
FAS 87
ASSUMPTIONS FOR NON-U.S.
DEFINED BENEFIT PLANS

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INTRODUCTION

The Wyatt Company carries out an annual survey of the economic assumptions used in the U.S. for FAS 87 purposes and of the funded status of U.S. plans. FAS 87 has become applicable for non-U.S. Plans, and a similar survey directed at the assumptions used by major U.S. corporations for their defined benefit plans outside of the U.S. was conducted as of December 31, 1989. This survey presents the comparable results collected as of December 31, 1990.

The Financial Accounting Standards Board (FASB) issued Statement Number 87, "Employers' Accounting for Pensions", in December 1985, setting standards of financial accounting and reporting for employers who offer pension benefits to their employees. Statement Number 87 (FAS 87) set forth new rules for the reporting of pension expense (amounts reported in the financial statement).

FAS 87 reporting is required for fiscal years beginning after December 15, 1986 for the United States plans of public and private companies with defined benefit plans covering

more than 100 participants. Mandatory compliance with FAS 87 was delayed two years (i.e., until fiscal years beginning after December 15, 1988) for companies reporting on foreign plans and for small private companies.

Though termination indemnity programs are generally considered to be pension plans for FAS 87 purposes, little mention was made of such programs in the 1989 survey. This is because, with one exception (*Austria*), they were not common in the countries for which 1989 results were analyzed. However, the survey this year collected a significant number of responses for France, which reflect the application of FAS 87 methodology to the "Retirement Indemnity Plans" that exist in France. This may also be somewhat reflective of the French accounting requirements to give proper recognition to the cost of these plans.

COUNTRIES COVERED

Survey responses as of December 31, 1990 were received from 50 U.S. companies that had adopted FAS 87 for their foreign plans. Because of the distribution of employees in foreign countries, analysis was limited to the following countries:

Australia	Germany
Austria	Japan
Belgium	Netherlands
Canada	Switzerland
France	United Kingdom

This selection includes the major foreign countries where U.S. companies have defined benefit plans and also illustrates usage of a fairly wide spectrum of different local funding and actuarial approaches.

BACKGROUND

In broad terms, FAS 87 was designed to:

- ◆ provide a measure of net periodic pension cost that is understandable and comparable because it reflects the terms of the underlying plan and approximates the recognition of the cost of an employee's pension over that employee's service period;

- ◆ provide disclosures that will allow users of financial statements to understand the extent of an employer's undertaking to offer employees pensions and related financial arrangements; and
- ◆ improve reporting of financial positions.

Any pension accounting method that recognizes the cost of benefits before the benefits are actually paid must, however, deal with the issue of making estimates or assumptions concerning future events that will determine the amount and timing of benefit payments. FAS 87 requires that each assumption be the best estimate of the plan's future experience.

One major problem in applying FAS 87 outside of the U.S. has been the selection of assumptions consistent with FAS 87 methodology. For example, the methods suggested by FAS 87 for determination of the discount rate are not available in a number of foreign countries, so some judgment must be applied. Furthermore, local foreign actuaries may not be familiar with the interpretation of FAS 87, which is of course a U.S. standard.

In many cases, local traditional actuarial cost methods and assumptions, and/or the application of legal/tax constraints, mask the realistic cost of benefits. Moreover, FAS 87 has introduced a clear distinction between "cost" - the charge to a company's profits, and "funding" - the cash contribution to a pension fund.

MEASUREMENT OF COSTS AND OBLIGATIONS

The determination of pension costs and obligations is based on the attribution of benefits to periods of employee service and the use of actuarial assumptions reflects the *time value of money and the probability of payment*. Three economic assumptions are essential to an understanding of the determination of pension costs under FAS 87. These are:

- ◆ the discount rate;
- ◆ the salary scale assumption; and
- ◆ the expected long-term rate of return on plan assets.

Also, in many foreign countries, two other economic assumptions can play a key role:

- ◆ the rate of increase in pensions in payment; and
- ◆ the rate of increase in the Social Security parameters reflected in the pension benefit formula.

