

**Accounting for the Cost of Capital
by Federal Entities**

Invitation for Views

July 1996

THE FEDERAL ACCOUNTING STANDARDS ADVISORY BOARD

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The Board communicates its recommendations by publishing recommended accounting standards after considering the financial and budgetary information needs of Congress, executive branch agencies, and other users of federal financial information. The Board also considers comments from the public on its proposed recommendations, which are published for comment as "exposure drafts." The Board's sponsors, i.e., the officials who established the Board, then decide whether to adopt the recommendations. If they do, the standard is published by the OMB and the GAO and then becomes effective.

Additional background information is available from the FASAB, including: (1) the "Memorandum of Understanding among the General Accounting Office, the Department of the Treasury, and the Office of Management and Budget, on Federal Government Accounting Standards and a Federal Accounting Standards Advisory Board" and (2) the "Mission Statement of the Federal Accounting Standards Advisory Board."

Federal Accounting Standards Advisory Board
Ronald S. Young, Executive Director
750 First Street, NE, Room 1001
Washington, DC 20002
Telephone (202) 512-7350
Fax (202) 512-7366

Federal Accounting Standards Advisory Board

750 First Street, NE, Room 1001
Washington, D.C. 20002
(202) 512-7350
FAX: 512-7366

July 15, 1996

**To: Heads of Agencies, Users, Preparers, and Auditors of
Federal Financial Information**

The Federal Accounting Standards Advisory Board (the Board) is pleased to issue the attached Invitation for Views (IFV) on accounting for the cost of capital by reporting entities of the United States Government. Unlike exposure drafts, the IFV is issued before the Board has reached any conclusion about the subject. In the IFV, the Board invites your views and comments on issues related to the potential uses of the cost of capital information in managerial decision making and in the management of costs and assets. Comments are also solicited on approaches to measure and account for the cost of capital. The IFV provides agencies and interested parties with an opportunity to express their views at the earliest stage of the project.

The Board has developed four groups of issues for respondents to comment upon. Respondents are encouraged to raise other issues that they deem relevant to accounting for the cost of capital by the federal government. Responses should be sent by October 4, 1996 to:

Ronald S. Young, Executive Director
Federal Accounting Standards Advisory Board
750 First Street, NE, Suite 1001
Washington, D.C. 20002-4241

The Board will carefully consider your comments, and it may hold a public hearing for respondents who wish to present oral comments. Individuals and organizations wishing to make oral presentations should indicate their desire in their written comments or in a separate letter to the Board. If the Board decides to hold a hearing, notice of the date, the place, and the time of the hearing will be published in the *Federal Register* and in *FASAB Newsletter*.


Ernest B. Staats
Chairman



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Executive Summary

1. The Federal Accounting Standards Advisory Board (the Board) is considering the subject of accounting for the cost of capital. In this document, it invites views and comments from federal agencies and other interested parties on issues related to the potential uses of the cost of capital information in managerial decision making and in the management of costs and assets. Comments are also solicited on approaches to measure and account for the cost of capital. The Invitation for Views (IFV) provides agencies and interested parties with an opportunity to express their views before the Board reaches any conclusion on the issues.

2. As used in this IFV, "capital" is the amount of funds invested in assets possessed by federal entities, including assets used in operations, held for sale, and maintained for contingent uses. The Federal Government obtains its capital by issuing public debt and by collecting taxes and fees. "Cost of capital" is the compensation or return required by providers of those funds. For the 1995 fiscal year, the federal government paid \$232 billion in net interest mainly on federal debt,¹ and the cost is growing. A part of that interest was incurred on funds used to finance government assets. The cost of capital raised through taxation is an opportunity cost; that is, the sacrifice of a return that could have been earned if the capital were invested in alternative economic opportunities.

3. Currently, federal entities do not report the cost of capital except for interest on debt borrowed by the entities individually. The Federal Credit Reform Act of 1990 required that agencies borrow funds from the Treasury to finance direct loans made to the public and pay an interest on the borrowed funds. This, in effect, imposed a capital charge on loan assets. Unlike

¹ Financial Management Service, Department of the Treasury, United Statement Government Annual Report Fiscal Year 1995 (December 1995).

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borrowed funds, federal entities are not required to pay or to report a capital charge on appropriated funds used to finance assets.

4. Many people believe that cost of capital is no less significant than the costs of labor and material for the production of government goods and services. Thus, it is appropriate to consider whether and under what circumstances the cost of capital should be recognized and included in accounting for the full costs of government activities and outputs. As explained in Statement of Federal Financial Accounting Standards (SFFAS) No. 4, Managerial Cost Accounting Concepts and Standards for the Federal Government, the full cost information is useful as a basis for improving asset management and operating efficiency, evaluating cost-effectiveness, and determining user charges for government goods and services.²

5. Companies in the private sector have used the cost of capital for a number of management purposes, such as gauging the rate of return as a measure for the performance of operating units, and making capital expenditure decisions. Recently, there are significant developments in accounting for capital costs by the governments of other countries. For example, in 1989, the Government of Canada issued a guide to its departments instructing them on the calculation of the cost of capital and the inclusion of that cost, if significant, in measuring the full cost of government services. In 1991, the Government of New Zealand established a rule for its ministries to pay a capital charge and include that charge in operating expenses. Experience of the New Zealand Government indicates that the cost of capital information encouraged and helped department managers in better managing their assets. More recently, The United Kingdom government announced in a report to Parliament dated July 1994, that it will use full resource accounting and budgeting by its departments, and will recognize the cost of capital as an expense in the provision of government goods and services.

² SFFAS No. 4, paragraphs 199-208.

6. This IFV poses four groups of issues for respondents to comment upon. Respondents are encouraged to raise other issues that they deem relevant to accounting for the cost of capital by the federal government. The four groups of issues address:
- What are the specific areas in which the information on cost of capital could be used by federal executives and managers at various levels.
 - What categories of assets should be included in the capital base and how those assets should be valued for the purpose of calculating the cost of capital.
 - What is the capital cost rate that should be used to calculate the cost of capital. (Options include the government's borrowing rate and the average rate of return on private sector investments.)
 - What would be a cost-effective approach to accounting for the cost of capital without making it unnecessarily complex. For example, the Board might limit the accounting requirement to capital intensive activities. The Board also solicits views on how the cost of capital should be accounted for. (Options include (a) recording it in the general ledger accounts and reporting it in general purpose financial statements, and (b) discussing it in a note to financial statements as supplemental information without recording in the general ledger accounts.)

After receiving written comments, the Board may hold a public hearing for some respondents to present their oral comments.

Introduction

Purpose and Scope

7. The Board is considering the feasibility and appropriateness of measuring and recognizing the cost of capital in financial reporting by reporting entities of the United States Government (the federal entities). In this Invitation for Views (IFV), the Board solicits views and comments on issues related to (1) usefulness of information on cost of capital and its effect on management decision making, (2) the capital base and capital cost rates used to measure the cost of capital, and (3) accounting procedures.
8. The scope of discussion at the current stage is limited to accounting by individual reporting entities within the federal government, such as departments, agencies, and programs, rather than the entire federal government at the consolidated level. However, since most of the assets reported by federal entities were centrally financed by Department of the Treasury (the Treasury) through issuing public debt and taxation, the capital cost and structure of the entire federal government must be considered in developing a measure for the cost of capital for federal entities.
9. In at least two occasions the Board raised the subject of accounting for the cost of capital. One of them occurred during its deliberations of the Managerial Cost Accounting Concepts and Standards. Several Board members commented on the importance of cost of capital in product costing, performance measurement, and managerial decision making. The other occasion occurred when the Board set standards for property, plant, and equipment. The Board discussed whether the costs of

using capital assets should include both depreciation and imputed interest costs. Because of the complexity of the subject, the Board decided to set up a separate project on cost of capital and formed an advisory group to identify issues. The advisory group laid the ground work for this IFV.

