

**THE IMPACT OF KOREAN PERFORMANCE  
BUDGETING ON BUDGETARY  
PROGRAMMES**

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# ABSTRACT

This study examines the impact of the Korean system of performance budgeting on government spending programmes. It sets out to examine the associations between a programme's future budget and its past performance and also the impact of performance budgeting on managerial practices.

Much of the study uses quantitative techniques – particularly regression analysis and analysis of variance (ANOVA). Regression analysis is used to examine the links between budget decisions and performance, by analysing the impact on budget changes of SABP (Self-Assessment of Budgetary Programmes) scores (or grades) of programmes which the SABP assessed from 2005 to 2007. Secondly, ANOVA is used to examine changes in seven managerial practices: goal clarity, goal difficulty, budget adequacy, budget flexibility, budget participation, procedure formalization, and support from higher management, using perceptual data of 807 administrators in the Korean central government.

This thesis found evidence of two main effects of Korean performance budgeting on government operations. Firstly, budget decisions have a statistically significant correlation with the performance of programmes or SABP scores (or grades). Secondly, Korean performance budgeting tends to initiate changes in programme-managerial practices within spending organizations, and to improve programme performance.

# **DEDICATION**

**TO MY PARENTS**

**TO MY WIFE, HYANG SOON PARK**

**and MY TWO DAUGHTERS, HYO JIN and KOUNG ME**

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# ABBREVIATIONS

<b>Art.</b>	Article
<b>GDP</b>	Gross Domestic Product
<b>GPA</b>	Government Performance Assessment Act
<b>IES</b>	In-depth Evaluation System
<b>KDI</b>	Korea Development Institute
<b>MBO</b>	Management By Objectives
<b>MPB</b>	Ministry of Planning and Budget
<b>NABO</b>	National Assembly Budget Office
<b>NFA</b>	National Finance Act
<b>OPC</b>	Office of Policy Coordination under the Prime Minister
<b>OMB</b>	Office of Management and Budget
<b>PMS</b>	Performance Management System
<b>PART</b>	Programme Assessment Rating Tools
<b>PPBS</b>	Planning Programme Budget System
<b>RMO</b>	Resource Management Office
<b>RND</b>	Results Not Demonstrated
<b>SABP</b>	Self-Assessment of Budgetary Programmes
<b>SOC</b>	Social Overhead Capital
<b>ZBB</b>	Zero-Based Budgeting

# CHAPTER 1 INTRODUCTION

## 1.1 Research Objectives

A budgeting system for the public sector is something that has been evolving continuously ever since the first efforts were made to establish a modern format for recording and regulating public expenditure (Nah, 2007). In the early twentieth century, the line-item budgeting system was introduced into one US local government, mainly to control the arbitrary approach of bureaucrats to making and executing budgets. Later, in response to changes in financial circumstances, the orientation of budgetary practice was changed from controlling the budget to linking it to performance. Introducing the concepts of cost and performance into public budgeting triggered the implementation of various types of performance budgeting by the US federal government: Zero-Based Budgeting (ZBB); the Planning-Programming-Budgeting System (PPBS); Management by Objectives (MBO); and others (Tyer and Willand, 1997).

Since the 1980s, when public finance departments found themselves operating in tougher financial circumstance than ever, Australia, New Zealand, the United Kingdom, the United States, and other developed countries have introduced performance budgeting systems in a variety of ever more elaborate types (Kim, 2003; Andrews, 2003). They have continuously struggled to associate budget allocations with

programme results. For example, in 2002, the US federal government designed the Programme Assessment Rating Tool (PART) in order to assess individual programme performance. In 2005, the Korean central government devised Self-Assessment of Budgetary Programmes (SABP) with reference to the PART (MPB, 2006a). Although SABP has many similarities to PART, one difference as discussed below is that currently SABP, unlike PART is largely limited to capital programmes, because of the current accounting system and the fact that programme managers have little authority in choosing their staff. It is planned to introduce a new accrual accounting system in 2012 that will partly address this issue.

These above types of performance budgeting aim to improve government performance by linking budget allocations with measured performance. For example, since introducing SABP in 2005, the Korean central government has argued that Korean performance budgeting has associated budget decisions with performance, and that this has contributed to improving programme performance. It has even been argued that Korean performance budgeting, supported by SABP, tends to be particularly direct in the way it links budgets and performance, one example of this being the stipulation in the Budget Request Guidance issued by the Ministry of Planning and Budget (MPB) that spending ministries and agencies should reduce by more than 10% the budget of any programmes assessed as 'Poor' by SABP. Indeed, in the budget year 2006 the MPB reduced by 25% the budgets of programmes which had received the SABP grade 'Poor'; in the year 2007 the reduction to such programmes' budgets was 24 %; and in 2008 it was 15% (Park: 2006).

In practice, there may have been various arguments as to whether performance budgeting systems have served their primary purpose. Basically, there needs to be investigation of opposing arguments about whether, and how closely, performance budgeting models have linked budget allocations with programme performance. From the viewpoint of Giddens' theory of structuration (2007), an institution interacts with its actors. These interactions may lead to impacts on a wide range of government management areas such as organizational structure, finance, personnel. In this context, performance budgeting, as one of the institutions managing government, may affect personnel and organizational behaviour, for example, in managerial practices. In terms of its impact, there needs to be examination about how much they have improved the performance of individual programmes or government management.

Studies are required to ascertain the efficacy of performance budgeting and its impact on government operations. Following their implementation of performance budgeting, various governments have argued that it has made a key contribution to improving public activities. For example, the Korean central government (2003) has argued that performance budgeting has changed decisions about budget allocations among programmes and that it has led to improved use of public finances. On the other hand, many studies have reported that performance budgeting models have not had such a great success. According to an OECD investigation (Currestine, 2005a), there is no evidence to support the thesis that performance budgeting has directly improved the performance of individual programmes or of aggregate public finance. Schick (2003, p 83) concluded that 'efforts to budget on the basis of performance almost always fail' due to difficulties in associating budget decisions with performance. Furthermore, there have been few studies about changes in managerial behaviour.

These opposing arguments, which have been made against a background of growing attention to performance budgeting, may result from practical and technical problems, rather than from problems inherent in performance budgeting itself. From a practical point of view, because performance budgeting encompasses diverse types or models which individual governments have developed, it may produce different impacts, depending on the particular approach, objective or phase of development (Curristine, 2005a). As a result, it is difficult to identify universal impacts of performance budgeting. Different research studies tend to produce different conclusions.

In addition, technical difficulties in measuring performance tend to make it harder to identify accurately the impacts of performance budgeting on public finance or government activities. Contemporary programmes require more elaborate and sensitive techniques for measuring performance, because the facets of performance and the interests of stakeholders are becoming more complex and intricate than ever. Measuring performance is a political process which becomes entangled with the interests of various stakeholders (Bouckeart and Halligan, 2008). As a result, performance tends to be defined in diverse ways, for example as economy, efficiency, or effectiveness, depending on the emphasis of the assessment.

It is also the case that it is difficult to separate the impacts of performance budgeting from those of other reform measures, because the system tends to be introduced as part of a package of government management reforms. At the current stage of technological development, it has been difficult to provide tools capable of overcoming these more nuanced problems of performance measurement.

Inevitably, many researchers tend to take a case-by-case approach to identifying the efficacy or impact of performance budgeting. The Korean version of performance budgeting may be a particularly interesting object for research because, in assessing budgetary programmes with SABP, it translates programme performance into scores and grades. The numeric scores and grades of programmes are useful for identifying whether Korean performance budgeting has successfully linked budget allocations with programme performance. Furthermore, the Korean version of performance budgeting can be expected to help researchers address how it has changed programme-managerial practices and programme performance, because it uses checklists which may be closely related to both of these areas in assessing the results or status of programme execution.

To date, there have been few empirical studies on the efficacy or impact of current Korean performance budgeting, because its history is so short. Regressing budget changes with SABP grades, Park (2006) reported that Korean performance budgeting had linked budget decisions with performance. The National Assembly Budget Office (2007) conducted an opinion survey of Korean central government civil servants to find out how SABP had impacted on public finance. The survey suggested that SABP had contributed to improving the performance of public finance. However, the two studies have some gaps that need to be filled. Park's conclusions are limited in that he analysed only about a third of programmes assessed with SABP. Nor did the National Assembly Budget Office's analysis reach a more helpful conclusion, because its survey dealt with the general impacts of SABP rather than with the specific impacts of Korean performance budgeting.

This research, in this context, aims to extend existing analyses of the impacts of Korean performance budgeting. It does this firstly by considering every programme assessed by SABP during the period under investigation, so that it gives more generalized suggestions about the links between budget decisions and performance. And secondly, it examines changes in programme-managerial practices and in programme performance, in an attempt to find more specific evidence about the dynamic impacts of Korean performance budgeting on public management.

This study is expected to make a minor contribution to constructing a bridge over a small chasm which existing research has rather missed, because it employs a more comprehensive approach, considering changes in both budget allocations and programme-managerial practices. Indeed, there have been few previous research studies which have taken a comprehensive approach to identifying the impacts of Korean performance budgeting on government, despite the possibility that these may affect a wide range of government activities such as budget decision-making and managerial practices. Furthermore, this study provides empirical evidence of the impacts of Korean performance budgeting on budget decisions and programme-managerial practices. From a practical point of view, the research is expected to contribute to providing specific indications as to how current performance budgeting efforts could be improved.

## **1.2 The Scope of the Research**

The primary objective of this research is to identify whether performance budgeting has

served its purpose. This is a hard task, as stated earlier, because of practical and technical problems. Thus, limiting the scope of this research may be helpful for achieving its goal. Although there have been various types and models of performance budgeting used by various governments, this research focuses on the Korean version of performance budgeting. As far as the analysis is concerned, it aims to identify how Korean performance budgeting has linked budget decisions with performance, and what impacts it has had on budgetary programme-managerial practices and programme performance within spending organizations of the Korean central government.

The Korean central government, in 2000, introduced a performance budgeting system as one of the fiscal reform measures it put in place after the Asian Financial Crisis of the late 1990s. In 2005, the performance budgeting system was modified by the addition of SABP, so that budget allocations might rely more on programme results. SABP is a critical tool with which the Korean central government links budget decisions to performance. Before budgeting every year, the Korean budgetary authority assesses the results or performance of budgetary programmes using SABP. SABP produces numeric scores from 0 to 100 for programmes, and then translates these scores into one of four grades: 'Poor', 'Modest', 'Somewhat effective', and 'Effective'. Following its implementation, SABP was used to assess 1717 budgetary programmes listed on the initial assessment plan for the year 2005 as follows: 555 programmes in 2005, 577 in 2006, and 585 in 2007. For all these programmes, their performance was represented as a numeric score or as one of four grades. In aiming to describe the links between budget decisions and performance, the research concentrated on this three year period of the implementation of Korean performance budgeting. As regards the question of how far

the results of the study can be generalized, it should be noted that the study considered the SABP assessment of all budgetary programmes which had been scheduled for such assessments in the three years of its duration.

As described above, Korean performance budgeting may have an effect on personnel and organizational behaviour, for example, in managerial practice. In the case of an assessment, an element of performance budgeting, this will be followed by a response. It is this response that may result in changing the behaviour of an organization or its personnel. According to both the National Finance Act and the Government Performance Assessment Act, the Korean central government assesses programmes using SABP and utilizes the assessments for making budget decisions and evaluating ministry (and agency) performance or personnel performance. As a result, Korean performance budgeting has the potential to cause changes in wide areas of government activities. However, this study is limited to changes in programme-managerial practices. This research uses the perceptions of administrators about the contribution of Korean performance budgeting in relation to changes in seven programme-managerial practices (goal clarity, goal difficulty, budget adequacy, budget participation, budget flexibility, procedure formalization, and support from senior management) and in programme performance. Conducting a survey in 2009, this research used the survey to analyse the impacts which Korean performance budgeting had had on managerial practices or programme performance up until that time.

To sum up, this thesis focuses on the impacts of Korean performance budgeting on government management. The analysis of links between budget decisions and

performance is confined to the three budget years 2006, 2007, and 2008. In terms of changes in the eight practice factors, this thesis measures them for the year 2009. However, the dynamic processes of their changes are beyond the scope of this research.

### **1.3 The Structure of the Thesis**

This thesis consists of seven chapters. Figure 1-1 illustrates the structure of the thesis. Chapter 1 introduces the objectives, scope, and configuration of this thesis.

Chapter 2 provides a survey and analysis of existing research studies on performance and performance budgeting. This chapter first defines the concept of performance and then examines the factors which may influence programme performance within an organization. Following the descriptions of performance, a variety of performance budgeting systems implemented since the 1950s are introduced, and recent developments in performance budgeting are presented. Finally, this chapter describes the impacts of performance budgeting on government operations.

As noted earlier, this thesis focuses on Korean performance budgeting. In Chapter 3, the process of Korean performance budgeting is specifically described. First, its historical background and details of its introduction by the Korean central government are presented. The framework of the current performance budgeting system is illustrated diagrammatically. The chapter then examines SABP, a critical tool for assessing programmes, comparing it with the Programme Assessment Rating Tool (PART) developed in the United States. Finally, the impacts of Korean performance budgeting

are described in the context of reviewing existing research work. This chapter describes its possible contributions to changes in programme-managerial practices, focusing on checklists for SABP.

Chapter 4 develops research questions and determines ways to address them. There are a large number of issues about performance budgeting that need to be dealt with. This thesis starts from the question of how performance budgeting associates budget decisions with performance, bearing in mind that, by linking budget decisions with performance, it aims to improve performance. Furthermore, the thesis raises the question of whether performance budgeting improves performance, and how it changes managerial practices. Chapter 4 introduces techniques for answering these questions. Employing a quantitative approach, in this chapter the thesis constructs models for regressing budget decisions on performance. For analysing changes in practices, seven practice variables and one performance variable are selected, with reference to the discussion in Chapters 2 (literature review) and 3 (Korean performance budgeting) about impacts of Korean performance budgeting on programme-managerial practices which may affect performance. An opinion survey is designed to measure these, and the demographic characteristics of this survey are described.

