

# Technical Challenges Facing the Implementation of Performance Budgeting and Accrual budgeting

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## Abstract

A great part of the Organization for Economic Co-operation and Development (OECD) countries has made fundamental changes in public financial management (e.g. reforming public sector accounting and budgeting). These changes are characterized under the rubric of implementing accrual accounting, performance budgeting and accrual budgeting. This paper has attempted to explore a number of the technical challenges that can face the implementation of performance budgeting and accrual budgeting in the public sector. In order for governments to successfully implement both performance and accrual budgeting, these technical challenges must be identified and tackled before any attempt to implement both of them in the public sector. In addition, it has been made clear that the implementation of performance budgeting face a specific technical challenges that are different from the specific technical challenges that face the implementation of accrual budgeting. In the first place, the paper concludes that the implementation of performance budgeting will face the following technical challenges: specifying the outcomes; specifying the output; and linking outcomes to outputs. In the second place, the paper concludes that the implementation of accrual budgeting will encounter the following technical challenges: Appropriations for non-cash items; treatment of capital charging in the budget; and cash Management systems. It is concluded that there are two models that can be used to tackle the technical issue of appropriation of non-cash items, these are cash-in-hand-model and no-cash-in-hand model. Moreover, the paper has tackled in detail the following challenges that are related to capital charge: How can government determine the capital charge rate? How to compute a net asset base on which to apply the rate? How can the capital charge be treated in the budget? Finally, the paper concludes that the nature of the appropriations is intrinsically linked to the cash management system that the government uses, and therefore, the interface between cash management and appropriations differs depending on the extent of decentralization of the appropriation system.

**Key Words: Accrual Accounting, Performance Budgeting, Accrual Budgeting and Technical challenges.**

## 1- Introduction

A great part of the Organization for Economic Co-operation and Development (OECD) countries has made fundamental changes in public financial management (e.g. reforming public sector accounting and budgeting). These changes are characterized under the rubric of implementing accrual accounting, performance budgeting and accrual budgeting.

Performance-based budgeting aims to improve the efficiency and effectiveness of public expenditure by linking the funding of public sector organizations to results they deliver, making systematic use of performance information (Robinson, 2009b). In comparison to traditional line item budgeting that stresses inputs rather than outputs and controls only the inputs and inhibits the ability of the managers to manage resources flexibly to achieve program objectives, the performance budgeting allows for more flexible use of fiscal resources and transforms focus from inputs to results, as it focuses on the results to be achieved. Accrual budgeting means that spending ministries are given budgets which are

defined in terms of accrual concepts—and, in particular, that the budget sets quantitative limits on the expenses which they incur rather than the cash payments they make (Robinson, 2009a). In other words, accrual budgeting is defined as *the specification of budgetary expenditure authorizations and revenue estimates in terms of accrual accounting measures*—that is, measures which are specific to the accrual system of accounting (Robinson, 2009a). This in turn means that the appropriations have to be allocated in the budget including both cash and non-cash items.

While accrual budgeting is not considered as a prerequisite to the implementation of performance budgeting, notwithstanding, accrual budgeting can assist in the implementation of performance budgeting because it provides measures of costs of services/output in budgetary documentation (Marti, 2010). It underpins the allocation of costs to outputs and outcomes. In fact, the pioneer countries such as New Zealand, UK and Australia have adopted both performance budgeting and accrual budgeting as result of adoption of accrual accounting in their public sectors. An earlier paper (Ouda, 2010) has suggested a framework for implementation of the performance budgeting. The suggested framework has identified the following components that can facilitate the implementation of performance budgeting:

- Shifting from public administration/bureaucratic system to performance management (managing-for-results). Government cannot budget for results unless it manages for results;
- Introducing and using of performance information into budget process will facilitate the implementation of performance budgeting;
- Changing the budgeting format and structure towards a more performance-oriented approach;
- Shifting to a multi-year budget framework (a Medium-term expenditure framework);
- Shifting from Bottom-up budgeting approach to Top-down budgeting approach;
- Modernizing the governmental accounting system (shifting to accrual accounting system); and
- Developing an appropriate performance measurement system.

However, the practical experiences of the OECD countries have proved that while the aforementioned suggested framework can facilitate the implementation of performance budgeting, the technical challenges and problems that are encountered when implementing the performance and accrual budgeting can preclude that implementation. Therefore, the potential technical challenges must be identified and tackled before any attempt to implement performance and accrual budgeting in the public sector. This in turn can assist in reducing the implementation risks and avoiding the implementation failure. In fact, the identification of the technical challenges gives a clear and comprehensive picture about both volumes of work and financial means required to successfully managing the implementation of performance and accrual budgeting. Furthermore, the well-identified and articulated technical challenges will profoundly affect the nature and speed of the implementation process. Therefore, exploring and tackling the technical challenges can be considered as a complement to the earlier suggested framework (Ouda, 2010), as both can create appropriate conditions for successful implementation of performance and accrual budgeting and putting them into practice.

Accordingly, this paper aims at exploring the technical challenges that can be encountered when implementing performance and accrual budgeting in the public sector. In fact, while both developed and developing countries are incrementally moving towards performance and accrual budgeting, for most countries the implementation of both performance and accrual budgeting is in its early stages of development. Consequently, exploring the technical

challenges and problems can assist in successful transition to both accrual and performance budgeting. So this paper raises the following questions:

- 1- Are performance budgeting technical challenges really different from the technical challenges of accrual budgeting? If so
- 2- What are the technical challenges that are encountered when implementing the performance budgeting?
- 3- What are the technical challenges that are encountered when implementing the accrual budgeting?