The first of these additional key assumptions is attributable either to custom and practice or to law in the particular country. FAS 87 addresses the issue of situations where, though not written into the text of the plan, a particular practice exists to provide benefits over and above those legally (in the sense of what is in the plan text) contracted for. If such a practice has become so common as to constitute a "substantial commitment", then under FAS 87 it should be allowed for in the

determination of pension cost. Regular "ad hoc" increases in pensions in payment is one situation where such a "substantial commitment" may exist. However, the decision as to whether this is indeed the case must be made by the employer, subject to confirmation by the auditor.

The second arises because Social Security plays a significant role in benefit provision in many countries, and so the company provision, over and above (or integrated with) Social Security, tends to be highly geared. Thus the rate at which the "Social Security parameter" increases can materially affect costs. However, we have not been able to gather enough data on this particular parameter to provide meaningful survey results, and the reader is left to reflect on this matter.

While each assumption should be a realistic "best estimate", it is essential that the assumptions be consistent among themselves. So, it is common to determine an underlying level of price inflation (CPI), which then forms the basis for the assessment of the other economic assumptions. In other words, the other assumptions should be arrived at by considering how they vary from the assumed CPI.

The noneconomic assumptions also should not be overlooked. It is important to make best estimates of turnover, early retirement (essential whenever benefits that differ from the actuarial equivalent are provided), disability, family composition, and, of course, mortality, both in service and after retirement. The survey, however, explored only economic assumptions.

MEASUREMENT DATES

The measurement date usually coincides with the end of the fiscal year. However, FAS 87 permits the measurement date to be as much as three months earlier than the end of the company's fiscal year.

The majority of the reported measurement dates are December 31, 1990 (78%), while the other measurement dates ranged from September 30, 1990 to June 30, 1991. The previous survey included measurement dates ranging from December 31, 1988 (44%) to December 31, 1989 (37%).

The interest rate structure of the world's major economies had some degree of change during 1990 as shown in the table below. (The table is taken from data supplied in **The Economist** publications of January 6, 1990 and January 5, 1991.) The European economies all fought hard to keep pace with the conditions in Germany where the Bundesbank raised interest rates to combat the economic pressures of unification. Inflation in the U.K. and Switzerland increased substantially during 1990, while in Australia, inflation reduced substantially. The Netherlands dramatic increase in inflation still leaves it one of the least inflationary countries in the world. Interest rates and inflation in Japan rose, however, from a relatively low base.

Economist reported data close to 12/31/89 & 12/31/90

	Long Term Government Bonds			CPI		
	12/31/89	12/31/90	% Change	12/31/89	12/31/90	% Change
Australia	12.00%	12.06%	1%	8.00%	6.00%	-25%
Belgium	9.84%	9.75%	-1%	3.50%	4.10%	17%
Canada	9.53%	10.25%	8%	5.20%	5.00%	-4%
France	9.34%	10.00%	7%	3.60%	3.60%	0%
Germany	7.75%	8.94%	15%	3.20%	2.70%	-16%
Holland	8.01%	9.16%	14%	1.20%	2.80%	133%
Japan	5.54%	7.08%	28%	2.30%	4.20%	83%
Switzerland	5.75%	6.61%	15%	4.40%	6.00%	36%
UK	9.97%	10.68%	7%	7.70%	9.70%	26%

Source:

Economist, January 6, 1990

Economist, January 5, 1991

DISCOUNT RATES

Discount rates are used to calculate the present value of pension obligations and the service and interest cost portions of net periodic pension cost. The disclosure of obligations in the financial statement is based on the discount rate selected at the current measurement date and this rate is then used to determine pension cost for the following year.

The discount rate is intended to represent the rate at which pension benefit obligations could be settled. A variety of measures can be used as guides for determining the settlement rate. In the U.S., they include annuity rates, current PBGC rates, and rates on long-term fixed interest securities. Outside of the U.S., PBGC rates do not exist.

Also, in many countries, annuity rates may not be available or appropriate, while "long-term" bonds may not be truly long-term, or their yields may be fixed somewhat artificially by the government. Taxation of income on pension investments has also become an issue in some countries.