10. The IFV is issued before the Board reaches a conclusion on any issues. After receiving written responses, the Board may hold a public hearing on the subject. Views and comments received will help the Board in considering the issues and decide what further action, if any, should be taken. Thus, the IFV provides the federal agencies and other interested parties with an opportunity to comment on the subject at the earliest stage of the Board's deliberation.

The Meaning of Capital and its Cost

11. The word "capital" used in this IFV means money invested in assets possessed by federal entities, which include assets currently used in operations, held for sale, and maintained for contingent uses. In a broad sense, capital embraces all entity assets. However, to calculate the cost of capital, the capital base may be defined to include only certain categories of assets such as fixed assets, fixed assets plus inventory, or fixed assets, inventory, and receivables.
12. The term "cost of capital" used in this IFV refers to the return, or interest, required by capital providers. It is measured by applying a rate of interest (the capital cost rate) to the amount of capital invested in entity assets (the capital base). Capital costs vary in form and rate with sources of capital. The federal government has two general capital sources: the issuance of debt such as Treasury bills, notes, and bonds (referred to hereafter as debt capital); and the collection of taxes and fees

(referred hereafter as tax capital). The cost of debt capital is paid in the form of interest. The cost of tax capital does not require an expenditure, but can be measured as an opportunity cost which is the sacrifice of the minimum return that the capital could have earned if invested in alternative economic opportunities.

13. Capital cost rates vary with maturities and risks of investments. Interest rates on short term debt securities usually differ from long term debt securities. For a given maturity, interest rates on U.S. Treasury securities are usually lower than securities issued by corporations because investing in U.S. Treasury securities has a lower default risk than investing in corporate bonds.

Recent Developments

Practices in the Private Sector

14. There have been considerable discussions on the use of cost of capital information by the accounting community in addition to economists and financial analysts. (See a partial list of references in Appendix B.) In the 1980's, the National Association of Accountants (NAA) issued two Statements on Management Accounting on cost of capital. The NAA stated: "The cost of capital is important in making investment decisions, managing working capital, evaluating performance, and determining the costs of products, product lines, and services that include the use of capital resources."³

³ NAA, Statement on Management Accounting No. 4H, Uses of the Cost of Capital (January 1, 1988) p. 3.

15. Cost of capital has been used as a discount factor in making capital expenditure decisions. In addition to that, many companies have used the cost of capital as a benchmark to measure divisions' performance. One of the measurement methods compares the cost of capital with the rate of return attained by operating units. An operating unit is considered profitable if its return on investments exceeds the cost of capital. Another method expresses the cost of capital as a capital charge in dollars. The capital charge is subtracted from an operating unit's net earnings to derive the "excess of net earnings over the cost of capital", or the "residual income."⁴ The unit is considered profitable if its residual income is positive. These performance measures are particularly effective for decentralized corporations whose divisions have more autonomy in managing their assets. The performance measures provide managers with an incentive to keep their assets fully productive, and keep the investments in assets at a minimum level. It should be noted that external financial reports of companies in the private sector recognize interest on debt as an expense, but do not recognize the cost of equity capital provided by stockholders or generated from operations.

Canada

16. In 1989, the Treasury Board of Canada Comptroller General issued Guide to the Costing of Outputs to assist the departments of the Government of Canada in meeting their cost accounting responsibilities. The Guide (revised in 1994) states

⁴ General Electric was said to be among the first companies which adopted the residual income approach. More discussion on residual income can be found in Charles T. Horngren and Gary L. Sundem, Introduction to Management Accounting, 8th ed. (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1990) 367-368. See, also, David Solomons, Divisional Performance (Homewood, Ill.: Richard D. Irwin, Inc., 1965) 123-159.

that "Cost of capital should normally be included in the base for full costing of outputs."⁵ The full cost, including the cost of capital, is considered useful for cost recovery, make-or-buy decisions, level of service decisions, and benefit-cost analyses.

New Zealand

17. As a part of its financial management reform, the New Zealand Government gave its departments the authority to manage its capital assets and at the same time it established a capital charge for all departments. Each government department receives an appropriation as capital charge allowance. At the year-end, each department calculates and pays a capital charge to the Crown. Depending on each department's level of invested capital, the capital charge payment may be more or less than the appropriated capital charge allowance. This provides the departments with an incentive to manage its capital assets carefully so that the capital charge payment can be kept within the appropriated allowance. (See Appendix B for details.)

The United Kingdom

18. In a report to Parliament, entitled Better Accounting for the Taxpayer's Money (referred to hereafter in this IFV as the UK Report), the government of the United Kingdom proposed to implement both "resource accounting" and "resource budgeting"⁶ on an accrual basis. It also proposed for Parliament to approve and control public expenditure on the same accrual basis. A

⁵ Treasury Board of Canada Comptroller General, Guide to the Costing of Outputs in the Government of Canada (February 1989), p. 14.

⁶ Secretaries of the Treasury of the United Kingdom, Better Accounting for the Taxpayer's Money, A Consultation Paper presented to Parliament (July 1994).

principal objective of the resource accounting is to recognize the full costs of resources consumed in the provision of government goods and services on an accrual basis. The full costs will include depreciation and the cost of capital, and will be linked to government outputs. UK's resource budgeting will allocate and control public expenditures on the same accrual basis, and will make a distinction between current and capital expenditures.

19. The recognition of a capital charge is an important feature in UK's resource accounting and budgeting. The capital charge will be reported by each department as a cost in its "operating cost statement". A purpose of imposing the capital charge is to enable department managers to evaluate the cost of using capital and current resources on an equivalent basis. The UK Government believes that the capital charge will encourage the efficient utilization of capital by creating incentives to dispose of unwanted or uneconomic assets. It further states that "The quality of decision making on the acquisition of new capital should also be improved since the ongoing capital costs would have to be accommodated within future resource budgets."⁷

Current Practices of Federal Entities

20. Federal entities rely mainly on two capital sources to finance their assets: (1) funds appropriated by Congress, and (2) funds borrowed by individual entities directly. Most assets reported by federal entities are financed by appropriated funds. Those funds are obtained centrally by the Treasury from collecting taxes and issuing notes and bonds. In their general purpose financial statements, reporting entities have used the terms "invested capital" and "cumulative results of operations" to report the appropriated funds and internally generated funds that

⁷ Ibid, paragraph 3.26, page 20.

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were used to finance the assets, and have reported borrowed funds as liabilities.⁸

21. To the extent assets are financed with appropriated funds and internally generated funds,⁹ reporting entities do not recognize a cost of capital. One apparent reason is that there is no actual charge for the use of those funds by the Treasury. However, the capital is by no means free of cost. Some appropriated funds are borrowed by the Treasury through issuing debt and the Treasury pays an interest on the debt. That interest expense is recognized in the consolidated financial statements of the federal government, but is not recognized by individual reporting entities.

22. In limited cases, some federal entities are authorized to borrow funds from Treasury or the Federal Financing Bank. Also, some are authorized to issue debt securities to the public. These borrowed funds generally carry an explicit interest rate. Federal financial accounting standards require that the interest on funds borrowed by a reporting entity be recognized as an expense. Thus, those entities that borrow funds report interest expense, whereas the entities whose funds are provided by appropriations do not report an interest expense.

⁸ These terms have been used to describe financing sources and have been displayed as components of the "net position" in the statement of financial position prescribed in OMB Bulletin No. 94-01, Form and Content of Agency Financial Statements (Nov. 1, 1993). Under the new standards prescribed in SFFAS No. 7 Accounting for Revenue and Other Financing Sources and Concepts of Reconciling Budgetary and Financial Accounting (June 1996), appropriations used to finance assets will be included in "Cumulative Results of Operations" displayed in the Balance Sheet.