## 2- Performance Budgeting and Its Technical Challenges

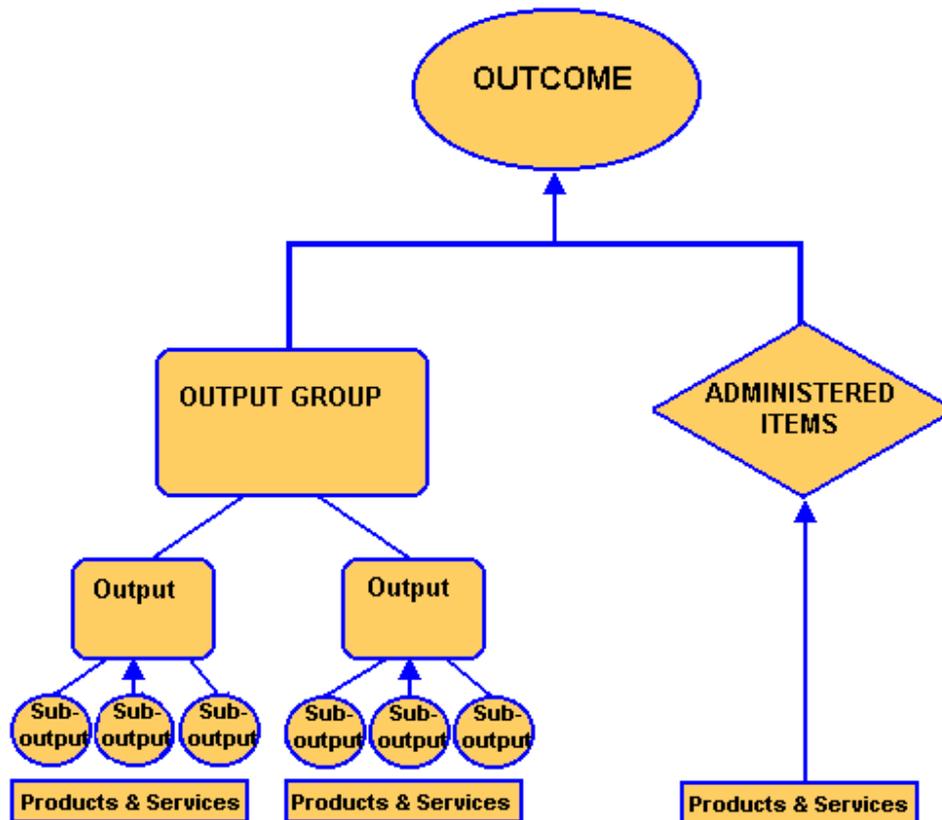
### 2.1 Introduction

The OECD (2002) has defined performance budgeting as budgeting that links the funds allocated to measurable results. Shah and Shen (2007) have defined the performance budgeting as a system of budgeting that presents the purpose and objectives for which funds are required, costs of programs and associated activities proposed for achieving those objectives, and outputs to be produced or services to be rendered under each program. Performance-based budgeting aims to improve the efficiency and effectiveness of public expenditure by linking the funding of public sector organizations to results they deliver, making systematic use of performance information (Robinson, 2009). In comparison to traditional line item budgeting, performance budgeting allows for more flexible use of fiscal resources and transforms focus from inputs to results, as it focuses on the results to be achieved.

Consequently, the performance budgeting has shifted the focus from input-focused budgeting to output- and outcome-focused budgeting. In other words, it has shifted the focus from how much resources, staff, facilities, etc. are made available for a programme or ministry to what products and services (outputs) can be delivered by these resources and what is the impact that these products and services will have on the community (outcomes). In order the performance budgeting to work efficiently and effectively, some of the OECD countries (e.g., Australia) have developed the outcomes and outputs framework which can assist in determining and linking the outcomes to outputs (Australian Government, 2000). This framework works as follows:

- the Government specifies, via outcome statements, the outcomes it is seeking to achieve in given areas;
- these outcomes are specified in terms of the impact government is aiming to have on some aspect of society, e.g., defence and education;
- Parliament appropriates funds, on a full accrual basis, to allow the government to achieve these outcomes through administered items and departmental outputs;
- items such as grants, transfers and benefit payments are administered on the government's behalf by agencies, with a view to maximising their contribution to the specified outcomes;
- agencies specify the nature and full accrual price of their outputs and manage them to maximise their contribution to the achievement of the Government's desired outcomes;
- performance indicators are developed to allow for scrutiny of effectiveness (i.e. the impact of the outputs and administered terms on outcomes) and efficiency (especially in terms of the application of administered items and the price, quality and quantity of outputs); and
- agencies discuss in their annual reports their performance against their performance indicators.

### Basic Outcome and Output Structure



Source: *The Outcomes & outputs framework guidance Document, November 2000.*

The outcomes and outputs framework is essentially designed to assist in implementation of the performance budgeting. In fact, the outcomes and outputs form the basis of the budgetary framework and documentation. Outcome statements determine the purpose of appropriations in the Budget Bills, and these outcomes have to be translated into outputs that should be produced and delivered to the community to achieve the targeted outcomes.

Accordingly, the new performance budgeting structure, for example, in the Netherlands and Australia is designed to give answer to the following questions:

- 1- what does government want to achieve?
- 2- what actions is government going to undertake to achieve it?
- 3- what may those actions cost?

This new budgeting structure has entailed that there should be a new structure for the financial reporting that should give answer to the following questions:

- 1- did government reach its goals as set in the budget?
- 2- has government done what it was going to do?
- 3- did the cost of actions remain within the limits previously set in the budget?

So in addition to the earlier suggested framework for implementation of the performance budgeting (Ouda, 2010), the successful implementation of performance budgeting in the public sector will encounter some technical challenges which need to be overcome before implementing the performance budgeting. Based on the experience of OECD countries (e.g.,

New Zealand, Australia, UK, etc.), the potential technical challenges can be identified as follows:

- **Specifying the outcomes**
- **Specifying the output**
- **Linking outcomes to outputs.**

## 2.2 Performance Budgeting Technical Challenges

### 2.2.1 Specifying the outcomes

Outcomes are the consequences for the public resulting from the outputs and activities of government. Australian Government (2000) defined the outcomes as the impact sought or expected by government in a given policy arena. It also added that the focus is on change and consequences: what effect can government have on the community, economy and/or national interest. In other words, the outcomes are the results, consequences or impacts of Government actions. In addition, the outcome statements must articulate Government objectives, describe the purposes of appropriated funds and serve three main purposes within the financial framework (Australian government, 2009):

- To explain the purposes for which annual appropriations are approved by the Parliament for use by agencies/governmental entities;
- To provide a basis for budgeting and reporting against the use of appropriated funds; and
- To measure and assess agency and program non-financial performance in contributing to Government policy objectives.

Basically, the outcome statements must describe the broad goals of government and its entities. All ministries and governmental entities within the general government sector must have at least one Outcome Statement. The output of these ministries and governmental entities must contribute – directly or indirectly – to the realization of a specific outcome. However, the determination of the outcome is not an easy task, as the outcomes have to be determined at the level of government as a whole and hence at the level of each ministry and governmental entity. In addition, there should be consistency among those outcomes at the aforementioned levels. This is due to the fact that the outcome statements also perform a specific legal function by articulating the purposes of appropriated funds. Consequently, there are some technical challenges with respect to: How to determine/specify the outcomes? How can the government measure the achievement of outcomes? Who will be held accountable for achieving outcomes? How can the government translate these outcomes to appropriate outputs? How can the government define and achieve outcomes that are cross-ministry in nature?

- **Determining the outcomes**

The outcome statements should reflect the strategic priorities of the country. This means that the government must specify its broad strategic priorities for the upcoming budget; its fiscal intentions (e.g., for the next three years); and its long-term fiscal policy objectives (e.g., for the next ten years). However the question is: who is or should be responsible for determining/defining outcomes and identifying indicators? Is it the president of country, the parliament, the cabinet collectively, the minister responsible for program, the program's executive or manager, career government officials; or should outcomes be defined jointly by several of these parties? (Kristensen et al, 2002). In fact, several parties should participate in determining the intended outcomes. For example, the government can specify the outcome

statements through consulting with Parliament, all ministries and governmental entities and surveying the public to know what their needs are for the upcoming years. An outcome should not be so general as to lack meaning; nor should it be so specific and operational as to fail to articulate the actual impact desired by Government (Australian Government, 2000). The Outcomes and Outputs Framework Guidance Document (Australian Government, 2000) has determined the factors that should be taken into account when determining an appropriate outcome level as follows:

- The degree and nature of the Government's policy interest in the area, particularly as expressed by the portfolio minister (s).
- The breadth of the agency's policy responsibilities (e.g., the Department of the Treasury is likely to have broader outcome statements than the Australian Broadcasting Authority).
- Whether the agency is making use of intermediate outcome statements to provide a managerial and information link to a higher, over-arching outcome.

