

DEATH AND DISABILITY BENEFITS

The Committee concluded that death and disability benefits should be excluded from the valuation due to low utilization and the complexity of interaction with Employees' Compensation benefits.

It is true that death and disability benefits will comprise a small portion of the total remuneration value. In the private sector, values will range from zero (for companies with no plan) to over 1% of pay (at average ages). This does not mean that, over the employee's working lifetime, the benefit is of little value. For example, if an individual is hired at age 25, then he has about a 15% chance of dying before age 55. As such, the protection provided by employer-sponsored programs must be considered as valuable to the individual.

Furthermore, if the fringe benefit valuation is to have public credibility, it should be seen to provide values for traditional components of the benefit package. In the following sections we discuss how death and disability benefits should be valued in theory. We then introduce the practicalities of the situation and present our recommended approach.

VALUATION OF DEATH AND DISABILITY BENEFITS

In theory, a full valuation of death and disability benefits would involve using an approach similar to that used for the valuation of retirement benefits (see Appendix A). Death and disability benefits would be valued using the following formula to determine a percentage of pay:

$$\frac{\sum \text{AMOUNT OF FUTURE BENEFIT} \times \text{PROBABILITY OF PAYMENT} \times \text{INTEREST DISCOUNT}}{\text{VALUE OF EARNINGS FROM HIRE TO RETIREMENT}} \times 100$$

Note the summation in the numerator. Death and disability benefits are payable throughout the employee's career (and occasionally even in retirement). Therefore, we must sum the value of benefits payable at each age. The total value is then spread over the career earnings of the employee. From this percentage must be deducted any contribution made by the employee.

In the calculations above and using death as an example, the AMOUNT OF FUTURE BENEFIT at each age would reflect the amount of benefits payable from the group life insurance plan, and the retirement plan. Sometimes the group life and retirement plan benefits are related. For instance, the benefit on death could be the greater of the group life benefit (usually expressed as a multiple of salary) and the accrued retirement benefit. It would then need to be determined whether any death benefits are offset by benefits which may be payable under the terms of the Employees' Compensation Ordinance. This would also involve making reasonable assumptions as to increases in Ordinance benefits over time as salary levels increase.

PRACTICAL ASPECTS

The foregoing provides some indication of how complex the calculations can become. In the final analysis, however, there is the issue of materiality. It makes little sense to commit resources to producing results having micrometric precision when they have a minor impact on the overall result. To that end we recommend an approach which is both fair and practical.

RECOMMENDED APPROACH

The calculations will be simplified and the results valid if we limit the analysis to death and disability benefits which are non-work-related.

We then recommend that the value of death and disability benefits be calculated as:

$$\begin{array}{l} \text{BENEFIT PAYABLE ON DEATH OR} \\ \text{DISABILITY AT VALUATION DATE} \end{array} \times \begin{array}{l} \text{INSURANCE} \\ \text{PREMIUM} \end{array}$$

In this calculation, the BENEFIT PAYABLE ON DEATH OR DISABILITY would be determined from the retirement and group life plans assuming the employee died on the date of the valuation. The INSURANCE PREMIUM would be obtained from an insurance company and would be the premium per dollar of benefit payable for one-year term insurance. Any employee contribution would need to be deducted (with the result not less than zero).

OVERSEAS EDUCATION ALLOWANCES

In the terms of reference for this assignment, we were asked to advise "which age and salary cut-off points should be adopted for the purpose of valuing civil service, and where appropriate, private sector, overseas education allowances."

Large numbers of local civil services are potentially eligible for this benefit. The benefit itself is substantial for those receiving it.

The Pay Research Advisory Committee adopted the general assumption that "once a benefit had been accepted as an entitlement and included in total packages, it should be valued on the assumption of maximum utilization without further regard to the actual rate of utilization". In determining whether a benefit is to be considered as an entitlement, the Committee recognized that where conditions were so restrictive "that most employees could not make use of the benefit, it might be appropriate to assume that the benefit was not an entitlement".

An analysis was then produced which showed that, at many age and salary levels, the actual utilization of the allowances is virtually nil or of little significance.

The effect of specifying age and salary cut-off points would then be to:

- include zero in total compensation for this benefit for employees below the cut-off points
- to include £5,550 in total compensation for this benefit for those above the cut-off points.

