# COST OF CAPITAL

***This paper was written by Peter McKinlay for the Local Government Forum. Its purpose was to demonstrate for local government managers how using cost of capital could be a very effective management tool in assisting local authorities get better value out of their resources. The lessons in the paper are equally applicable in other public institutions (universities; district health boards as examples). An important objective was to demonstrate that efficient use of capital is an entirely separate issue from public versus private ownership.***

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## 1.0 Introduction

1.1 This paper has been prepared by the Local Government Forum ("the Forum") to assist local authorities understand why the business community places such importance on the use of cost of capital. The paper shows how a proper understanding of the cost of capital can be:

- An extremely useful management tool, allowing local authorities to make their own capital work more efficiently;
- A very good way of understanding the costs which local authorities' investment decisions create for ratepayers.

1.2 The Forum has looked very closely at the history of "cost of capital" in a local government context. In the Forum's view, the way in which the 1989 and the 1992 amendments to the Local Government Act sought to make local authorities recognise the cost of capital was extremely inept. It confused economic and accounting concepts. In the Forum's judgement, the 1989 and 1992 legislation gave quite wrong signals to local government and played a significant role in creating the current confusion over what cost of capital actually is and the value which its recognition can add for local authorities and their ratepayers.

## 2.0 Background

2.1 Cost of capital is an economic concept. Its purpose is two-fold:

- As a management tool, to signal to managers that capital has a cost and identify this cost for them so that they can make judgements about the best use of capital; in particular, whether it is in the interests of their organisation to continue using the capital in the way in which it does, or to yield it up for allocation elsewhere;
- To help those responsible for governing the organisation understand the costs to those who supply their capital of giving it up to the organisation.

2.2 Underlying each of these is the concept of opportunity cost. Under this concept, the cost of capital is looked at in terms of the next best use. The basic idea is that a dollar invested in activity A by definition cannot be invested in activity B. Assuming that activity B is the next best use of the capital, the opportunity cost of investing the dollar in activity A is the return which could have been earned by investing it in activity B.

2.3 Obviously, this is not an accounting concept. Accounting is concerned with financial flows; actual cash transactions which leave a record behind them. Opportunity cost does not do this. Instead, it needs to be estimated by observation of the typical returns from alternative investment opportunities.

2.4 Government, in the late 1980s, as part of the process of public sector reform, began the process of identifying the cost of equity or owner capital used in government owned activities.

2.5 Within State Owned Entities and other crown companies, this was done by using normal financial market techniques of estimating the market required rate of return on equity in businesses of equivalent risk and using that to set rate of return requirements for the Government's various businesses.

2.6 The technique used is one known as the Capital Asset Pricing Model ("CAPM"). What this model does is provide an estimate, for any business, of the rate of return which the normal investor would expect to receive for making an equity investment in that business. The model starts from the presumption that the rational investor will expect a return made up to two separate components:

- The so called risk free rate of return. This is the return which can be obtained from an investment which has no risk. There is only one investment regarded as risk free (in the sense that there is no perceived risk of non-payment); this is government stock;
- For any other investment, a risk premium to make up for the risk associated with that investment.

2.7 Two factors are involved in calculating the risk premium. The first is what is known as the market risk premium. Obviously, different kinds of equity investments will have different levels of risk associated with them. The market risk premium is an average of the risk across all investments and is calculated by analysing the returns received, over time, on different investments within the economy.

2.8 In any particular case, of course, the investor's focus is not so much on the risk premium for investments generally as on the appropriate risk premium for the particular investment under contemplation.

2.9 The risk under consideration is the risk of a change in the rate of return on an investment. The market risk premium provides investors with a premium to compensate for the fact that returns on equity investments generally fluctuate over time. What the investor wants to know, in respect of any one investment, is the relationship between the fluctuation on the returns from that investment and the returns from investments generally. The variability of return on any particular investment can be estimated from empirical data; it is usually a matter of analysing the kinds of returns which have been received on similar assets and the extent to which those returns have varied as compared with average returns. This measure, the measure of the variability of return on an individual investment, is known as the beta of the asset. The beta of the market generally is one. If an asset is regarded as riskier than a typical investment, its beta will be higher than one; if it is regarded as less risky, then its beta will be less than one. To put it another way, an investor will require a higher risk premium to compensate for holding a more risky asset and a lower risk premium to compensate for holding a less risky asset.

