MEASURING THE COST OF GOVERNMENT SERVICES

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Introduction

One of the most important issues which we as a society have to resolve in planning for the 1980s and 1990s is the appropriate role of central and local government. The debate is characterised by more heat than light. There are those who regard public servants - almost regardless of whether they are teachers, tax collectors, railwaymen, policemen or doctors - as an affliction on society paid by the State out of excessive taxation. On the other hand, there are those who feel that the social services which have made New Zealand famous as an effective welfare society have deteriorated to the point where education is inadequate, health services not as good as they should be, and benefits such that poverty and hardship are increasing. The Council discussed these issues in The Welfare State?

The Council intends in the next 2 years to publish a number of studies and proposals designed to achieve a better understanding of how the State might attain its various objectives more effectively. The first prerequisite for such a discussion is a clear definition of what the public sector and public expenditure involve. This raises many questions to which there can be no single answer. For example, if we want to discuss the growth of public sector activity we clearly must include not only central government, but also regional and local authorities, publicly owned trading activities such as the Post Office, the Bank of New Zealand, power boards, municipal swimming pools, and so on. But if, for instance, we are concerned with the staffing policies of central government departments, a much narrower definition is clearly required. A quite different perspective must be used if we want to assess whether those Government activities which don't lead directly to the production of goods and services for sale (that is, non-market activities such as the provision of education and health care) are rising so fast that the private sector is being "starved" of resources. In short, it is important to be clear that there neither is, nor can be, a single definition of the public sector which is suitable for all purposes. The Council will make proposals about useful definitions which will make analysis of the many different aspects of Government activity possible.

Another controversial issue which needs analysis is the extent to which services financed by the Government should be provided by the public sector and the private sector. Most hospital services are both financed and provided by the public sector, but pharmaceuticals are financed by the public sector and provided by private enterprise. Some public works are carried out by government and others are left to private enterprise. These are questions of broad public policy. Other questions concern public administration, i.e. the way in which the public sector operates. How could efficiency and its measurement be improved? To what extent should private enterprise management and control techniques be introduced? Should the accounting and budgeting systems be modified? These are just some of the issues which need clarification.

Measuring the Cost of Government Services

The first area to which the Council has addressed itself is the deceptively simple question of how the cost of government should be measured. The Council invited Dr Ian Ball to prepare a paper on Measuring the Cost of Government Services.

This paper is an excellent discussion of the important and practical questions involved in measuring costs. Differences in technique can make very large differences in reported costs, and can have far-reaching effects on decision-making and resource allocation.

Dr Ball starts with two assumptions:

- that accounting information should be designed to meet the needs of different users (e.g. private and public sector management, politicians, electors, special interest groups);

- that resource allocation decisions are directly influenced by the quality of information produced.

He then critically examines several possible cost concepts and measures, and shows how the very large differences in reported results depend on the measures used.

The Need for Reform

Dr Ball points to changes which will take time, and research which should be undertaken. He also discusses specific urgent reforms. The Council in this brief statement makes a number of recommendations about government accounting which, it believes, can be introduced relatively quickly, and should make an important contribution to better resource allocation and greater efficiency. Some of these proposed reforms have not been economic in the past because the processing costs would have been excessive. With modern computers and the proposed changes to the accounting system for the Public Accounts, the cost of the Council's proposals will be small in comparison with the benefits which may be obtained.

The emphasis in the proposed changes (some of which have already been recommended by other agencies such as the Public Expenditure Committee and the Controller and Auditor-General) is on deficiencies which lead to misallocation of resources, for example, no charge for office rent or the use of money.

There are two possible changes which are more fundamental. The first, is to move towards an accrual accounting system in addition to the present system of cash accounting. A good deal of research would be required before such a change could be meaningfully discussed. The Council does not regard this as a matter of high priority. The second, concerns current cost accounting.

With current and expected rates of inflation, historic cost accounting tends to understate the cost of resources used in the case of many governmental assets. This problem has been discussed in the private sector for some years and the point has now been reached where public companies will be expected to produce accounts on a current cost basis in addition to the traditional historic cost accounts. The Council considers that the question of applying current cost accounting techniques at least to government trading activities should be examined as soon as practicable by Treasury in consultation with the trading departments concerned.

Proposals for Urgent Reform

Charging for Goods and Services: Departments receive some valuable services at no cost. These include all office space supplied by the Office Accommodation Board, and the cleaning services performed by the Department of Internal Affairs. There is no doubt that most of these services would be used more carefully if they were subject to the normal budget constraint for each department. Proper charging would help Parliament and others interested in obtaining more accurate information on the cost of various government agencies. The Council therefore recommends that where the cost of processing the necessary charges is not prohibitive, all goods and services should be charged at rates sufficient to cover their full cost or at market prices where appropriate. Where under present arrangements the costs are recovered only partly, the charges should be revised. Charging may not be justified where the user can have no influence over their provision (e.g. Treasury reports on expenditure proposals.)

Tax Expenditures: Financial assistance to industry and agriculture is provided, to a great extent, through the taxation system. These measures are often called incentives or allowances. Although the Government does not, in most cases, actually pay out money for this assistance, the effect of relieving the tax-payer of a charge that would otherwise be due is the same as it would be if Government collected the full tax and paid out the assistance as a subsidy. The equivalence is even more striking when, as in the case of Exports Performance Incentive and Forestry Encouragement Grants, the Inland Revenue Department actually pays to the "taxpayer" the amount of any benefit that cannot be absorbed within the tax liability otherwise due.For this reason, relief of this sort is called "tax expenditure".

Although subsidies (like all Government expenditures) are explicitly appropriated by Parliament and thus subject to detailed scrutiny, tax expenditures are not. It is not even possible to ascertain the cost of tax expenditures, though it is clear that the revenue forgone because tax incentives and allowances of all sorts is very large - probably in excess of $300,000,000.

Estimating and reporting the amounts of the tax expenditures involved in incentives and allowances make it possible for the Government and Parliament to scrutinise these measures in the manner applied to other proposals for expenditure of public monies. This would enable better judgements to be made of their benefit in relation to cost. The Council agrees with Dr Ball's recommendation that a tax expenditure budget should be developed and that notes should be included in the appropriate votes for Estimates of Expenditure. (Parliamentary Paper B7, Parts 1 and 2). Actual amounts of tax expenditures should subsequently be reported in the public accounts and compared with estimates in the same way, and in like detail, as are other expenditures.

Capital Assets: The area where there is the greatest potential variation between cash expenditure and resource use is the use of capital assets. Moreover, there is no incentive for Government departments to use capital assets efficiently or for that matter at all once they have been acquired. This is because under New Zealand's cash accounting system most departments are charged neither depreciation on assets nor interest on the cost of money involved in acquiring capital assets. Therefore from the departmental managers' point of view assets once acquired are in most cases "free goods".

The Council, while recognising that the treatment of capital assets raises complex accounting issues and that no simple once and for all solution is possible, is convinced that reform in this area is urgent if public sector resources are to be used more efficiently. Before significant progress can be made it is essential that all departments and agencies of government should have up-to-date registers of major assets. The Council recommends that the necessary instructions to prepare such registers, in cases where they are not now kept, be issued urgently. In addition, the Council concurs in Dr Ball's recommendation that a pilot project should be introduced to test the operation of Capital Asset Funds.

In conclusion, the Council wishes to stress the importance of the proposed reforms if it is desired to improve the efficiency and effectiveness of the public sector.

MEASURING THE COST OF GOVERNMENT SERVICES

INTRODUCTION

There is currently a high level of concern with the cost, the efficiency and the effectiveness of government services. This concern is expressed throughout society, and mirrors a trend existing in other comparable countries.[1] Individuals and groups express widely differing views of government spending. These range across concern at the aggregate level of government expenditure,[2] concern with the quality of management in the public sector (highlighted in reports on governmental efficiency[3]) and concern with the effectiveness of specific services. While some hold that the aggregate level of spending is too high, there are many who would like to see more resources applied to particular government services.[4] This paper takes a neutral stand on the issues of appropriate levels of resource allocation between the public and private sectors and within the public sector. What is examined is the financial information upon which decisions rest; that is, the information which provides the basis for deciding on the appropriate level of government activity vis a vis the private sector, or for deciding how to allocate funds between or within government services. In

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1. Most clearly evidenced in tax and expenditure limitations (such as Proposition 13) imposed in the United States of America.

2. For example, New Zealand Monetary and Economic Council Report No. 31, The Public Sector, The Council, Wellington, 1976; and Report of the Task Force on Economic and Social Planning, New Zealand at the Turning Point, The Task Force, Wellington, 1976.