Table 1 shows, for each of the countries analyzed, the reported distribution of discount rate assumptions, and a comparison with the average rate for last year.

Table 1
DISCOUNT RATES

	Lowest	Average	Highest	Average for Last Year
Australia*	9.50%	11.28%	13.25%	11.38%
Austria	6.75%	7.42%	8.00%	6.67%
Belgium	5.00%	8.67%	10.50%	7.50%
Canada	7.50%	9.24%	10.00%	9.13%
France	8.00%	9.30%	10.00%	N/A
Germany	6.75%	7.97%	9.75%	6.82%
Japan	5.50%	6.40%	7.00%	5.61%
Netherlands	6.00%	8.09%	9.75%	6.42%
Switzerland	4.00%	5.58%	6.75%	4.80%
United Kingdom	8.50%	9.89%	11.50%	9.37%

*It is assumed that the "net of tax" rate was reported.

Material increases are observed in the following countries:

Austria	0.75%
Belgium	1.17%
Germany	1.15%
Japan	0.79%
Netherlands	1.67%
Switzerland	0.78%
United Kingdom	0.52%

Undoubtedly, these increases reflect the general rise in interest rates and inflation in Europe and Japan during the period under review while the increase in Belgium may reflect a more realistic view being taken under FAS 87. This of course helps to reduce pension expense.

EXPECTED RATE OF RETURN

The expected rate of return on assets is the long-term expectation of the annual earnings rate of the pension fund. The expected return on assets is a component of net periodic pension cost.

Rates of return reflect the plan sponsor's outlook with regard to the asset allocation decision plus future expectations.

Table 2 shows separately by country the distribution of rates of return reported in the survey, together with the average rate for last year.

Table 2

EXPECTED RATES OF RETURN ON ASSETS

	Lowest	Average	Highest	Average for Last Year
Australia	10.00%	11.28%	13.75%	11.52%
Belgium	7.00%	8.58%	10.00%	7.67%
Canada	7.50%	9.58%	11.00%	9.53%
France*	8.50%	9.60%	10.50%	N/A
Germany*	6.00%	7.48%	9.00%	6.71%
Japan*	5.75%	7.16%	8.30%	6.82%
Netherlands	4.00%	7.63%	9.75%	6.27%
Switzerland	5.00%	5.89%	6.75%	5.36%
United Kingdom	9.00%	10.28%	12.00%	9.92%

*Only some plans were funded. Austria has been excluded as only one plan had any funding.

Three countries -- France, Germany and Japan -- have both funded and unfunded arrangements for their retirement liabilities. The survey disclosed the following percentages of funded plans:

France	33%
Germany	46%
Japan	73%

For the funded plans the following material increases are observed:

Belgium	0.91%
Germany	0.77%
Netherlands	1.36%
Switzerland	0.53%

The increases above most likely reflect the fact that pension plans in these countries tend to be much more heavily invested in fixed interest securities than, say, the U.K., and thus additional returns are expected which will go towards reducing pension expense. Again, Belgium may reflect just a more realistic view.

The U.K. saw a 0.36% increase and Japan a 0.34% increase. Investment returns in Japan are still somewhat "controlled" by the Trust Banks and Insurance Companies which handle the pension plan assets.

SALARY SCALE ASSUMPTION

The salary scale assumption is used to project current salaries into the future. The assumption selected at the current measurement date is a significant factor in the determination of the projected benefit

obligation disclosed in the financial statement, and it also affects the determination of pension cost for the following year.

Year-to-year increases in compensation result from:

- ◆ inflation;
- ◆ productivity improvements;
- ◆ merit and promotional increases; and
- ◆ seniority raises.

Elements other than inflation are commonly expressed as a flat percentage increment, but in reality they are more commonly related to age, service and position, and may also vary between "salaried" and "hourly" employees. Salary increase assumptions tend to be expressed as a single percentage, and where the responses indicated otherwise, we have converted to a single figure. Furthermore, we have tried to restrict the results to salaried employees, where possible.

Table 3 shows for each country the distribution of the salary scale assumptions, together with the average for last year.