***Example: Outcome Statement Reflecting Government Policy Interests***

*An efficient and equitable labour market that links people to jobs and promotes the transition from welfare to work*

Department of Employment, Workplace Relations & Small Business, Outcome One, 2000-2001

**Examples: Outcome Statements Reflecting Breadth of Responsibilities**

*Well-functioning markets*

Department of the Treasury, Outcome Three, 2000-01

*An accessible, diverse and responsible broadcasting industry*

Australian Broadcasting Authority, 2000-01

*Source: The Outcomes & outputs framework guidance Document, November 2000.*

In addition, an outcome statement should exactly be specified and focused. This in turn leads to identifying the intended results of the ministries and governmental entities and specifying the activities that should be undertaken by the ministries and governmental entities in order to contribute to the achievement of the intended results. Furthermore, the outcome statement should be written precisely to ensure that the underlying purpose is clear and should not include multiple purposes nor use technical and difficult language (Australian Government, 2009).

**- Measuring the achievement of outcomes**

Having determined the outcomes, the next step is to determine the performance indicators that help in assessing the degree of achievement of those outcomes. Also outcome statements should be formulated in a form that facilitates their measurement. As one of the more difficult aspects of specifying outcomes is ensuring that they are amenable to measurement, particularly in terms of the effectiveness of the relevant administered items and /or governmental entities outputs in contributing to the outcome (Australian Government, 2000). The Australian experience shows that the performance indicators specified by agencies fall into two categories: indicators for effectiveness and indicators for efficiency. Effectiveness indicators should be designed to identify as clearly as possible the causal relationship between the outcome and the outputs and administered items in place to achieve it. Efficiency indicators provide information on the productivity of a given output in terms of combined and independent effects of its quality, quantity and price (Kristensen, et al, 2002).

The following is an example of an outcome statement and effectiveness indicators in Australian government:

**Example: Outcome Statement & Effectiveness Indicators**

*A stronger, sustainable and internationally competitive Australian industry, comprising manufacturing, resources and service sectors*

Department of Industry, Science & Resources Outcome One for 2000-01

The Department's five effectiveness indicators for achievement of this outcome (as specified in its Portfolio Budget Statement for 2000-2001) include:

**Production:** Changes in Australia's per capita gross domestic product relative to its major international trading partners and trading competitors, at purchasing power parities;

**Exports:** *Trend in exports from the manufacturing, resources and services sectors; and*

**Productivity:** *Trends in labour productivity and multi-factor productivity in the manufacturing, resources and service sectors.*

*Source: The Outcomes & outputs framework guidance Document, November 2000.*

In addition, the Canadian experience shows that in the fall, Department Performance Reports are tabled in Parliament along with the president of the Treasury Board's annual overview of government performance. In these reports, departments and agencies chart progress made towards achievement of their Key Results Commitments (outcomes). The performance reports describe to what extent the intended outcomes and outputs of a department and an agency have been achieved, the resources used, and how departmental activities contributed to the department's strategic direction and to government-wide commitments (Kristensen, et al, 2002).

- **Accountability for achieving outcomes**

In fact, there is no consensus among countries about who is accountable for achieving the outcomes, as this depends on how the budget and accounting documents are being structured whether around the outcomes or the outputs. For instance, In Australia and the Netherlands, the main budget and accounting documents are now restructured around the outcomes. This restructuring is accompanied by plans to change the focus of budget negotiations. In New Zealand, the budget is structured around the outputs. Agencies in Australia are directly responsible and accountable for the delivery of outcomes identified in the appropriation bills and receive appropriations based on their outcomes (OECD, 2002). There should be relationship between the ministry outcomes and the outcomes of each agency related to that ministry. This means that the agencies develop an outcome statement in conjunction with the portfolio minister. Based on these outcomes, the appropriations can be allocated. The outcome statement then requires the endorsement of the Minister of Finance.

So the accountability for achieving the outcomes is strongly related to the specific government structure of each country and the structure of the budgeting and accounting systems and documents.

Finally, government has to ensure that the outcome statement is specified enough to form a valid appropriation, however, it should not be so abstract as to be without meaning.

**2.2.2 Specifying the outputs**

Outputs are the goods or services which government entities provide for citizens, business and/or other government entities/agencies. The Outcomes & outputs framework guidance Document (Australian Government, 2000) defined the outputs as they are “engine room” of the outcomes and outputs framework. They are actual deliverables - goods and services – governmental entities produce to generate the desired outcomes specified by government. These outputs (goods and services) can be used by different users such as members of parliament, general public, industries, sectors, ministries and other governmental entities. In addition, an output-focus to management and budgeting typically describes public functions in terms of goods or services and calculates how many services are being delivered, or products produced (*Kristensen, Groszyk and Bühler, 2002*)

In order for governmental entities to be able to carefully specify its outputs, they should consult with major stakeholders, such as client groups, related governmental entities/agencies and the relevant legislation committee within the parliament. Moreover, these outputs must be approved by the relevant minister. In fact, the Outcomes & outputs framework guidance Document (Australian Government, 2000) has determined the requirements for output specification. As it requires that the outputs should:

- describe a good or service provided to individuals or organizations external to the governmental entity/agency;
- be effective in terms of their contribution to the specific outcome;
- be expressed in terms of what it is (nouns or noun phrases) rather than how it is performed (verbs);
- be within the control of the agency, whether through direct delivery or contractual arrangements with third parties;
- identify what government is paying for, including being measurable in terms of price, quantity and quality;
- be amendable to comparison between actual or potential suppliers (especially through price analysis);
- collectively cover all of the agency’s activities, including overheads or shared resources allocated across outputs or output groups ; and
- specified so that the agency’s organizational structure and management systems can be mapped to its outputs.

Basically, there must be a strong relationship between the outputs and outcomes, as the outcomes cannot be achieved without producing the related outputs. Accordingly, there is a causal-relationship between an outcome and output (s). The governmental entities are required to maximize the contribution of their outputs to the specified outcome. However, the governmental entities will encounter the problem of:

*How can they report the outputs in the budget?*

*How can they measure the impact of an output on both outcomes?*

In other words, shall the governmental entities report at the output level or output groups’ level. In fact, the experience of the Australia has indicated that while the governmental entities are still required to report at the output level, grouping outputs can allow aggregated reporting at a business or program level (Australian government, 2000). Output groups tend to reflect the more business-specific aspects of a governmental entity’s operations, while

outputs within output groups tend to be more generic in nature. The following is an example business-specific output groups and generic outputs:

### **Business-Specific Output Groups & Generic Outputs**

In 2000-01 the Department of Education, Training & Youth Affairs (DETYA) had three outcomes. The first of these was '*School systems provide their students with high quality foundation skills and learning outcomes*'. Under that outcome there are three output groups—1.1 *Infrastructure funding for the schools system* 1.2 *Assistance for school students with special needs* and 1.3 *Enhance the quality of teaching and learning*—Under each of these output groups there are four generic outputs:

1. *Administration;*
2. *Policy Advising;*
3. *Ministerial & Parliamentary Services;* and
4. *Research, Analysis & Evaluation.*

In addition, output group 1.2 includes a fifth generic output, *Service delivery*.

By defining generic outputs under specific output groups, DETYA is more likely to be able to manage across outputs in a consistent manner. It also enhances the scope for benchmarking and price comparisons within the Department and with benchmarking partners.