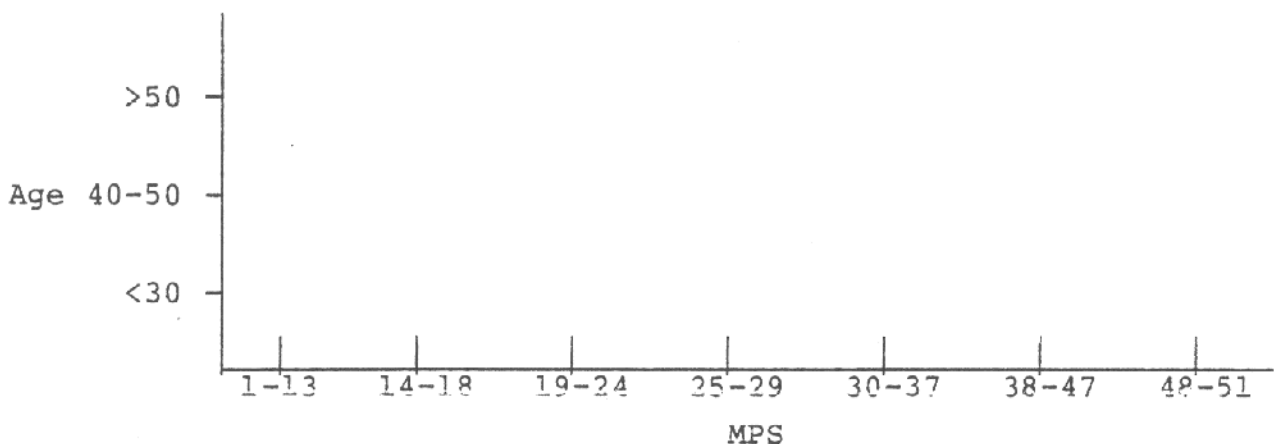
Our view is that this is very rough justice indeed. We are concerned that the credibility, among the civil service, of the total compensation comparison will be strained when it is apparent that, even among those most likely to utilize this benefit, 80% do not do so.

However, we are also of the view that, to maintain public credibility, overseas education allowances should be included in the total compensation measurement. This will recognize that civil servants potentially have access to significant amounts of money.

Our recommendation, therefore, is to utilize available statistics to derive a value for this benefit. To that end, we recommend that the value to be included in the total package vary by age and salary in accordance with recent experience. For example, the value of the benefit would be:

$$\text{BENEFIT AMOUNT} \times \text{COST FACTOR}$$

where: BENEFIT AMOUNT = £5,550 in the case of the civil service and the corresponding amount in the private sector. COST FACTOR would be taken from a table constructed from civil service utilization experience as follows:



This method has technical imperfections. For example, the BENEFIT AMOUNT and the COST FACTOR are in reality not independent. For instance, if the benefit amount were to double, we would expect higher utilization. However, since few private sector employees offer this benefit, the distortion will be negligible where comparing civil service total compensation with that of the entire private sector. In the public sector, the statistics used would need to be reviewed from time to time to ensure that they are still relevant. Furthermore, this method does not suffer from the potential credibility problems identified earlier. It is also easy to apply in practice.

MEDICAL AND DENTAL BENEFITS

The purpose of this Appendix is to describe ways by which medical and dental benefits can be valued. We will recommend the approach which is most appropriate in the circumstances.

THEORETICAL MODEL

In this discussion, we include medical and dental benefits under the generic name of health care benefits. They will be separately discussed in later sections.

A generalized model for calculating the value of health care benefits can be constructed as follows:

- determine the amount of benefit payment that is made from the plan in the event a specified illness occurs
- determine the amount of any co-insurance, deductibles and employee contribution towards the premium for the plan
 - co-insurance is where the employee pays a specified percentage of each claim
 - deductible is where the employee pays the first 'x' dollars of a claim
- determine the probability that the illness will occur in the Standard Population.

The value of health care benefits is then determined by summing over all possible types of benefit payments. Mathematically, this can be represented by the following formula:

$$\text{HEALTH CARE VALUE} = \sum_{i=1}^n (B_i - DC_i) \times P_i - EC$$

where: there are 'n' possible types benefit payment under the plan

- Bi = the benefit payment for benefit 'i'
- Pi = probability that illness 'i' will occur
- DCi = deductible and/or coinsurance
- EC = employee contribution toward plan

This method provides the most flexible way of determining the value of a particular health care plan. This flexibility arises from the ability to reflect the exact provisions of each benefit plan (i.e. the surgical schedule, room and board limits, etc.). In theory, then, if two health care plans differed only in the scheduled payment which would be made on minor surgery, this would be reflected in the benefit value.

The difficulty with the method is the necessity to establish the various probabilities for the Standard Population. Unless such statistics are kept, in at least enough detail to reflect the major types of benefit payments, application of the method becomes impractical.