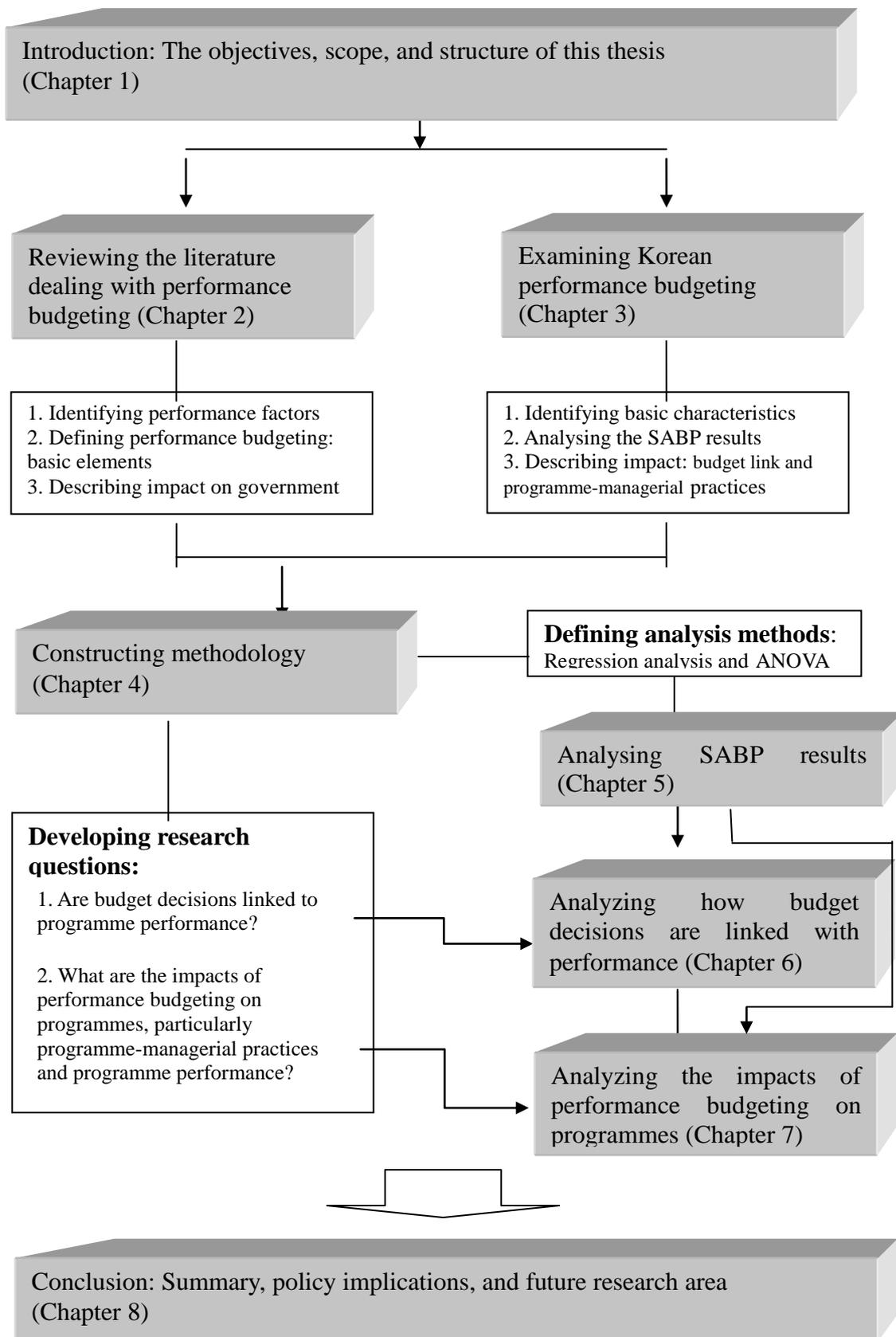
Chapter 5 provides statistical descriptions of SABP results depending on programme types, and questions and sections in SABP checklists. It is expected to give some suggestions for analysing differences in budget linkages and managerial practice changes among programme groups in Chapters 6 and 7.

Chapter 6, using the techniques presented in Chapter 4, conducts an empirical analysis of how Korean performance budgeting has associated budget decisions with programme performance. After describing data, this chapter analyses the regression results of budget changes with SABP scores. More specifically, it identifies differences in the extent of links between ministries and agencies, and the four SABP grades. Also, it examines differences in the links, depending on types of programme. These empirical results are expected to give statistical evidence of whether SABP results have been reflected in budget decisions.

Chapter 7, using the methods discussed in Chapter 4, analyses the impacts of Korean performance budgeting on programme performance and programme-managerial practices within spending organizations. In order to establish the reliability of data gathered in a survey of Korean government administrators, exploratory factor analysis is conducted. The contributions of performance budgeting toward changing eight variables are presented. Differences in these contributions between organizations, programmes, and the uses of SABP results are examined using analysis of variance (ANOVA). Finally, this chapter examines whether these seven practices make a difference to improving performance.

Chapter 8 provides a summary of the thesis, and concludes by discussing the limitations and implications of this research.

Figure 1-1 Structure of this thesis



## **CHAPTER 2 DISCUSSIONS OF PERFORMANCE**

### **BUDGETING**

#### **2.1 Overview**

A budget, a financial plan for what is being done or what it is intended shall be done (Musgrave, 1961), is a not uncommon feature in the life of an individual or an organization, whether the latter is in the private or the public sector. Fleischman and Marquette (1986; re-cited Tyer and Willand, 1997) noted that it is difficult to imagine governments without budgeting. Budgets play a critical role in public management. Wildavsky (1961) compared public budgets to the lifeblood of governments. That is to say, budgets are essential for the management activities of governments.

Schick (1966) argued that a budget, basically, has three functions: control, management, and planning. The earliest modern budget systems placed an emphasis on the control of governments. However, as budget systems have evolved, with the invention of a variety of accounting techniques, auditing techniques, and controls for budget-implementing units, the control function of budgets has attracted less attention than their other functions.

As government activities expanded in the post-World War 2 era, the voting public started to ask critical questions about what was being accomplished. In the mid-1980s,

when economic recession deepened, the demand on public services increased but the revenues that governments could call on to provide these were squeezed. To handle these difficult situations, governments concentrated on enhancing the efficiency and effectiveness of public spending. Since then, governments have shown an increasing tendency to shift from detailed input control to a more results-oriented budget management. As a consequence, performance budgeting has regained the attention which it originally received in the 1960s. The new performance budgeting models aim to improve the performance of government operations by associating budget decisions with performance.

Performance budgeting in the public sector has varied widely across the countries which have implemented it, because individual countries have constantly developed their practice. New Zealand, one of the leading countries in the field, began to introduce the present form of performance budgeting in the late 1980s, and was followed in the 1990s by Canada, Finland, the United Kingdom, and the United States. New Zealand has been shifting the emphasis of performance budgeting from outputs to outcomes. France has enacted a law which requires the measurement of outputs and outcomes in budget documentation for government programmes (Currestine, 2005a).

On the other hand, performance budgeting, in particular as a reform lever, may have an impact on various government operations. For example, performance budgeting, at the very least, is required to give spending organizations and administrators increased flexibility so that they can reallocate funds within the controls on budget line items. At the same time it ensures their responsibility for the results of reallocated funds. Thus,

returning to performance budgeting may cause spending organizations and administrators to adjust their managerial behaviour. In turn, the adjustment of managerial behaviour specifically related to performance factors may influence the performance of spending organizations' activities, including their implementation of policies and programmes. Nonetheless, there have been many arguments about whether performance budgeting has served its primary purpose. Some authors have argued that performance budgeting has failed to link budget decisions with performance and to improve performance (Shick, 2003; Willoughby and Melkers, 2001). Others have reported that it has contributed to the improvement of public finance (MPB, 2006a; Park, 2006; Reddick, 2003; Poister and Streib, 1999).

Performance budgeting, as described above, has been implemented in different forms by many governments. It has contributed to various, and sometimes contradictory, reputations. In order to investigate why it has been viewed in different ways, this chapter reviews various existing literatures which discuss it. Firstly, Section 2.2 examines what performance, a vital element of performance budgeting, is. In this section, the author examines definitions of performance, key performance factors, and some issues that relate to the measurement of performance. Section 2.3 defines what performance budgeting is: its history, definition, and types. Section 2.4 looks into the impact of performance budgeting on government operations. And the last section provides a discussion of the limitations of performance budgeting.

## 2.2 Performance in the Public Sector

### 2.2.1 Definition of Performance

It is not easy to define performance budgeting in the public sector in a single phrase, because performance has diverse definitions in both the practical and the technical sense. From performance budgeting's inception in 1950, the concept of performance in government has evolved in accordance with the objectives of budgeting systems or approaches. Ultimately, performance depends on the objectives of budget management systems (Diamond, 2005).

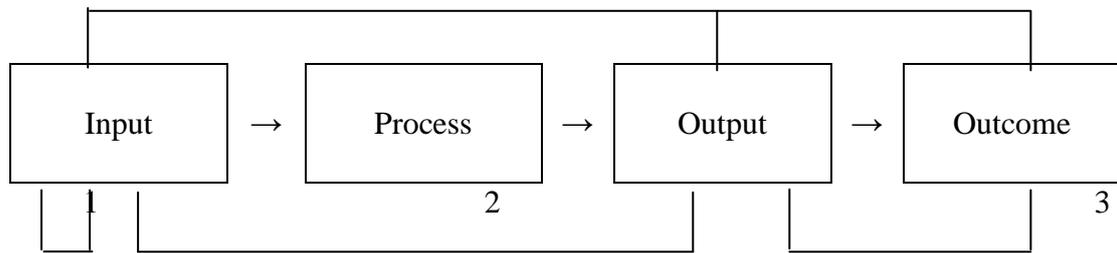
*If the budget management system is a traditional one, performance will be defined by measures of compliance and stewardship. On the other hand, if the budget management system is outcome focused, and judges success in terms of impact on society, in this case performance will be defined by measures of the effectiveness of outputs produced (Diamond, 2005, pp 4).*

First of all, starting from the general viewpoint that performance budgeting can be defined as a budget management system which places a focus on performance for managing budgets, performance needs to be conceptualized. In order to define performance, a simple logic model of public service production is employed in <sup>1</sup>. As seen in the figure, this model illustrates four paths: input, process, output, and outcome. It adds an outcome process to the typical production model of the private sector.

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<sup>1</sup> This model is regarded as the basis for assessing performance, and has a long tradition (Diamond: 2005.3). Bouckaert & Halligan (2008) state that for public organizations it is crucial to secure the trust of citizens, and so they add the trust stage to the process.

Figure 2-1 Definition of performance in the public service production process



1. input/input: economy
2. output/input: efficiency
3. outcome/output: effectiveness

The process starts with an input stage. An input is the acquisition of resources such as personnel, infrastructure, finance and other physical assets. In this sense, it is relatively easy to quantitatively measure this stage. A process refers to activities for which inputs are used. Activities produce outputs through implementing policies, programmes, and other government activities. An output is the name given to direct goods and services produced by various government activities. And an outcome, ‘not what the program or organization itself did but the consequences of what the programme or organization did (Bovaird and Loffler, 2003, pp 130)’, is taken to be the final or long-term consequences and the effects or impacts on the community of a policy or a programme. Outcomes are more difficult to measure, due to the fact that they are affected by various external factors.

Based on this model, performance in the public sector has three dimensions. Firstly, economy, which is ‘the cost divided by the input (e.g. the cost per employee, the costs per office)’ (Bovaird and Loffler, 2003, pp 131). In general, a traditional budget

management system concentrates on controlling input costs, and so places the emphasis on economy. Secondly, efficiency, which are defined as the ratio of output to input, as in the number of crimes solved by per police officer or the number of closures per inspection. Indeed, governments mainly tend to estimate efficiency, when measuring operation results. Finally, effectiveness is outcome divided by output, as in the amount by which transport expense is reduced by each Km of road extension. As outcome is more difficult to measure than input, effectiveness is not as easy to measure as economy.

As the focus of budget systems has changed from input to output and outcome, measurement of performance has become a critical issue. Performance tends to be conceptualized to focus on the measurability of efficiency and effectiveness (Miller et al., 2001; Bouckaert & Halligan, 2008). Performance, in practice, needs to be defined to be measurable and utilizable for managing government operations in the public sector. In this sense, it is not easy or reasonable to define performance as a unique concept. Behn (2003) noted that no single performance measurement is appropriate for overall management. Bovaird (1996; re-cited Bouckaert and Halligan, 2008) makes a significant suggestion that performance 'is not a unitary concept, within an unambiguous meaning. Rather, it must be viewed as a set of information about achievements of varying significance to different stakeholders'. This approach may have the advantage of covering a diverse range of performance budgeting systems from the 'performance budget' recommended by the Hoover Commission in the United States, the Planning-Programming-Budgeting System (PPBS), and Zero-Based Budgeting (ZBB) to the 'new' performance budgeting of the 1990s (Robinson & Brumby, 2005).

### **2.2.2 Determinants of Performance**

Many researchers have argued that the performance of an organization and the success of its programmes are influenced by both internal and external elements: these include the capability of its personnel; its organizational type; its administration; organizational strategy; its organizational culture; and the external environment in which it functions. More specifically, the performance of organizations is closely related to organizational characteristics such as organizational size and organizational structure, as well as to external environment (Andrew, 1980; Blau and Schoenherr, 1971; Burns and Stalker, 1961; re-cited Keats and Hitt, 1985).