3. Reports of the Public Expenditure Committee (for example Financial Management in the Forest Service) and reports of the Controller and Auditor-General (for example Financial Management and Control in Administrative Government Departments, and The Use of Computers in the Public Sector, 1980.)

4. A casual reading of daily newspapers indicates the frequency with which individuals or groups seek higher levels of government expenditure for services in which they have a particular interest.

general it is argued that better information leads to more appropriate decisions and actions, that in many respects the financial information necessary for informed decisions is not currently available, and therefore inevitably decisions taken will involve an inefficient use of resources. At the same time, it needs to be recognised that financial information itself has a cost, and improvements in the quality of financial information produced can be carried too far. The production of financial information can itself become inefficient.

The objectives of this paper are:

- to outline the general directions in which to move if an improvement in cost information is sought;
- to identify specific areas in which the current system of cost measurement in government is in need of urgent reform;
- to specify a set of research projects which would assist in directing the long-term development of the cost measurement system.

The methodology adopted is the same as that used in most comparable studies of cost measurement in government; that is, it is normative, not empirical. Reasons for adopting this approach are outlined briefly in the appendix. In essence, the approach involves identifying the users of accounting information by class (e.g. departmental managers) and on the basis of their uses of cost information, designing cost measurement systems and financial reports to meet those needs.

UNDERLYING ASSUMPTIONS

This paper rests on three fundamental notions concerning the accounting process:

- that the process should be user-oriented;
- that the quality of information produced determines the quality of decisions made;
- that the production of accounting information should itself be economic.

The first assumption requires the users of financial information to be identified. In the context of central government, users will include:

- parliamentarians;
- cabinet ministers (individually and collectively);
- departmental managers;
- electors;
- special interest groups (including groups representing the users of particular services);
- lenders.

These users will have widely differing needs for financial information, given that they will be making different sets of decisions: e.g. the information needed by a district commissioner of works to exercise proper control of a construction project is quite different from the information required by the Cabinet to allocate funds to the various functions of Government and Parliament, to establish the legality of Government spending, needs different information yet again. Not only do different user-groups need different information, but each group needs a variety of information.

It is useful to differentiate internal users of information (Cabinet Ministers and departmental managers) from external users (Parliament, electors, specific interest groups, lenders). Given the underlying rationale for this paper - concern for the cost, efficiency, and effectiveness of government services - the internal/external distinction is significant in that the potential impact on decision-making arising from improved information to the two groups differs. Improvements in the information provided to the Cabinet and management has the potential to result in better resource use and improved efficiency of operations - for example through a system of charging for, and therefore introducing restraint in the use of, capital facilities.

Improved information to external groups, including Parliament, has the potential to alter resource allocation to, and within, the public sector. For example, a broader entity definition which reflects more accurately the real role of the Government in the economy could lead to a re-evaluation of that role. These changes would operate in the same way that information on the real operating profit of the Post Office or Electricity Division (calculated on a current cost basis) could alter the political climate in which pricing decisions are made, and therefore their outcomes. Such changes have the prospect of increasing the effectiveness of Government services by redirecting activity on the basis of accurate cost information.

The user orientation also requires consideration of the types of decisions for which users require information. In the appendix on methodology, two alternative classifications of user needs are identified. These can be modified to give a classification suitable to the New Zealand Government. This would identify three broad classes of information:

- financial and legal compliance;
- cost of services provided;
- management performance,
  - (a) economy and efficiency
  - (b) effectiveness.

In the discussion below on alternative measures of cost, the conclusions derive from the user-needs identified here.

The second assumption is that the quality of information produced influences the quality of the decision-making process. The corollary of this is that the poorer the quality of information produced, the poorer the resulting decisions are likely to be. While this point may appear self-evident, there are a number of features of the existing system of cost-measurement which appear totally to ignore the link between information and decision-making. Probably the best examples are those areas where the manager of an activity is able to use resources without that usage being reflected in any way in the cost of his activity. For instance, where an activity is not charged for the floor space it occupies, it is unlikely that economy of use will result. A second instance is where a policy to encourage exporting is implemented by giving tax concessions. These concessions have a cost (in tax revenues forgone) which, if not accounted for, leads to an understatement of the cost of this activity. If nothing else, this will prevent informed debate on the appropriate allocation of resources to the encouragement of exporting, and may make this alternative appear cheap in relation to other means of protecting the balance of payments (e.g. import substitution). A failure to use appropriate financial information, if widespread in the government sector, could lead to a significant misallocation of national resources.

The third assumption is that the production of accounting information should itself be economic. Refinements in the production of accounting information should not continue beyond the point at which the cost of producing information exceeds the benefits to be gained from it. For example, in measuring the cost of using capital facilities, it may be that for a specific decision the appropriate concept of cost is current replacement cost. While it may be theoretically correct to measure the current replacement cost of every such asset, an alternative is to use an index which reflects changes in the replacement cost of that type of asset. It is possible that the added refinement of determining the current replacement cost of each asset individually would not result in a different decision to that based on the use of an index. In such a case it would be uneconomic to refine the information beyond the use of the index.

THE MEASUREMENT OF COST

There is no one measurement of cost that is appropriate in all circumstances. Adopting a user-orientation implies acceptance that one measure of cost is appropriate in one set of circumstances for one purpose, but in different circumstances an entirely different measure may be appropriate. Cost measurement has a number of dimensions, with a variety of alternative treatments in each dimension. These dimensions include:

- concept of cost;
- definition of the entity;
- transfer pricing and cost allocation systems;
- system of expenditure classification;
- level of consolidation.

Given a variety of alternative treatments in each dimension it is clear that "cost" can be measured in a large number of alternative ways. From this array of alternatives one must attempt to select the measures of cost which best meet the needs of users.

While the quality of cost measurement is influenced by the treatment selected under each of the five dimensions above, deficiencies in the current system are less marked in relation to the system of expenditure classification and the level of consolidation.[1] For this reason the discussion below and the recommendations which follow relate to the concept of cost, the definition of the entity, and the system of cost allocation and transfer pricing.

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1. The system of expenditure classification admits of a variety of treatments. For different purposes expenditure may need to be classified by function, by department, by input, or by electoral or geographical area. Other classifications are also possible (by Vote, by cost centre, or by economic classification). The appropriate level of consolidation will depend on a number of factors, including the organisational level for which the information is required (a Minister requires less detail in his oversight of departmental activities than does a district manager) and the user's ability to process information (excessive detail may cause the user to miss significant points).

An additional factor which bears on the recommendations emerging in this study is the interrelationship which exists between the dimensions of cost identified. Reforms which have the aim of improving the quality of measurement on one dimension, for example the cost concept, could in certain circumstances be achieved largely by simpler changes in relation to another dimension. Thus if it were sought to charge administrative departments the current cost of office accommodation currently provided free by the Government Office Accommodation Board, there are at least two ways this could be achieved. One would be to adopt a system of current cost accounting, which would involve acceptance of a different concept of cost, and would be a radical change in the Government accounting system, and also, be very costly to implement. A second alternative, which would achieve the aim of charging the current cost of accommodation to departments, but would not involve the wholesale adoption of the current cost concept, is to establish the Government Office Accommodation Board as a revolving fund. The fund would be required to charge departments for office space and operate on a commercial basis. The departments would then pay for their accommodation by a cash payment to the fund. Under this alternative there is a revision to the cost allocation procedures, but no change from the cash basis of Government accounting.

Where alternative means of improving the quality of cost information are available, the alternative advocated is that which gives the necessary improvement in information with minimum change to the accounting system.

THE CONCEPT OF COST

Within accountancy there is a wide range of alternative concepts of cost which are used. This range includes many concepts which have their rationale primarily in reporting for internal management decisions, such as fixed and variable costs, sunk costs, and incremental costs. Many of these concepts are in widespread use but while they are often essential in selecting and structuring information for a decision, many are inappropriate for use as the basis for external reporting systems. For this purpose the major issue is whether the cost of resources consumed by a service is adequately measured under the cash accounting system currently used,[1] or whether this should be modified to take account of accruals and changing price levels. Thus, when considering alternative cost concepts available, attention will be given to the major alternative concepts of historic cost (whether on a cash or accrual basis) and current cost accounting.[2] For reasons identified below the concept of social opportunity cost will also be referred to, though briefly.[3]

(a) Historic Cost

Under the concept of historic cost, no account is taken of the effect of inflation. For instance the cost of a hydro-electric power scheme constructed in 1968 is not adjusted for

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1. Cash accounting is the basis of the Government-wide accounting system (SIGMA), though trading departments (e.g. Post Office) also produce accounts on an accrual basis.