⁹ From this point on, the term appropriated funds will also include funds generated from operations. Federal agencies generally may not retain funds received in their operations without appropriations.

23. The Credit Reform of 1990. The Federal Credit Reform Act of 1990, in effect, instituted a capital charge on loan assets. The Act requires that all direct loans be recorded as assets at the present value of their estimated cash flows discounted at the interest rate of marketable Treasury securities. The Act also stipulates that the lending agencies borrow funds from the Treasury to make those loans and pay an interest on the funds borrowed from Treasury at the interest rate of marketable Treasury securities. The interest payment to Treasury is a capital charge on funds invested in loan assets.¹⁰
24. In summary, entities currently report the cost of capital on funds borrowed by themselves individually. This includes the funds invested in loan assets under the credit reform requirements. However, the cost of capital on assets financed with appropriated funds is not recognized. Although federal entities do not fully recognize capital costs in financial reporting, the cost of capital as a concept has been used by the federal government in making planning and budgeting decisions involving capital investments. For example, in submitting program proposals, federal entities are instructed to use an interest rate as the discount rate to perform cost-benefit analysis for public investment projects.¹¹ Federal entities are also instructed to use the Treasury's borrowing rates as discount rates in cost-effective analysis, lease-purchase analysis, and asset sale analysis.¹²

¹⁰ For more information on accounting for loans and loan guarantees, please refer to SFFAS No. 2, Accounting for Direct Loans and Loan Guarantees (August 23, 1993).

¹¹ OMB Circular No. A-94 (Revised October 29, 1992), 9-10.

¹² *Ibid.*, 10-11.

**The Relevance of Recognition of Capital Costs
to Reporting Objectives**

25. The relevance of the cost of capital in financial reporting may be considered in relation to the objectives of financial reporting by federal government entities as established in Statement of Federal Financial Accounting Concepts (SFFAC) No. 1, Objectives of Federal Financial Reporting. It is stated in that Statement that federal financial reporting should provide information to help assess reporting entities' budgetary integrity, operating performance, stewardship, and control systems. Reporting the cost of capital could improve information for the assessment of entities' operating performance and stewardship.
26. SFFAC No. 1 discussed at length the importance of cost information for performance measurement. It emphasized that cost is a necessary element to measure the efficiency and cost-effectiveness of entity operations. To meet that reporting objective, Statement of Federal Financial Accounting Standards (SFFAS) No. 4, Managerial Cost Accounting Standards for the Federal Government, was issued. SFFAS No. 4 established managerial cost accounting concepts and standards which require that the full cost of goods and services provided by federal entities be reported in general purpose financial statements.
27. In recommending full cost reporting, the Board stated in its Basis for Conclusions that full cost information is useful in measuring operating efficiency and cost-effectiveness. It is also essential for improving financial management at all levels of the federal government though: (1) program evaluation and authorization, (2) promoting cost awareness and cost control, (3) setting fees and prices, and (4) making cost analyses and

comparisons. "Full Cost" is defined to encompass all direct and indirect costs. Many people believe that capital is a major production factor, and that the cost of capital is no less significant than labor and material costs. Thus, it may be argued that without including the cost of capital, full costing may not be complete.

28. The relevance of the cost of capital information may also be considered in relation to the objective of assessing stewardship. Given a capital cost rate, the cost of capital is determined by the amount and duration of assets held. Thus, the selection, acquisition, preservation, and disposition of assets will all affect an entity's use of capital and capital costs.

29. When evaluating the usefulness of the cost of capital information, the Board would also consider ways to alleviate unnecessary accounting burden. For example, the scope of the accounting application may be limited to capital intensive activities or some commercial-type activities,¹³ and the application may be made optional for activities which do not use substantial capital assets.

Invitation for Views and Comments

30. To facilitate consideration and discussion, the Board has identified four groups of issues for respondents to comment upon. The issues in the first group are conceptual in nature, which address the usefulness and appropriateness of recognizing or disclosing capital costs by federal reporting entities. The IFV solicits comments on the specific areas in which the information on cost of capital could be used by federal executives, managers, and their aides at various levels.

¹³ A related discussion on "capital intensive activities" can be found in paragraph 77, page 38.

31. The issues in the second group address what assets would be included in an entity's capital base. A "capital base" can be viewed as a corpus of capital used to finance a group of assets. The scope of the capital base determines the extent to which the capital cost would be recognized. The categories of assets included in a capital base can range from all assets on an entity's financial statements to only one category of assets such as the general property, plant, and equipment. Respondents are requested to consider the significance of the cost of capital in relation to the management of fixed assets as well as working capital, such as supplies and materials and accounts receivable.
32. To avoid double counting, debt obtained through direct borrowing by reporting entities may need to be excluded from the capital base. Those borrowed funds usually carry an explicit interest cost which is recognized as interest expense under the federal financial accounting standards.
33. The issues in the third group address what capital cost rates would be applied to the capital base. The cost of capital equals capital base multiplied by a capital cost rate. Options discussed include the government's borrowing rates and the average rates of return on private sector investments.
34. The issues in the fourth group are related to potential implementation problems and accounting and reporting procedures. They address (a) whether a cost-effective approach could be used to avoid unnecessary complexity, and (b) whether the accounting requirement, if adopted, could be limited to capital intensive activities. Respondents are also requested to comment on whether the cost of capital could be recorded in general ledger accounts and reported in general purpose financial statements by reporting entities, and if so, what journal entries may be made in the general ledger accounts.

35. These issues are fully posed and explained in the remainder of this IFV. Each group of issues is stated in a box followed by a brief discussion. Respondents are invited to comment on the issues and the discussions. Please provide reasons for each answer so that the Board can better consider your views. Respondents are encouraged to comment beyond those issues and to identify other issues for the Board's consideration. After receiving written comments, the Board may hold a public hearing on the subject.

Usefulness of Cost of Capital Information

Issue Group 1: Usefulness of Cost of Capital Information

1. *Is the information on cost of capital useful to users of federal entity financial reports? If so, please explain and describe the ways in which such information could be used. If you do not believe it is useful please explain your reasons. Please consider different types of federal activities which may be financed with different types of funds, such as business type activities, trust funds, and governmental activities. Please also consider information needs for decision making at various levels from program management level to Congress and the president.*
 - 1a. *Do you believe the cost of capital information is useful for such purposes as: (i) program evaluation, (ii) measuring operating performance, and (iii) setting fees and user charges for government goods and services?*
 - 1b. *Would the cost of capital information help federal managers make better decisions regarding acquiring, holding, and disposing of assets and managing costs?*
 - 1c. *Would the inclusion of cost of capital in the full cost improve or hinder cost comparability between entities and over time?*

Discussion

36. The intent of identifying issues in the first group is to establish whether and for what purposes the cost of capital information would be useful. The usefulness may be considered in the context of managerial decision making as well as external reporting. Internal and external users of government cost information in general include Congress and federal executives, program managers, and citizens (including news media and

Usefulness of Cost of Capital Information

special interest groups).¹⁴ Management decisions usually affect the allocation of federal resources and the operating efficiency and economy in managing programs. Cost of capital may impact those decisions. Respondents may wish to consider the areas discussed below in which cost of capital information may be used.

Performance Measurement

37. An important objective of financial reporting by federal entities is to provide information that will assist in measuring the performance of federal entities and programs. Principal performance indicators include operating efficiency and cost-effectiveness. Those indicators relate efforts and costs to outcomes and results. As explained in SFFAC No.1, Objectives of Financial Reporting, efficiency measures relate financial resources used to output produced, and are often expressed as the cost per unit of output. Cost-effectiveness measures relate efforts and costs to outcomes or program results, and are often expressed as the cost per unit of outcome. Since capital is commonly believed to be an important input factor for producing goods and services, respondents are requested to consider whether cost of capital should be included in the performance measures.
38. Some commercial-type activities are expected to make a return on investments or at least recover the full cost. Respondents may consider whether the cost of capital can be used as a benchmark to determine whether the realized return can offset the cost of capital. Alternatively, if the cost of capital is accounted for as an expense, the operating results of

¹⁴ SFFAC No. 1 contains a full discussion on users of federal financial reports and their information needs.