The external environment is widely believed to have a major impact on organization performance. Some researchers have argued that the degree of congruence between an organization and its environment is one of the critical factors affecting performance. Burns and Stalker (1961) suggested that ‘the success of a firm stems, in part, from the adoption of an organizational structure sufficient to deal with changing competitive circumstances (Recited Lenz, 1981, pp 134).’ Child (1975), in an examination of 82 British companies, observed that the higher the performance, the greater the number of structured activities demonstrated, particularly in a stable environment. Also, Mason (1939) tested whether the market structure firms faced externally affected their conduct and, in turn, whether their conduct influenced performance. The results of the test indicated that market structure does explain the performance of an organization. The results of studies of the relationship between market structure and performance are often applied to public policy making (Lenz, 1981).

On the other hand, Pennings (1975) found, in sample-testing a ‘structural-contingency’ hypothesis (the structure of organizations is associated with their environment and technology), that associations between organizational structure and external environment failed to explain the variance in effectiveness. Miner (1979) and Argyris (1973) concluded that the performance of an organization is affected more directly by how successfully its human resources are integrated than by its external environment. The variations in these theories produced by empirical studies may be the result of a discrepancy between the settings in which the organizations were situated (Lenz, 1981). Taking the different theories into account, external environment needs to be seen as a fundamental factor when research is conducted into an organization’s performance.

The characteristics of an organization, such as type, size, structure, and the technology which it uses, are widely argued to have a major influence on its performance. They affect the decision-making process and managerial practices, and make a difference to the quantity and quality of the organization’s goods and services (Merget and Renee, 1982; Jackson et al., 1989). After Banner and Gangne (1995) derived five common characteristics from their definitions of organizations – (1) goal direction, (2) relatively identifiable boundary, (3) social interaction, (4) deliberately structured activity system, and (5) culture – they suggested that these five elements are generally related to the performance of an organization. Likert (1976), also, established a ‘profile of organizational characteristics’: leadership, motivation, communication, interaction, decision making, goal setting, and process control. The different profiles make a different organizational structure: bureaucracy, adhocracy, matrix structure, and so on. This, in turn, has an impact on organizational performance.

Many studies have indicated that organizational structure makes a difference in the performance of an organization. Organizational structure is believed to have an impact on individual behaviour as well as on organizational performance (Jackson et al., 1989). Studies of industrial organizations have observed that there is a significant relationship between organizational structure and organizational performance in a control situation (Marcus, 1969; Whittington, 1971; Child, 1974; Scheoffler, 1977; Steer and Cable, 1978). These discussions stem, in part, from a belief in the interaction between organizational structure and participants in the organization. Organizational structure is not only formed by participants' thinking but also affects the way in which participants think (Lenz, 1981). Dalton et al. (1980, pp 60) concluded in their research review on the relationship between organizational structure and performance that 'evaluations and generalizations concerning the nature and directions of these relationships are tenuous.' They suggested that micro-level studies of the relationship between organizational structure and performance should be conducted using organizational variables: degree of formalization, organizational size, and other 'structural'/'structuring'<sup>2</sup> dimensions.

Boyne & Walker (2005) suggested at a symposium, 'Determinants of performance in public organization', that 'a growing number of studies show that management does matter. .... many issues remain to be addressed about how public management variables are related to organizational performance.' Also, in the public sector, many studies have suggested that management is one of the critical factors which affect the outputs and outcomes of programmes. Furthermore, performance-focused management

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<sup>2</sup> Campbell et al. (1974) made a distinction between the structural and structuring characteristics of organizations. The structural characteristics are physical attributes such as size, control span, and flat/tall hierarchy; and the structuring characteristics are policies or activities within an organization which regulate its members' behaviour, such as the degree of centralization, formalization and etc.

‘not only has an impact on the key public management functions and components (HRM, finance, strategy, and etc.) but also changes the nature of policy and management in the public sector in itself (Bouckeaert and Halligan, 2008, pp 2).’

Roughly speaking, studies of the relationship between public management and performance have two streams: they either focus on managers’ behaviour; or they focus on the administrative and managerial arrangements as opposed to managers’ behaviour (Coggburn and Schneider, 2003). Focusing on managers’ behaviour, many researchers (Cohen, 1993; Riccucci, 1995; Denhardt, 1993; Ingraham, Thompson and Sanders, 1998) have observed that managers’ attributes and behaviour have a significant impact on organizational performance. Unlike the classical microeconomic assumption that managers are rational, managers’ behaviour in an organization may be determined by such motives as maximization of a personal utility function (Williamson, 1963; McKean and Scott, 1975) or budget (Niskanen, 1971). Some researchers have argued that the level of motivation and skill of administrators have a positive relationship with organizational performance. Participation in making budget decisions is strongly argued to have a positive correlation with motivation and/or performance (Kenis, 1979).

Organizational culture, as a concept which originated from anthropology, has a variety of definitions and has been applied to organizational studies in many ways (Smircich, 1983). Organizational culture, put simply, refers to ‘the pattern of shared meanings in an organization (Trice and Beyer, 1993; recited Rainey, 2003, pp 308).’ Among organizational researchers, organizational culture has been emphasized as a critical internal or external variable for organizational performance (Smircich, 1983).

Organizational culture has a critical role in the process of reforming an organization. For example, Flowers et al. (1999) observed, in the state of Florida in the US, that organizational culture was one of the main factors which had an effect on the implementation of a performance-based system.

As has been seen by now, there are many factors, internal and external, which influence the performance of an organization or a programme. However, several performance factors have been examined more specifically, which suits the purpose of this study. Chung (2003) conducted empirical research into the effect of performance budgeting on performance of programmes and organizations in Korean central government. In this research, along with three characteristics of budget management, he distilled four major factors from organizational characteristics: goal clarity, leadership, the degree of decentralization (or centralization), and the degree of formalization. Centring mainly on these, this study gives more specific discussion to performance factors.

### **Goals**

An organizational goal is generally defined as the mission or the objectives of an organization. It promotes the existence or survival of the organization and its activities in various vital ways, such as by providing a standard of performance, a basis for planning and management control, guidelines for decision-making, and so on (Banner and Gangne, 1995). If, for example, the goal for a policy or a programme is not set clearly, it may not be possible to evaluate the effects of that policy or programme appropriately. In this sense, a goal is often employed as an instrument for stimulating motivation, behaviour, and job performance. The effects can be made positive or

negative, depending on the characteristics of the goal, such as clarity, difficulty, number of objectives, and how it has been set (imposed or motivated) (Boyne and Chen, 2007). In addition, some researchers have stressed the importance of participation by members of an organization in the process of goal setting. Analyzing the effect of goal setting on performance under different task conditions, Hirst (1987) proposed that it was crucial for members to participate in setting goals in order to improve the performance of an organization. He found that a task might attain a less effective goal if participants had little knowledge of how their goal had been set.

Of the possible qualities for a goal, clarity and difficulty have attracted much attention in academic and practical literatures. The clarity of goals has been defined as ‘the extent to which goals are stated specifically and clearly, and are understood by those who are responsible for meeting them’ (Kenis, 1979, pp 709). ‘Goal clarity or goal ambiguity characterizes organizations’ (Matland, 1995; recited Flowers et al., 1999). Flowers et al. (1999), in their comparative study of Florida, found that organizations with clear goals tended to implement policy using a ‘top-down’ approach, and that organization with ambiguous goals used a ‘bottom-up’ approach.

With regard to the relationship between goal clarity and performance, Locke (1968; recited Kenis, 1979) presumed that a goal controls an organization or the behaviour of the organization’s personnel. He suggested that organizations with a specific goal are more productive than those with a vague goal, because an ambiguous goal gives grounds for employees’ confusion, tension, and dissatisfaction. On the other hand, opponents of planning have stressed that quantified goals can have a negative impact on performance

because they can de-motivate members of the organization who disagree with them (Boyne and Chen, 2007).

Goal difficulty is defined as ‘the level of performance required to achieve a goal (Hirst, 1987, pp 774).’ Hirst (1987) labelled goals as ‘easy (or low)’ or ‘difficult (or high)’ on the basis of an average level. The level of goal difficulty may make a difference in the performance in an organization. An inappropriate level of goal difficulty can demotivate members of an organization. Goals that are too easily attainable may fail to inspire or challenge the members of an organization, whereas unattainable goals may stimulate feelings of failure and frustration. Some studies have suggested that while easy or low goals result in lower performance, difficult or high goals result in higher performance (Locke, 1968; Likert, 1967). Other researchers have found that if goals are not possible to achieve, they result in poor performance (Stedry and Kay, 1966; Hofstede, 1967; re-cited Kenis, 1979). In conclusion, Hanson (1966) recommended that goals should be attainable and yet challenging if they are to result in higher performance.

As noted above, setting goals with different characteristics may make a difference in the performance of an organization.

### **Leadership**

There are many ways of defining leadership and interpreting its meaning, depending on the situation in which it is being demonstrated. In general, leadership is defined as a ‘relationship through which one person influences the behaviour or actions of other people’ (Banner and Gangne, 1995, pp 246). Leadership, an interpersonal relationship,

is closely related to the motivation shown by members of an organization. A leader can encourage or discourage the members of their organization when it comes to being motivated towards achieving the organization's goals. Leadership has an effect on almost all activities related to the performance of particular personnel or of organizations as a whole. Organizations with effective leadership tend to produce high-quality goods and services more efficiently (Wart, 2003).

Sabatier and Mazmanian (1979) suggested that leadership was one of the vital factors that affected the successful implementation of policies or the successful performance of institutions. The introduction of new institutions into an organization, in particular as a reform lever, requires the active and enthusiastic support of the leadership if these institutions are to attain their primary purpose. In the 1990s, when administrative reforms swept across the world, there were increasing leadership problems.

### **Centralization/Decentralization**

The degree to which an organization is centralized or decentralized is related to the question of who has the authority to make decisions. If one or a small number of individuals exert particular influence on the decision-making within an organization, the organization is regarded as centralized. The extent of centralization is measured by the dispersion of decision-making authority through the organization. Accordingly, centralization tends to be described as organizational structures which reflect how decision-making authority is distributed among organization members. Decentralization is defined as the redistribution of decision-making authority down to lower levels in an organization. A decentralized organization is likely to make greater use of the ideas of

lower level employees.

It is generally accepted that centralization or decentralization are elements which affect the performance of an organization. In particular, given that the running of organizations has recently become more complex and fast paced, many organizational researchers have proposed that centralization's weakness when it comes to providing a quick response to situations has a negative impact on performance (Dalton et al., 1980). And also, administrative reformers have paid more attention to decentralization. Accordingly, recent developments in public organizations tend to show a shift to flatter structures with a wider span of control, and so a shorter flow of decision-making.

### **Formalization**

The degree of formalization in an organization is measured by the extent to which the organization's operations are defined formally by rules, policies, and procedures. Formalization regulates and controls the behaviour of personnel in an organization. In this sense, it is closely associated with standardization, which also prescribes the behaviour and procedures expected of personnel in an organization (Dalton et al., 1980).

There have been many arguments about what effects formalization has on the performance of an organization. Proponents of formalization have argued that, because it enhances predictability and stability, it can diminish the cost of communication in operating an organization. They have suggested that an organization requires some degree of formalization in order to avoid role ambiguity among members, and that it therefore improves members' behaviour and performance (Rizzo et al., 1970).

On the other hand, formalization may lead to boredom and job dissatisfaction amongst members of an organization because of constraints on the scope of jobs (Hackman and Lawler, 1971). In this sense, it may be counterproductive. It may also generate role conflict because it limits the opportunity for negotiation (Spekman and Johnston, 1986; recited Michaels et.al, 1988).

Similarly, the results of empirical research in this field have been mixed. Harrison (1974) reported that formalization had a positive relationship with performance in an organization. In contrast, some other authors have suggested that formalization has a negative relationship with employees' attitudes (Greene, 1978; Deshpande, 1982). Furthermore, Rogers and Mulnar (1976) found in an interview with 102 top-level county administrators that formalization was not associated with performance. These mixed results indicate that there may be an optimal level of formalization that reduces role ambiguity but provides employees with reasonable scope for doing their job (Dalton et al., 1980).

### **Budgeting**

A budget, even though there may exist variations, depending on the emphasis given to particular elements, is generally defined as a financial plan for the activities of an organization. It is not only a financial plan, but also a key device for managing an organization. From the economic point of view, Musgrave (1980) presented three functions of budgets: allocation of resources, redistribution of income and wealth, and stabilization of employment and outputs. Also, a budget plays a variety of

administrative roles within an organization. Schick, in his article ‘The Road to PPB (1966)’, suggested that a budget has three basic functions: planning, management, and control<sup>3</sup>.

Budgeting is one of the management activities which may affect the success of an organization. Leonard et al. (1995) explained that a budget makes a crucial contribution to organizing management culture, and that changes in budgetary practices lead to changes in management culture and in incentives for managers. Because budgeting, as a management activity, tends to induce different reactions amongst the members of an organization (Miliani, 1975), it has a critical impact on the results of organizational management. Argyris (1953) proposed that because budgeting is one of the accounting techniques that provide rewards or punishments for organization members, it tends to affect them directly.

The direction and strength of the impacts that budgets have depends very much on organizational characteristics related to budgeting: budget adequacy, budget responsibility, budget participation, and budget flexibility (Kenis, 1979). In an empirical examination of 169 department managers, Kenis (1979) reported that budget responsibility, budget participation, and budget goal clarity had a positive relationship with the job- and budget-related attitudes of managers.

Budget adequacy is defined as the extent to which a budget is adequate to accomplish a programme. In a survey study on the relationship between budget participation and job

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<sup>3</sup> According to Schick, ‘*Planning* involves the determination of objectives, the evaluation of alternative courses of action, and the authorization of selected programmes. *Management* involves the programming of approved goals into specific projects and activities, the design of organizational units to carry out approved programmes, and the staffing of these units and the procurement of necessary resources. *Control* refers to the process of binding operating officials to the policies and plans set by their supervisors’.

performance, Nouri and Parker (1998, pp 467) described budget adequacy as ‘the degree to which the individual perceives that budgeted resources are adequate to fulfil job requirements.’ They proposed that budget adequacy works as an intervening variable between budget participation and job performance, and that it is likely to improve job performance directly and indirectly via organizational commitment.