2. There are a number of competing systems of inflation accounting. Discussion is limited to current cost accounting, it being the only option for which there is a strong likelihood of implementation, given the stand taken by the New Zealand Society of Accountants.

3. Social opportunity cost is the concept employed in cost-benefit analysis (CBA), the evaluation technique widely held to be most relevant in evaluating public sector programmes and projects, and endorsed by the Treasury (see The Treasury, <u>The Planning and Control of Government Expenditures</u>, 1973, (Ch.VIII).

price level changes in the intervening years. It is easy and convenient not to have to adjust for inflation, and in accounting terms historic cost is "objective". But clearly a dollar in 1968 is not the same thing as a dollar in 1980, and to treat them as identical is not valid. The practical significance of this, is that the cost of a resource is important in evaluating alternative uses of that resource. If the cost is measured incorrectly, the wrong decision may be taken. Power pricing, one might argue, should reflect the current cost of resources employed in power production, not the cost expressed in the dollars of 10, 15,or 20 years ago. Thus historic cost is imappropriate for use in resource allocation decisions. But historic cost is an adequate measure if the information is needed merely to report the legality of government spending; that is, to show how much cash was raised by government and how it was spent.

Cash or accrual accounting?

Historic cost encompasses more than one treatment of cost however. Under a system of historic cost the choice exists between a cash system, and an accrual system. Under a cash system costs are interpreted as cash flows, whereas under an accrual system costs are interpreted as expenses. The former reflects the cost of acquiring goods and services, the latter the cost of using them. Under accrual accounting, depreciation is the method by which the initial cost is allocated over the periods in which the asset is useful. Under cash accounting there is no cost attributed to the use of the asset in periods after the one in which it is paid for.

The major differences in reporting between cash and accrual accounting relate to depreciation and the recognition of certain expense items. These two topics are discussed below.

Depreciation

A critical element in the comparison of cash versus accrual accounting is the treatment of fixed assets. Under cash accounting, as noted, the initial cost of a capital asset is not spread over its useful life. Under accrual accounting the asset is depreciated over its useful service life. The US General Accounting Office highlighted the importance of depreciation:

> A basic responsibility of agency management is to fully and fairly account for all resources entrusted to or acquired by the agency. This responsibility extends to the consumption of those resoucres through use in carrying out operations and is just as applicable to long-lived physical facilities as it is to expendable materials.
>
> Depreciation as an element of cost is an estimate of the portion of the total cost of a long-lived capital asset consumed through use, approaching obsolence, or having other reason to be assigned as a cost of operation or performance over its estimated useful life.
>
> Accounting for depreciation as a cost is an integral part of the accrual basis of accounting. The purpose of accounting for depreciation (or amortization of cost) of long-lived capital assets is to systematically allocate their cost over the period of their estimated usefulness or capacity to render service so that all significant costs will be included in total costs of performance reported to management officials, the Congress, and the public.[1]

The case for depreciation accounting then, is that it better reflects the cost of utilising capital assets. Better, in this context, is relative to the present situation, in which the only measure which in any way reflects the use of capital assets is the cash cost of their acquisition. It is essential therefore to understand the deficiencies of this current measure as an indicator of resource use. The major

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1. US General Accounting Office, Accounting Principles and Standards for Federal Agencies pp.2-35.

problem with capital expenditure as an indicator[1] of resource use is the variability in the level of capital expenditure. While it can reasonably be assumed (there being no direct measures of this available for administrative government departments) that the pattern of capital asset use (depreciation) is reasonably steady over a period of years, capital expenditure will by contrast have an uneven pattern. There are two reasons for this. First, capital expenditure is inherently "lumpy". In the very simple case of one man employing one machine lasting 5 years, the labour cost occurs at essentially the same level over time, but the cost of machine acquisition occurs once every 5 years. The cost of machine use occurs in a pattern more akin to that of labour. This inherent lumpiness of capital expenditure is more acute (and therefore more distorting as an indicator of resource use) when one considers small organisational units. So while this inherent lumpiness might not be too evident in the pattern of total government capital expenditure, it can be expected to be more obvious at the level of the individual department. Similarly the lumpiness will be less acute for, say, the Department of Education as a whole than it will for Programme: Primary and Secondary Education. To pursue the point further, the lumpiness will be even more acute for activities within that programme for example Activity: State Primary Education or Activity: Special Education. Thus at the activity level in particular, the pattern of capital expenditures can be expected to be a very poor reflection of resource use.

The second reason to expect capital expenditure to fluctuate widely is its use for economic management purposes. For a variety of reasons it is perceived to be easier to modify the level of government spending through capital expenditure than through items of recurring expenditure such as salaries. Thus

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1. Capital expenditure does not measures the use of capital resources, rather it measures their acquisition. It is on occasion used as a surrogate for a measure of resource use, and it is this use which is misleading.

when, as it quite common, the Government wishes to stimulate or depress economic activity capital works are frequently the means chosen. The desire to damp down economic cycles has ensured that the manipulation of capital expenditure for economic management purposes results in a fluctuating pattern of capital expenditure. This relative variability of capital expenditure can be demonstrated in at least two ways. First, it is possible to show the degree of variability in capital expenditure when compares with other items of expenditure, such as personnel. Second, where depreciation figures do exist in government (i.e. trading activities which prepare accrual accounts), it is possible to compare the pattern of depreciation with that of capital expenditure.

The analysis of total government expenditure into items of expenditure enables the relative variability of the different items to be identified. By calculating the annual change in each item over a period of 8 years it is then possible to compute the mean rate of change and, as a measure of variability, the standard deviation about the mean. In ascending order of variability, the results are as below:

VARIABILITY OF EXPENDITURE ITEMS 1973-80

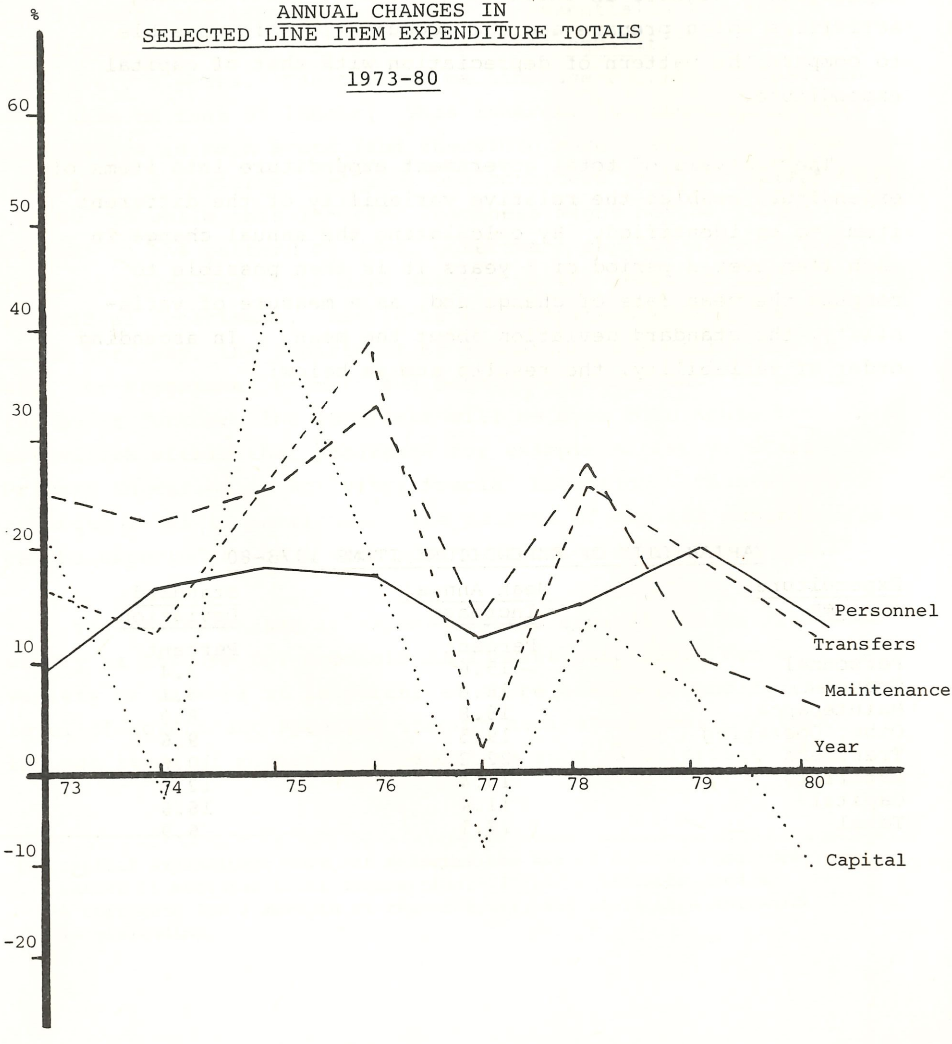
Expenditure Item	Mean Annual Increase	Standard Deviation
	Percent	Percent
Personnel	15.6	3.4
Travel	16.0	5.1
Maintenance	18.8	8.9
Other Operating	19.5	9.6
Transfers	22.2	10.6
Materials	15.4	12.6
Capital	11.4	16.6
Total	18.1	6.9

To illustrate this point further the annual changes can be displayed graphically - for simplicity the graph is confined to personnel, maintenance, transfers and capital. This indicates that the pattern of variability in the table is not caused by occassional extreme cases but represents a consistent pattern.