*Source: The Outcomes & outputs framework guidance Document, November 2000.*

Furthermore, the governmental entities will face a significant issue which is, in case that an output contributes to more than one outcome: *How can they measure the impact of an output on both outcomes?* Basically, the outputs should be specified so that they contribute to an outcome; however, there are some circumstances where an output may influence a second outcome as well. A governmental entity focused on environmental policy may, for example, have an outcome aimed at enhancing community knowledge and understanding matters affecting environment, and another aimed at supporting green environment. While the environment-oriented output (s) will contribute considerably to the knowledge and understanding outcome, it could also have impact on the supporting green environment. Accordingly, there should be relevant performance information that enables the governmental entities to measure the impact of an output on more than one outcome.

Finally, the governmental entities should carefully specify the outputs and overcome the related problems in order to facilitate the link between appropriated funds and outputs in the performance budgeting.

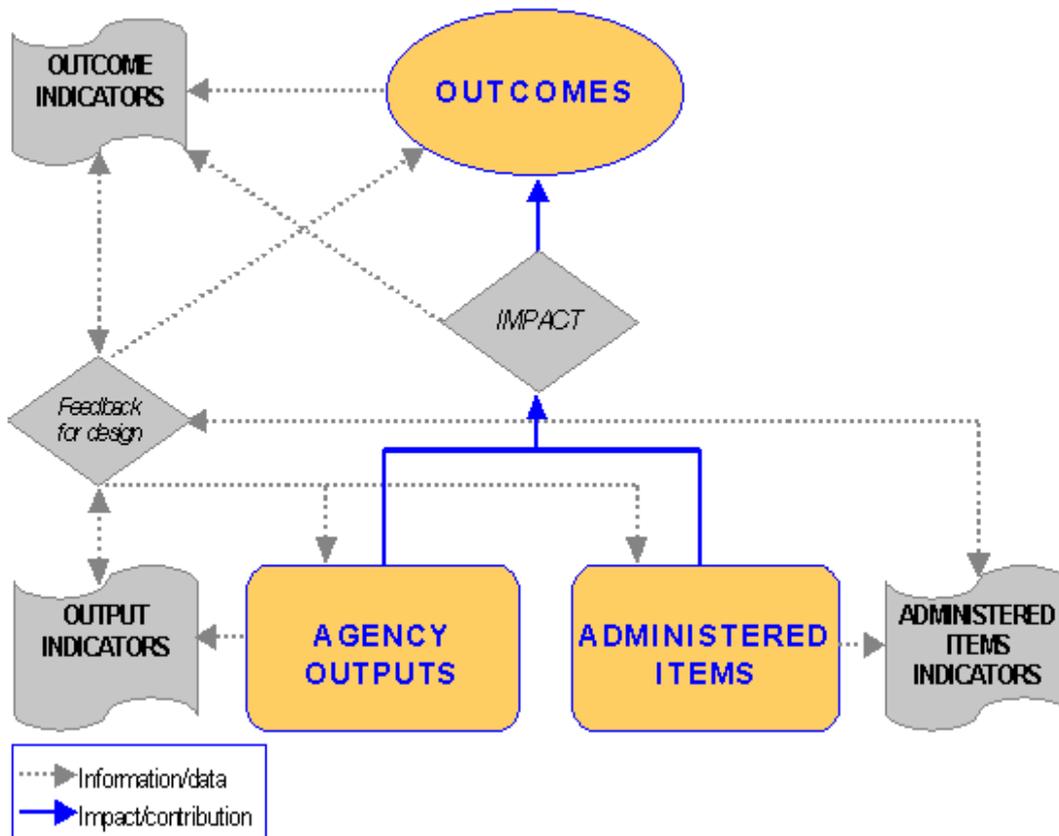
### **2.2.3 The link between outcomes and outputs**

As aforementioned, the outcomes are the impact sought or expected by government in a given policy arena. In other words, the outcomes are the results, consequences or impacts of Government actions on the community. Outputs refer to products and services provided with government appropriation funding, and outcomes are the impacts of those outputs.

Accordingly, the link between outcomes and outputs ensures that governmental entity activities fit with the Government's policy agenda. Under this framework Ministers must articulate policy agenda in terms of the outcomes they wish their agencies to achieve (Australian government, 2000). The relevant governmental entities then can set about producing outputs required to achieve the specified outcomes. The main aim of linking outcomes and outputs is to allow Parliamentarians and the public to see the real cost of providing government services. The real cost includes indirect costs such as corporate overheads, depreciation and maintenance, and the opportunity cost of capital. The purpose of linking outcomes with the full costs of outputs demonstrates a clear and accountable

contribution to policy formation and service delivery on behalf of the government (Australian government, 2000).

The following figure illustrates the links between outcomes and governmental entity/agency outputs and administered items.



Source: Department of Finance and Administration (Australian Government)

Accordingly, the ministries/departments and governmental entities objectives flow from the Outcomes and Outputs Framework, through which resources are applied for the purposes for which Parliament approves appropriations. The ministries/departments and governmental entities measure their performance in terms of effectiveness in contributing to and achieving the specified outcomes and efficiency in delivering outputs in terms of quality, quantity and price.

The Australian government has given a good example on how government can make link between the outcomes and outputs as follows:

### Outcomes and Outputs Framework 2006-07

<b>Outcome 1: SCHOOL EDUCATION</b>				
<b>Individuals achieve high quality foundation skills and learning outcomes from schools and other providers</b>				
Administered by: Schools Group, Indigenous and Transitions Group				
<b>Output 1.1</b>	<b>Output 1.2</b>	<b>Output 1.3</b>	<b>Output 1.4</b>	
Funding for schools	Assistance for individuals, including those with special needs	Assistance for quality teaching and learning	Assistance for transition through and from school	
<b>Outcome 2</b>				
<b>Individuals achieve relevant skills and learning outcomes from post-school education and training</b>				
Administered by: Higher Education Group Indigenous and Transitions Group, Industry Skills Development Group, National Training Directions Group, Strategic Analysis and Evaluation Group				
<b>Output 2.1</b>	<b>Output 2.2</b>	<b>Output 2.3</b>	<b>Output 2.4</b>	<b>Output 2.5</b>
Funding for vocational education and training	Australian Apprenticeships	Assistance for skills and career development	Funding for higher education	Assistance for post-school students, including those with special needs
<b>Outcome 3</b>				
<b>Australia has a strong science, research and innovation capacity and is engaged internationally on science, education and training to advance our social development and economic growth</b>				
Administered by: International Education Group, Higher Education Group, Innovation and Research Systems Group, Science Group, Questacon				
<b>Output 3.1</b>	<b>Output 3.2</b>	<b>Output 3.3</b>	<b>Output 3.4</b>	
Research infrastructure	Assistance for science collaboration and innovation	Support for the Australian education and training export industry and international relationships	National leadership in engaging people in science and technology	
<b>Departmental Outputs</b>				
<b>The following enabling areas provide support to all of DEST:</b>				
Audit and Investigations Branch, Finance, Property and Planning Group, Information Services Group, People, Communications and Network Group, Procurement, Assurance and Legal Group, Strategic Analysis and Evaluation Group				

Source: Department of Finance and Administration (Australian Government)

### 3- Accrual Budgeting Technical Challenges

The experiences of pioneer OECD countries such as the New Zealand, UK and Australia have proved that the implementation of performance budgeting should be accompanied by implementation of accrual budgeting. The main aim of performance budgeting is to link the resources (inputs) to the results (outputs). In that case, it is necessary to know the actual costs of output that include both cash and non-cash items. In fact, the use of cash basis would result in allocation of only those costs that involved a cash outflow during the period. In addition, cash disbursements do not reflect what the governmental entities costs to run during the year, because these disbursements may also include cash outflows resulting from, for example, the acquisition of assets or the repayments of debt related to the previous years. This means that the cash-based accounting system makes no difference between expenditures and disbursements, and generally no distinction between current and capital expenditure. Capital purchases are treated in the same manner as personnel expenses with no recognition that they are productive for years.