Table 3

SALARY SCALE ASSUMPTIONS

	Lowest	Average	Highest	Average for Last Year
Australia	7.50%	8.36%	10.00%	8.63%
Austria	3.50%	5.08%	6.50%	4.75%
Belgium	3.70%	5.93%	7.50%	5.33%
Canada	5.00%	6.24%	8.00%	6.14%
France	3.50%	5.09%	7.00%	N/A
Germany	3.00%	5.03%	6.50%	4.32%
Japan	4.00%	4.84%	5.50%	4.28%
Netherlands	3.60%	5.23%	7.00%	4.74%
Switzerland	4.00%	4.51%	5.00%	4.09%
United Kingdom	5.00%	7.50%	9.00%	7.12%

The salary scale is very much company and plan specific, once the underlying country level of inflation is taken into account.

assumption was more than offset by increases in the discount rate.

Apart from Australia, where inflation has been trending down, all countries, with the exception of Canada, exhibited noticeable increases in the salary scale assumption. This works towards increasing pension expense.

Australia	0.17%
Austria	0.41%
Belgium	0.56%
Germany	0.45%
Japan	0.23%
Netherlands	1.18%
Switzerland	0.37%
United Kingdom	0.14%

THE SPREAD BETWEEN DISCOUNT RATE AND SALARY SCALE ASSUMPTION

Table 4 shows by country the distribution of the difference (spread) between the discount rate and the salary scale assumption at the most recent measurement date, as well as the average spread for the previous survey.

Apart from Canada and (effectively) Australia, Japan and U.K., the spread increased in all other countries as shown below, thus indicating that the increase in the salary increase

Table 4
DIFFERENCE BETWEEN THE DISCOUNT RATE
AND THE SALARY SCALE

	Lowest	Average	Highest	Average for Last Year
Australia	1.60%	2.93%	5.25%	2.76%
Austria	0.75%	2.33%	3.25%	1.92%
Belgium	1.30%	2.73%	4.50%	2.17%
Canada	1.50%	2.99%	4.50%	2.99%
France	2.00%	4.21%	6.25%	N/A
Germany	1.50%	2.95%	5.50%	2.50%
Japan	0.90%	1.56%	2.50%	1.33%
Netherlands	2.00%	2.86%	4.50%	1.68%
Switzerland	(0.50%)	1.08%	2.00%	0.71%
United Kingdom	0.90%	2.39%	4.00%	2.25%

THE SPREAD BETWEEN EXPECTED RATE OF RETURN ON ASSETS AND DISCOUNT RATE

percent fixed-income fund allocation should increase the rate of return (but not the discount rate).

Tables 5A and 5B present, for each of the countries analyzed, the spread between the expected rate of return and the discount rate. Table 5A reports the results for the current survey, while Table 5B shows them for the prior year.

As was the case last year, this year's survey reports a number of instances where the discount rate was higher than the rate of return. While there can be circumstances under which this is feasible, one can make an argument against its reasonableness on the grounds that if the funds were *fully* invested in fixed-income securities, the yield should be the discount rate (on the assumption that the discount rate is based on the long-term fixed-income rate), while divergence from a 100

Table 5A - This Year

**SPREAD BETWEEN THE EXPECTED RATE OF RETURN
ON ASSETS AND DISCOUNT RATE**

	Highest Difference	Lowest Difference	Percentage of Cases Where the Expected Rate of Return is		
			Greater than the Discount Rate	Equal to the Discount Rate	Lower than
Australia	2.50%	(2.00%)	23%	55%	23%
Belgium	3.00%	(2.50%)	17%	58%	25%
Canada	2.00%	(0.50%)	37%	54%	9%
France	1.00%	(0.50%)	40%	0%	60%
Germany	0.50%	(3.75%)	8%	31%	62%
Japan	1.80%	(0.00%)	91%	9%	0%
Netherlands	2.00%	(5.00%)	14%	72%	14%
Switzerland	1.00%	(0.50%)	44%	33%	22%
United Kingdom	1.75%	(1.00%)	56%	33%	10%

Note: Percentages do not add up to 100% in all cases because of rounding.