FIGURE 1

ANNUAL CHANGES IN SELECTED LINE ITEM EXPENDITURE TOTALS

1973-80

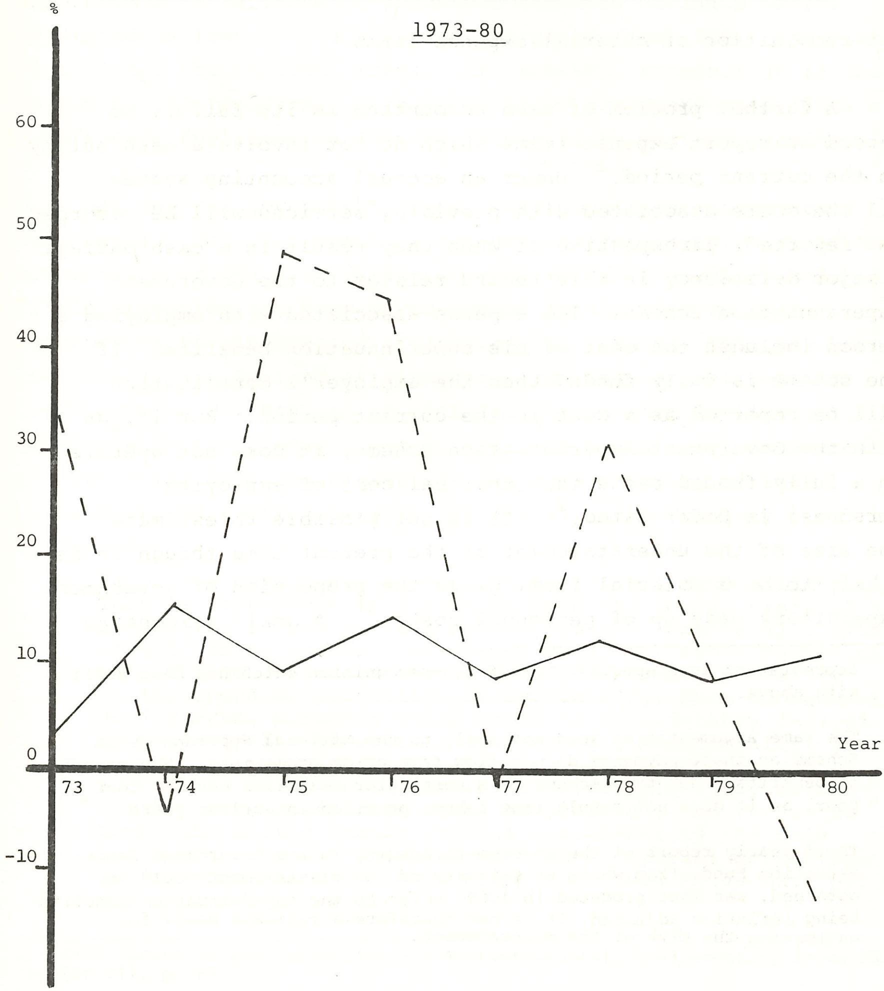


Finally, it is useful to demonstrate the relative patterns of change for the cost of using capital assets (depreciation) and the cost of acquiring them (capital expenditure). This can be done only for trading operations of the Government, where depreciation is calculated. Figure 2 demonstrates how much more volatile is capital expenditure than depreciation. Other trading operations of the Government for which data are available show the same pattern.

FIGURE 2

NEW ZEALAND ELECTRICITY:
ANNUAL CHANGES IN DEPRECIATION AND CAPITAL EXPENDITURE

1973-80



The aim of the discussion above has been to demonstrate as clearly as is possible with existing data how inadequate is the use of capital expenditure as a measure of resource use. If it it of public and governmental concern to know the cost of government services, this points to a significant gap in the existing measurement system. The implication of providing information on capital assets on the basis of capital expenditure only is that decisions on asset use will be poorly informed and therefore likely to lead to inefficiencies. In particular, managers are in no sense "charged" for the use of assets once acquired - there is no cost associated with use.

Non-recognition of material expense items

A further problem of cash accounting is its failure to record or report expense items which do not involve a cash outlay in the current period.[1] Under an accrual accounting system all the costs associated with providing services will be recorded and reported, irrespective of when they result in a cash outlay. A major deficiency in this regard relates to the Government Superannuation Scheme. The expense associated with employing a person includes the cost of his superannuation benefits. If the scheme is fully funded then the employer's contribution will be reported as a cost in the current period. But if, as with the Government Superannuation Scheme, it does not operate on a fully funded basis then the real cost of employing personnel is understated.[2] It is not possible to estimate the size of the understatement at the present time though it is likely to be a material item, given the proportion of government expenditure made up of personnel costs.[3] A small percentage

1. Depreciation is a special case of non-recognition which has been dealt with above.

2. The same argumentation does not apply to the National Superannuation Scheme as these payments do not flow from prior employment. The payment of benefits under this scheme in a particular year is a cost of that year, as it does not result from labour provided in earlier years.

3. The 5-yearly report of the Government Actuary on the Government Superannuation Fund, from which an estimate of the misstatement could be obtained, was last produced in 1969, prior to the superannuation benefits being inflation adjusted. It is not therefore a reliable basis for estimating the size of the misstatement.

understatement in this item would imply an annual understatement of personnel costs of many millions of dollars.

While other expense items also will not be recognised under cash accounting, the problem in regard to superannuation is more evident and serves as an example of the divergence between cash and accrual accounting.

The points highlighted above are major differences between a cash basis and an accrual basis of accounting. In each case the deficiencies of cash accounting exist only if the user-need for information is in terms of resources consumed during a period. As stated earlier, for a number of purposes, cash flows and cash control are the relevant items. If, however, information is sought on the use of resources, then these areas are where cash flows as a surrogate for resource use are likely to be most misleading.

At central government level, most countries account on a cash basis. This has meant that moves for reform have tended to concentrate on the cash versus accrual accounting issue, and little attention has been given either to alternative cost concepts or to alternative strategies for reform. This has been the case in New Zealand as elsewhere, and the current position would seem to be, that at an official level there is little concern with the inadequacies of the cash basis. In the Statement of Accounting Policies presented in the 1979 Report of the Controller and Auditor General (B1 (Pt II), the Treasury view is stated:

> (1) The cash basis of accounting for all transactions. This is significantly different from the normal basis of accounting in the private sector and the commercial element of the public sector. In common with most other countries this method of accounting is used principally to assist in the speed of production of accounts for both management and external purposes which could be considerably delayed by the adoption of accrual accounting. Additionally, it avoids all the attendant valuation problems of accrual accounting which would require considerable study before satisfactory resolution could be achieved. As far as is known the United States Federal Government is the only central government which has attempted accrual accounting in its accounts and the problems mentioned above have not yet been fully resolved.[1]

1. 1979 Report of the Controller and Auditor-General, Parliamentary Paper B1 (Pt II), p. 99.

The proposal to move to a full accrual system is not, however, the only way reform can be introduced; consideration will be given to an alternative method following discussion of the other dimensions of cost measurement.

(b) Current Cost

The concept of current cost and the method of current cost accounting are fully elaborated in the Richardson Report.[1] Using current cost accounting involves reporting the value of assets as, and calculating depreciation on the basis of, the current replacement cost of those assets. (In the case of non-essential assets, instead of replacement cost, the measure used is net realisable value). Richardson recommends current cost accounting for both financial reporting and pricing decision purposes. The rationale for this recommendation is implied by the deficiencies of the historic cost method - current cost measures the cost, at the currently prevailing price levels, of the resources consumed during a particular period.