Usefulness of Cost of Capital Information

commercial-type activities may be measured by the extent to which their revenues recover their full costs including the cost of capital.

Cost Comparisons

39. In many instances, performance measurement requires cost comparisons. Cost comparisons are also useful for other purposes, such as decisions to contract out a service or to perform it internally. Cost comparisons are usually performed on a unit cost basis (the cost per unit of output). In some situations, without recognizing the cost of capital, cost comparison may not be valid. For example, cost comparisons may not be valid among programs and activities that use different financing sources: appropriated funds, borrowed funds, or capital leases. This is because financial charges for borrowed funds and capital leases are usually recognized, while the costs of appropriated funds are not. If the capital cost of appropriated funds is recognized, cost comparisons may be performed more accurately among activities that use different financing sources.

Program and Project Evaluations

40. The cost of capital information may be useful for the evaluation of programs and projects. Congress and federal executives are often faced with decisions to initiate, renew, or expand programs or projects in both commercial or governmental type activities. Cost of capital is usually considered as an economic factor in making those decisions. For example, a capital cost rate may be used as a discount rate to calculate and compare the present values of projected future costs and benefits resulting from the proposed programs or projects. Alternatively, the cost of capital can be used as a benchmark to compare with expected internal rate of return of the program.

Usefulness of Cost of Capital Information

41. After a program is authorized and placed in operation, the information on cost of capital invested in the program could serve as a feedback to the authorization decision. It could help to evaluate whether the program performs as expected. The information could also serve as a basis for future decisions related to program modifications or new asset acquisitions.

Setting Fees and Prices

42. Cost is an important consideration in setting fees and prices. Federal policies require that when goods and services are provided with user charges, the user charges should be sufficient to recover the full cost of the goods and service, unless such recovery is prohibited by law.¹⁵ The term "full cost" as used in those policies includes a return on capital invested in land, structures, equipment, and other capital resources used.¹⁶ Since cost of capital would usually be used as a basis to determine the required return on the invested capital, the cost of capital information would be needed in determining the full cost as a basis for setting fees and prices.

Managing Assets and Costs

43. The information on the cost of capital may help in improving the management of assets. Once the manager becomes aware that it is not free to hold assets over any length of time, the manager may become more prudent in acquiring new assets, more focused on placing assets in better use, and more prompt in disposing of useless assets. If a capital cost is imputed on current assets such as accounts receivable and

¹⁵ OMB Circular A-25, User Charges (Revised July 8, 1993).

¹⁶ Ibid., par. 6 d.

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supplies and materials inventory, management may be motivated to find ways to better manage its working capital by shortening the collection period of receivables and by cutting down excessive inventory for the purpose of reducing the cost of capital.

44. Experience of the New Zealand Government and the private sector shows that the cost of capital could have a greater impact on asset management, if, in addition to accounting and reporting, other methods are also taken to control and reduce the cost of capital, such as: (1) include the cost of capital as a budget expenditure, (2) give entity managers more authority in making decisions on the acquisition, replacement, and disposition of assets, (3) use the cost of capital in measuring managers performance, and (4) provide appropriate financial incentive to entities for reducing the cost of capital and for the improvement of asset management. The UK Report indicates that the UK Government is considering moving toward those directions.

Issue Group 2: Capital Base

2. What categories of assets do you believe would be included in the capital base? How would the assets be valued for the cost of capital calculation purpose?

2a. Of the following options related to the scope of the capital base, which option, if any, do you choose and why?

- i. All assets reported in a federal entity's balance sheet;
- ii. All physical assets including general property, plant and equipment, stockpile materials, inventory of operating materials and supplies;
- iii. General property, plant and equipment, and long-term stockpile materials; or
- iv. General property, plant and equipment only.

2b. If option i (all assets) is selected, would fund balance, non-entity assets, and intra-governmental assets (claims of a federal entity against other federal entities) be included in the capital base?

2c. If none of the above options is selected, do you have an alternative suggestion for a capital base?

2d. How would the capital base be measured?

2e. Some federal resources, such as federal mission property, plant and equipment, would not be reported as assets in the balance sheet, but would be subject to stewardship reporting (See FASAB Statement of Recommended Accounting Standards No. 8, Supplementary Stewardship Reporting). Do you believe that a separate capital base for some stewardship resources should be formed? If you do not believe so, please give your reasons. If you do, please explain what categories of stewardship resources would be included in the capital base, and the usefulness of the cost of capital information related to those stewardship resources.

Capital Base

Discussion

45. The term "capital base" used in this IFV refers to the amount of capital, represented by a group of assets, for which the cost of using the capital is to be measured. The cost of capital is calculated by applying a capital cost rate to the capital base.
46. Federal entities typically report as assets: (1) financial assets such as fund balance with Treasury, cash, investments, accounts receivable, and loans receivable, and (2) non-financial assets which include inventory, and property, plant, and equipment. Federal entities also report "non-entity assets," if any, on their balance sheet (the statement of Financial Position). "Non-entity assets" are those assets that are held by an entity but are not available for use in the entity's operations.¹⁷
47. The basic issue to be considered in this section is what types of assets would be included in a capital base for cost of capital calculations. Respondents may consider the following options in defining a federal entity's capital base or suggest other options:
- (i) All entity assets reported on the balance sheet;
 - (ii) All physical assets, including general property, plant and equipment, stockpile material, inventory, and other physical assets;
 - (iii) General property, plant and equipment, and long-term stockpile materials; or

¹⁷ "Non-entity assets" is defined and discussed in SFFAS No. 1, Accounting for Selected Assets and Liabilities (March 30, 1993), paragraphs 25 and 26.

(iv) General property, plant and equipment only.

48. Option (i) includes all assets reported in an federal entity's balance sheet, including both current and fixed assets. This option reflects the view that all assets require the use of capital, and thus would be subjected to improved management in order to reduce their carrying cost. Some may believe that accounting for the cost of capital for current assets may help in improving the management of working capital. For example, some may believe that a reduction in excessive inventory would reduce the related holding costs including the cost of capital.

49. If Option (i) is selected, respondents are requested to consider whether a federal entity's capital base would include fund balance with Treasury, non-entity assets, and intra-governmental assets. A fund balance with Treasury represents an authority for the entity to make expenditures, but it does not represent any resources actually held or used by the reporting entity. Non-entity assets are those assets that are held by the entity for custody but are not available for its use.¹⁸ Intra-governmental assets are claims of a federal entity against other federal entities.¹⁹

50. The remaining options narrow the focus of measuring and reporting an entity's capital cost: from all tangible assets to general property, plant and equipment (PP&E) as a minimum. Option (ii) encompasses all tangible assets, such as property, plant, and equipment, stockpile materials, and operating materials and supplies. Option (iii) includes long-term fixed assets only: property, plant and equipment, and stockpile

¹⁸ SFFAS No. 1, paragraphs 25 and 26.

¹⁹ Ibid., paragraphs 18 and 19.

Capital Base

materials held for an indefinite length of time. Option (iv) is limited to property, plant, and equipment. In selecting or suggesting a capital base option, respondents are requested to consider and comment on the effect of a selected option on management information needs, such as information for full costing and asset management.

Valuation of the Capital Base

51. Once the assets to be included in the capital base are identified, respondents may consider how the assets would be valued for the cost of capital calculation purpose. The following table summarizes the valuation bases prescribed in the current federal financial accounting standards.