Budget participation has been described as members of an organization having an influence on, and being involved in, decisions related to their own budgets. Many management studies have examined how participation in making a budgetary decision affects the performance of an organization and its employees. Budget participation affects job or organizational performance directly or indirectly (Miliani, 1975).

Some studies have indicated that budget participation has a positive impact on performance (e.g. Argyris, 1952; Merchant, 1981). Proponents of budget participation have argued that, although members of an organization have a different quantity and quality of information about programmes and about local conditions, they can share various kinds of information with each other by participating in a budgeting process. This may result in the creation of more accurate budgets. Nouri and Parker (1998, pp 469) found that ‘subordinates often have better information about the level of budgetary support required to perform the subordinate’s tasks than do superiors.’ Other proponents have proposed that participation improves job or organizational attitude. Hanson (1966) stated that budget participation helps members to identify the goals of the budget and the organization. Miliani (1975) suggested, in a survey, that there was a positive correlation between budget participation and attitudes toward the participant’s job and the organization as a whole.

It has been suggested that budget participation has a positive effect on the performance of a job and an organization. Nouri and Parker (1998) found that there was a positive relationship between budget participation and job performance via budget adequacy and organizational commitment. Furthermore, Brownell found, in a field study (1982), that participation and job performance formed a strongly positive relationship the extent of which differed according to the individuals' personality. Others, however, have reported that budget participation has a significantly negative relationship with performance (Bryan and Locke, 1967; Stedry, 1960). Such diverse results are likely to stem from diversities in the contexts in which jobs and organizations exist.

Autonomy in budget execution is related to the flexibility which managers have in implementing budgets. Techniques for making budget execution flexible vary depending on budgetary purpose and the relationships between government agencies. For example, if control of the budget is emphasized, the line-item appropriation is more centred. Pitsvada (1983) presented six techniques which US federal agencies had used in budget execution, as follows: (1) object classification; (2) the appropriation structure; (3) contingency appropriations; (4) emergency provisions; (5) transfer authority; and (6) reprogramming authority.

Budget flexibility has been widely argued to have an impact on programme performance. Nonetheless, there have not been many studies in the field. Pitsvada (1983, pp 84) criticized the fact that even though budget execution was a key factor in improving government performance, it remained 'the most neglected area of budget research.' Hanson (1966) recommended that an increase in budget flexibility was required for enhancing the attainability of goals. A goal with an inflexible budget may become obsolete when circumstances changed.

More recently, there has been a growing emphasis on budget flexibility related to the increasing introduction of performance budgeting by governments. The first concern in this is to enlarge the autonomy of spending agencies to reallocate funds within the limitations of budget line items. There has been a growing trend towards giving organizations and managers greater freedom in operational decisions, instead of withholding from them more direct responsibility for results (Diamond, 2001). Against this background, the Korean financial authority announced that it would enlarge the budget flexibility of spending ministries and agencies, in response to the introduction of performance budgeting (MPB, 2006, 2007, 2008).

### **2.2.3 Measurement of Performance**

#### **2.2.3.1 Concepts and purposes**

Most OECD countries have not only implemented a performance management system but have also introduced performance information into budgetary documents (Curristine, 2005). Performance management in the public sector has been spreading with the 'new public management' movement. Neely (1999) specified the reasons for this prevalence as follows: the changing nature of work, increasing competition, specific improvement initiatives, national and international quality awards, changing organizational roles, changing external demands and, finally, the power of information technology.

Measuring performance has recently been one of the main issues in public management. OECD members have a common tendency to concentrate on performance measurement,

in spite of diverse approaches to performance management (Curristine, 2005). Fifty per cent of surveyed OECD countries have used performance measurement results in order to set programme priorities and to allocate budgets among programmes (Curristine, 2005). Berman and Wang (2000) found in a 1998 survey that 33.6% of U.S counties, even though the intensity with which they did it varied, measured performance and utilized the results.

Performance measurement is defined as measuring the progress or achievements of activities with a series of measures (Wang, 2000). Similarly, the GAO (2005) described it as ‘the ongoing monitoring and reporting of program<sup>4</sup> accomplishments, particularly progress toward pre-established goals.’ Performance measurement must be distinguished from performance evaluation, which involves the conducting of individual systematic studies periodically or on an ad hoc basis to assess how well a programme is working (GAO, 2005).

Performance measurement is not an end in itself. Rather, it is a means of performance management which collects a piece of information and ensures accountability (Osborne et al., 1995). Therefore, measuring performance is a key element underlying performance management. It provides analytical tools for managing organizations’ planning, personnel, finance and other management activities. For example, it produces useful information for setting target levels in the process of designing a programme. The level of targets helps calculate an adequate amount of resources for the implementation of programmes. Also, managers can monitor programmes by checking actually-realized

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<sup>4</sup> A programme may be any activity, project, function, or policy that has an identifiable purpose or set of objectives.

performance against pre-established targets during the course of the programmes' implementation. Finally, performance measurement is used as a tool for reporting achievements. Many countries publish an annual performance report (Curristine, 2005).

### **2.2.3.2 Considerations of measurement**

Although performance measurement in itself has diverse advantages, it is difficult and complex to quantify the performance of governments. The first factor creating this difficulty is the ambiguity or multiplicity of performance concepts. As noted previously, performance may be defined as economy, efficiency, or effectiveness, depending on the emphasis of an assessment. Performance measurement in the public sector requires consideration of 'a particular set of political and societal values, ethics and assumptions that have been translated into legislative requirements by successive governments' (Rogers, 1995, pp 19). These considerations define the concept of performance in the public sector. The second factor is goal multiplicity or ambiguity of programmes or policies. The third factor is the long time it takes for some programmes to take effect. It is critical to recognize that for many activities, such as education and health, it can be a long time before the outcomes or impacts are realized.

This difficulty in measurement tends to stem from the typical characteristics of public goods and services. Public goods and services are generally not transacted and are supplied free, or at an economically insignificant price. This means they cannot just be measured in terms of market price. Additionally, governments produce many intangible services for which attention needs to be focused on quality rather than quantity (Warner and Havens, 1968).

More seriously, measuring performance tends to be a political process in which the interests of various stakeholders are entangled. Bouckeart and Halligan (2008, pp 27) suggest that assessing performance ‘is not a neutral exercise. It is a managerial activity which ..... affects the behaviour of individuals and organizations.’ Although this may produce either advantages or disadvantages for improving performance, an inappropriate measure of success can cause unforeseen reactions. There are many examples of the use of inappropriate performance indicators leading to distorted and counterproductive responses. Take the example of a nail factory in an early socialist production system. Where performance is measured by quota or weight, the managers have an incentive to produce nails which the market does not demand.

*The manager of a nail factory, whose quota was set in terms of the number of nails, and who was rewarded as he made or exceeded his quota, was inevitably driven to producing large numbers of small nails, regardless of market requirements. With production quotas specified as a certain weight of nails, the same manager would necessarily concentrate on producing a smaller number of very heavy nails – again, regardless of market demand (Schultze, 1969, pp 36).*

To prevent this sort of thing from happening, some authors have recommended that performance measurement is integrated into a performance management system. Diamond (2005) warned that, if performance is measured in isolation, organizations run the risk of having the following problems: (1) overreliance on performance measures; it is usually not a comprehensive evaluation; (2) using inappropriate measures; (3) misuse of the measurement system by having different interpretations of performance indicators;

and (4) information overload and lack of selectivity due to oversimplification or multiple measures of performance. Furthermore, he recommended avoiding the above dangers by using the following strategies; (1) clarifying the purpose of performance measurement: Who will use the information? How will they use it? And why will they use it? (2) focusing on core information in order to prevent information overload; (3) aligning performance measurement with the practical needs of the agency; (4) producing a balanced perspective on performance: i.e., producing an appropriate mix of internally generated and external measures; (5) having a regular review of performance measures so that they reflect surrounding changes over time (6) ensuring the robustness of basic information.

Apart from these problems, measuring performance entails cost. For example, it requires the support of an effective information system, in order to ensure that information is received at the time it is required. The cost of performance measurement may be higher than its benefits.

### **2.2.3.3 Methods of measurement**

These difficulties of performance measurement lead to the development of different methods of measuring performance which take into consideration the conditions under which organizations operate and the purposes for which performance is being measured. The different methods produce different kinds of performance information of varying depth and scope. Furthermore, there is a growing awareness that financial measurements are necessary, but not necessarily all that is needed, for managing organizations in both the private and the public sectors. Typical financial measurements

have been criticized for promoting ‘short-termism’ (Banks and Wheelwright, 1979; Hayes and Abernathy, 1980) and ‘local optimisation’ (Goldratt and Cox, 1986). Eccles (re-cited Ghobadian and Ashworth, 1994) pointed out that financial measurements should be regarded as just one of a broader set of measures, rather than the main basis for performance measurement. In creating public budget documents, the use of non-financial measurements has been increasing. Seventy two per cent of OECD members have reported presenting such measurements as part of documents requesting the setting of a budget (Curristine, 2005).

Efforts have continued to develop one best method of measurement which matches various cases and purposes. Taken together, these efforts have brought a comprehensive and systematic approach to performance measurement. Assessing performance management models in the public sector, Boukaert and Halligan (2008) concluded that performance measurement has shifted from being intuitive and subjective to being systematic. For example, Kaplan and Norton (1992) presented a comprehensive performance measurement system – a balanced scorecard (BSC) – which allows managers to check achievement from four different perspectives: financial, customer, internal business, and innovating and learning.

In this context, there has been a significant trend towards developing performance indicators since the 1980s. It played a key role in Margaret Thatcher’s government reform strategy in the UK. At that time, there was a growing interest in consumer satisfaction and quality of service, rather than in traditional financial indicators (Carter, 1991). Recently, such performance indicators have been used to measure performance in many countries. There are four variations, depending on the stage of public service

production that the indicators focus on: input indicator, process indicator, output indicator, and outcome indicator (Jun and Park, 2002). These variations in indicators tend to affect how performance information is used in budgeting. For example, using a high proportion of input indicators may fail to strengthen the links between budget decisions and performance (Schick, 2003). Diamond (2005) reported that there was increasing adoption of outcome-oriented indicators among OECD countries.

However, Pollit (1986) stated that ‘how to measure performance is a perennially awkward question. The notorious absence of one best method raises formidable difficulties in principle and practice.’ Cave et al. (1990, pp 11) pointed out that ‘there is no easy formula which can be widely applied; it is doubtful whether anyone could ever produce a standard guidebook to performance measurement for the whole of the public sector.’ Similarly, there is no performance indicator which gives information that is always useful for all types of users. Technically, a performance indicator may not measure various facets of performance: outcome, output, process, or input. In addition, relevant performance indicators are changeable over time (Neely, 1999). More seriously, a performance indicator does not guarantee causality between a programme’s activities and its outcomes (Diamond, 2005). As a result, it is hard to develop performance indicators which are broadly applicable and widely acceptable in the public sector (Behn, 2003).

Accordingly, it is suggested that performance is measured from various aspects and at various levels. Relevant performance indicators consider differences in the purpose of, and requirements for, information at each level: a project or a team, a programme or a department, and a strategy (Osborne et al., 1995). As described in Table 2-1, Behn (2003)

suggested selection criteria for performance indicators in accordance with eight purposes of performance measurement: evaluation, control, budget, motivation, promotion, celebration, learning, and improvement, respectively.

Table 2-1 Characteristics of performance indicators for different purposes

Purpose	To help achieve this purpose, public managers need
Evaluate	Outcomes, combined with inputs and with the effects of exogenous factors
Control	Inputs that can be regulated
Budget	Efficiency measures (specifically, outcomes or outputs divided by inputs)
Motivate	Almost-real-time outputs compared with production targets
Promote	Easily understood aspects of performance about which citizens really care
Celebrate	Periodic and significant performance targets that, when achieved, provide people with a real sense of personal and collective accomplishment
Learn	Disaggregated data that can reveal deviances from the expected
Improve	Inside-the-black-box relationships that connect changes in operations to changes in outputs and outcomes

Source: cited Behn (2003, pp 593)

To produce a useful piece of performance information, public managers, firstly, need to determine the purposes of measurement and then to select performance indicators which serve those purposes. That is, managers should try to develop some appropriate indicators which assess a specific management activity.

## 2.2.4 Conclusion

There are various factors which affect the performance of an organization or a programme. Performance is the output of interaction among various elements, internal and external, such as organization structures, administrations, culture, and environments. In particular, this chapter focuses on examining goal setting, leadership, formalization, budget adequacy, budget participation, and budget flexibility. Existing researches have suggested that they, generally, have an impact on the performance of an organization.

As discussed above, performance is defined in various dimensions: economy, efficiency, and effectiveness. Also, the products of government operations have different features from those of private companies. Public goods and services tend not to have a price fixed by the market as private goods do. Many activities produce intangible services (Warner and Havens, 1968). This multiplicity of performances and characteristics of public goods cause complex problems for the measurement of performance. Behn (2003, pp 599) warned that ‘what people measure often is not precisely what they want done.’ These measurement problems often lead to unintended organizational behaviours and results.

Recently, more attention has been paid to measuring, monitoring and evaluating the outputs of projects and the outcomes of policy initiatives (Shick, 2003). Nonetheless, this attention is still limited to identifying performance determinants and developing

techniques of performance measurement. The political risks and the costs of performance measurement do not receive so much attention from researchers and practitioners (Halchmi, 2005). For example, when an information system was developed for use in performance measurement, its main purpose was to measure performance against time targets. Against this background, Halchmi (2005) has warned that ‘while performance measurement has a potential, its use should be encouraged but not mandated by external bodies.’