Given that the New Zealand Society of Accountants has moved to require reports on a current cost basis from publicly listed companies, this form of accounting will become both more widely used and better understood. In such an environment the deficiencies of the accounting reports of Government become even more apparent. Internationally, there is growing interest (though as yet little convergence of ideas) in current cost accounting for administrative government units. For trading activities the case is more apparent and preliminary work is underway on applying current cost accounting to this area.[2]

From the viewpoint of measuring the cost of government services, historic cost accounting has the same deficiencies as are evident when the aim is to measure income for the firm.

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1. Report of the Committee of Inquiry into Inflation Accounting, Government Printer, 1976.

2. This work has been undertaken by R. Debrecency, as part of the Inflation Accounting Project at the University of Waikato. The specific area of application is the New Zealand Electricity Division of Energy. As part of the same project two students also carried out a study on the accounts of the National Airways Corporation.

The effect is to understate the cost of providing services, given that under accrual based historic cost accounts, the depreciation charge is based on the original acquisition cost of the asset. The implication is that decisions will fail to reflect the value of resources used by government unless managers, politicians and voters are aware of the cost of those resources, measured in terms that have current relevance.

(c) Social Opportunity Cost

In discussing the appropriate cost measurement system for government, mention should be made of the notion of social opportunity cost. This is the concept used in social cost-benefit analysis. It differs fundamentally from the notion of cost employed in the private sector. In theory, cost benefit analysis involves a comparison between the benefits society gains from a project or programme with the real resource cost of its implementation. The real resource costs are borne by society as a whole, and may involve no financial cost to government. For example, the Department of Labour might be considering new, tighter, standards of work safety. Implementing this policy might impose some costs on the Government (e.g. inspection costs) but the most significant proportion of the cost will be borne by the firms which have to devote resources to the improvement of safety standards. These costs appear nowhere in the financial statements of government, yet in considering whether or not to impose the safety standards they must obviously be considered. Given the power of Government to impose costs on individuals and groups in the community, the cost of government policies will be reflected only partially in financial statements which relate only to costs borne by the Government itself. Yet to evaluate Government performance in a particular area it is as necessary to consider the costs imposed by Government on others as it is to consider the costs to Government itself. This implies that a system of financial reporting which is useful in evaluating government performance ought to utilise a concept of cost which is consistent with the concept used in deciding whether to undertake a project, i.e. the concept inherent in cost-benefit analysis. Such a concept of cost is consistent not only with the analytical technique employed in decision-making, but also with any comparison of costs and benefits, where the benefits of Government services accrue to individuals outside the Government.

We currently take for granted that the benefits of Government programmes accrue to society as a whole, not to the Government itself, yet it is not customary to compare those benefits with the costs which fall on society as a whole. While there are many activities of Government which impose costs on external parties, the most significant are the inspection activities. Here the Government sets certain standards by enactment or regulation which require the affected individual or organisation to comply, and where compliance may involve significant cost. The only cost to the Government may be the cost of inspection to ensure the specified standards are being met. The total cost to the nation of compliance with these regulations may be very high indeed and costs as revealed in existing reports of the Government certainly do not indicate the real resource costs of its policies.

Examples of programmes with significant inspection components are:

(i) Ministry of Agriculture and Fisheries:

Programme IV - Animal health;
Programme V - Meat inspection;
Programme VI - Fisheries management and inspection;
Programme VII - Dairy inspection and grading.

(ii) Ministry of Energy:

Programme I - Energy policy and administration of mining and mining privileges (Activity 2 - "regulate and inspect mining operations to ensure acceptable operating safety standards).

(iii) Department of Health:

Programme VII - Public health and environmental protection.

(iv) Inland Revenue Department:

On a national scale, there will be significant resource costs associated with the accounting carried out by individuals, companies, trusts etc. in order to comply with IRD requirements.

(v) Department of Justice:

Programme VIII - Commercial affairs.

(vi) Department of Labour:

Programme V - Industrial safety, health and welfare;
Programme VI - Weights and measures.

(vii) Department of Trade and Industry:

Programme III - Commerce.

(viii) Ministry of Transport:

Programme III - Road Transport;
Activities: Traffic enforcement and vehicle inspection.

In all the above cases, and others, Government oversight imposes costs on external parties. There is no implication that the above activities do not produce substantive benefits, the point is simply that the Government does not report the full resource cost of such policies or actions.

Social opportunity cost differs in other ways from the notion of cost used in the private sector to evaluate projects. For instance, in CBA terms transfer payments (e.g. the unemployment benefit) are not regarded as real resource costs to society as a whole - they represent a reduction in the financial resources of one group (taxpayers) and an equivalent increase in the financial resources of another group (the unemployed). Ignoring administration costs, this expenditure involves no use of real resources. However, the difficulties involved in reporting the social cost of Government actions are manifest. To report on this basis would require the resolution of major theoretical and practical problems. On the other hand, as discussed above, there is an inconsistency in using social costs for purposes of analysis and evaluation, and private cash costs for reporting performance.

In these circumstances reported costs will not necessarily reflect, even approximately, the resource costs of a particular decision or policy. It is not conceivable that measures of social cost will be sufficiently developed in the near future to meet accounting tests of objectivity. At this stage in the process of developing measures of social cost it would be impractical to advocate widespread adoption of the concept for reporting purposes. For this reason the concept will not be discussed further in this paper, beyond noting:

- That any attempt to compare the benefits to society of a government programme with its costs as currently reported is potentially misleading as the concepts of cost and benefit are inconsistent.

- Where external costs associated with a programme or policy are identifiable and can be measured with acceptable accuracy and objectivity, departments should be encouraged to report such costs, either in the departmental annual report or in the Notes to the Estimates of the department, as appropriate.

This section indicates the range of alternative measures of cost implied by the choice of cost concept(s). The choice is clearly wider than cash versus accrual accounting - for users with an interest in management performance, measures which better reflect the current cost of resource-use are superior, and where current costs to the Government and social opportunity costs differ widely, the evaluation of Government programmes will be deficient without some consideration of the latter. Specific proposals for reform will be considered after canvassing the problems of entity definition and cost allocation.

THE ENTITY DEFINITION

Entity is a fundamental notion for financial reporting. Unless reporting relates to a well-defined organisation, or entity, and the entity so defined is consistent with the information needs of users, costs cannot be meaningfully reported. Clearly then, under different circumstances, different definitions of entity may be appropriate. While a narrow definition of "Government" may be appropriate for one purpose (for instance, reporting on the legality of expenditure through the Public Account), there are circumstances in which a much wider view of the entity should be taken. Debate concerning the scope of Government activity (the size of the public sector, for instance) might be better served by an entity definition which included items such as tax expenditures[1] and encompassed the activities of all trading departments, Government corporations and Government companies. There are various ways of defining the entity and, especially in a governmental context, the choice of definition can have a marked effect on the cost measurement and financial reporting systems. Historically, there has been a tendency towards broader, less legalistic entity definitions. The fund theory of the entity is the narrowest definition; the commander theory sits at the other end of the spectrum.

The fund theory of the entity, widely regarded in the United States as an essential feature of government accounting, involves reporting on individual governmental funds (resources with legal restrictions on the activities to which they may be applied) such as the National Roads Fund. Where the fund theory is fully developed governments maintain separate self-balancing sets of accounts for each fund entity. If the user of accounting information is concerned to see that funds have been applied only in accordance with legal restrictions, then the fund theory of the entity is held to facilitate this.

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1. Tax expenditures is the term used to describe revenue forgone when Government seeks to achieve a policy objective through tax concessions rather than direct expenditures. Currently, the cost of such tax concessions is not reported.

It is necessary that the choice of entity definition for a particular reporting purpose reflects the nature of the decisions being made. For many current purposes one would be interested in sub-entities, for example the Department of Education, and much information would already be available. (There are, however, difficulties in reporting for sub-entities as the larger organisation is usually in a position to arrange matters to give an unrealistic view of the operations of the sub-entity. An example would be where the Government restructures the finances of a Government corporation,either by writing off debt, converting it into equity, or making it interest free, all of which have the effect of making the sub-entity appear more profitable.)