Asset category	Valuation Base	Reference
Accounts receivable	Net realizable value	SFFAS 1
Goods held for sale and in the production for sale.	Historical or latest acquisition cost adjusted for holding gains or losses	SFFAS 3
Operating materials and supplies	Historical cost	SFFAS 3
Stockpile materials	Historical cost	SFFAS 3
Continued.		

(This table is continued on the next page.)

Asset category	Valuation Base	Reference
Seized and forfeited property	Market value	SFFAS 3
Foreclosed property (post-1991)	Present value of future cash flows	SFFAS 3
Loans receivable (post-1991)	Present value of future cash flows	SFFAS 2
General property, plant, and equipment	Historical cost less accumulated depreciation	SFFAS 5

52. Some respondents may wish to consider the use of the existing accounting valuation, that is, the amounts recorded in the general ledger accounts. As a possible advantage, the use of those amounts would avoid additional efforts to revalue the assets and would make the valuation of capital base consistent with the verifiable accounting records.
53. As the above table indicates, tangible assets, such as inventory and general property, plant, and equipment, are generally accounted for at their historical costs under the federal accounting standards. In recommending accounting standards for general PP&E, the Board concluded that historical acquisition cost less an accumulated depreciation should be used as the valuation base because historical cost is understandable, verifiable, and would be viewed as being objective. The accumulated depreciation would be subtracted from the invested

Capital Base

capital because it represents the portion of the capital that has been used up and charged to expense.

54. Respondents are requested to comment on whether the capital base would be valued at the beginning balance of the assets, ending balance of the assets, or the average of the beginning and the ending balance of each reporting period. Some may argue that using the beginning balance of the assets makes the amount of the cost of capital for the period more predictable, and may provide managers with more incentive to reduce invested capital during the period.
55. Respondents may suggest an alternative valuation basis other than the accounting bases. The Task Force of this project considered the use of a current value approach, and developed a proforma statement which may help respondents to consider the effects of the current valuation approach. The proforma statements are illustrated in Appendix A.

Capital Structure

56. After the assets of a capital base are identified and appropriately valued, the sources of capital that were used to finance the assets may have to be identified. In addition to appropriated funds, an entity's capital structure may include funds borrowed by the entity from the Treasury, the Federal Financing Bank, or through issuing debt to the public. Typically, direct loans made after the credit reform are financed with funds borrowed from the Treasury. An entity's capital structure may also include liabilities incurred under capital leases. Since interest on debt and capital leases has already been recognized as an expense, the amount of debt and capital lease liabilities may need to be subtracted from the capital base.

Stewardship Property, Plant, and Equipment

57. SFFAS No.5, Accounting for Property, Plant, and Equipment, requires that general PP&E be reported as assets, and states that "stewardship property, plant, and equipment" are not to be carried on the balance sheet, but are subject to supplementary stewardship reporting.²⁰ Costs of those stewardship-type resources are treated as expenses in the financial statements in the year the costs are incurred. The recommended accounting standards in FASAB Statement No. 8 Supplementary Stewardship Reporting²¹ require that the following stewardship resources be subject to supplementary stewardship reporting: (a) heritage assets, (b) federal mission PP&E, (c) stewardship land, and (d) stewardship investments including non-federal physical property, human capital, and research and development. Those standards further require that:

- Heritage assets and stewardship land be reported in physical units rather than dollar amounts;
- Cumulative investments in Federal mission PP&E be reported using either the total cost or the latest acquisition cost (without accumulated depreciation); and
- Annual investments for the year being reported and the preceding 4 years in human capital, research and development, and nonfederal physical property be reported in nominal dollar amounts.

²⁰ For the definitions of general PP&E and various categories of stewardship PP&E, please refer to SFFAS No. 5, Accounting for Property, Plant, and Equipment (September 1995).

²¹ When this IFV is prepared, FASAB Statement No. 8 is pending for final approval.

58. Over the years, the federal government has spent substantial amounts to acquire mission property, plant, and equipment.²² In accordance with FASAB Statement No. 8, the cumulative balances of federal mission PP&E will be reported in dollar amounts. Those balances are based on the values assigned to the PP&E that exist at the beginning of a reporting year, plus or minus additions, deletions, or value adjustments, but without accounting for depreciation. Respondents are requested to express views on (1) whether it is useful to report information on the cost of capital invested in federal mission PP&E, and (2) whether it is feasible to measure the cost of capital for federal mission PP&E.
59. In considering land, stewardship assets, and stewardship investments, respondents should bear in mind that SFFAS No. 8 does not require reporting a monetary value for stewardship land and heritage assets. Also, it does not require reporting a cumulative balance for stewardship investments in education, research, and nonfederal physical property (only the annual investments are reported). Without the cumulative monetary balances, it may not be practicable to measure the cost of capital for those stewardship resources.

²² As reported in the Consolidated Financial Statements of the U.S. Government for 1994, the balance of "military equipment" amounted to \$479 billion which was 42 percent of total property, plant, and equipment reported by the federal government. The amount provides an indication for the magnitude of federal mission PP&E, but it is uncertain as to how much of the military equipment could have been treated as federal mission PP&E in accordance with FASAB Statement No. 8.

Issue Group 3: Capital Cost Rates

3. The cost of capital expressed in a dollar amount is usually calculated by applying a rate, referred to in this IFV as the capital cost rate, to the amount of capital used (the capital base). For that calculation purpose, what do you believe is an appropriate capital cost rate that should be used by federal entities? Please support your answer with reasons.

3a. Listed below are some options. Which of them, if any, do you believe is the appropriate rate to use?

A. The interest cost of federal debt held by the public, with sub-options: (i) historical interest cost applicable to the time when assets are acquired or modified, (ii) the embedded cost of federal debt which equals actual interest accrued for a fiscal year divided by average federal debt outstanding during that year, or (iii) current interest cost applicable to the reporting period.

B. The current rate of return on investments made by the public in the private sector.

3b. If you choose Option A above, do you believe that the cost of long-term debt should apply to long-term assets (such as property, plant and equipment) and the cost of short-term debt should apply to short term assets (such as inventory and accounts receivable)?

3c. If none of the above is appropriate in your view, can you suggest a rate to use, and what is the rate?

3d. Should specific rates be used for individual programs of the entity?

Capital Cost Rates

Discussions

60. In order to measure the cost of capital provided to entities through appropriations, a capital cost rate needs to be determined. Funds appropriated to agencies are raised centrally by the Treasury through borrowing and tax collections. Once the funds are obtained, they become fungible. Respondents may wish to consider the following options for developing a capital cost rate and may suggest other alternatives:
- A. The interest cost of federal debt held by the public, with sub-options:
- (i) historical interest rates of federal debt held by the public applicable to the time when assets are acquired or modified,
 - (ii) the embedded cost of federal debt which may be defined as the actual interest accrued on federal debt held by the public for the year being reported divided by the average federal debt held by the public outstanding during that year, or
 - (iii) the current interest rate of marketable Treasury securities applicable to the reporting year.
- B. The current rate of return on investments made in the private sector.

Interest Rates of Federal Debt

61. Option A is based on the cost of borrowing from the public paid by the government. The underlying assumption of using the interest cost on federal debt as the capital cost rate is that all assets acquired by federal entities are financed with

federal debt. This assumption is based on the fact that over the years, the revenues of the federal government are not enough to pay entitlement benefits and other expenses, and that borrowing is the only way to finance the acquisition of assets.²³

62. Sub-option A(i) is based on historical debt cost for the years in which assets were acquired. The historical rate reflects the actual interest rate prevailing at the time the assets were acquired. This approach would require accounting efforts to search historical records in order to establish the amounts of asset acquired in past years and the interest rates applicable to those years.²⁴

63. The Federal Credit Reform Act of 1990 requires that the interest cost of funds used to make direct loans and loan guarantees during a fiscal year be measured with the interest rate of marketable Treasury securities of a similar maturity, applicable to that fiscal year. That cost rate is not changed over the life of the loans unless the loans are modified. Based on the Credit Reform Act, the federal financial accounting standards for direct loans and loan guarantees apply the same calculation basis to loans and loan guarantees obligated or committed after the credit reform (September 31, 1991).