Table 5B - Last Year

**SPREAD BETWEEN THE EXPECTED RATE OF RETURN
ON ASSETS AND DISCOUNT RATE**

	Highest Difference	Lowest Difference	Percentage of Cases Where the Expected Rate of Return is		
			Greater than the Discount Rate	Equal to the Discount Rate	Lower than
Australia	2.50%	(1.00%)	29%	47%	24%
Belgium	3.00%	(2.00%)	22%	56%	22%
Canada	2.75%	(1.84%)	46%	38%	25%
Germany	1.50%	(2.00%)	17%	58%	25%
Japan	2.00%	0	83%	17%	0
Netherlands	2.00%	(3.00%)	23%	54%	23%
Switzerland	2.00%	0	55%	45%	0
United Kingdom	2.00%	(1.00%)	63%	31%	6%

Note: Percentages do not add up to 100% in all cases because of rounding.

ALLOWANCES FOR INCREASES IN PENSION IN PAYMENT

Not surprisingly, only two countries stood out in the responses to this question - Germany and the U.K. - though there were some responses for the Netherlands.

Germany. Labor law requires the review of pensions in payment every three years, and the granting of an appropriate increase to allow for full cost-of-living increases, subject to certain constraints. Only 75% of the respondents reported a COLA assumption, and we expect that this information was not available to the other 25%. It is a very important and costly assumption and we urge management to be more aware of this in the future.

Of those 75% responding, the increase assumption ranged from 1% to 4%, with an average of 3.1%. The average increase assumption last year was 2.4%, thus reflecting increasing inflation in Germany.

United Kingdom. Only 74% of the respondents reported a COLA assumption, including those cases where 0% was reported.

The U.K. has a complex environment as regards pension increases. Those plans which are "contracted out" are required by law to provide a 3% indexing on part of the "GMP". At some future date, increases up to 5% will have to be provided on future accruals, and possibly on past accruals.

The intent of this survey has been to investigate the level of plan or voluntary company sponsored increases that are provided - or more correctly, allowed for in the FAS 87

assumptions. We hope that the results reflect this, but cannot be certain of the fact. The 0% assumption reflects the view of many U.S. companies that pension increases, unless required in the provisions of the plan document or otherwise required by law (e.g. as in Germany), are not considered a "substantial commitment". This is not to say that pension increases have not been granted by the U.K. subsidiaries of U.S. companies, or are not intended to be granted in the future (if conditions so warrant), but the managements of U.S. companies prefer to reserve the right of decision in the matter.

Of the 74% responding positively, the increase assumption ranged from 0% to 5%, with an average of 1.72%. If those companies using a 0% assumption are excluded, the range is 3% to 5% with an average of 3.9%, which compares to an average assumed increase of 3.7% in the 1989 survey.

Netherlands. The few reported cases showed an average COLA assumption of 2.8%.

SMOOTHING OPTIONS

FAS 87 provides employers with two major options to assist in smoothing expenses from year to year. These are:

- (a) the use of a *Market Related Value of Assets* rather than the *Market (Fair) Value*; and
- (b) the use of a *Corridor* when determining the amortization of gains and losses.

The survey asked whether or not these were used. There was a fairly overwhelming response that *Market Value* was the preferred asset valuation method, and that the *Corridor* was almost always used. The following Table 6 shows the results:

	<u>Use Market Related Value</u>		<u>Use a Corridor</u>	
	<u>This Year</u>	<u>Last Year</u>	<u>This Year</u>	<u>Last Year</u>
Australia	23%	29%	95%	94%
Austria	N/A	N/A	100%	100%
Belgium	33%	22%	100%	100%
Canada	31%	36%	94%	95%
France	20%	N/A	100%	N/A
Germany	15%	8%	93%	95%
Japan	45%	21%	100%	100%
Netherlands	29%	15%	100%	100%
Switzerland	44%	27%	100%	100%
United Kingdom	23%	23%	95%	94%

Overall, one could conclude that there was a slight trend towards the use of Market Related Value, which is perhaps not surprising, given the volatility of market values in recent years.

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