## **2.3 Performance Budgeting in the Public Sector**

### **2.3.1 Introduction**

The modern budget system in the public sector is a product of the political struggle for financial power between monarch and citizens. The public budget system in Europe was developed in the course of constraining the monarch’s financial supremacy, a struggle that had been going on in England since the signing of Magna Carta in 1215. In the United States, the legislative branch of government took the initiative on budget decisions until the early twentieth century, when the line-item budgeting system was introduced. Each department of government requested lump-sum budgets directly from the legislature without providing relevant data. At that time, each department was given common guidelines for budget preparation and requests. The legislature deliberated to determine budgets, taking the requests into account (Tyer and Willand, 1997; Fleischman & Marquette, 2003).

To improve these unsystematic budget activities, the line-item budget system was created. It had a simple structure which listed categories of expenditures, such as salaries, supplies, communication, and other things to be purchased. It has a relatively uncomplicated structure and is easy to understand. In addition, it allows public expenditures to be controlled more easily. However, it has some limitations when it comes to describing what government is doing in areas other than purchasing.

Many local and central governments have been trying to improve budget systems in accordance with changes in the internal and external environment. As government expanded in the post-war period, the focal point of budget management shifted to efficient utilization of limited resources. As a result, performance budgeting began to be introduced into the public sector.

Since the Hoover Commission first recommended performance budgeting to the federal government of the United States in 1949, the practice has evolved continuously. In the 1960s, the Planning-Programming-Budgeting System (PPBS) was introduced, and Management By Objectives (MBO) and Zero-Based Budgeting (ZBB) were experimented with in various countries in the 1970s and 1980s. However, these budgeting systems were not very successful because of the limitations of performance measurement and the multiplicity of programme goals in the public sector (OECD, 2004; Lauth, 1987; Jordan & Hackbart, 1999).

What is more, Schick (1966) stated that budget reform alters the equilibrium of the three budgetary functions of planning, management, and control. Indeed, recent developments in budgeting systems have placed more of an emphasis on planning and management

than on control. More recently, market-oriented techniques have been actively introduced into public budget management. Cothran (1993) pointed out that public budget reform has tended to apply private budget management techniques such as decentralization and incentives, characterized as ‘entrepreneurial budgeting.’

Looking back into history and at the current status of performance budgeting may lead to a comprehensive and deep understanding of the procedure’s identity and suggest what future models will be like. The next sections examine the definitions, types and recent trends of performance budgeting.

### **2.3.2 Definitions of Performance Budgeting**

Performance budgeting, a practical and technical term, aims to use performance information for managing budgets. However, due to differences in kinds of information used and the ways in which information is used, the term has various definitions and types. According to the concept of the GAO (1993), performance budgeting should link performance levels with specific budget amounts, so that it can encompass PPBS, MBO, and ZBB. The OECD (2003) defined performance budgeting as ‘a form of budgeting that relates funds allocated to measurable results’. Also, many literatures define performance budgeting as a process of linking budget decision making to performance of programmes (Lauth, 1985).

More broadly, Jordan and Hackbart (1999, pp 69) stated that it is ‘preparing the budget document with identified performance measures.’ McGill (2001, pp 377) defined it as

‘the process of linking expected results to budget levels but not to any particular approach.’ He argued that there was, in the end, no definitive process of performance budgeting.

Emphasizing the formality of producing performance information, Bobinson & Brumby (2005, pp 5) defined performance budgeting as ‘procedures or mechanisms intended to strengthen links between the funds provided to public sector entities and their outcomes and/or outputs through the use of formal performance information in source allocation decision-making’. From the perspective of an administrative reform, Andrews & Hill (2003) explained performance budgeting as an institutional reform that shifted input-oriented into outcome-oriented budgeting.

These definitions of performance budgeting have two elements in common. The first element is that performance budgeting should produce a formal piece of performance information. It is closely related to performance measurement. Here, the reader is referred to previous discussions, in order to avoid repetition. The second element is that budget decisions should be linked with performance information. Links can be divided into two types on the basis of their timing: the *ex ante link* and the *ex post link*. The *ex ante link* is to link budget decisions with programme performance before the programmes are implemented. This link allows programmes to set targets related to budgets. The budget amounts of programmes become associated with the level of targets. The *ex post link* is defined as a link between budget and performance after the implementation of a programme. It is mainly used for punishments and rewards, checking achievement against pre-established targets (Chung, 2003; Park, 2007; Bang, 2008). Affected by the ‘new public management’ that emphasizes market disciplines,

performance budgeting tends to strengthen the *ex ante* link (Robinson and Brumby, 2005).

The strength of the link may be different depending on models or types of performance budgeting. Some researchers, as will be described later, categorized performance budgeting on the basis of the extent to which it associates budget decisions with performance (Mackay, 2007; Shah, 2006).

The reality is that it is not common to associate resource allocation with performance. The OECD (2005) reported that many members would rather make an indirect link between fund allocation and performance than a direct link. Many governments tend to have reviewed performance information as one of various factors considered in budgeting. Curristine (2005, pp 135) reported that 18% of OECD members 'link expenditure to all or most of their output or outcome targets.' However, a few countries made direct links in certain programmes, such as health and education.

In recent times, performance budgeting has tended to be more closely associated with long/mid-term strategic planning or mid-term expenditure frameworks. Indeed, many governments tend to attach strategic plans to budget request documents. The strategic plans set objectives or goals for the organizations and activities, and these provide a guide for performance measurement. In this context, some researchers have defined performance budgeting as 'requiring strategic planning regarding agency mission, goals and objectives, and a process that requests quantifiable data that provides meaningful information about program outcomes' (Melkers and Willoughby, 2003; re-cited Robinson and Brumby, 2005). However, Melkers and Willoughby's definition encompasses non-budgeting activities, so that it expands the concept of performance

budgeting to broader managing-for-results (Ronbinson and Brumby, 2005).

Following the generally-accepted concept of performance budgeting, this study defines it as a process of linking budget decisions with performance, so that it can encompass various kinds of performance budgeting. The United States Government Accountability Office (1997, GAO) recommended that ‘given the complexity and enormity of federal budget process, performance budgeting ..... will need to encompass a variety of perspectives in its efforts to link resources with results.’ This study does not differentiate between performance-based budgeting, performance budgeting and result-oriented budgeting, insofar as they come within the same definition. Many researchers have already reviewed them as equivalents with different names (McGill, 2001).

### **2.3.3 Types of Performance Budgeting**

Line-item budgeting was an initial attempt at a modern budget system, as well as a product of public finance reform. As many researchers have argued, it has been adopted by many governments, and at the same time it has itself been an object of budgetary reform. While its strength is that it facilitates budgetary control, one of basic functions of budgeting, it lacks budgetary flexibility, so that it constrains the achievement of efficiency (Wildavsky, 1978; Cothran, 1993).

To address problems associated with line-item budgeting, various experiments have been conducted in the public and private sector over the decades. Cothran (1993)

observed that ‘since the 1950s, a relatively major reform has been proposed about once each decade in an effort to overcome some of the perceived deficiencies of incremental line-item budgeting.’ In the 1950s, the US federal government introduced a ‘performance budgeting’ system in accordance with the first Hoover Commission’s recommendations. Later, the US federal government adopted the Planning-Programming-Budgeting System in 1965, and Zero-Based Budgeting (ZBB) in 1977. Other countries too have continually made similar efforts to link budget decisions to performance. This has led to the development of new types of performance budgeting.

Following the broad definition of performance budgeting as the linking of budget decisions to performance, the process can encompass existing budgetary institutions such as the PPBS and ZBB. Apart from these, performance budgeting may be categorized on the basis of its strength in helping to make the link between budget and performance. Mackay (2007) divided performance budgeting into three types: direct performance budgeting, indirect performance budgeting, and presentational performance budgeting. The first type allocates budgets directly using performance information. For example, a job-training programme is allocated a budget in response to the number of students registered. The second type views performance information as one of the critical factors which affect budget decisions. This type has been adopted by most of the countries which have implemented performance budgeting. The last type presents programme performance in a budget proposal for budget deliberators, regardless of budget allocations. Shah (2006) distinguished four types of performance budgeting: performance-report budgeting, performance-informed budgeting, performance-based budgeting, and performance-determined budgeting. These four types

are different in the way they link performance presentation to a budget decision.

However, this study examines types of performance budgeting centring on variations in budgetary institutions. In this context, the Hoover Commission's performance budgeting, the Planning-Programming-Budgeting System (PPBS), and Zero-Based Budgeting (ZBB) are examined below. In the next sub-section, the recent trend in performance budgeting, stressing, in a sense, markets and competition<sup>5</sup>, is discussed.

### **Performance Budgeting as conceived by the Hoover Commission**

'Performance budgeting' as conceived by the Hoover Commission was first introduced by the United States Federal Government in 1949 in reaction to criticisms of the incremental line-item budget system. Unlike incremental budgeting systems, such as in line-item budgeting, which stresses budgetary control, it places an emphasis on the evaluation of the objectives, efficiency and effectiveness of a programme (Jordan and Hackbart, 1999). It was invented to shift the focus away from inputs to the functions, activities, and achievements of government. It describes the outputs that can be expected from a specific function or activity, e.g., the purchasing of weapons or training, rather than items of expenditure such as salaries, rent, and supplies (GAO, 1997).

The basic structure of the budget management system is not as complex as it seems. It sets up a new budget presentation: 'activity obligations'<sup>6</sup>. Budgets are estimated centring on the major programmes, projects and activities of government. In order to

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<sup>5</sup> According to Robinson and Brumby(2005), a type of performance budgeting which stresses market and competition is, since 1990,described as 'New performance budgeting.'

<sup>6</sup> According to the GAO (1997), the term 'activity obligations' continues to be used today, although it is referred to as 'obligations by programme activity' or more informally 'programme activities'.

complete these, workload and unit cost are presented in budget documents. In this way, a tool is created for the public reporting of the outputs of government expenditure.

Nonetheless, the performance budgeting system has been criticized for creating difficulties when it comes to implementation. It is not so easy to define functions or activities, nor to estimate their unit cost. In these respects, it has been widely argued that it has failed to make a fundamental change in budget decision-making. Diamond (2003) proposed that the failure of performance budgeting resulted from a lack of adequate accounting systems.

### **The Planning-Programming-Budgeting System (PPBS)**

The Planning-Programming-Budgeting System (PPBS) was first installed in the US Department of Defence in 1961, and then the President Johnson extended it to all other federal departments in 1965. It places much more stress on the budgetary function of planning, even though it shares the ideas about result orientation of the Hoover Commission's performance budgeting.

The Planning-Programming-Budgeting System formulates budgets through three phases of linking planning to budgeting for programmes: planning, programming, and budgeting (Diamond, 2003). The planning phase defines present and future objectives, and assesses a variety of possible alternatives for achieving them. The programming phase integrates proposals from the phase of planning into programmes. Finally, the budgeting phase transforms multi-year programmes into annual actions, and allocates the budgets required for implementing them.

Despite the simple and clear ideas behind PPBS, difficult and complicated tasks are required for its execution. The most difficult problem is that programmes are not easy to define. Unlike private companies, governments tend not only to have a wide range of operations but also to have multiple objectives. Programmes tend to involve various organizations throughout government. What is more, public organizations have many regulations, some of which put constraints on the budgeting process. As a result, the structure of the budget may well be different from that of programmes. Programmes are often not consistent with the workings of relevant departments (Diamond, 2003). This results in practical problems in the process of implementation. Secondly, PPBS requires sophisticated and elaborate techniques for distributing funds and costs among organizations. More specifically, assignments are addressed as follows: how to allocate costs, and how to deal with essential fixed expenditures; off-budget expenditures; and transfer payments.

From a political point of view, US federal agencies and the Congress may have been reluctant to employ PPBS in the process of budgeting because they are often concerned that the system may reduce their influence on budgeting as regards economic efficiency. Indeed, for years the US Bureau of the Budget continued to review cost and benefit in a traditional way, and the Congress continued to request a traditional budgetary presentation (Nah, 2007; Gordon, 1978).

In the end, the PPBS had almost been abandoned by 1971, in spite of acclaim for ‘a revolutionary development in the history of government management (Nah, 2007, pp

334)' at the beginning. Failure of the PPBS may have resulted largely from lack of preparations. Axelrod (1988) argued that most of the problems stemmed from a wholesale introduction that forced ill-prepared agencies to implement it (Re-cited Diamond, 2003).

### **Zero-Based Budgeting (ZBB)**

Zero-Based Budgeting (ZBB), as a term as well as a budget management technique, was first introduced by Peter Pyhrr in 1970<sup>7</sup>. Pyhrr referred to it as an approach of 'rather than tinker endlessly with its existing budget, Texas Instruments prefers to start from base zero, view all its activities and priorities afresh, and create a new and better set of allocations for the upcoming budget year' (Re-cited Suver and Brown, 1977).

Zero-Based Budgeting requires three steps: (1) identifying 'decision packages,' (2) evaluating and prioritizing all these packages, and (3) allocating resources between packages. The most critical task in ZBB is to design a decision package, because this is the basic unit for budget allocations. According to Pyhrr, the decision package is 'a document that identifies and describes a specific activity in such a manner that management can (a) evaluate it and rank it against other activities competing for the same or similar limited resources, and (b) decide whether to approve or disapprove it'.

In practice, identifying and prioritizing decision packages require a great deal of time and cost. Most budget directors in US cities reported that the amount of time and

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<sup>7</sup> Its concept was not completely new. The US Department of Agriculture used a 'ground up' budgeting technique in 1962 which included a re-evaluation of all the department's programmes. (Suver and Brown, 1977)

paperwork required had been the biggest problems in the ZBB procedures (Moore, 1980).

As a result, despite offering the advantages of an enhanced quantity and quality of programme information, ZBB failed to reform budget management approaches. Public organizations use incremental budgeting and it is within the constraints of this that ZBB ideas have had to take their place (Lauth, 1978).