Accordingly, under the cash basis of accounting, it is difficult to know how much resources have been consumed in carrying out the operations during the accounting period (operating costs) (Ouda, 2006). Also as a result of not capitalization of the fixed assets and not recognizing of the long-term debts, the depreciation and interest costs are not accounted for. And this, in turn, results in that the costs of producing the services in the governmental entities, and the total cost of the programs and activities, which take place in a given period, are also not known. Consequently, it is difficult to get the right information about the total cost of services and goods produced during the year. Therefore, the adoption of accrual budgeting is essential for allocating the appropriation including both cash and non-cash items in order to know the total actual cost of the outputs.

In fact, the use of accrual budgeting enables the government to report on the true cost of its programs and activities. Moreover, under accrual-based accounting, it is known how much resources have been consumed in carrying out the operations during the accounting period (operating costs). Then the total cost of the services produced by the government entities and the total cost of government programs and activities, and the matching of those costs with the output can only be provided by the accrual-based accounting system (Ouda, 2003). Accordingly, accrual budgeting can provide better information concerning the total resources consumed in the provision of the output (goods and services) and better reflect the cost of capital, thus encouraging better assets management. This means that the accrual budgeting is a useful tool to encourage more efficient and effective use of resource management by providing better analytical base and incentives for assessing performance and managing costs. In addition, the experiences of pioneer countries have proved that accrual-based cost information contributes to improved resource allocation and program management decisions. For example, New Zealand officials argued that the cost information provided by accrual-based budgeting has led to efficiencies and better resources allocation decisions. New Zealand attributed the cost information provided by accrual budgeting as helping them identify where and how to cut spending to put the country on a more sound fiscal footing in the early 1990s. Several of the countries have attributed specific improvements on the departmental level to accrual budgeting. For example, under accrual accounting, the cost of a loan includes the subsidy cost—the cost of lending below market rates and provisions for bad debt. When New Zealand recently made student loans interest free, the cost of the subsidy was taken into consideration during the policy debate. The United Kingdom also reported the more complete information on student loans directly affects lending decisions at the Department of Education and Employment (Carlin, 2003).

In addition, other countries such as the Netherlands perceived that accrual budgeting can facilitate comparisons between the public sector and private sector. For example, the OECD reported in 2005 that both agencies and core ministries in the Netherlands were content with the results from accrual budgeting at the agencies. Agencies, which now receive a budget for the full cost of their activities, like the flexibilities under accrual budgeting, while core ministries value the output and price information they receive from the agencies. The ministries also reported that agencies' use of accrual budgeting enables them to consider the performance of the agencies relative to alternatives (i.e., decentralization to subnational government or contracting out). At the same time, the availability of the alternatives enabled ministries to put more pressure on agencies to improve cost efficiency and to reduce prices (Schick, 2007).

Moreover, accrual budgeting helped policymakers recognize the full cost of certain programs at an earlier point and make decisions that limited future cash requirements. For example, as reported in 2000, both New Zealand and Iceland credited accrual budgeting with highlighting the longer-term budgetary consequences associated with public sector employee pension programs. In Iceland, accrual budgeting showed the consequences of wage negotiations on future public sector employee pension outlays. The full costs of these agreements were not fully realized by the public until the adoption of accrual budgeting. Similarly, New Zealand officials decided to discontinue the defined benefit public employee pension program after pension liabilities were recognized on the balance sheet and the expense incurred was included in the budget.

Also United Kingdom officials argued that accrual budgeting helped highlight the full cost of pension liabilities and forced the debate on pension reform to happen sooner. Furthermore, accrual budgeting has also changed the information available for insurance programs, veterans benefits, and environmental liabilities. For example, Canadian officials attributed accrual information with leading to recent changes in veterans benefits. The use of accrual accounting requires Veterans Affairs Canada to record the full cost of veteran benefits in the year they are earned rather than paid. Therefore when considering changes to veteran's benefits, Veterans Affairs Canada considered the effect of future cash flows in discounted terms. Consequently, the implementation of accrual budgeting can lead to efficient and effective use of public resources and provide better information with respect to the full cost of services provided by governmental entities. However, the implementation of accrual budgeting will create new technical challenges and problems that did not exist when allocating the appropriations using the cash basis. In order to assure the successful implementation of accrual budgeting, these technical challenges must be identified and tackled before starting the implementation process. The potential technical challenges can be identified as follows:

- **Appropriations for non-cash items;**
- **Treatment of capital charging in the budget; and**
- **Cash Management systems.**

These challenges will be tackled in details in the following section.

### 3.1 Appropriations for non-cash items

Unlike cash basis of budgeting, accrual basis of budgeting recognizes expenses when they are incurred rather than when cash is paid or received. This also means that several accrual expenditures are non-cash in nature. These comprise depreciation, post-employment benefits (pension, health care), interest payable on government debt, employee leave entitlements (annual leave, long-service leave), revaluations of assets (downwards) and liabilities (upwards), and payables and year end (Blondal, 2005). There is one aspect of accrual appropriations which is of special note: appropriating cash for non-cash items.

*The question is: how such non-cash items should be treated under an accrual appropriations framework?*

In fact, the experiences of the pioneer OECD countries have led to development of the following two approaches:

- 1- Cash-in-hand model:** Cash is appropriated for the full accrual amounts, comprising non-cash items such as depreciation. According to this model, the governmental entity would receive cash for both the cash required during the year and for the non-cash items such as depreciation, interest payable on government debt, etc. This means that the cash appropriations would reflect the total operating costs of the governmental entities (Blondal, 2005). The advantage of using the cash-in-hand model is that it has led to major changes in management of the government. Before using this model the main focus was on the immediate cash requirement, but now the full costs of government become the main focus of the operating budget. This in turn requires from the governments to develop ways of how effectively manage the cash appropriated for non-cash items such as depreciation. In fact, the governmental entities can use the accumulated depreciation for funding the replacement of capital assets.

However, the lack of transparency regarding the appropriation and use of these funds can lead to criticism that the provision of cash in excess of immediate needs provides a pool of funds which can be used for other purposes. So if the governmental entity is given cash to fund depreciation expense, there is a risk that the money may be used for other purposes than replacing the capital assets. For example, a standing committee of the Australian Senate has expressed concern that accrual-based appropriations have led to a loss of transparency in the management and use of funds appropriated for accrual expenses (Parliament of Australia, 2007b). As part of Operation Sunlight, the new government is considering options for resolving these challenges. Accordingly, the implementation of accrual budgeting requires from the governments to set clear criteria for the use of cash appropriations for non-cash items, for instance, the use of accumulated depreciation to replace capital assets and not for other purposes. In addition, when the governmental entities switch to accrual budgeting will face another problem which is that no appropriations were given for accumulated depreciation on the day of the switch to accruals, meaning that governmental entities would almost always need to have a separate appropriation to replace assets, this problem should also be tackled before switching to accrual budgeting, i.e. to fund the accumulated depreciation at the time of switching to accrual budgeting (at the first year of switching) and after that it can only fund the annual depreciation.