2.10 Government uses this formula when calculating the return which it requires from its State Owned Enterprises. In doing so, what it is really saying is that, unless the enterprise earns at least the return required by the CAPM, then the business is operating at an economic loss. It is important to note that, typically, the required rate of return will be higher than (say) Government or local government's cost of borrowing. The mere fact that a local authority owned business may earn more than the authority's cost of borrowing does not means that it is making an economic profit; it could well be making an economic loss if it is not earning sufficient to compensate for the risk in the business.

2.11 Government has also applied this approach to government departments. They were required to develop balance sheets (as part of the shift to accrual accounting) and thus record the amount of taxpayer's equity invested in each department. Departments were then charged a cost of capital which they were required to pay back to government, via the Treasury, as a defined percentage of their taxpayer's equity.

2.12 Amongst other things, this approach has served as a basis for making decisions on further taxpayer investment in departments. If departments require further capital from government, they are required to present business plans which demonstrate that the required taxpayer investment will achieve a rate of return at least equivalent to the cost of capital charge imposed on the department.

2.13 More recently, government has introduced a value based reporting protocol for State Owned Enterprises. Under this protocol, State Owned Enterprises are required to report their results in economic terms. The purpose is to report the entity's performance, over the reporting period, relative to the required returns to the providers of capital. In respect of debt this means the actual interest rate(s); in respect of equity capital (the Crown's interest in the

business) it means the market required rate of return on equity for a business with the risk characteristics of the particular state owned enterprise. The purpose of this form of reporting is to focus the attention of the board and management of the SOE on whether their conduct of the business has achieved a positive return for the Crown in economic terms. The approach recognises that a firm may be reporting an accounting profit but nonetheless making a loss in economic terms in the sense that the economic return on equity is less than the market required rate of return or, to put it another way, the business is earning less than the opportunity cost of the capital it employs and the owner could expect to do better by disinvesting and placing the money elsewhere (unless, of course, management can improve its performance).

2.14 Local government reform in 1989 and thereafter applied to local government broadly the same principles as central government had applied to its own departments and agencies. As part of this, central government sought to make local government recognise the cost of capital used in its various activities. This was first introduced as part of the new annual plan/annual report requirements in the Local Government Amendment Act (No. 2) 1989. Under this legislation, local government was required to report on the basis of 'significant activities' with local authorities required to state in their annual plans their significant policies and objectives, and performance targets and other measures by which performance was to be judged in relation to objectives. In turn, the annual report was to assess the authority's performance against the policies, objectives, performance targets, costs and sources of funds specified in the annual plan.

2.15 The 1989 Amendment Act also required local authorities to adopt financial systems and reporting and record keeping procedures that are 'consistent with generally accepted accounting practices recognised by the New Zealand accounting profession as appropriate and relevant for the reporting of financial information in the public sector'.

2.16 To the surprise of local government, the legislation included a requirement that the annual plan should include, in total and for each significant activity, the indicative costs '***including an allowance for depreciation and a return on capital employed***'.

2.17 As noted, the annual report was to assess the local authority's performance against matters in the annual plan including projected costs and the allowance for depreciation and a return on capital employed.

2.18 Finally, the financial systems to be adopted by the local authority were to include, for each significant activity, a separate allowance for depreciation and provision for a return on capital.

2.19 Publicly available material suggests that the origins of this requirement are unclear. An article 'A Case Study in Confusion?' in the October 1991 Accountants Journal by (then) Professor Don Gilling of Waikato University noted:

- 'No advance warning was given. No background paper existed which explained or justified the new policy.
- 'The Department of Internal Affairs had no knowledge of how

the requirement came to be inserted in the Act and was quick to point out it didn't know what it meant or how it should be applied'.

- 'Similarly, the Treasury wasn't sure how or why it was in the law, and was equally quick to mention if it was responsible, then it didn't know where the idea had sprung from'.
- 'Nor had it any background papers which would explain or justify the new policy, or identify particular problems it was designed to overcome'.

2.20 A draft report prepared by the Audit office in 1994 noted:

'cost of capital is meant to:

- Make local government managers more aware of opportunity costs in managing assets.
- Remove any bias in favour of capital-intensive goods or services which might exist if capital is treated as free.