### **2.3.4 Recent Trends**

Since 1990, performance management has become a critical issue in the public sector. From the point of view of performance management, performance budgeting tends to be seen as ‘the budget process as a means of increasing the pressure upon agencies to lift their performance.’ For example, it stresses ‘budget-linked targets, prices and performance agreements’ (Jordan and Brumby, 2005, pp 13). As such, recent performance budgeting has placed a growing emphasis on outcomes and accountability beyond the workload productivity or efficiency which earlier performance budgeting mainly focused on (Jordan and Hackbart, 1999). It tends to strengthen *ex post* controls through performance assessment instead of *ex ante* controls through budget management (Robinson & Brumby, 2005).

Many countries are eager to introduce performance budgeting in order to shift the focus of budgeting from inputs to results (Curristine, 2005; Melkers & Willoughby, 1998).

The OECD (2005) reported that the majority of OECD members have applied results-oriented budget management systems as of the year 2005. Recently, budgetary reform tends to have integrated performance information into the process of budgeting in a systematic and comprehensive manner (Lauth, 1987; Boukaert and Halligan, 2008). In particular, performance budgeting has continued to evolve in the direction of strengthening links between budget decisions and performance, applying the management techniques of the private sector. As a result, different countries have implemented various types of performance budgeting in the context of their specific approach, objectives, and phase of development.

The UK government introduced a system of ‘performance agreement’ in 1995. This is intended to introduce flexibility and discretion into the existing budget system and budgetary implementation, and also to strengthen direct accountability for results. The agreement is referred to as a new type of budget document, a contract in which the financial authority and other agencies agree performance targets and financial support (Kim, 2003; Jun, 2004).

Compared with other countries, New Zealand has made particular efforts to establish a performance management system, and these efforts have led to the setting up of ‘output-focused budgeting’. This is characterized as a system that stresses outputs – goods and services – as in the private sector. Based on their intended outputs, each agency calculates budgets appropriate for producing them. In addition, a performance agreement is made between the minister and deputy minister involved (Kim, 2003; Jun, 2004).

The US Congress enacted the Government Performance and Results Act in 1993. It was described as ‘a continuation of more than 50 years of efforts to link resources with results, and ..... melds the best features, and avoids the worst, of its predecessors’ (GAO, 2003, pp 2). Furthermore, the US Administration in 2003 launched the ‘Program Assessment Rating Tool (PART)’ in order to strengthen links between resource allocation and performance. PART assesses a fifth of federal budgetary programmes regularly every year. It rates programmes as one of four grades: ‘effective’, ‘moderately effective’, ‘adequate’, or ‘ineffective’. According to Office Management and Budget (OMB, 2008), the results of the PART have been one of critical factors that affect budget decisions.

As will be described in more detail in the next chapter, the Korean central government introduced Self-Assessment of Budgetary Programmes (SABP), which was mainly modelled on the basic idea of the US PART, in 2005. This aims to strengthen links between budget decisions and performance, compensating for the weakness of the Performance Management System of Programmes (PMS) which the Korean government launched in 2003.

As discussed above, individual governments have implemented specific types of performance budgeting. However, there are still problems with establishing performance measurement and links between budget and performance. Lauth (1987) proposed that performance budgeting had limited success in associating performance information with budgetary decision-making. The OECD (2005) reported that most

members had not made an appropriate association between performance information and fund allocation. Seventy two per cent of OECD countries have linked budget request documents with performance data, whereas only 35% have linked budget decisions with performance. In future, individual countries will be likely to continue to evolve new types of performance budgeting in order to address these challenges.

## **2.4 Impacts of Performance Budgeting in the Public Sector**

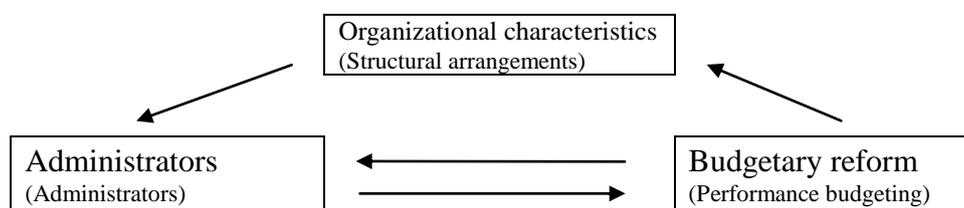
### **2.4.1 Introduction**

Performance budgeting has the main objective of improving government operations. However, opinions are mixed as to whether or not it serves that objective. Some critics have argued that the mainstream of current public budgeting is still traditional line-item budgeting rather than performance budgeting. Whereas, proponents have argued that performance budgeting has improved the efficiency or effectiveness of government operations. Those supporting this point of view suggest that it has led to improvements in budget allocation, managerial practices, and culture. Performance budgeting may cause organizations or administrators to modify managerial behaviours, assessing and integrating performance into the budget process. More fundamentally, it may cause an organizational culture to change from an input- to an outcome-oriented attitude (GAO, 2005).

From an institutional point of view, performance budgeting is a budgetary institution which places an emphasis on links between budget decision and performance. It is a managerial technique for distributing scarce resources according to performance information (Lauth, 1987). From the viewpoint of Giddens' theory of structuration (2007), according to which an institution interacts continuously with its actors, performance budgeting may affect administrators' behaviours. In the end, it may formulate new patterns as standardized practices within organizations.

Figure 2-2 illustrates the process of interaction between budget reform and administrators. The introduction of performance budgeting may formulate new programme-managerial practices in the course of continual interactions. Performance budgeting may cause organizations to change a budget decision-making system in compliance with its operating norms. In addition, it leads to changes in organizational characteristics such as structural arrangements. For example, when the Korean government introduced Self-Assessment of Budgetary Programme (SABP) in order to strengthen performance budgeting, it added one phase of programme assessment to the budgeting process and enlarged the divisions in charge of budgeting within spending agencies.

Figure 2-2 An adaptive structuration model



Source: Adapted from Flowers et al. (1999)

Some advocates have argued that performance budgeting changes 'the behaviour of

budget participants and their decisions' (Jordan and Hackbart, 1999, pp 69). Furthermore, the GAO (1993) reported that performance measurement for performance budgeting, apart from contributing to the budgeting process, encouraged administrative managers to (1) establish programme priorities, (2) strengthen management improvement efforts, (3) deal with the results of budgetary reduction, and (4) gain more flexibility in allocating appropriated funds. Also, administrators' capacity to assess programmes was being technically improved (GAO, 2005).

In the 1980s-1990s, economic recessions around the world compelled governments to take various reforming initiatives in a wide range of areas in order to improve their performance. Amongst these initiatives, budgetary reform – performance budgeting – was put in a central position, so that it could drive other reforms. It was expected that it would have an impact on the management activities of governments: for example, it might affect managerial practices; or a financial authority might strengthen accountability for results, increasing the budgetary flexibility of spending agencies.

However, there have not been many studies of how and through what paths performance budgeting has had an impact on government performance. Flowers et al. (1999) pointed out that 'the processes by which this occurs and the factors that contribute to it are not well understood.' What is more, performance budgeting varies significantly in its development phases, objectives, and approaches between countries (Curristine, 2005). This diversity in the forms of performance budgeting tends to bring mixed claims about its impacts. The scope and depth of the impacts may depend heavily on such differences. Accordingly, it may not be right to assess performance budgeting in a single phrase: 'it works' or 'it doesn't work'. Therefore, this chapter gives a comprehensive examination

to the intended or realized (or tested) impacts with reference to existing literatures.

#### **2.4.2 Impact on the Public Sector**

Performance budgeting since 1990 has been strongly underpinned by the presumption that public organizations are not more efficient than private organizations such as companies. Most OECD members, as noted earlier, adopted performance budgeting as a government reform initiative. They tended to expect that it would have direct or indirect impacts on budget management, or on the overall management of public agencies. Wildavsky (1992) stressed that ‘any effective changes in budgetary relationships must necessarily alter the outcomes of the budgetary process (re-cited Jordan and Hackbart, 1999).’ Furthermore, Grizzle (1986b) indicated that changes in budget format could affect parts of the budget process, for example, budget deliberations.

Although there have been opposite arguments, it is anticipated that performance budgeting will have an impact on government, either positive or negative. According to the Korean MPB (2006a), it expected that Korean performance budgeting would change budget decisions taken on programmes and would lead to an improvement in public finance. Chung (2002) proposed that the impacts to be expected would be as follows: (1) improvement of public finance management, (2) changes in administrators’ budgeting behaviour, and (3) enhanced trust and accountability in government. Because programme performance is linked to budget allocations, spending ministries and agencies have an incentive to achieve the goals of their programmes within budget.

Performance budgeting may result in changing a portfolio of programme budgets, and in improving the efficiency or effectiveness of programmes. Also, it is expected to change budgetary practices within spending agencies. Taking budgeting and goals into account, managers may estimate an appropriate budget with scientific evaluation techniques, instead of making an incremental budget. Performance budgeting tends to report performance targets and achievements in budget documents. Because it facilitates public surveillance, it is expected that governments will be more accountable for results. Furthermore, Curristine (2005) proposed that such provision of more information on performance to the public has, to some extent, improved transparency in the use of public finance.

Examining existing empirical studies regarding the efficacy of performance budgeting, Robinson and Brumby (2005) reviewed them from three viewpoints: budgetary allocation; aggregate expenditure; and productive efficiency and programme effectiveness. Firstly, there are mixed arguments about whether or not performance budgeting has had an impact on budgetary allocation. Jordan and Hackbart's survey (1999) found that 33 out of 46 US states had changed the budget allocations since the introduction of performance budgeting. In contrast, according to a survey by Melkers and Willoughby (2001), most US officials perceived that performance budgeting had not changed resource allocations, and even that they did not utilize performance measures in budgeting.

As regards the macro-level impact of performance budgeting on aggregate expenditure, there are not many empirical studies of this (Robinson and Brumby, 2005). Testing the

impact of performance budgeting on levels of US state expenditure, Reddick (2003) concluded that budgetary reforms had been successful in reducing aggregate spending. Finding that the New Zealand government had reduced central government expenditure compared to GDP, Brumby et al. (1996) proposed that financial management reform in that country had made it easier to control public expenditure.

Finally, there may be no consistency in the argument that performance budgeting has a beneficial effect on programmes. According to Poister and Streib (1999), 46.4% of US city managers perceived that performance measures made a contribution to reducing the costs of services and improving the efficiency or effectiveness of programmes. On the other hand, Willoughby and Melkers (2001) suggested in their survey of US state budget makers that performance budgeting did not make any contribution to improving programme performance.

So, it is arguable whether performance budgeting has had any impact on government operations. These mixed arguments may be the result of the diverse models, structures and developments of performance budgeting which individual countries have implemented. In this context, it is proposed that researchers should take a case-by-case approach in order to identify the impacts of performance budgeting.

## **2.5 Conclusion**

This chapter has examined some major issues related to performance budgeting, ranging from definition, types, and recent trends to impacts. Before doing this, it discussed the

concepts, determinants and measurement of performance which preceded performance budgeting. Performance has a multi-dimensional definition: economy, efficiency, and effectiveness. It is affected by various factors such as goals, leadership, personnel capacity, budgeting, and external and internal environments.

Following a generally-accepted view, this study defines performance budgeting as the process of linking budget decisions to performance. Recommended by the first Hoover Commission in 1949, performance budgeting has been constantly evolving since then. The US federal government introduced PPBS in the 1960s and ZBB in the 1970s. Economic recessions in the 1980s-1990s inspired governments to introduce budgetary reform. This led to many countries designing various types of performance budgeting, influenced by the private sector.

Many governments tend to expect that performance budgeting will produce considerable results throughout public organizations: for example, that measuring performance may change organizational behaviours; that performance measures may affect the incentive structure for participants. Also, when introducing performance budgeting, governments tend to give more budgetary flexibility to agencies and to strengthen accountability for results. This may lead to changes in budgeting practices, so as to restrain the use of incremental budgeting without assessing performance. However, it is not clear what impacts performance budgeting has had on governments. That is to say, there are opposite arguments among researchers.

It is a formidable task to identify universal impacts of performance budgeting. Indeed,

there are not many literatures that address common factors in all the models. Firstly, individual countries have recently applied specific models of performance budgeting. Many researchers, inevitably, try to take a case-by-case approach to analysing the impacts of these on organizations or programmes. Additionally, it is not easy to obtain proper data for testing effects empirically. This results mainly from weaknesses in the objective measurement of impacts. How can we measure impacts? More to the point, it is difficult to separate the impacts of performance budgeting from those of other reform measures, because performance budgeting tends to be introduced as part of a set of government management reforms. As a second-best way, many empirical studies utilize subjective data obtained by questionnaire surveys.

For now, assessments of the efficacy of performance budgeting may be premature. As Jones and Kettl (2003) pointed out, ‘there is a glaring need to understand the short- and long-term outcomes of the reforms... [but] doing so is almost impossible in the short term and exceedingly difficult in the long term’ (Re-cited Robinson and Brumby, 2005). In this context, specific empirical tests are likely to be essential for identifying the impacts of performance budgeting. These would provide more evidence about the impacts of performance budgeting. Korean performance budgeting may provide a useful research object because it translates programme performance into scores and grades with Self-Assessment of Budgetary Programmes (SABP). The next chapter is devoted to undertaking a specific examination of Korean performance budgeting with the SABP.

## **CHAPTER 3 KOREAN PERFORMANCE BUDGETING**

### **3.1 History**

Since the 1950s, many countries have made efforts to introduce considerations of performance into the budgeting process, and this is a trend that is still developing. In the 1980s, during the economic slow-down, OECD countries began to strengthen government performance management. It was in this context that Korea began to integrate performance into budget decisions. In 1982, Zero-Based Budgeting (ZBB) was introduced as a reform of public finance, but it was abandoned after a few years (Nah, 2007). In 2000, a performance management system which stressed the linking of fund allocation with performance was initiated in central government, but implementation of this also soon ceased.