- 2- No-cash-in-hand model:** Cash is appropriated for only the cash component of full accrual amounts. This in turn means that non-cash items – such as depreciation- would not receive a cash appropriation. These items would be recognized in the budget as approved by the

parliament (Blondal, 2005), which means that the budget would include both the full accrual costs and the cash required.

*“The financial statements of the governmental entities would report the total accrual amount as revenue on their operating statement – in the same manner that all expenses are treated on an accruals basis. The difference between the cash requirement and the total full cost appropriations would be treated as **accounts receivable** in the balance sheet. This would give formal recognition to these non-cash items” (Blondal, 2005).*

The main advantage of the no-cash-in-hand model is that it is achieving the benefits of accrual budgeting without making big changes of current cash-based appropriation arrangements. While the appropriation will continue to be on cash basis, the total amount recorded in the budget would also include the non-cash items (Blondal, 2005). This model can to a great extent overcome the aforementioned problems of the cash-in-hand model as it can avoid the risk of using the cash received for other purposes and enhance the parliament’s control over capital acquisition. In addition, it will avoid the financial problem that can take place as a result of funding the accumulated at the first year of switching to accrual budgeting.

However, the disadvantage of this model is that it will not lead to culture change with respect to the management of money received for non-cash items, as the old cash-based appropriation system will continue. In addition, it will open the door for the governmental entities to manipulate the accounts receivables recorded in their balance sheets.

### 3.2 Treatment of capital charging in the budget

#### - **Rationale**

The capital charging is designed to capture the financing cost associated with government assets (Ball, 2002). In fact, Capital charge is a cost levied on the government’s investment in each governmental entity. It reflects the opportunity cost of governmental capital investment. Namely, it reflects the cost to the government of investing in a governmental entity versus other use of that money. Similar to the private sector, governments do pay interest on borrowed funds. While the borrowing costs are significant costs to the government as a whole, they may not be obvious to an individual governmental entity and may have no impact upon the governmental entity financial statements (Ball, 2002). This is due to the fact that governmental borrowing is usually undertaken by a central borrowing agency and then allocated to governmental entities at no cost. This prevents governmental entities from seeing the true cost of their financing and also makes it less likely that they will be motivated to better manage the public assets.

Accordingly, the introduction of capital charging aims to identify explicitly the full costs of services and to provide a way for capital to be efficiently allocated and used, and hence making the governmental entities to be aware of their actual financing cost. In fact, the capital charging is introduced in New Zealand and other pioneer countries alongside accrual output based budgeting. In addition, there are important incentives behind the introduction of capital charging in the public sector, as it has positive impact on decision-making in the following areas: (OECD, 2002)

- 1- Assets management decisions: Capital charging can result in more efficient asset management for following reasons: a- the full cost of holding assets is highlighted; b- complete information on assets held is available; and c- governmental entities can reduce the capital charge through more efficient asset management (e.g. by disposing of surplus assets).

- 2- Output production decisions: By the introduction of capital charging, the governmental entities will be able to see the full cost of producing their goods and services. This can in return facilitate make or buy decisions and encourage resource switching. This will lead to reduced assets holdings and therefore a reduced charge.
- 3- Capital investment decisions: In fact, a government entity should be able to generate more value from its net assets than the capital charge it is required to pay to the government. The presence of a capital charge can assist in choosing the appropriate discount rates and investment selection techniques.
- 4- Output purchase decisions: By the introduction of capital charge, governments will be able to make better cost comparison between private and public sector providers, or between alternative public sector providers. In addition, some governmental entities provide goods and services to the private sector. In the absence of a capital charge, such goods and services is being subsidized by the taxpayers.

In addition to the rationale behind the capital charge, the following challenges are important for its application:

- How can government determine the rate?
- How to compute a net asset base on which to apply the rate?
- How can the capital charge be treated in the budget?

These challenges will be tackled as follows:

- **How can government determine the capital charge rate?**

The governmental entities receive the appropriations from the treasury at no cost (free of charge). This makes the governmental entities not to be aware of the actual cost of their financing and also makes it less likely that they will be motivated to better manage the public assets. The main objective of the capital charge is not making revenues but making the governmental entities to be aware of their financial costs and hence to be motivated to manage their assets efficiently. In other words, the motivation for capital charging has been to persuade the managers to get rid of unnecessary assets. The capital charge is levied on the governmental entity which neither pays interest nor provides a return on owners' capital. Accordingly, the capital charge should be designed to be substitute for interest and a return on capital (OECD, 2002). In other words, it should reflect the cost to the government of investing in a governmental entity versus other uses of that money. Ball (2002) argues that the capital charge should, as a minimum, cover the government's cost of borrowing. Similar to private sector, governments face risk when conducting their activities. The capital charge should comprise a risk premium in addition to the borrowing cost. In order to determine the appropriate risk premium, we can use Capital Asset Pricing Model (CAPM) or Arbitrage Pricing Theory (APT). Bear in mind that CAPM and APT are used to calculate the cost of capital from equity sources and not from debt sources. As it is aforementioned, the capital charging rate should include both interest and return on capital. The rate will vary depending upon the way in which it is calculated and the countries in which it is operating, but usually be in the region of 5-15% (Ball, 2002). In private sector, the cost of capital is composed of the weighted average of two components: 1- the cost of capital from equity sources and 2- debt sources, adjusted for tax effects as follows:

$$K = Ke(1 - L) + kd(1 - T)L \quad (1)$$

Where *ke* is the cost of equity, *kd* the cost of debt, *T* the statutory tax rate, and *L* the financial leverage. In the private sector, the cost of equity is equal to the expected dividend yield and the expected percentage increase in stock price; whereas, the cost of debt is represented by the after-tax interest rate to the firm. Each factor – equity and debt- is weighted by the proportion they contribute to the capital of the firm, and thus, the weights (*1-L*) and *L*.

However, the governmental entities do not pay corporate tax. Therefore, the cost of capital must be adjusted to be valid for the government application. The absence of a tax on governmental entities means that the cost of debt is not net of a tax deduction. In addition, the cost of equity must be adjusted to reflect the absence of corporate taxes. So the following equation represents these tax adjustments for governmental entities: (Lally and Smith, 1997)

$$Kg = [ke/(1-t)] (1-L) + kd(L) \quad (2)$$

Where *kg* is the cost of capital to the government; *ke* is the cost of equity, *t* represents the effective rate of corporate taxation; *kd* is the cost of debt without a tax effect, and *L* represents leverage.

In addition, Hartman (1990) states that as government activities displace private investment the marginal pre-tax rate of return on private investment should be used as a discount rate. New Zealand experience has also proved that the effective pre-tax rate is used to adjust the cost of equity and to maintain competitive neutrality between the government and tax-paying, private sector entities. Lally and Smith (1997) argue that without the use of a pre-tax cost of capital, government organizations have unfair advantage in pricing their outputs, and competing with private sector businesses.