'This office supported the reporting of cost of capital because of the importance of the first objective. Good financial management requires that managers take account of opportunity cost when making decisions about capital investment or divestment. However, there are conceptual difficulties with reporting the cost of capital in general purpose financial reports'.

2.21 This was at the heart of the problem. The requirement to adopt financial systems which accorded with generally accepted accounting principles and to report, within those financial systems, a return on capital directed attention to conventional financial accounting. Accordingly, most local authorities sought accounting advice on how to deal with the new concept. Indeed, given the specific requirements of the Act, they were required to do this and required to report, at least in their annual accounts, in accordance with GAAP. Because those principles recognised transactions rather than economic concepts, many authorities concluded that there was no return on capital to be reported because none was being paid or received. Theoretically, this was at odds with the annual plan requirement, as that document was not subject to generally accepted accounting principles. However the close interrelationship between the annual report and the annual plan meant that the influence of GAAP dominated.

2.22 Enquiry under the Official Information Act shows that the initiative was led by Treasury with Audit's concurrence but that there was some uncertainty as to how it would work in practice. Officials seem to have thought that a shift to accrual accounting would make inclusion of depreciation and return on capital normal accounting practice and not have given sufficient thought to the fact that normal accounting practice (GAAP) makes no provision for recording the economic (opportunity) cost of capital but simply actual payments, such as interest or dividends paid to the suppliers of capital.

2.23 This issue was raised with the Audit Office in 1990 with the suggestion that there was a need to provide guidance for local authorities so that they could understand what was required to meet

the reporting requirement in respect of "return on capital employed". The Audit Office's response was:

> "..... it would not be useful at this stage to lay down a set of rules or regulations for local authorities. The Audit Office experience would support this approach. We have found it far better if local government as a whole prepares its own sets of rules. Obviously there will be considerable input from the Audit Office to ensure that they are acceptable to us. If this process is followed the results will be far more readily acceptable by local government itself....."

2.24 This approach also reflects the specific situation the office finds itself in dealing with parties whom it is required to audit. It generally takes the view that its role as auditor is somewhat compromised if it has been responsible for specifying the procedures or interpretations which the client should follow. It is prepared to tender advice but this should not cross the fine line between its audit role and the role of specifying the approach which the party should take as it then places itself in the rather difficult position of having to pass an audit judgement on procedures which were of its own devising.

2.25 An attempt was made in 1992 to clarify the purpose of the legislation by deleting the words 'a return on' in the legislation and substituting the words 'the cost of' in an endeavour to make it clear that the focus was on the economic concept of the opportunity cost of capital and not on an actual financial transaction.

2.26 Unfortunately, this change did not deal with the fundamental problem that local authorities were still required to report in accordance with GAAP and transaction based accounting principles simply do not provide a suitable mechanism for reporting opportunity cost.

2.27 Local authority response to the statutory requirement was somewhat variable. In the Forum's view this was hardly surprising. A strict application of GAAP led easily to the conclusion that the cost of capital should be zero, as no payments were being made by local authorities to the providers of ratepayers' equity. As a result, many local authorities reported a zero cost of capital. Others, clearly recognising that there was some kind of economic purpose behind the legislation, made attempts to estimate what they thought was the cost of capital and reported this accordingly. Some reported it only on assets which they thought were tradable whilst using a zero cost of capital for what they saw as non-tradable assets (infrastructure, reserves, etc.). Others applied a cost of capital treating this as the equivalent of bank interest foregone. One or two tried to assess opportunity costs.

2.28 The 1996 amendment to the Local Government Act repealed the reporting requirement. A number of local authorities seemed to have assumed that this means that they no longer need to concern themselves about cost of capital. This impression is quite wrong.

2.29 Section 122C(c) of the new financial reporting legislation contains an obligation that "the benefits and costs of different options are to be assessed in determining any long term financial strategy, funding

policy, investment policy or borrowing management policy, and in making any decision with significant financial consequences (including a decision to take no action)". The cost of capital is a cost of any option a local authority is considering (unless there are literally no assets involved); accordingly it is one of the costs which local authorities must take into account when complying with this section. The mere fact that the term "cost of capital" is not used in this section should in no way be seen as removing the obligation.