²³ For fiscal year 1994, for example, the Consolidated Financial Statement of the U.S. Government reported \$1,386 billion in total revenues and \$1,521 in total expenses, showing an excess of \$135 in expenses over revenues. Since capital expenditures are not a part of the expenses, one can argue that the capital assets are presumably financed by debt rather than by revenues. However, the presumption does not overcome that fact that funds obtained through various sources are fungible, and there may not be a strict match between sources and uses of funds.

²⁴ The average cost rates of federal public debt can be obtained in many federal publications. One such source is the Consolidated Financial Statements of the US Government which includes a note on "Debt held by the public." See also, CBO Study Report, Federal Debt and Interest Costs (May 1993).

Capital Cost Rates

64. Option A (ii) uses the embedded cost of federal debt, which may be calculated as the actual interest accrued for the fiscal year for which financial statements are prepared divided by the average amount of debt outstanding at the beginning and the end of that year. This approach may be simpler than Option A (i) because it avoids the search for historical interest rates for the years in which the assets were acquired.
65. Option A (iii) uses a current Treasury rate applicable to the current accounting period. The current Treasury rate may be defined as the average rate of marketable Treasury securities issued during the current reporting year. Some may view the current rate as an opportunity cost to the government. The use of a current rate could be supported with two arguments: (1) the Treasury refinances its debt continuously and the cost of funds is by no means fixed, and (2) if the entity assets were sold and the capital recovered, the government could have borrowed less and saved some cost on debt for the reporting period. Theoretically, the current rate applicable to the period needs to be updated each year in order to remain "current."

Matching between the Terms of Debt Maturity and Asset Life

66. Issue 3b asks whether there should be a match between the maturity terms of the federal securities and the useful life of the assets, so that the interest rate of long-term Treasury securities, for example, would be applied to long-term assets (such as property, plant and equipment) and the interest rate of short-term securities would be applied to short-term assets (such as inventory and accounts receivable). Arguments for such approach may be based on the assumption that long-term debt is generally issued to finance long-term assets, and short-term debt is issued to finance short-term assets. However, some may argue against this approach based on the view that for the

federal government, the hypothetical relationship between the debt maturity term and the economic life of assets may not hold true.

Opportunity Cost Rates Used in the Private Sector

67. Option B is based on the capital cost rates of the private sector. The capital cost of the private sector differs from the borrowing cost to the federal government mainly in risk considerations. Traditionally, U.S. Treasury securities are considered to be free of default risk, and their interest rates are generally lower than those of corporate security issues. Thus, the cost of corporate debt and equity securities is usually higher than the interest cost of U.S. Treasury securities because investors demand a higher return to compensate for the higher degree of risk that they undertake.
68. The private sector rate of return has been used as the discount rate in benefit-cost analyses for public investment decisions.²⁵ OMB's discount policy guide is based on the private sector opportunity cost. It publishes discount rates for use in performing benefit-cost analyses of public investments.²⁶ The capital charge that the New Zealand government instituted on its departments is based the pre-tax rate of return on private investments.
69. The use of a private sector rate may reflect the theory that a public investment, whether it is financed with debt or

²⁵ Edward M. Gramlich, Benefit-Cost Analysis of Government Programs (Englewood Cliffs, N.J.: Prentice-Hall, Inc. 1981), pp. 95-107.

²⁶ OMB Circular A-94, October 29, 1992, Transmittal Memo No. 64, Section 8.b. [Other sections address discount rates for use in internal planning decisions.] A "real rate of return" is a nominal rate of return minus the inflation rate.

Capital Cost Rates

taxes, takes away money that could have been invested in the private sector to earn a return. In other words, the theory may be based on the view that for every public investment there is an alternative investment opportunity in the private sector. Another argument for using the private sector rate is to make government and private sector goods and services subject to the same level of capital costs so that they compete on the same grounds. One argument against the use of a private sector rate is that such use would create inconsistency in the cost of capital between loans receivable and other assets. This is because the credit reform requires the use of the interest rate of Treasury securities to calculate the cost of capital on funds used to finance loan assets.

Focus on Individual Programs and Projects

70. In addition to the use of a capital cost rate for the entire capital base of an entity, respondents may want to consider whether a separate capital cost rate would apply to a specific program of the entity. Such a specific rate may be more pertinent for program evaluation purposes.
71. In making decisions to approve a program or a capital investment project, such as a project to acquire major assets, federal entities usually perform an economic analysis to support such decisions.²⁷ In such economic analysis, the costs and benefits over the life cycle of the program are projected. The projected costs and benefits are then discounted at a rate equal to the cost of capital. A program or project is considered

²⁷ A considerable amount of literature has been made available within the federal government, giving guidance to federal entities on performing economic analyses based on life cycle costs. Discussions related to the subject matter can be found, for example, in OMB Circular A-76, Performance of Commercial Activities, DOD Instruction 7014.3, Economic Analysis and Program Evaluation for Resource Management (1972), and Naval Facilities Engineering Command, Economic Analysis Handbook (NAVFC P-442, 1986).

economically worthwhile if the present value of its projected benefits exceed the present value of its costs. Once a program is approved and placed in operation, it may be desirable to have information on the operating results of the program to evaluate its performance.

72. Since a specific discount rate is used in pre-approval economic analysis, it can be argued that a similar specific rate may also be used in post-approval program evaluations. The program specific rate may facilitate better comparison between pre-approval projections and actual program performance.

Issue Group 4: Implementation Procedures

4. What do you perceive to be the potential problems in implementing accounting for the cost of capital? Can you suggest some cost-effective approaches to avoid those problems?

- 4a. Considering the purposes of providing information on the cost of capital as discussed in Issue Group 1, what would be an effective approach to providing the cost of capital information without involving costly complexities?*
- 4b. Do you believe that the cost of capital information should be required only of capital intensive activities, and if so, what would be the criteria for capital intensive activities?*
- 4c. Should the cost of capital be recorded in the general ledger accounts and reported in financial statements? If so, what journal entries should reporting entities make?*
- 4d. If the cost of capital is not to be recognized in the general ledger accounts, do you believe it should be reported, discussed, and explained in a narrative note to the financial statements?*

Discussion

73. This group of issues seeks an appropriate approach to providing the cost of capital information. Underlying those issues are cost-benefit considerations. There may be a general concern that accounting for the cost of capital is complex. However, it

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may not have to be so. A simple and less costly approach could be used to provide adequate cost of capital information. For example, a relatively simple approach would consist of the following three steps:

- (1) Define net assets (excluding non-entity assets and the fund balance with Treasury) as the capital base;
- (2) Use the embedded cost of federal debt held by the public as the capital cost rate. (The embedded cost may be defined as the interest on debt held by the public divided by the average of the beginning and ending balances of federal debt held by public.)
- (3) Determine the capital charge by multiply the capital base by the capital cost rate to find the cost of capital in dollars.

74. This approach may be relatively simple because: (1) the amount of net assets is readily available in entity financial statements, (2) the embedded cost of federal debt held by the public can be calculated using data reported in the Consolidated Financial Statements of the US Government, and (3) the capital charge is simply the product of the figures obtained in steps (1) and (2). Respondents are requested to consider and comment on whether such an approach would meet the information needs as discussed in Issue Group 1 of this IFV, and if not, how the approach should be modified.

75. The capital charge, if reported in general purpose financial statements, may need to be explained in notes to the statements so that readers of the statements can understand its meaning and significance. If some agencies use quarterly or monthly reports, the annual capital charge could be divided on a quarterly or monthly basis for internal reporting. Respondents

Accounting and Reporting Procedures

are requested to comment whether this method is appropriate and adequate.