While various notions of the entity are able to be used as needed, one purpose for which an adequate notion is not available is reporting the overall level of Government activity. Increasing concern has been expressed at the extent of government activity in the economy and with the manner in which government activities in toto affect society and the economy. The fund theory of entity is quite inadequate to this need. An alternative entity definition, advocated by Holder as being suitable for governmental financial reporting, is the commander theory:

> This concept suggests that accounting should focus on the effective economic control of resources by the managers or "commanders" of an enterprise. This approach rejects the ownership bases of proprietary and entity theories because "ownership is a nebulous concept and is extremely difficult to define and analyse in any way suitable for use as a basic accounting notion". Thus, the financial statements report on "operational stewardship" using a broad responsibility accounting approach.
>
> The broad responsibility accounting aspects of the commander theory make it a promising alternative conceptual foundation for reporting on the management of governmental units. This theory of the entity is especially desirable when one considers the basic relationship between the electorate and the elected. Elected officials are responsible for providing goods and services to society and the individuals who elected them as effectively and efficiently as practicable in the circumstances. Part of the communication link between these parties is the financial reporting process. Further, and equally as important, short-and long-term creditors - and other potential financial statement users attributed a high

intensity of need for financial information but possessing limited authority over the reporting organisation and concerned with financial viability - are also dependent upon the financial resources of the government and those it can marshal by levying taxes or otherwise.[1]

To fully apply the commander theory of the entity to the New Zealand Government would require substantial research. The powers of central government in New Zealand to "command" the flow of resources are extensive. To report in these terms would widen radically the accepted definitions of Government expenditure and undoubtedly emphasise the extent of the Government's role in the economy. To move in this direction would involve at least two major changes:

(i) Explicit accounting for tax expenditures. Where the Government wishes to intervene in the economy to encourage or support a certain type of activity, it has available a choice of methods. It can use tax revenues that have been collected to fund a programme of grants, and in this case the cost of the grants would be reflected in the accounts of Government. An alternative, in effect much the same, but reported quite differently, is to give encouragement by way of tax relief. In this case the forgone tax revenue-the cost of the tax relief - is neither reported nor accounted for systematically. Where the tax system is used in this way the result is to understate the cost of government services and the effective tax level. As in other areas, failure to account explicitly for this tax expenditure is likely to lead to misallocation of resources. While the level of total tax expenditures in New Zealand is not known precisely, it is clear that the total will be significant. Tax expenditures are incurred in such areas as:

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1. Holder, W.W., A Study of Selected Concepts for Government Financial Accounting and Reporting. NCGA, 1980, p. 31.

Exporting - export performance and export
market development
Agriculture - farm development
- investment in plant and machinery
Fishing - development expenditure
- investment
Forestry - forest establishment and maintenance.

When the cost of tax relief in these and other areas is not known, Parliament is unable to debate the Appropriation Bill with a knowledge of the total cost of Government activity in certain areas. Equally the taxpayer is misinformed of the cost of Government services and the total cost of Government.

(ii) Inclusion within the entity of all Government-owned institutions, including for example Air New Zealand and the Development Finance Corporation. Under this entity theory it is recognised that as the sole owner of such enterprises the Government does have ultimate power to command their resources. More problematic would be independent organisations, whether with elected or appointed officials, that rely so heavily on central government financial support that the Government does have effective command over resource flows, at least at the aggregate level. Into this category would fall universities, hospital boards, and education boards. Equally problematic would be power boards. Explicit consideration of the relationship of such organisations to the Government draws attention to the extensive command over resources in Government hands, and highlights the narrowness of the definition of the entity currently in use.

It can be argued that debate over the extent of Government involvement in the economy will remain uninformed until financial reporting reflects the real significance and breadth of the role of the Government. Equally, the substantive redefinition of the entity in this direction would involve considerable cost, and could be justified only if the information so produced led to a re-evaluation of the role of the Government and a consequent reallocation of resources. Given the problems associated with a major redefinition, a preferable option would be to engage in progressive change eliminating first the most serious anomalies, such as the treatment of tax expenditures.

TRANSFER PRICING AND COST ALLOCATION SYSTEMS

The system under which costs are allocated admits of a variety of treatments. Often costs incurred in one area of government are for the benefit of some other area. If a manager who requires goods or services is free to acquire them outside Government, for example from a commercial printer rather than the Government Printer, then the issue is one of transfer pricing. Specifically, the problem is to decide the price to be charged for the service should he decide to acquire them from the governmental supplier. The major alternatives are prices derived from cost to the service provider (either full cost or variable cost) or those based on market prices. But if the manager receiving the service has no option as to source of supply, that is he must obtain the service from another Government department, then the issue is one of cost allocation. For example, in the printing costs incurred initially by the Government Printing Office to publicise employment schemes administered by the Department of Labour, alternative treatments may be adopted. The costs may be fully or partly allocated to the activity benefiting, allocated in some cases only, or never allocated. Also the basis for allocating the costs may vary - one may allocate variable costs only, or full costs. While there is a distinction to be made between transfer pricing and cost allocation, the primary issue from a reporting viewpoint is to identify the appropriate measure of cost for services provided by one department to another, and to determine whether or not the costs should be charged to the recipient department.

For the purposes of the discussion below it is assumed that instances where the conditions for transfer pricing exist are relatively less common, that in the majority of cases there is no market provision of the goods or services outside the Government, or for administrative reasons the purchaser has no choice but to acquire from a specified Government agency. Where a transfer pricing system can operate and is allowed to do so the appropriate pricing policy will be based on market rates.

Where the conditions for transfer pricing do not exist the issues are:

(i) the extent to which costs are allocated;

(ii) the basis used for establishing costs.

In respect of the first option the trade-off is between improved information on the cost of services or activities and the cost of the allocation system. A more extensive system yields better information but does involve additional cost, notably in analysing the costs in a way that yields meaningful figures for allocation. Where, for instance, the cost of a specific service performed by one department for another involves the use of labour, the determination of labour cost attributable to the job requires a time recording system that may not be required in the absence of a cost allocation system. The cost of the actual transfers will be minor when compared with the cost of the systems necessary to support meaningful allocations.

There are again a variety of bases on which allocated costs can be determined but the two principle types are those based on market prices and those based on cost. In situations where market prices exist but transfer pricing is not permitted to operate, they have the advantage of removing conflict between the needs for goal congruence (between specific responsibility centres and government as a whole), incentives (to efficiency), and autonomy (of decision-making). However, market prices do have drawbacks (e.g. fluctuating markets, large price variations) and many organisations use full cost or cost-plus pricing. These in turn have disadvantages, in that they enable inefficiencies on the part of the supplier to be passed on to the receiver.

The case for, and extent and basis of, cost allocation in government requires detailed study. The approach could be expected to vary with specific situations. Where one activity relies heavily on services from another activity or department the system should reflect this and costs should be allocated. This would ensure that the manager of the recipient activity does not use significantly more of the services than he would if they were not free to him. Conversely, the information processing cost of occasional, minor services provided by one activity to another may not be warranted. This would especially be the case where the service receipt and provision are immaterial relative to both the activities of the recipient and the costs of the provider.

While the system of transfer pricing and cost allocation is critical to the achivement of goal congruence, incentives, and autonomy, and requires detailed study with these aspects in mind, specific aspects of the current system which require immediate consideration are dealt with in the following section.

RECOMMENDATIONS FOR REFORM AND FURTHER RESEARCH

GENERAL DIRECTIONS FOR REFORM

In terms of the classes of information identified as being relevant to users, the reporting of financial and legal compliance is adequate. The appropriation of funds is in cash terms, and the existing cash accounting system is entirely suitable for reporting on the compliance with relevant legislation and supporting regulations. The user concerned with the integrity of Government in its custody of cash has the basic information he needs. The only respect in which this information might be improved is through a redefinition of the entity. At present, for example, the financial statements of hospital boards are not available to all users as of right. Given the size of this expenditure, a definition of the entity which deprives the user of information on the financial and legal compliance of such organisations limits his ability to satisfy himself of the integrity of the use of all cash resources provided to government.

In order better to reflect financial and legal compliance in respect of all cash resources provided to the Government a revised, broader definition of the entity should be adopted for external reporting purpose. It would be possible to institute such a reform in a series of incremental steps.

For the user interested in the cost of Government services (this would include virtually all user groups but should be of special relevance to Parliament, Cabinet, and departmental managers) the existing state of cost measurement is much less satisfactory. While the extent of current deficiencies will vary from activity to activity (with the divergence between cash expenditure and resource use) there does exist a set of general problems in cost measurement.

The first relates to the entity concept, discussed above. In order to report fully on the cost of Government activities an entity definition needs to be progressively introduced which better reflects the role of Government in directing resource flows in the economy. This implies an extension of the entity concept beyond the boundaries suggested by the need for financial and legal compliance. Specifically, the definition should be broadened to reflect the use of resources through tax expenditures.