Since the late 1990s Korea has experienced swift changes in its public finance environment. Firstly, an aging society has brought a rapid fall in the rate of increase in government revenues. By contrast, government spending on areas of social welfare, such as provision for the elderly and education, has increased exponentially. Secondly, there has been growing concern about trust in the public finance system. Ever since the establishment of a Korean budgetary system, this had been operated in an input-oriented way without any assessment of programme performance, except for accounting audits. This meant there was a lack of performance information that could be linked to budgetary programmes. The finance departments of the Administration could plausibly

be viewed as allocating public money by rule of thumb and lacking accountability for programme results. This view tended to weaken trust in the public finance system itself among citizens, the National Assembly, and other groups outside the Administration. It is against this background that current financial circumstances have made public finance much tighter and tougher.

To address these problems, the Korean central government determined, in 2003, to reform its public finance system, and introduce a ‘top-down’ budget allocation strategy which would allow spending ministries and agencies to allocate funds within expenditure limits set by a commission chaired by the President and hosted by the Ministry of Planning and Budget (MPB)<sup>8</sup>. The Ministry of Planning and Budget, a public finance authority, sought to launch a budget management system that would allow the linking of budget decisions with performance, in order to implement the new budget allocation strategy effectively.

Performance budgeting in Korea since the year 2000 can be divided into three phases (Park, 2006). During the first phase, 2000-2002, a pilot project on performance budgeting was conducted. Given the title Performance-Oriented Budgeting, this project was influenced by the US Government Performance Results Act (GPRA). For this pilot project, 39 divisions<sup>9</sup> were selected in 22 ministries and agencies<sup>10</sup>. These divisions

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<sup>8</sup> The Ministry of Planning and Budget was reorganized into the Ministry of Strategy and Finance, merging with the Ministry of Economy and Finance, in 2008.

<sup>9</sup> The number of participating divisions was extended from 16 in 2000 to 28 in 2001, and finally 39 in 2002.

<sup>10</sup> The Ministry of Construction and Transportation; the Ministry of Agriculture and Forestry; the Ministry of the Environment; the Ministry of Science and Technology; the Ministry of Commerce, Industry and Energy; the Ministry of Information and Communication; the Ministry of Culture and Tourism; the Ministry of Health and Welfare; the Ministry of Education; the Ministry of Foreign Affairs; the Ministry of Government Administration and Home Affairs; the Ministry of Patriots and Veterans Affairs; the Government Information Agency; the Rural Development Administration; the Korea Forest

were required to develop an annual performance plan and an annual performance report every year. However, the project failed to attract senior management's attention because it was applied only to a few divisions in each of the ministries or agencies (Jun and Park, 2002; MPB, 2003). Higher management viewed the annual performance plans and reports as a supplementary instrument for monitoring their programmes, not as a way of linking budget allocation to programme performance. Making comparisons in programme performance between divisions that had taken part in the pilot and ones that had not, Chung (2003) found that there was little significant difference between the two groups in terms of programme performance. The project ended with a change of Administration.

Based on the 2000-2002 experiment, the second initiative, known as the Performance Management System (PMS), began as one of four major fiscal reforms<sup>11</sup> initiated by the MPB in 2003. At first, 22 ministries and agencies which had ever participated in the pilot project introduced the PMS, so that it could cover all their divisions. They were asked to submit an annual performance plan and an annual performance report to the MPB, along with their annual budget request documentation. After 2006, when the Government Performance Assessment Act (GPA) was enacted, they were required to establish a strategic performance plan. The PMS was extended to cover 26 ministries and agencies in 2005, and then extended to all ministries and agencies in the following year. In terms of programmes covered, the PMS covered, initially, only major budgetary

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Service, the Korea Intellectual Property Office; the Public Procurement Service; the Korea National Police; the Korea Coast Guard; the Korea Meteorological Administration; and the Korea National Statistical Office.

<sup>11</sup> The four fiscal reforms consisted of (1) establishing a national mid-term expenditure plan, (2) introducing a 'top-down' budget allocation strategy, (3) introducing performance budgeting, and (4) building a 'digital budget' accounting system.

programmes over one billion Won<sup>12</sup>, but, in 2006, was extended to cover all single budgetary programmes.

In the third phase of performance budgeting, the MPB tried to improve links between performance and budget allocations. In 2005, the MPB introduced Self-Assessment of Budgetary Programmes (SABP) to all ministries and agencies. As will be described later, this was strongly influenced by the Program Assessment Rating Tool (PART) of the United States. In a procedure similar to that imposed by the PART, programme managers have to self-assess their programmes according to checklists of questions about the planning, management and results of programmes. The checklists are provided for ministries and agencies by the MPB. Under SABP, all budgetary programmes must be assessed at least once every three years. This tends to allow the MPB to review every budgetary programme over the course of three years. The MPB reviewed 555, 577, and 585 programmes (about a third of all the budgetary programmes for each year) using SABP in 2005, 2006 and 2007 respectively. In 2006, the third phase added an In-depth Evaluation System (IES) which allows the MPB to evaluate relatively larger and more strategic programmes with the Korea Development Institute (KDI).<sup>13</sup>

Performance budgeting had been operated on the basis of guidelines issued by the MPB. However, it was defined, with more specifications, by two Acts: the Government Performance Assessment Act (GPA) and the National Finance Act (NFA)<sup>14</sup>, in 2006.

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<sup>12</sup> The Won is the unit of Korean money. One Korean Won is equivalent to about 0.0005 UK pounds, as of June 2009.

<sup>13</sup> The KDI is a major research institute which is financially supported by the Korean central government.

<sup>14</sup> The Administration required the National Assembly to review the two Bills in 2004 and in 2005, i.e. separately. But the two bills were both passed and made effective in 2006.

## **3.2 A Framework for Korean Performance Budgeting**

In Chapter 2, the author defined performance budgeting as the process that links budgetary allocations to performance of programmes. Seen in this way, the system requires two elements: (1) measuring the performance of budgetary programmes, and (2) associating performance information with budget allocations. This section now looks at the fundamental framework of the current Korean budgeting system, focusing on the definition of performance budgeting given above.

### **3.2.1 Underlying Laws**

The Korean central government has a legal system which underpins performance management in the public sector. Performance management including performance budgeting is constructed according to two laws: the National Finance Act (NFA) and the Government Performance Assessment Act (GPA).

The GPA defines government performance assessment and management more comprehensively than the NFA. It stipulates the concepts, principles, and objectives of government performance management. In addition, it sets out the essential rules of government performance assessment. It defines performance management as ‘the activities that develop organizational missions, long and short term objectives, and performance indicators, and that manage government performance in the context of economy, efficiency, and effectiveness (Art. 2).’ It proclaims as an essential objective of

performance management that it should contribute to enhancing the autonomy of ministries and agencies in planning and implementing their policies but should also ensure their accountability for results, and that it should improve the performance of government, the quality of policy, and the level of public satisfaction (Art. 4).

In order to comply with the GPA, ministries and agencies must develop a strategic performance plan and an annual performance plan, and then consult the National Assembly on them (Art. 5-6). The strategic performance plan, which covers a five year period, should include at the least the missions and strategic objectives of each ministry (or agency) for the relevant period, and be revised to take account of changed circumstances every three years. It covers a long-/mid-term vision, and focuses on establishing future objectives for individual ministries or agencies. However, a strategic performance plan tends to be limited to playing only a small role in measuring performance, because it does not make use of methods of performance measurement such as performance indicators.

An annual performance plan makes concrete the objectives for each year of a strategic performance plan. It is required to cover annual performance objectives, performance indicators, and the results of implementing the programmes for the previous three years.

The NFA controls Korean performance budgeting more directly and specifically than the GPA. It sets out the fundamental objective of the relationship between budget decisions and assessments, stating that the MPB should reflect the results of assessments of budgeting when assessing programmes (Art. 8).

On the basis of the law, the MPB may give spending ministries and agencies a guideline which requires them to develop an annual performance plan and an annual performance report with performance indicators, and to assess their programmes with SABP. These spending ministries and agencies must submit an annual performance plan, an annual report, and the results of SABP to the MPB when they request budgets each year (Art. 8). Furthermore, the MPB can evaluate major budgetary programmes in cooperation with the Korea Development Institute (KDI), a government-funded research organization (Art. 8).

To sum up, Korean performance budgeting is underpinned by two laws: the GPA and the NFA. According to these two laws, individual ministries and agencies must, as a first step, draw up a strategic performance plan. On the basis of the strategic plan, they must develop an annual performance plan with performance indicators. After implementing the annual performance plan, they must draw up an annual performance report. In practice, SABP is partly used as a substitute for the financial section of an annual performance report. Finally, the MPB may make in-depth evaluations of selected programmes with expert teams. In the process of budgeting, the MPB and spending ministries and agencies reflect these assessments.

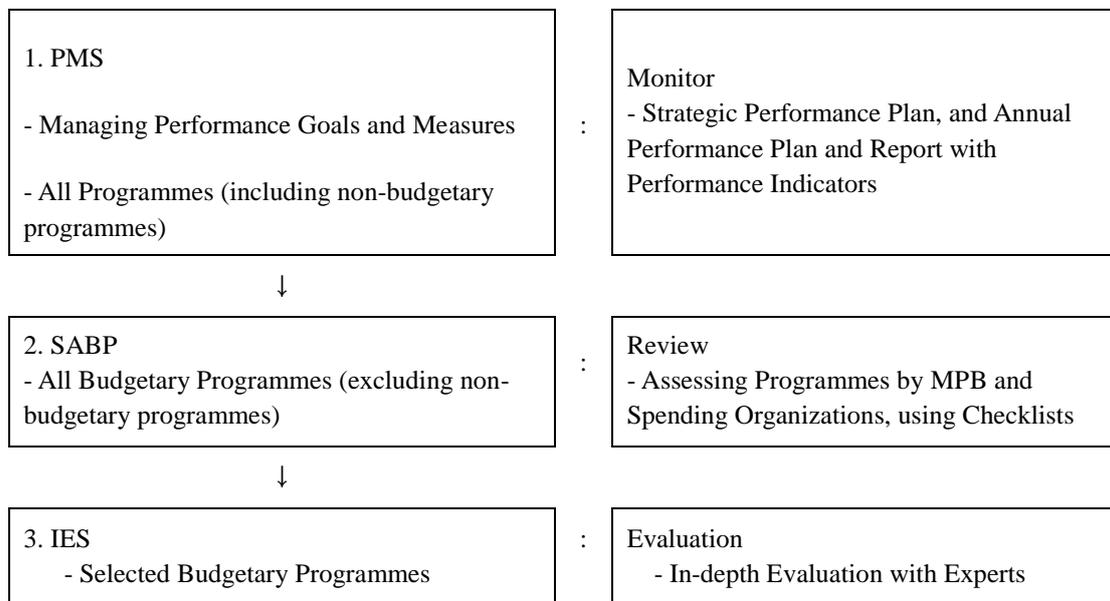
### **3.2.2 Measuring Programme Performance**

In order for performance budgeting to achieve its primary objective of improving the efficiency or effectiveness of a government, the underlying assumption is that it has to

be allowed to measure performance. A strategic performance plan needs to present a well-defined organizational mission and strategic goals, coordinated with a medium-term budget framework. An annual operating plan needs to make a ‘direct link between the long-term goals of the strategic plan and those identified in budgets’ which serves as ‘a point of reference for annual progress evaluations’ (Diamond, 2005).

In this context, Korean performance budgeting measures the performance of budgetary programmes with three sub-systems: (1) the Performance Management System of Programmes (PMS), (2) Self-Assessment of Budgetary Programmes (SABP), and (3) the In-depth Evaluation System (IES). Each of these three sub-systems produces a slightly different kind of information. However, they monitor or assess budgetary programmes in ways that are closely linked. This is illustrated in Figure 3-1.

Figure 3-1 Relationship between the three sub-systems



Source: Adapted from the Ministry of Planning and Budget (2006a)

As described above, in 2003, the PMS was introduced into the major budgetary

programmes of 22 ministries or agencies by the MPB, and it was extended to all the budgetary programmes of central government by 2006. The ministries and agencies which implemented the PMS in the various years are shown in Table 3-1. Since 2006, when the GPA and the NFA defined the underlying basis for performance management, the Office of Policy Coordination (OPC), which comes under the Prime Minister, has controlled the PMS, in cooperation with the MPB, in order to avoid a significant duplication of paperwork.

The PMS plays a critical role in monitoring programme performance during the implementation of programmes, by establishing a strategic performance plan and an annual performance plan, and making an annual performance report which mainly use performance indicators. An annual performance plan tends to bridge the gap between the long-term goals in the strategic performance plan and annually funded goals. So, long-term goals tend to be specified in an annual performance plan. It is on the basis of the targets in their annual performance plans, that SABP is used to assess the performance of budgetary programmes.

An annual performance plan is required to include at a minimum (1) mission, (2) strategic objectives, (3) performance goals, (4) performance indicators and ways to measure them, and (5) action plans. When implementation of the plan is finished, each ministry or agency has to produce an annual performance report (Guidelines for the PMS, 2006b). The report checks the extent to which individual programmes have achieved performance goals with performance indicators, and provides a brief explanation of the causes of any failures in achievement.