PRACTICAL APPROACHES - MEDICAL BENEFITS

The obvious alternative to the theoretical model is to determine the value of the benefit plans by reference to premium rates in the insurance market. Note that, in theory, the insurance company actuary might go through a process similar to that in the theoretical model above. In practice, the actuary also has to cope with the availability of statistics, his company's underwriting policies, expenses, competitive posture and other business-related issues. Therefore, the premium rates for health care coverage can vary from insurance company to insurance company. Nonetheless, a set of premium rates from a reasonably competitive insurance company forms a valid proxy for the theoretical model. It is also representative of the expenditure the employee would face if the employer were to withdraw the coverage.

the size of the government's expenditure on dental services, we believe that we have credible experience and therefore a reasonable proxy for the premium rate basis would be to calculate the value as:

EXPENDITURE ÷ NO. OF CIVIL SERVANTS

In this calculation, the expenditure includes benefits provided to pensioners and their families and families of deceased officers. This is as it should be since the entitlement to these benefits ultimately arises from the employee having rendered active service. Therefore, their value should be included in the value of dental benefits to be included in the fringe benefit valuation. The number of civil servants is the average number employed during the period of time over which the expenditure occurred.

In the private sector, dental benefits are rare. Where they are provided, the benefits are usually not elaborate. It will be evident that, when the final private sector value of benefits is calculated, the portion attributable to dental benefits will be very minor under any reasonable basis. Our recommendations are:

- where the benefits are payable up to some specified dollar limit, use that dollar amount as the value
- otherwise, use the same value, per member, as is used for public sector dental benefits, less any employee contribution

This latter basis is reasonable given that, for those employers providing dental benefits, it is often on the basis of company-appointed dentists which is roughly comparable to the public sector benefits. Again, because of the few number of employers provided these benefits, no material error will be introduced.

HOUSING BENEFITS

The purpose of this appendix is to recommend how the various types of housing benefits in the public and private sectors should be valued for purposes of pay level and pay trend surveys.

QUARTERS PROVIDED BY THE EMPLOYER

In valuing employer-provided quarters, it is important to establish a basis which assigns consistent, equitable values in all circumstances. This is most readily achieved by determining the rent that the individual would have to pay if he were forced to seek equivalent quarters. Under this basis, he would be deemed to sign a new lease for the equivalent quarters on the date of the benefit valuation.

1. In the Public Sector

For reasons discussed in Section IV, these benefits should be included in pay trend as well as pay level surveys. Assuming that pay level surveys are not conducted annually, our recommended approach is to establish a "basket" of non-departmental quarters provided to local officers on or above MPS48 or the equivalent. The basket should be composed of selected quarters from various locations. For pay level surveys, the market rental value as of the survey date should be ascertained by professionals for each unit in the basket. For inclusion in the fringe benefit valuation, the results should be weighted by the number of units in each location.

As a simple example, suppose we have the following:

| <u>Location</u> | <u>No. of Units</u> | <u>Appraised Rental Value of Sample Unit</u> |
|-----------------|-------------------------|--|
| Peak | 10 | \$25,000 |
| Repulse Bay | 5 | \$20,000 |

Then the value to be included in the fringe benefit valuation is:

$$(10 \times 25,000 + 5 \times 20,000) \div 15 = \$23,333$$

This is the benefit value per participant. In the Standard Population Method, this value would then included for officers at MPS48 and above or equivalent. No account would be taken of private tenancy allowances for these officers.

For purposes of pay trend surveys, the value of the basket could be updated using rental indexes maintained by the government's rating and valuation department (unless professional valuers considered this to be misleading in any particular year).

2. In the Private Sector

In the private sector, the same procedure should be followed for employers who provide this benefit.

PRIVATE TENANCY/RENTAL ALLOWANCES

For both pay level and pay trend surveys, the value of the benefit should be the maximum amount that an individual is eligible for, adjusted for any employee contribution. If the impact of tax is to be reflected, care must be taken to separate private sector benefits according to their tax treatment.

In the private sector, these benefits are sometimes pay-related and sometimes position-related, with the latter being more frequent. Either can be accommodated by the procedure illustrated in Table III-3 once the pay level survey is designed.

SUBSIDIZED LOANS

Various schemes occur in the public and private sectors by which housing loans, at below market interest rates, are granted to employees. The presence of this interest rate subsidy can constitute a significant benefit to the employee and this should be reflected in the valuation of fringe benefits.

For this purpose, it should be assumed that the employee takes out the maximum loan available to him on the effective date of the fringe benefit valuation. The general formula for valuing the benefit to the employee is then:

$$L \times \left(\frac{1}{AN1} - \frac{1}{AN2} \right)$$

Where: L = Loan amount

AN1 = Annuity at market rate of interest for the term of the loan

AN2 = Corresponding annuity at interest rate paid by employee

The principal complication comes in determining the amount of the loan, L. For instance, in the private sector, it is sometimes the case that the amount of the loan is subject to several constraints, such as, the loan may be limited by:

- 75% of appraised value of accommodation
- 60 months' salary
- maximum monthly repayment equal to 50% of salary

The first condition can obviously be ignored for the purposes of fringe benefit valuation since it is to be assumed that the employee will take the maximum loan available to him. The third condition depends on the interest rate that the employee pays on the mortgage. Therefore, mathematical tests must be performed in the Standard Population calculations in order to determine the maximum available loan.