76. Examples of more elaborate and complex approaches may include: (1) apply different cost rates to assets acquired in different periods, (2) apply different rates to different categories of assets (such as short term versus long term assets), and (3) measure the cost of capital for various segments, programs, and activities, within a reporting entity, instead of using an entity-wide cost of capital. It should be noted that the use of a relatively simpler method for general accounting and reporting purposes does not preclude the use of more elaborate methods in special cost studies for managerial decision making purposes.
77. Some federal activities, such as regulatory and policy making activities, are likely to use relatively small amounts of capital assets. Other activities, such as those involve defense, energy, education, health care, transportation, and utilities, are likely to require significant amounts of capital assets. Respondents are requested to express an opinion whether accounting for the cost of capital would be made optional for those activities which are not capital intensive, and if so, what would be the criteria for capital intensive and non-intensive activities.²⁸
78. The remaining issue in this section addresses how the cost of capital, once measured, would be accounted for and reported. There may be two alternatives:

²⁸ While a definition of "capital intensive activity" may need to be developed, an incomplete survey of agency reports to Treasury found the following U.S. Departments which reported \$10 billion or more in buildings, equipment, and structures: Agriculture, Air Force, Army, Army Corps of Engineers, Other Defense Agencies, Energy, GSA, Interior, NASA, Navy, Transportation, and Veterans Affairs.

Accounting and Reporting Procedures

- (1) Recognize the cost of capital as an expense in the general ledger accounts and report the expense in the general purpose financial statements; or
- (2) Report, discuss, and explain the cost of capital in notes to the general purpose financial statements without recognizing it in the general ledger accounts.

79. Alternative (1) would treat the cost of capital as an expense. As such, it may be included in the full cost of an entity's activities. The argument for this treatment may be based on the belief that the cost of capital is a real cost of operations and therefore would be recognized as an expense and included in the full cost of government goods and services.
80. Because reporting entities are not actually required to pay a capital charge for the use of appropriated funds, some meaningful journal entries may need to be designed to "book" the cost of capital. One suggestion is that the cost of capital may be recorded as an capital usage expense (or capital charge), with a credit entry to "financing source" to offset the expense entry. The use of "financing source" entry may be based on the view that the interest cost of debt capital is paid by Treasury on behalf of the reporting entity.
81. If the cost of capital is recorded in the general ledger accounts, it may be reflected in the general purpose financial statements. At the same time, Treasury would presumably continue to record and report interest on debt as expense. To avoid double counting of the financing charges in the consolidated financial statements of the United States Government, inter-entity eliminations may need to be made. However, the normal elimination procedures may not be feasible if the capital costs recognized by various reporting entities do not

Accounting and Reporting Procedures

equal the interest expense recognized by Treasury either in total or for individual entities. A possible way to deal with this problem might be simply to remove the capital usage expense from entity financial statements during the consolidation process.

82. Alternative (2) would not book the cost of capital in the general ledger accounts. It would only disclose, discuss, and explain the cost of capital in notes to the general purpose financial statements. The disclosed information may be used for special studies and analyses to support managerial decision making.

Appendix A: Illustration of Reporting Capital Costs

This illustration is based on a hypothetical entity using a variety of assets in its operations. The entity's balance sheet is presented below with both historical cost and current value information.

Table 1: Balance Sheet
For the Year Ended September 30, 199X
(dollars in thousands)

	HISTORICAL COST	CURRENT VALUE
ASSETS:		
Accounts Receivable	\$200	\$200
Advances & Prepayments	10	10
Inventory	200	220
Direct Loans Receivable	450	450
General Property, Plant & Equipment	<u>1100</u>	<u>1750</u>
TOTAL ASSETS	<u>\$1,960</u>	<u>\$2,630</u>
LIABILITIES:		
Accounts Payable	\$125	\$125
Gen PP&E Lease Liabilities	400	400
Debt to Treasury	450	450
Other Accrued Liabilities	<u>25</u>	<u>25</u>
Total Liabilities	1,000	1,000
NET POSITION:		
Invested Capital	\$800	\$800
Cumulative results of operations	110	110
Revaluation of assets		670
Other	<u>50</u>	<u>50</u>
Total Net Position	<u>\$960</u>	<u>\$1,630</u>
TOTAL LIABILITIES & NET POSITION	<u>\$1,960</u>	<u>\$2,630</u>

Appendix A

The following table displays three options for the definition of capital base: (1) all assets, (2) all tangible assets, and (3) PP&E only. (Assuming the illustrated entity does not have stockpiles.) Each option is measured in both historical cost and current value.

TABLE 2: CALCULATION OF CAPITAL BASE
(dollars in thousands)

	OPTION 1 - ALL BALANCE SHEET ASSETS		OPTION 2 - TANGIBLE BALANCE SHEET ASSETS		OPTION 3 - PP&E	
	HIST. COST	CURRENT VALUE	HIST. COST	CURRENT VALUE	HIST. COST	CURRENT VALUE
Accounts Receivable	\$200	\$200				
Advances & Prepayments	10	10				
Inventory	200	220	\$200	\$220		
Direct Loans	450	450				
General Property, Plant & Equipment	1,100	1,750	1,100	1,750	\$1,100	\$1,750
* less: payables, debt to Treasury, Accrual, and Lease Liabilities	(1,000)	(1,000)	(550)	(550)	(550)	(550)
CAPITAL	\$960	\$1,630	\$750	\$1,420	\$550	\$1,200

* Note that the following amounts are subtracted from the capital base for various reasons: (1) the entity's accounts payable (\$125,000) and accrued liabilities (\$25,000) are subtracted because they are assumed to be interest free, (2) the debt to Treasury (\$450,000 borrowed to finance direct loans) is subtracted because its interest is recognized as interest expense, and (3) the capital leases liability (\$400,000 for general PP&E) is subtracted because its interest cost is recognized as interest expense.

We now illustrate the application of three hypothetical capital cost rate options to the capital base to compute the cost of capital:

- a. Historical interest cost to the government of 6.9%,
- b. Current interest cost to the government of 6.3%, and
- c. Current opportunity cost to the public of 10%.

Applying these three rates to the alternative capital bases results in the following interest expense options:

Table 4.2 - Imputed Interest Expense Under Each Option

OPTIONS FOR CAPITAL BASE	OPTIONS FOR INTEREST RATES		
	Historical Cost to the Government - 6.9%	Current Cost to the Government - 6.3%	Opportunity Cost to the Public - 10%
1. All Balance Sheet Assets			
a. historical cost \$960	\$ 66	\$ 60	\$ 96
b. current value \$1,630	112	103	163
2. Tangible Balance Sheet Assets			
a. historical cost \$750	52	47	75
b. current value \$1,420	98	89	142
3. General PP&E			
a. historical cost \$550	38	35	55
b. current value \$1,200	83	76	120

In reviewing these amounts, please keep in mind that the relative differences in the rates may change over time. Differences that appear immaterial at this time may not remain immaterial.

APPENDIX B: REFERENCES TO COST OF CAPITAL**The Government of the United Kingdom: Better Accounting for the Taxpayer's Money**

In July 1994, the UK Government presented a Consultation Paper to Parliament entitled Better Accounting for the Taxpayer's Money.²⁹ In that Paper, the UK Government indicated that it decided to abandon cash based accounting methods in favor of "resource accounting and budgeting" on an accrual basis, similar to private sector accounting practices. Major features of the resource accounting include: "Use of accruals accounting techniques to provide a more accurate measurement of resources consumed;" and "Accounting for the use of capital and current resources consistently in terms of resources consumed." Under the new system, departments will be required to recognize as an expense a capital charge for the use of capital and include that charge in the full cost of government services. Among purposes of introducing the capital charge were: (1) sharpen the incentives on departments to extract the best value from their use of capital, and (2) better informed resource allocation decisions on the balance between current and capital expenditure, taking into account the opportunity cost of capital and its consumption over time.