2.30 The Local Government Forum discussed this issue with the Audit Office, when preparing a first draft of this paper. It again raised it with the Audit Office when feedback on that draft suggested that local authorities believed they no longer needed to have regard to cost of capital. The Audit Office has confirmed the view held by the Local Government Forum that cost of capital must be taken into account when assessing benefits and costs under Section 122C(c). The Forum understands that the Audit Office will be examining the way in which local authorities take decisions with significant financial consequences and will be expecting to see proper regard given to the cost of capital component.

## 3.0 Cost of Capital: Using the Concept

3.1 Cost of capital is a key decision making tool within the private sector for two reasons:

- To make sure that a business uses its resources as efficiently as possible. Experience shows that requiring managers to recognise the cost of capital can have quite dramatic impacts on efficiency;
- Estimating the value of business investments, and measuring financial performance (actual or anticipated).

3.2 Former government owned businesses provide the most dramatic evidence of the efficiency impact. Historically, Government did not apply a cost of capital to its activities. This created a very marked bias in decision making. Managers knew that they had to pay for consumables - labour, materials, etc. - but also knew that they did not have to pay for capital. Accordingly, there was a strong bias towards using capital rather than other resources.

3.3 The experience of the Government Printing Office provides a good illustration of what can happen when managers understand that capital has a real cost. In the mid 1980s, the Government Printing Office was restructured so that instead of being a single multi-functional department, it became a number of specialist business units (general printing, telephone directory printing, stationery, publishing, bookselling).

3.4 The Office was required to meet a target rate of return on shareholders' funds (set by comparison with other similar New Zealand businesses) and pay commercial rates on its borrowing.

3.5 The profit requirement for each business unit was set to meet the target rate of return, and capital budgeting was introduced that required new investment to meet or exceed hurdle rates of return. However, initially interest charges, computer charges, and accommodation costs (the latter two representing over half the capital

of the Office) were simply brought to charge as a corporate overhead.

3.6 Subsequently, the Office established separate balance sheets for each business unit (so they faced their share of interest charges) and separate business units to provide computing services and accommodation (so explicit charges were made for these services).

3.7 The impact on the capital costs of the Office were immediate. Machines were double shifted, accommodation requirements reduced, debtor management became much more focused, and requests for capital investment were much more rigorous.

3.8 Half of the buildings owned by the Office were disposed of (representing a quarter of the assets on the balance sheet), and significant reductions in plant holdings occurred. Returns on capital increased markedly.

3.9 This experience translates easily into local government and, indeed, some local authorities are already applying the approach which the Government Printing Office used. In a variation on charging for cost of capital, one major local authority has now centralised all of its property in a single business unit. Council activities, which use council owned property, are now required to lease it from the Property Business Unit on normal market terms. Leases are negotiated and rentals fixed on a conventional arm's length basis.

3.10 Managers of units using that Council's property have a choice. They can pay the rental of the property, out of their budgetary allocation, or they can give up the property. As a result of this change, the Council's managers are looking very closely at whether they need the properties involved and can they make better use of the money they are paying in rental in some other way. The immediate result has been that a large number of properties have been returned to the Property Business Unit by managers who, now that they have to pay for the use of the property, have concluded that this is not a sensible use of their resources. The Council concerned has realised millions of dollars from the sale of surplus property.

3.11 Increasingly, the Forum expects that Councils will want to manage their capital from a central treasury function (this is a natural consequence of the need to establish borrowing management and investment policies). This provides a very straight forward way for councils to manage their capital so that managers responsible for individual council activities face the real cost of retaining council capital. On this approach, capital is allocated to individual activities from the treasury function and an appropriate charge levied. The provision of funds to meet that charge is a separate decision. The Council may decide not to fund fully the charge to one or more of its activities if it believes that capital is not being used efficiently.

3.12 A simple example will illustrate this. Assume a council trading activity which has substantial debtors. Assume also that the management responsible for that function has not really concentrated on managing debtors. As a result, the average age of debtors may be in the order of 60-90 days rather than the 30 days which might be expected under strong debtor management.

3.13 Council may take the view that management within the operating

unit has been too lax in dealing with debtors. Accordingly, it may decide it should only finance the cost of capital charge, in respect of the capital tied up in debtors, to a level sufficient to cover an average age of 30 days. As a result, management of the operating unit will either have to reduce the average age of debtors by improving collection, cut expenditure elsewhere, or face the consequences of operating at a deficit.