Moreover, a capital charge may be expressed in either real (excluding inflation) or nominal (including inflation) terms. The cost of capital should be expressed in real terms rather than nominal terms, therefore, the cost of capital should be adjusted by subtracting the projected rate of inflation in the consumer price index for the coming year (*i*) as follows:

$$Kg = [ke/(1-t)] (1-L) + kd(L) - I \quad (3)$$

In order to calculate the cost of equity (*ke*), the Capital Asset Price Model (CAPM) is used. Herein, three separate parameters must be estimated: (1) *Rf*, the risk free rate of interest; (2) *Rm - Rf*, the market risk premium, and *B*, the beta of equity, which measures the risk of a particular private sector firm's equity. These three parameters are used in the equation 4 to determine the cost of equity (*ke*):

$$Ke = Rf + (Rm - Rf) B \quad (4)$$

Accordingly, the equations (3) and (4) can be used to calculate the capital charge rate. Bear in mind that when a capital charge is first introduced within a jurisdiction, a lack of requisite information or skills may mean that a uniform charge is applied to all governmental entities (Ball, 2002). Over time, the governmental entities which consider that a uniform rate is too high may be able to obtain information regarding the cost of capital for comparable private sector activities and present a case for a lower rate. Similarly, the Ministry of Finance might make a case for a higher rate if the investment risk warrants it (OECD, 2002).

- **How to compute a net asset base on which to apply the rate?**

A capital charge usually consists of a rate levied on an asset base. The asset base upon which the charge is levied could be: (OECD, 2002)

- Total assets;
- Fixed assets;
- Total assets less current liabilities; or
- Total assets less all liabilities.

As a result of using the cash basis in the governmental accounting system of most governments, there is no information available on government assets and the value of those assets. It is necessary before a capital charge can be introduced to have complete information on assets held and the value of those assets. As a pre-requisite to the introduction of accrual accounting and the application of capital charge, the United Kingdom government has compiled two registers: in November 1997 a National Assets Register was published, giving, for the first time, details of what was owned by the central government. Also in the course of year 1998-1999 a Departmental Assets Register was published which gave full information on the departmental assets. The information, which is provided by the two registers, enables the politicians and departmental management to make more informed decisions and to improve the management of these assets (Likierman, 1998). The effective management of such assets requires sufficient records to identify the existence of assets and the costs of holding and operating these assets. *The question here is, on what basis should assets be valued or revalued?*

In fact, the historical cost accounting convention has traditionally been used as basis for preparing accounts because of its underlying simplicity and certainty, derived from original bookkeeping records. But in a period where the prices rise, the historical cost accounting suffers from a number of drawbacks. Aiken (1982) argues that it is widely accepted that in a period of inflation, historical cost accounts conceal the true position of a business because they:

- overstate profits by charging against revenues an inadequate measure of the true cost of assets sold or used up;
- understate capital employed, by stating assets at historical rather than current costs;
- overstate return on capital employed, by compounding the distortion of the last two cases; and
- distort the information on which decisions are made about the allocations of resources, pricing policy, cost control, distributions and gearing.

Also, the fall in the value of money during a period of inflation has serious implications for accounting. Unless the effects of these implications are taken into consideration, the reported data will be based upon monetary units with different purchasing powers, depending on the value of money at the date of each relevant transaction.(United Nations, 1984). As a consequence of the drawbacks of the historical cost, the New Zealand and United Kingdom (as pioneer countries in public sector accounting and budgeting reform) have preferred to use some form of current cost (i.e., inflation-adjusted) accounting for the public assets. In National Health Service of UK, the Depreciated Replacement Cost (DRC) has been used as basis for valuing the fixed assets. Whereas the consolidated financial statements of the New Zealand government reported that land and buildings are recorded at Net realizable Value

(NRV), military equipment is recorded at Depreciated Replacement Cost (DRC), and plant and equipment is recorded at its historical cost (New Zealand, 1993). The experience of the New Zealand and the UK appears to favor a market-based perspective to capital maintenance. While the New Zealand's Crown recognizes NRV where it is most significant, i.e., with buildings and land, the Tertiary Capital Charge Feasibility Study Task Force (Task Force, 1993) recommends the higher of NRV or the Optimized Depreciated Replacement Cost (ODRC) for valuation of fixed assets as surrogates for market value. Also the UK public sector, including the National Health Service, adopts the Depreciated Replacement Cost (DRC). So the governments can use one or mix of the aforementioned valuation methods. However, it is important that initial valuations are established in a manner which enables them to be accepted by all governmental entities. It is also necessary to consider the impact of future revaluations as a capital charge may prove a disincentive to revalue assets, where revaluations are accepted accounting practices (Ball, 2002).

- **How can the capital charge be treated in the budget?**

There was a fear from governmental entities side that the introduction of capital charging can result in budget deficit. In fact, the experience of New Zealand, UK and Australia has proved that the impact of the implementation of capital charging on governmental entities has been budget neutral. As the governmental entities were compensated for the charge; their appropriations were increased by an amount equal to the charge.

From the experience of New Zealand, UK and Australia, we can see that there are two models can be used for funding the capital charging as follows:

***1- Full Reimbursement Capital Charging Model:***

The three pioneer countries (New Zealand, UK and Australia) have adopted the accrual output based budgeting model. Under accrual output based budgeting model, cash and non-cash items are funded in each governmental entity's annual appropriations. Thus the increase in expense (as a result of including the capital charging) has been exactly matched, for each governmental entity, by an increase in appropriations. This model is generally referred to as a full reimbursement capital charging model (each governmental entity is given additional funds exactly equal to the capital charge) (Heald and Scott, 1996, Heald and Dowdall, 1999 and Carlin, 2003).

However, the adoption of full reimbursement model without to have an efficient public management system, will not achieve the target benefits from its application. If a governmental entity's appropriations were increased by an amount equal to the capital charge without comparing its output cost with other competitive entities, it will not be motivated to use the available resources efficiently. In fact, deriving maximum benefit from the capital charging requires a prior redesign of the management process. For example, the public sector reform has resulted in that the New Zealand ministers have two relationships with their departments: 1) as their "owner", and 2) as the "purchaser" of the goods and services they produce. The different interests of the government in departments (as owner and purchaser) imply different approaches to performance measurement. The ownership interest is concerned with how effectively resources are being maintained and used. This requires the same types of financial reporting, as are generally accepted practices in the private sector (Ball 94). This includes distinguishing of capital and current expenditure, notion of capital maintenance, and hence, the use of accrual accounting, without accrual accounting there is no reliable basis for measurement.

As “purchaser” of services from the departments, the government is looking for quality of goods and services at the best competitive price. Herein, the purchaser wants to know the full cost of services which are delivered by the departments. The capital charging is considered as an important cost item of the goods and services provided by each department. In addition, the cost of these goods and services is compared with private sector. Accordingly, the implementation of the capital charging in the government should be done with a framework that makes the governmental entities to use their resources efficiently.

## **2- Weighted Capitation Model:**

Under this model, the governmental entities are compensated for the capital charge they incur on the basis of certain socio-economic characteristics of the population base they serve (Heald and Dawdall, 1999). This in turn means that a governmental entity might be compensated for anywhere between 0% and 100% of the capital charges it incurred. A governmental entity (e.g., School) which served a privileged socio-economic demographic might, for example, be compensated on the lower end of that range, while a school which served an underprivileged demographic would be compensated at the upper end of the possible range (Carlin and Guthrie, 2001).