The Government of Canada's Guide to the Costing of Outputs

In February 1989, the Comptroller General of the Government of Canada issued Guide to the Costing of Outputs.³⁰ It was intended to assist government departments in meeting their cost accounting responsibilities. The Guide states that cost of capital should normally be included in the base for the full costing of outputs. As a procedure prescribed in the Guide, cost of capital is calculated on two categories of assets used in producing outputs: (1) fixed

²⁹ The United Kingdom Government, Better Accounting for the Taxpayer's Money: Resource accounting and Budgeting in Government, a Consultation Paper presented to Parliament by the Secretaries of Treasury (July 1994).

³⁰ Treasury Board of Canada Comptroller General, Guide to the Costing of Outputs in the Government of Canada (February 1989, revised in 1994).

assets, and (2) significant inventories held to support the provision of outputs. For cost recovery, the cost of capital rate is the government's borrowing rate. The Guide further states that the cost of capital is not reflected in government departments' accounting records and therefore need to be specially calculated for costing purposes. The calculation and inclusion of the cost of capital, however, are optional, if the cost is immaterial for a particular non-capital intensive operation.

The Capital Charge Regime Instituted by the New Zealand Government

The Government of New Zealand instituted a capital charge to its ministries (departments) effective July 1, 1991. The capital charge is an expenditure appropriated to and paid by all government departments to the Treasury. The capital base to which the capital charge is applied is the net worth of the department as recorded in the department's audited financial statements. The amount of the charge was set at a general rate of 13% for the first two years and was then reduced to 10.8% as interest rates in New Zealand fell. Conceptually this rate was pegged at a level equivalent to the weighted average cost of capital for similar activities in the private sector. One of the purposes of the capital charge is to facilitate cost comparisons among government units and with similar activities performed by the private sector. It was intended to assist in establishing a cost benchmark both for monitoring the efficiency of management and also as an input to decisions regarding the contracting out of services.

In mid 1993, Price Waterhouse was commissioned by the New Zealand government to make an independent review of the capital charge.³¹ The review concluded that the concept had an overall success. Among its findings, the review stated that the capital charge influenced: (1) better understanding of capital expenditure risks, (2) better understanding of the full costs of outputs, (3) more rigorous review of opportunities for disposing surplus assets, (4) better decisions between purchase and lease, and (5) better control of working capital. The review also pointed out that the impact varied with different departments. In some cases the incentive effect was undermined initially because people saw it as a bookkeeping transaction and did not see any real financial reward. In general, capital charge was

³¹ Price Waterhouse, Capital Charge Regime for Government Departments, Survey of Benefits and Current Issues, July 1993, [Photocopy].

Appendix B

recognized at the departmental level and was not allocated to lower level units. Thus, it had very little influence on decision making related to lower level activities.

OMB Circular A-25

OMB Circular A-25 on User Charges prescribes that user charges be at least as great as costs of providing services unless prohibited by legislation. The Circular provides for inclusion of both an annual rate of return on physical assets and depreciation expense in any imputed rent charges considered in determining full cost (paragraph 6.d.(1)(b)(ii)).

Cost Accounting Standard Board: CAS 414

The Cost Accounting Standard Board (CASB) is responsible for developing standards for determination of cost under Federal procurement contracts. The CASB addressed cost of capital in its Cost Accounting Standard 414 (CAS 414). This standard recognizes that the cost of capital committed to facilities is an element of contract cost and provides guidance for determining the amount allowable as a cost in government contracts. The method prescribed by CASB is to identify the net investment in facilities used directly and indirectly in performing contract work and apply a rate specified by the Secretary of the Treasury (CAS 414.50(b)). The CASB standard states that the cost of capital should be calculated by applying a interest rate determined by the Secretary of the Treasury pursuant to Public Law 92-41 (85 Stat.97) to the average of month-end balances of capital assets used in contract performance.

Statements on Cost of Capital Issued by the National Association of Accountants

In NAA Statement on Management Accounting No. 4A, Cost of Capital,³² NAA explained ways to calculate the cost of capital by firms in the private sector. It was followed by Statement on Management Accounting No. 4H,³³ in which uses of the cost of capital were suggested. It was stated in the latter statement that "The full cost of a cost object is the sum

³² National Association of Accountants (NAA), Statement on Management Accounting No. 4A, Cost of Capital (Nov. 1, 1984).

³³ NAA, Statement on Management Accounting No. 4H, Uses of the Cost of Capital (Jan. 1, 1988).

of its direct costs and indirect costs. Therefore, to measure full costs, an appropriate share of the cost of debt and equity capital should be associated with those cost objects to which they are applicable." NAA made the following recommendations: (1) include an appropriate share of capital costs in the measurement of full costs, (2) assign cost of capital to responsibility segments to improve asset utilization, (3) include cost of capital in making decisions involving alternative choices, and (4) include cost of capital in analyses that support investment decisions. NAA Stated that the cost of capital is important in making investment decisions, managing working capital, evaluating performance, and determining the cost of products, product lines, and services that include the use of capital resources.

Robert Anthony: Tell It Like It Was

Dr. Robert Anthony, in his book Tell It Like It Was, states that "the cost of using a depreciable asset in an accounting period should include both depreciation and the cost of interest on the funds committed to the asset."³⁴ Dr. Anthony proposes that interest expense (including both debt and equity financing) be treated as any other direct or indirect cost and that it be associated with cost objects as are direct and indirect costs. This would require imputing interest³⁵ on equity capital as well as allocating all interest to cost objects. Dr. Anthony argues that this approach is equally applicable to profit and non-profit entities.³⁶

Capital Charge as a Management Tool Used by Decentralized Corporations

As a internal management accounting practice, decentralized corporations often impose a capital charge on their operating units.³⁷ The performance of those units is

³⁴ Robert Anthony, Tell It Like It Was, Richard D. Irwin, Inc., 1983, Page 144.

³⁵ Dr. Anthony elects to apply the term "interest" to the cost of equity capital although the term has generally been reserved for the cost of debt. Dr. Anthony suggests applying a rate based on some measure of average return on equity capital.

³⁶ Anthony, page 141.

³⁷ David Solomons, Divisional Performance: Measurement and Control (Homewood, Ill.: Richard D. Irwin Inc. 1965). See Chapter V, Evaluating Divisional Performance by Return on Investment and Residual Income, pages 123-159.

Appendix B

measured by their residual income which is net operating income minus the capital charge. The capital charge is based on the amount of capital employed by each unit, which represents each unit's share of both the corporation's equity and debt financing. Most corporations use the weighted average of the cost of debt and equity capital to compute the capital charge. The benefit of assigning this charge to units is twofold. First, it encourages unit managers to better manage and utilize their resources. Since in a decentralized environment divisions enjoy a certain degree of autonomy, they can make decisions to dispose of assets that they can no longer profitably use. Second, it enhances comparisons between units. It allows top corporate management to compare and evaluate the profitability of operating units or product lines giving weight to the relative amounts of capital employed by each. At the consolidated level, the charges to the operating units are eliminated for external financial reporting purposes.

Capital Charge Used in Activity-Based Costing

Some literature on activity-base costing (ABC) mentions that if a large investment in fixed assets is required to conduct a particular activity, then the cost of that activity should reflect the cost of capital for the asset.³⁸ For instance, an activity-based costing model may track the average inventory turn-over cycle of each activity. The full cost of each activity would include the cost of financing the warehouse and the investment in the inventory. If two activities are otherwise similar, the one that has a higher inventory turn-over rate and less storage time will cost less than the other activity. Through such costing, ABC helps the management to discover such cost differences among activities.

³⁸ Michael Ostrenga, et al, The Ernst and Young Guide to Total Cost Management, John Wiley & Sons, New York, 1992, p. 233.