Second, cash accounting does not satisfactorily report the consumption of resources in carrying out an activity for a period. Any user interested in the cost of services will be better informed under a system of accrual accounting. This is reflected in the following statement from the U.S. General Accounting Office, which has devoted more attention to the issue of cost measurement than any other government accounting organisation:

> THE ACCRUAL BASIS OF ACCOUNTING
>
> 9.1. BASIC REQUIREMENT
>
> The maintenance of accounts on the accrual basis is a basic requirement for Federal agencies.
>
> The accrual basis of accounting consists of recognising in the books and records of account the significant and accountable aspects of financial transactions or events as they occur. Under this basis, the accounting system provides a current systematic record of changes in assets, liabilities, and sources of funds growing out of the incurrence of obligations, expenditures, and costs and expenses; the earning of revenues; the receipt and disbursement of cash; and other financial transactions.
>
> This basis of accounting provides more information than the cash basis alone, under which financial transactions are recorded in the accounts only when cash is received or disbursed. It also provides more information than the obligation basis alone, under which financial transactions involving use of funds are recorded in the accounts primarily when obligations are incurred.
>
> The accrual basis of accounting can contribute materially to effective financial control over resources and costs of operations and is essential to the development of adequate cost information.[1]

1. U.S. General Accounting Office. op. cit., pp.2-14.

Third, the system reports in historic cost terms only. For many Government-owned assets this will significantly understate the real (current) cost of resources used. After detailed consideration of the application problems the cost measurement system of Government should be brought into line with the general recommendations of the New Zealand Society of Accountants to report on the basis of current cost. The inadequacies of historic cost accounting are as apparent in respect of the cost of Government services as they are for services provided by the private sector.

For the cost measurement system to produce improved cost data requires reform in three areas:

(i) Entity definition

(ii) Accrual accounting

(iii) Current cost accounting

In all cases the implementation of these changes implies detailed research. In no case need the reforms be all-or-nothing. Incremental reform strategies can be developed which lead gradually to an improved quality of cost measurement. The cost of producing this information is a factor to be taken account of in the detailed research stage.

For users who need information on management performance - efficiency and effectiveness - the precise needs for cost measurement are less clear, though the general direction can again be identified. Efficiency is defined as an input-output relationship, while effectiveness measures goal achievement. To meet user needs in this area requires that outputs and goal achievement can be identified and measured. These factors then imply the cost measurement system necessary to relate input to output (i.e. what are the real resource costs of inputs?) and to goal achievement (at what cost are specific goals achieved?). It is apparent that before explicit redesign of the cost measurement system can be undertaken it would be necessary to have output and effectiveness measures defined. These are issues in which those responsible for financial information systems would have a subsidiary role, following on from the development of appropriate measures of output and achievement specific to programme or activity areas. Performance measurement systems need further development which may in turn imply change in the cost measurement system.

The development of measures of Government performance (efficiency and effectiveness) must precede development of the appropriate measures of cost. Financial managers should encourage development of performance measures, but usually this will be a task in which the financial manager has a role subsidiary to that of the professional in the particular field.

The directions for reform identified above should not be interpreted as recommendations to be implemented immediately. It may well be that they should never be fully implemented, if subsequent empirical research indicates either that the information so produced would not materially assist users, of that the production cost of the information would be prohibitive. They represent superior measures of resource use for the identified user needs; i.e. financial and legal compliance, cost of services and management performance. The proposed directions for reform would also facilitate the evaluation of financial viability, should that be of concern. (Borrowing to meet current expenditure requirements would be highlighted.) For other specified uses (e.g. economic management) additional information may be required and the relevant users would need to specify their information requirements.

SPECIFIC URGENT REFORMS

The previous section identifies general directions for reform. This section identifies specific changes which move the cost measurement system in the general directions recommended above, but which appear to require more rapid action. These recommendations concentrate on deficiencies which have the greatest likelihood of leading to a misallocation of resources, i.e. most seriously misstate real resource costs.

Much effort in evaluating reforms to government accounting has gone into the issue of cash versus accrual accounting. The view taken here is that such dichotomies may reduce the prospects for making progressive incremental changes to the system. The strategy adopted in this paper is to seek maximum informational change with minimum system change, at least in the short-term. For instance, if it is possible to bring the reported level of cost under the cash accounting system close to the level that would be reported under a current cost system, then such a change is preferable to attempting comprehensive reform.

In order to develop this strategy it is necessary to identify specific deficiencies in the existing cost measurement system and to identify changes which would substantially remedy the deficiency without major system changes. Implementation of of such minor reforms would have three advantages:

(i) Data would be accumulated in a way which revealed the extent of deficiencies in the cash system of accounting;

(ii) Evidence could be gathered which would indicate the extent of efficiencies in resource use to be gained through improved cost measurement;

(iii) If minor reforms prove ineffective it is possible to reverse the change at less cost than if the system had been substantially modified.

This strategy has the added advantage that at the same time as it permits a move in the direction of full accrual accounting it also enables progress to be made towards current cost accounting.

1. Cost Allocation and Transfer Pricing

A number of instances exist where the costs of inputs are not transferred to the department receiving the service, or are not fully costed. Cases which fall into the former category are the Audit Office not recovering audit fees from non-trading departments, Internal Affairs not recovering the cost of cleaning services, and the Government Office Accommodation Board not recovering the cost of using office space. Where the cost of processing the necessary transfers is minimal, as it would be in these cases, the transfer should be made for the following reasons.

- More careful resource usage will occur where such usage is subject to a budget constraint. (This is consistent with normal assumptions about resource usage already embodied in the system of cost measurement. Departmental management will, it is assumed, take greater care to implement Audit Office recommendations if it is known that the failure to do so may result in higher audit fees than necessary in subsequent years.)

- In relation to external users, who wish to know the cost of services, extension of the system of cost allocation will generate more accurate information on service costs.

The second area in which the cost allocation system requires extension relates to the calculation of costs transferred. Where charges transferred do not recover fully the cost of providing services, there is a need to calculate recoveries so that full costs are charged to the recipient department. Wherever possible the cost should reflect the current cost of resources used. That is, where the cost of a service involves the use of significant capital assets, it is preferable to recover at a rate which reflects current costs. The activities of the Ministry of Works and Development would give most scope for the implementation of this proposal. Initial use of a current cost basis for inter-departmental charging should be restricted in its application and carefully monitored before the system is further extended.

A further refinement which should also be implemented on a trial basis is the use of market prices for cost allocation purposes where such prices are available. A system based on market prices is motivationally superior, and where markets do exist for the services provided (e.g. cleaning services) the use of this system removes one problem of allocating on the basis of full cost or cost plus, namely that it does not provide incentives for efficiency on the part of the supplier.

The system of cost allocation should be extended to all areas where the cost of processing such transfers is not prohibitive. Where the system under-recovers the cost of services to other departments or activities the calculation of application rates for overheads should be revised.[1] The use of current costs as a basis for transfers should be implemented selectively on an experimental basis, as should the use of market prices.

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1. The overhead costs of an organisation are allocated to goods and services produced by the use of an application rate. It may, for example, be based on labour usage, with overhead applied at a rate of $5 for every hour of labour used in the production of goods or services. It may alternatively be applied on the basis of machine usage, or some other basis which has the effect of spreading the overhead costs on a rational and systematic basis. The total amount of overhead applied may be incorrectly estimated (for example by omitting some allowance for the use of "free" office space) in which case the application rate would be too low and the cost of the goods or services allocated to the receiving department would not reflect their real cost.

2. Tax Expenditures

For the user who wishes information on the cost of services, the failure to account explicitly for tax expenditures clearly understates the cost of certain government programmes, and encourages policy makers to seek to achieve their objectives through tax expenditures rather than direct expenditure. The system is biased towards as essentially uncontrolled element of cost. By way of example, it would be quite misleading to assume that the $86.4 million voted to Activity: Financial Assistance to Primary Industries in 1980-81 represents the total cost of achieving the objectives of this activity. (NB: Banking and Finance Corporation has also had $11.4 million voted in Programme II: Assistance to Primary Industries.) A first step towards accounting explicitly for tax expenditures would be to develop a Tax Expenditure Budget [1] as a separate item in the Budget, with the estimated cost of specific tax expenditures reported in the Notes to the Estimates of the appropriate Vote, and in the Public Accounts.

A system of accounting explicitly for tax expenditures should be developed through a Tax Expenditure Budget, with appropriate notes in the Estimates and the Public Account.