In such model, capital charging becomes as much a tool for economic redistribution as for improved internal governmental entity management (Carlin and Guthrie, 2001).

The international experience prefers to use the weighted capitation model. For example, the UK started with the application of the full reimbursement model and overtime changed to weighted capitation model. So when capital charges were first introduced in the UK National Health Services, they were neutral, in the sense that each purchaser received an additional allocation equal to the actual charges incurred by the provider and passed it on to the latter. Over time, they were gradually made to bite more, as the allocation became more dependent on weighted capitation and less on the characteristics of individual providers, bringing more pressure to bear on high-cost providers. Consequently, it might be right in the beginning to use the full reimbursement model but overtime, the capital charge must be bite through the movement to application of weighted capitation model.

## **3-3 Cash Management systems**

In order a government to be able to budgeting and forecasting the cash required for appropriations in right way, management cash systems at the whole-of-government level need to consolidate a range of information relating to taxation receipts, asset sales, loan repayment schedules, transfer payments and individuals government entity/agency operating flows and capital requirements. In addition, the cash management systems need to be linked with debt management systems to ensure current interest and principal obligations can be met (Ball, 2002). Thus, the main aim of cash management is to ensure that the government is able to fund its expenditures on timely basis and to meet its obligations when fall due. Even though the cash management is a very important dimension for effective management for budgeting appropriations, it is not very well covered in the public financial management literature. The well covering cash management should include, in fact, several subjects such as cash budgeting and cash forecasting; collection of cash receipts; disbursement of funds/payment mechanisms; identification and investment of surplus funds; obtaining short-term funds and cash appropriations management, this is in addition the degree of centralization of cash management system and the structure of bank accounts (Ball, 2002). However, the main focus here is not on discussing all the aforementioned subjects but on the accrual budgeting technical challenges related to the cash appropriations management. As Blondal (2005) argues that the nature of the appropriations is intrinsically linked to the cash

management system that the government uses, and therefore, the interface between cash management and appropriations differs depending on the extent of decentralization of the appropriation system. Based on the experience of pioneer countries such as New Zealand, UK and Australia, there are four approaches for appropriations, as the appropriations may be designated as being for: (Blondal, 2005)

- 1- The cash expenditure made by agencies;
- 2- The cash provided to agencies;
- 3- The costs incurred for the production of outputs by agencies and
- 4- The price paid to agencies for the production of outputs.

These four approaches are related to the above described models (no-cash-in-hand model and cash-in-hand-model). As the first approach (and in some cases, the second approach), represent the no-cash-in-hand-model where the appropriations are allocated to governmental entities including only cash required for their operations in a given year. The last two approaches, and sometimes the second approach, represent the cash-in-hand-model, where the appropriations are allotted to governmental entities including both cash and non-cash items.

Accordingly, the government has two options, firstly, it can allocate only cash requirements for a given year to governmental entities, secondly, it can allocate cash required for the given year in addition to cash required for replacement of fixed assets in the future (e.g. accumulated depreciation). In effect, cash management system would be used to transform the cash-in-hand-model in the no-cash-in-hand-model. Blondal (2005) argues that the non-cash items would be a national amount in the bank accounts of the governmental entities-i.e. as receivables.

In all above options, there should a strong control on cash and how it is used. In fact, there are two broad models of cash balance management and control that can be derived from country practices. The control task of cash management can be performed by centralized system or decentralized system. The centralized system can be performed by the Central Bank, Ministry of Finance or both Central Bank and Ministry of Finance. The decentralized system can be performed by governmental entities/agencies themselves. In case the Central Bank is the government's de facto cash manager and controller, the total net cash flows of government are managed passively, through the central bank. A cash surplus is put on deposit at the central bank, while a deficit is covered by an overdraft or through operations conducted by the central bank. This situation applies whether the central bank has direct responsibility for cash management or operates as agent for the government. In practice in this model, cash management operations form part of the central bank's liquidity management operations. This model is appropriate in those countries (particularly developing and emerging-market economies) where the ministry of finance lacks the technical capacity to accommodate the transaction flows and also manage the financial and operational risks that are associated with transactions with the market. Alternatively, the ministry of finance may be an active cash manager. In this model, the ministry of finance, through the state treasury or debt management office, manages the government's overall net cash flows directly with the market, by investing a cash surplus or securing funds to cover a deficit.

There may be hybrid solutions, however, in this model, the ministry of finance, through the state treasury or debt management office, manages the government's overall net cash flows both directly with the market and via the central bank. This situation may manifest itself in two ways. From the perspective of the ministry of finance, the central bank may be an

optional counterparty, in that the ministry of finance has the option to pass responsibility for any end-of-day cash surplus or deficit to the central bank.

Under the decentralized model, the governmental entities would receive the cash in their account for the full amount of the non-cash items of their appropriations. The governmental entities would be responsible for the management of this part of their appropriations. However, in order for the governmental entities to manage the non-cash items effectively, the ministry of finance has to set some limits for each governmental entity for using the appropriations for non-cash items and all amounts in excess could require the approval of the ministry of finance (Blondal, 2005).

#### 4- Conclusion

While both developed and developing countries are gradually moving towards adopting the performance budgeting and accrual budgeting, for most countries the implementation of performance budgeting and accrual budgeting is not an easy task and at an early stage. Nevertheless, the accrual and performance oriented budgeting, if fully implemented, could bring radical changes to structure and format of the government budgets and to budgetary decision making processes. This paper has explored a number of the technical challenges that can face the implementation of performance budgeting and accrual budgeting. In order for governments to successfully implement both performance and accrual budgeting, these technical challenges must be identified and tackled before any attempt to implement both of them in the public sector. In addition, this paper has made clear that the implementation of performance budgeting face a specific technical challenges that are different from the specific technical challenges that face the implementation of accrual budgeting. In the first place, the paper concludes that the implementation of performance budgeting will face the following technical challenges: specifying the outcomes; specifying the output; and linking outcomes to outputs. With respect to specifying the outcomes, the paper has tackled the following technical challenges: How to determine/specify the outcomes? How can the government measure the achievement of outcomes? Who will be held accountable for achieving outcomes? How can the government translates these outcomes to appropriate outputs? How can the government define and achieve outcomes that are cross-ministry in nature?

Regarding the specifying the outputs, it is concluded that while the governmental entities are required to maximize the contribution of their outputs to the specified outcome. The governmental entities will encounter the problem of: *How can they report the outputs in the budget? How can they measure the impact of an output on both outcomes?* This is in addition to how can government link the outcomes to outputs.

In the second place, the paper concludes that the implementation of accrual budgeting will encounter the following technical challenges: appropriations for non-cash items;

Treatment of capital charging in the budget; and cash Management systems. It is concluded that there are two models that can be used to tackle the technical issue of appropriation of non-cash items, these are cash-in-hand-model and no-cash-in-hand model. Moreover, the paper has tackled in detail the following challenges that are related to capital charge: How can government determine the capital charge rate? How to compute a net asset base on which to apply the rate? How can the capital charge be treated in the budget? Finally, the paper concludes that the nature of the appropriations is intrinsically linked to the cash management system that the government uses, and therefore, the interface between cash management and appropriations differs depending on the extent of decentralization of the appropriation system.

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