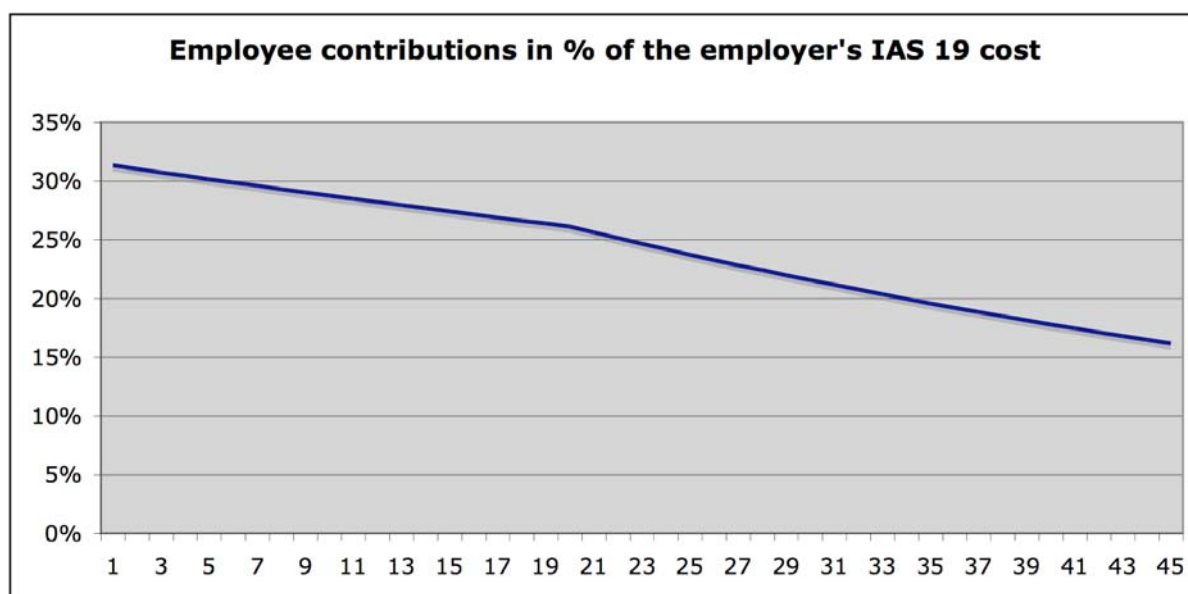
Another issue raised by the current IAS 19 / SFAS 87 method (the PUCM) is that the participation of employees to the funding of their future benefits is partially taken into consideration :

- as a reduction of the cost recorded in the employer's profit and loss account
- as an increase in the plan's financial assets

While benefit payments are included in the DBO calculated under the PUCM's method, no allowance is made for expected future employees' contributions, despite the fact that benefit payments are usually conditional upon the effective payment of contributions by employees.

In our view, the employer's obligation should rather be calculated on a net approach.

As illustrated in the graph below, employee contributions represent a decreasing but significant element of the funding of benefit plans :



3) Conclusion : our proposal for new actuarial principles for the valuation of employer's obligations in respect of employee benefit plans

In consideration of the observations above, we would suggest that the actuarial method to be selected, in the near future, to be the background of future accounting standards (IAS / IFRS, US GAAP) for the financial reporting of employers sponsoring employee benefit plans, amends the current technical inconsistencies of the PUCM :

- the final cost for employers sponsoring benefit plans is principally made of contributions, which depend upon financial returns of the underlying funds, and are reduced by employee contributions when plans are contributive : the PUCM currently requires employers to measure their obligations based on future expected benefit payments to be made by funds to beneficiaries

- the assets of the underlying funds are valued at fair value, while liabilities, are, according to PUCM principles, value based on method combining prudent discounting (based on bonds return, while funds are also usually significantly invested in shares), and pro-rating over periods of services : better adequation of valuation principles for assets and liabilities should be sought

- funding of employers' obligations in respect of benefit plans is usually smoothed over the entire career of beneficiaries, and smoothing mechanisms are therefore not as anti-economic as some commentators argue : it seems advisable, in the reporting principles of sponsoring employers, to keep some smoothing mechanisms for the volatility inherent to the investment of a significant portion of funds assets in shares, which usually aims at reducing – through improved expected investment returns over long term periods – the cost of providing such benefits : any accounting or actuarial principles which would expose employers to a large volatility because of their equity investments in their pension funds, are likely to result in employers changing their investment strategy to 100% bonds or cash instruments, this resulting in a final higher employers' cost of providing the underlying benefits, and collateral damage on financial markets.

- by requesting the use of projections over very long term periods on components which are difficult to predict (turn over, salary increase,...), the PUCM introduces a relatively poor reliability of the resulting actuarial estimations, and conditional elements which, in our view, do not meet the criteria for debt or even provision accounting : we would suggest that future methods be rather based on benefits actually accrued by beneficiaries as of the valuation date, like a transfer value calculation, which, in our view, represents a more reliable estimation of the underlying employer's obligation.

Appendix 1 - Main characteristics of the actuarial model used for the illustrations of this article

Benefit accumulation formula

1/60th final salary per year of service	1,67%	max	65%
pension indexation	2,00%		

Financial assumptions

Financial return expected on plan's assets	6,0%		
Bonds return (and accounting discount rate)	5,0%	inflation LT + 3%	
Equity return	7,0%	inflation LT + 5%	
Bond portfolio as a % of total portfolio	50%		
Equity portfolio as a % of total portfolio	50%		
Long term expected inflation	2%		
Discount rate used for transfer value calculations (decreasing)	7%	inflation LT + 5%	
Expected return on plan's assets	6,0%	inflation LT + 5%	
Risk free interest rate	5,0%		

Demographic assumptions

Monthly salary at beginning of career	2 000	€		
Salary increase	2%	until	40	
	1%	until	65	
Birthdate	1-jan-83	age		ans
Entry date in the pension plan	1-jan-03			
Expected age of death	86			
Normal retirement age	65			

Funding arrangements

Employer share of contributions	66,7%
Employee share of contributions	33,3%
Total employer / employee contribution rate (calculated)	11%

Solvency rules for funding requirements

Discount rate to be used (decreasing from)	7%
% of assets to be detained as a % of liabilities	105%

Appendix 2 - Glossary

EFRAG

European financial reporting advisory group (advisory body to the European Commission in respect of accounting standards)

FASB

Financial accounting standards board (the US accounting standard setter)

IAS

International accounting standard

IASB

International accounting standards board (the IFRS setter)

IFRS

International Financial Reporting standard (accounting standards applicable in the European Union)

SFAS

Statement of financial accounting standard (particular US accounting standards)

US GAAP

US generally accepted accounting principles (US federal accounting standards in general)