3. Capital Assets

The need to reform the accounting for capital assets can be argued from two viewpoints, both of which involve the distinction between resource usage and cash flow. The first concerns the inherent lumpiness of capital asset acquisition, the second that once acquired capital assets are, in most

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1. A Tax Expenditure Budget would specify the estimated tax forgone under each tax concession. There are a number of conceptual and practical difficulties involved in estimating tax expenditures but with clearly stated assumptions the reader should be in a position to interpret the figures. Further, if the Government is not able to specify the cost of such concessions, it casts some doubt on the decision process by which the concessions are established or continued. Tax expenditures should be subject to the same requirements by way of initial justification and review as are direct expenditures.

cases, treated as "free" goods. No information is produced by the accounting system to remind managers of the resources tied up in capital assets, and hence to subject capital assets to a budget constraint.

Conceptually, the easiest way to remedy this situation would be to introduce accrual accounting. However, in the short-term it may be possible to implement change within the existing cash accounting system. It is possible to identify two cases:

- Capital assets used by one department in producing services for other departments. In this case extension of the cost allocation system would ensure that at the point of final use the cost of asset usage would be recognised.

- Capital assets held by departments for internal use. In this instance it would be possible to develop a system based on departmental Capital Asset Funds (CAF). The CAF's would be located and funded within departments' Programme: Administration and General. These funds would "own" the capital assets. Programmes making use of the assets would be charged for asset use. This would have the effect of introducing a budget constraint at the level where utilisation decisions are made (i.e. at programme level) and would also firmly locate responsibility at the centre for overall departmental capital asset management.

All capital expenditure would be incurred by the CAF and provision ought also be made for the CAF to be charged with a finance cost, based on the value of assets held in the fund. The CAF would then rent assets out to programmes, recovering at a rate sufficient to cover the cost of the asset (depreciation plus financing cost). Depending on the circumstances, maintenance costs could be borne either by the CAF or by the programme. (If the former it would be recovered from the programme along with depreciation and the finance cost.) Subsequent development could involve two refinements - the move, where possible, to programmes being charged at market rates for the use of assets, and the CAF being charged for any indirect taxes which would have been incurred had the assets not been acquired by Government. This would result in a system of cost measurement which took explicit account of the opportunity cost of using assets in the public versus the private sector. Eventually, also, it would be desirable to account for the use of assets on a current cost basis, as it is in relation to capital assets that historic and current costs tended to diverge most.

This proposal would obviously involve a considerable amount of detailed research. It would require to be tested on a pilot basis in one or two departments with existing and up-to-date asset registers. While the pilot project is running other departments should be ensuring that their asset registers are in a state which enables later development, should the pilot project be successful. (The need to establish up-to-date asset registers in some departments is perhaps indicative of the level of concern for resource usage engendered by the existing system.) The development of a pilot project would involve the following steps:

1. Selection of one or two departments with up-to-date asset registers;
2. Valuation (at current replacement cost, where possible) of existing assets;
3. Establishment of finance charges, based on value of asset holdings;
4. Establish the rates at which the use of specific assets will be charged to programmes;
5. Identify any capital assets which, for special reasons, may not be charged out to programmes. This provision should be used sparingly;
6. Establish procedures for asset management within the CAF, and for asset requisitions by programmes.

The system should then be fully tested to determine its impact

A pilot project should be instituted to test the operation of Capital Asset Funds. This mechanism would encourage the economic use of capital assets and would also facilitate debate on the level of programme funding, as the cost of programmes would be reported more accurately.

As a basis for the development of the capital asset fund concept, departments should ensure that they have current asset registers. Asset registers are, irrespective of the accounting treatment, a necessary feature of a management control system.[1]

FURTHER RESEARCH

The specific recommendations above address the areas where there is the greatest potential for improved decision-making and resource allocation. In allocating scarce financial management resources to reform, these areas should receive priority. There are, however, other features of the existing cost measurement system which warrant research to gauge whether further reforms would be justified. In all cases, the research would be designed to establish, with some degree of accuracy, the divergence between cash flows as currently measured, and measures relevant to determining the cost of services and management performance. In each case, if the findings suggest major divergences between cash outlay and resource use, this would provide evidence for further evaluation.

1. Given the volume and value of capital assets held by the Government, the inefficient use of these resources may involve a high cost in lost opportunities. The minimum requirement of efficient management of capital resources is an up-to-date register of asset holdings. Where such registers do not exist it is most unlikely that assets are being well used. Land is one type of asset over which control has in the past frequently been weak.

1. Personnel Costs

Given that personnel costs are the major item of expenditure for most departments, misstatement in this area may have a significant impact on total costs. However, in the absence of accrual accounting the extent of misstatement is unknown. As a basis for evaluating proposals for reform the following aspects require study:

- Failure to accrue the costs of salary adjustments for inflation. Where the adjustment can be reasonably estimated at balance date, the personnel costs for a year should include an estimate of the back-pay outstanding. The issues to be studied here is the extent of misstatement as between years, when there are salary adjustments;

- Failure to accrue liabilities for holiday pay. The cost incurred in a particular financial year is better measured by leave earned than by leave taken. Where provisions exist which effectively prevent any accumulation of leave, this problem is likely to be of minor importance;

- Failure to accrue pension liabilities. For each year of service by an employee, the Government incurs a liability for future superannuation payments (as has been discussed). Further information is required on the understatement of personnel costs and the size of the unfunded liability.

Research into the first two items above should be undertaken to determine the extent to which personnel costs are misstated. In particular, the third should be carefully evaluated, given the potential size of the misstatement and the implications of a large unrecorded liability.

2. Patterns of Material Usage

The resource costs of a period can also be misstated if the pattern of resource acquisition differs from that of resource usage. It should be possible, given adequate inventory control systems, to determine whether there are significant variations between resource acquisition and resource use. Research of this kind would be conducted on a sample basis.

3. Opportunity Cost of Materials and Equipment

Where physical resources (materials, plant and equipment) are acquired by the Government free of the taxes that would be faced in the private sector, the cash cost poorly reflects the opportunity cost of those assets. This would encourage a resource flow to the public sector. Research into the extent of sales tax and customs and import duties forgone would indicate the size and importance of this factor. If material it may be appropriate to impute a price to materials and charge the currently forgone taxes on capital assets to the proposed Capital Asset Funds.

APPENDIX: METHODOLOGY

A study of cost measurement may utilise either of two general methodologies - empirical or normative. The former would involve an extensive study of the information needs of actual and potential users of government accounting information. It would then require a cost-benefit analysis of the alternative sets of information which could be provided to users, to determine the optimum effort which should go into the production of accounting information. While theoretically superior, this methodology suffers three major drawbacks:

- It involves a major research effort to determine the users of government accounting information and the decisions in which they utilise accounting information.
- Determining the needs of potential users (i.e. those who would use government accounting information if it were of the type or in a format which met their needs) faces even greater problems of research design.
- The large array of alternative measures of cost makes a cost-benefit evaluation of the provision of accounting information an exceedingly costly task and one which would necessarily face severe research difficulties (especially the attempt to determine the value decision-makers place on hypothetical information).

These three factors have lead to the rejection of an empirical methodology for this study.

The normative approach involves the specification of major user groups, and some analysis of their particular needs for information. A recent study by Holder [1] analyses users according to:

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1. Holder. W.W., A Study of Selected Concepts for Government Financial Accounting and Reporting, National Council on Governmental Accounting, 1980.

- their relationship to the government entity;

- the intensity of their need for financial information;

- their sophistication in analysing financial information.

The next stage is to specify the broad types of accounting information in which the users might be interested. In an earlier study Anthony [1] identified four such types of information:

- financial viability;

- fiscal compliance;

- management performance;

- cost of services provided.

It should be noted that all these four types of information require cost measurement, not just the last.

An alternative specification of the types of accounting information that might be required differentiates three levels of management performance:

- financial and legal compliance

- economy and efficiency

- effectiveness or programme results.

Under the normative approach one determines, within a framework of user groups and broad information types, the approach to cost measurement which most closely meets user needs. Normally the determination of the appropriate cost

1. Anthony, R.N., Financial Accounting in Nonbusiness Organisations, FASB, 1978.

measurement system derives from an analysis of users (see that of Holder above) and a weighting of their relevant needs against a more or less explicit consideration of the cost of producing information. Thus the situation can arise that a specific measure of cost would be of value to a particular user or class of users, yet that information may not be produced in view of its cost. It might, for instance, be of considerable interest to voters to know how much government has spent in their electorate, in order to evaluate the performance of their member of Parliament, yet the cost of analysing government expenditure by electoral area is likely to be too costly (and, arguably, the process too arbitrary).

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