## Investment Decisions

3.14 Cost of capital is just as important when a council is taking investment decisions, both the decision to make a new investment the decision to retain an existing asset.

3.15 At the margin, council capital comes from ratepayers. The decision by a council to invest money in a new asset, or to retain an existing asset, is a decision to take or withhold the amount involved from ratepayers. The fact that this is so can sometimes be hidden by mechanisms such as:

- Financing an investment from debt - but that debt is repaid from rates;
- Financing it from reserves - but those reserves could have been used to reduce rates.

3.16 The practical effect of taking or withholding those dollars from ratepayers is that they lose those dollars and, as a result, the opportunity to invest them in their own right.

3.17 This provides a way of assessing the opportunity cost of the capital used by local authorities. It is not the return which could have been earned on a bank deposit. Instead, it is the return which ratepayers could have earned if the money was left for them to invest.

3.18 Put shortly, the best measure of income foregone, because ratepayers do not have the dollars which councils take or withhold from them, is the rate of return an investor would expect on an investment of average risk. At the moment this is in the order of 14% (remembering that we are speaking of real rather than financial investments and returns include capital growth).

3.19 That, then, is the cost to ratepayers in terms of income foregone. This is an average figure. It is a fair measure of the cost as between ratepayers on the one hand and councils on the other.

3.20 Is this, then, the cost which councils should apply when assessing their own investment decisions? At first glance, this might seem quite sensible. However, the answer is not quite so simple. Councils invest in a range of different activities. Some are very safe and some quite risky.

3.21 Investing in a new water pipeline, which is essential in order to maintain service, is a relatively risk free investment. It is a natural monopoly and users of the service will pay whatever council demands.

3.22 On the other hand, if a council invests in (say) developing a new hotel or entertainment complex, it is entering into much more risky

territory. It cannot be sure that the business will earn sufficient income to cover its costs; it may end up making a substantial loss.

3.23 In the private sector, investment decisions are made by assessing the required rate of return having regard to the risk associated with the investment. If the investment is low risk, then the required rate of return or cost of capital to be applied is also relatively low. If the business has a high risk, then the required rate of return or cost of capital is proportionately high.

3.24 The investment decision is then assessed by estimating the net cash flow (revenue less expenses) year by year and discounting that revenue back to the present day using the required rate of return as the discount factor.

3.25 This same approach should be used by local authorities when setting the cost of capital for each of their operating units. The point of doing so is to ensure that managers (and for that matter, elected members) understand not just that capital actually has a cost, but that this cost varies depending on the risk of the activity in which it is invested.

3.26 Perhaps the most practical use of cost of capital, for local authorities looking at investment decisions, is in considering whether or not to retain ownership of a council owned company. It is not unusual for councillors to argue that they should retain ownership because the council gets a dividend flow and this can be offset against rates. It is easy to understand why councillors should think this way but it is not actually the right measure. A council's investment in a LATE or other council owned company is adding or subtracting value to the extent that it earns more or less than its cost of capital. Whether or not councils are thinking of selling council owned companies, they should as a matter of routine know what the true cost of capital is, as estimated by the use of the CAPM, and require directors to ensure that they earn at least this level of return.

## 4.0 Conclusion

4.1 Proper use of cost of capital is a very valuable tool for local authorities. Its uses include:

- Ensuring that managers face incentives requiring them to make efficient use of the capital assets under their control so that, unless the assets are contributing at least the equivalent of their associated cost of capital to the activity of the unit, the managers have strong incentives to yield them up so the capital can be redeployed;
- Helping elected members and ratepayers understand that capital is not a free good and that, each time the council makes a decision to invest in a new asset, or to retain an existing asset, it is in effect withholding that resource from ratepayers and denying them the income they could receive from investing it in their own right;
- Providing a tool which allows councils to make choices between different investments, or existing businesses, based on the risk associated with those. Properly applied, this approach should mean that councils only undertake new investments, or retain

existing ones, when the potential return to the council and its ratepayers is at least sufficient to compensate for the risk involved in the activity;

- Removing the current bias in favour of capital intensive investment which results from the fact that managers have to "pay" for consumables such as labour or materials, but not for capital.