Table 3-1 Extension of the numbers of PMS participants

	2003	2004	2006~
Ministries (or Agencies) of the PMS	Ministry of Construction and Transportation; Ministry of Agriculture and Forestry; Ministry of Environment; Ministry of Science and Technology; Ministry of Commerce, Industry and Energy; Ministry of Information and Communication; Ministry of Culture and Tourism; Ministry of Health and Welfare; Ministry of Education; Ministry of Foreign Affairs; Ministry of Government Administration and Home Affairs; Ministry of Patriots and Veterans Affairs; Government Information Agency; Rural Development Administration; Korea Forest Service; Korea Intellectual Property Office; Public Procurement Service; Korea National Police; Korea Coast Guard; Korea Meteorological Administration; and Korea National Statistical Office.	(4 ministries or agencies added) Ministry of Labour; Ministry of Gender Equality; Small and Medium Business Administration ; and Cultural Properties Administration	(22 ministries or agencies added) Ministry of Finance and Economy; Ministry of Unification; Ministry of Justice; Ministry of Defence; Ministry of Planning and Budget; Ministry of Government Legislation; Central Staff Commission; Fair Trade Commission; National Tax Service; Korea Customs Service; Military Manpower Administration; Korea Food and Drug Administration; National Emergency Agency; Multifunctional Administration; City Construction Agency; Defence Acquisition Program Administration; Prosecutors' Office; Anti-Corruption Commission; Civil Rights Commission; Youth Protection Commission; Emergency Planning Commission; Financial Services Commission; and Office of Policy Coordination
Programmes of the PMS	Major budgetary programmes	Major budgetary programmes	All budgetary programmes

Source: The Guideline for the PMS (MPB, 2006b)

The PMS does not provide information regarding programme characteristics which may be recognized in the process of implementation. As a result, the MPB has explored other ways of producing detailed performance information for budgeting (Chin, 2005; MPB, 2006a).

In addition to performance indicators, SABP, as will be described later, provides more

specific information through the checklists. Individual ministries and agencies review a third of budgetary programmes every year in accordance with the checklists which the OPC (or MPB) controls. Individual programmes are given overall numerical scores from 0 to 100, which are translated into one of four grades: ‘Poor’, ‘Modest’, ‘Somewhat Effective’, and ‘Effective’.

In addition to them, SABP provides individual status information, even though it is only in a simple yes/no format. Examples of such information include: purpose or design of programme; application of funds; and other considerations which budget makers need to have for the process of deliberating on programmes. In its annual workshop<sup>15</sup> for budget makers, the MPB recommends them to deliberate on budget allocations using the following fundamental considerations: Is it relevant for a programme to be established? (Or: Is the purpose of the programme clear?). If the programme is relevant, who funds it: private sector or public sector; local government or central government? Because of these checkpoints, SABP tends to provide opportunities for integrating serial activities from programme assessment into the activities of budgeting.

The In-Depth Evaluation System (IES) provides comprehensive and in-depth information on a selected subset of programmes. In order to implement the IES fairly, the MPB set up a committee comprised of non-government experts and budget makers from spending ministries and agencies. The committee selects about 20 of the programmes which the SABP results, the National Assembly, or non-government organizations suggest every year. It also adds several programmes which it judges

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<sup>15</sup> The MPB holds an annual workshop for budget makers of the MPB and spending ministries and agencies before the budget deliberation process starts. There, the MPB gives a session of guidance and information on the techniques, direction, and emphasis of programme budget reviews.

require in-depth evaluation. The MPB has argued that the IES has contributed to restructuring programmes through reduction, elimination, and consolidation.

Korean performance budgeting can be distinguished from other models such as the Planning-Programming-Budgeting System (PPBS) and ZBB in the sense that it has a sub-system, SABP, which provides numerical scores for programmes. The yes/no format of the checklists allows managers to assess programmes in a less complicated way than the PPBS and ZBB. The PPBS and ZBB have a crucial weakness in that they need highly skilled and sophisticated assessment techniques which make them difficult to implement (GAO, 1997; Nah, 2007). They take up a lot of time and require experienced staff.

In addition, Korean performance budgeting produces more diverse information than performance indicators alone can. Performance indicators provide such simple information that their usefulness for budget decisions tends to be somewhat limited.

### **3.2.3 Integrating Performance Information into the Budget Process**

Korean performance budgeting has the underlying objective of integrating programme performance into budget allocation. Under the provisions of the National Finance Act (NFA), the MPB may assess budgetary programmes and associate budget decisions with the results of those assessments in order to manage government performance (Art. 8). According to the resources available, spending ministries and agencies set reasonable

performance targets for programmes in an annual performance plan. When conducting SABP, the MPB and spending ministries and agencies assess attainment of targets and link budgetary allocations with the results.

In the annual Budget Request Guidelines for preparing budget request documentation by spending ministries and agencies (NFA Art. 29), the MPB has made two stipulations: (1) the budget of any programmes rated as 'Poor' by SABP shall be reduced by 10% in relation to the previous budget; and (2) it is prohibited to increase the budget of any programmes that do not demonstrate any improvement in performance (MPB, 2006c, 2007b, 2008).

In order to enhance the use of SABP results for budget decisions, the MPB has developed formal cooperation between budget staff and programme examiners. Budget staff in charge of budgeting in the MPB may give their opinions when programme examiners in the MPB review or make consistency checks for completing SABP. Also, programme examiners who monitor and review programme performance may attend a meeting in which budget staff deliberate on programme budgets. However, this cooperation may vary in the way it works, or even be temporary, because it is underpinned only by an internal 'soft' memorandum, rather than by a 'hard' memorandum which would be longer-term and more binding.

It is not easy to argue that Korean performance budgeting uses performance information to determine budget allocations. Korean performance budgeting may use performance measures to inform budget allocations in the budget process (Curristine, 2005a); but it

has tended to make a direct link mainly between budget decisions and performance of programmes which SABP assesses as 'Poor'. According to the Korean government, it has cut the budgets of programmes graded as 'Poor'. In the budget year 2006, it made an average reduction of 25%; in 2007, the reduction was 24%; and in 2008, it was 15% (Park, 2008). In the current situation, in which some programmes have not identified ways of assessing themselves, such as performance indicators, this direct link may produce distorted reactions which undermine efficiency (Park, 2006).

### **3.2.4 Roles Played by Individual Organizations**

The Ministry of Planning and Budget (MPB), as the control centre of Korean performance budgeting, plays a key role in implementing performance budgeting, building a legal foundation for the system. According to the National Finance Act (NFA) and the Government Performance Assessment Act (GPA), the MPB designs and manages Korean performance budgeting. In order for the MPB to perform its role systematically, in 2005 it created a unit, the Bureau of Performance Management.

The MPB provides various guidelines for assessing budgetary programmes, and also reviews draft performance plans and reports and draft SABP documents which spending ministries or agencies have submitted. Based on the reviews, it makes recommendations to these bodies. As such, the MPB is heavily involved in developing performance indicators and setting targets for programmes. Spending ministries and agencies are required to consult the MPB prior to the determination of performance indicators and

targets.

The MPB also provides fundamental resources for performance budgeting, such as staff training for spending ministries and agencies. It has set up the Learning Centre for Performance Budgeting in the Korea Institute of Public Finance, which is financially supported by the Korean central government. Many public servants have participated in learning programmes in the Centre, and thus broadened or deepened their knowledge of performance budgeting (MPB, 2006a).

In reality, formal relationships between a financial authority and spending ministries vary from country to country. In some countries, such as Denmark and Iceland, the financial authority has no or little involvement. In other countries, such as Chile, the financial authority controls performance budgeting (Curristine, 2005a). Curristine (2005a) divides performance budgeting into two types, depending on whether or not the financial authority is involved in determining indicators and targets. In a survey of OECD members, he showed that 48% of responding members operated the centralized type. Of these, 16% required spending ministries and agencies to agree performance targets with the financial authority, and 32% required them to agree both indicators and targets. Korean performance budgeting can be considered a centralized type in which the MPB is involved in determining performance indicators and targets for spending ministries and agencies.

### **3.2.5 Limitations**

Many countries have introduced various types of performance budgeting. They have set a wide range of objectives and approaches, reflecting their financial environments (Curristine, 2005a). In order to adapt to its own environment, Korean performance budgeting has been modified many times since its introduction in 2000. However, it had rarely utilized performance information in the process of budgeting before the introduction of SABP. The main reason was that performance information was not sufficient, in either quantity or quality, for links to be established with resource allocation. For instance, performance indicators tended to be oriented towards inputs or processes that were easy to measure and attain. In the annual performance plans for the fiscal year 2002, only 20.4% of performance indicators presented in the plans were found to be result-oriented. Furthermore, there were few audits or meta-evaluations against the assessment results (Jun, 2004).

Korean performance budgeting can be seen to have taken a major step forward with the establishment of SABP, which aims to strengthen links between budget allocations and performance. Under SABP, the MPB has strengthened its review of the appropriateness of performance indicators, the level of targets, and the degree of achievements. What is more, the MPB puts pressure on budget makers to link budget allocations with SABP results. In this context, Korean performance budgeting has become more systematically organized since the establishment of SABP. That is, it produces specific performance information, assessing budgetary programmes on the basis of performance targets in the annual performance plan. The performance information tends to be reflected in the making of budget decisions.

Nonetheless, Korean performance budgeting has challenges to overcome: some are peculiar to the Korean model; others are common to various kinds of performance budgeting. Similarly to other models, Korean performance budgeting has inherent limitations in measuring performance. It is not easy to measure programme performance, because performance tends to be defined in multi-dimensional ways, and because public programmes tend to have ambiguous and multiple goals. Technically, a performance measure may not represent various facets of performance: outcome, output, process, or input. Diamond (2005) pointed out that, even though performance measurement is a key tool in the process of implementing performance budgeting, it is necessary to be prudent in measuring performance because of possible unintended side effects. For example, selecting inappropriate indicators may result in causing goal displacements, as discussed in Chapter 2. More seriously, a performance measure does not guarantee causality between a programme's activities and its outcomes (Diamond, 2005). In the SABP assessments for the years 2005-2007, the MPB found that almost 50% of the total of 1717 programmes reviewed set inappropriate performance indicators. There is also a tendency to generate additional workloads in producing documentations such as a performance plan and report.

Here, the author will focus on problems peculiar to Korean performance budgeting.

Korean performance budgeting has some limitations in the extent to which it encompasses budgetary programmes. In contrast with the PART, performance budgeting of the United States, Korean performance budgeting restricts itself largely to capital programmes and does not assess programmes related to current costs (including staff

cost). It also excludes grants for local authorities and their budget decisions. The Korean central government has found that it has been difficult to distribute current costs to budgetary programmes without an accrual accounting system. Furthermore, in the light of a performance management system for personnel, it might not be fair to distribute staff cost to their programmes because programme managers have little authority of choosing their staff. The MPB has a plan to implement an accrual accounting system from the fiscal year of 2012 after finishing a pilot test during three years (MPB, 2008).

Korean performance budgeting is characterized as the centralized type in which the MPB or the Prime Minister are involved when spending ministries and agencies develop performance indicators and set targets for programmes. Here, there is some redundancy in the underlying legal system. As seen in Table 3-2, both the Government Performance Assessment Act (GPA) and the National Finance Act (NFA) stipulate performance management including performance budgeting in Korean government. While the NFA gives the MPB the authority to ask ministries and agencies to present an annual performance plan/report and SABP results, the GPA states that the Prime Minister controls a strategic performance plan and an annual performance plan within the Korean central government. Also, the NFA leaves out a strategic performance plan, whereas the GPA leaves out an annual performance report.

Table 3-2 GPA vs. NFA regarding the performance management of Korean government

	GPA	NFA
Agency in charge	Prime Minister	Ministry of Planning and Budget
Scope of performance management	The administrative branch of the central government	The central government which spends the public budget, including the Legislature, the Administration, and the Judiciary. And, public fund operators
Objects to be documented	<ul style="list-style-type: none"> <li>◇ A strategic performance plan, and an annual performance plan</li> <li>◇ There is no annual performance report</li> </ul>	<ul style="list-style-type: none"> <li>◇ An annual performance plan and an annual performance report</li> <li>◇ There is no strategic performance plan</li> </ul>
Procedure	<ul style="list-style-type: none"> <li>◇ Developing plans → consulting with the relevant committee of the National Assembly.</li> <li>◇ There is no guideline related to performance management</li> </ul>	<ul style="list-style-type: none"> <li>◇ (MPB) Presenting the guidelines → (Spending ministries and agencies) Developing and submitting an annual performance plan and report to the MPB → (MPB, Spending agencies) Submitting them to the National Assembly along with budget proposals</li> </ul>

Note: modified NABO (2006b)

The two Acts provide two centres of control for the implementation of Korean performance budgeting: the MPB, and the Prime Minister. The duplicate legal provisions for government performance management may result in (1) the disconnection of fiscal performance management from government performance management as a whole, (2) the creation of additional workload due to duplication of effort, and (3) confusion amongst ministries and agencies (NABO, 2006b). Fortunately, because the MPB cooperates closely with the Prime Minister, these problems have not

arisen. As a result of discussion with the MPB, the Prime Minister creates and gives guidelines regarding performance management, including the use of SABP, to the individual ministries and agencies. At the review stage, the MPB is involved in reviewing the budget-related part of annual performance plans and reports and the SABP results of ministries and agencies.

Korean performance budgeting, as described earlier, tends to make a direct association between budget allocation and performance in the case of programmes whose performance is poor. When a programme is graded 'Poor' according to SABP, it is forced to reduce its budget by 10% compared with the previous year. This may result in the distortion of resource distribution because other considerations – demand, social priority, and other aspects of programmes – are neglected in the making of budget decisions. The GAO (2004, pp 11) reported that 'the more important role of the PART was not in making resource decisions but in its support for recommendations to improve programme design, assessment, and management.' Indeed, 82% of PART recommendations were related to programme assessment, programme design, and programme management issues (GAO, 2004).

The next section takes a close look at SABP, which forms a key element of Korean performance budgeting (NABO, 2006b). Indeed, it is expected that this will assist understanding of the structure and operation processes of other types of performance budgeting.

### **3.3 Self-Assessment of Budgetary Programme (SABP)**

#### **3.3.1 Background**

The Korean central government has experienced trials and errors while establishing performance budgeting. Beginning in 2000, the pilot project for Performance-Oriented Budgeting ended with the change of Administration in 2002. On the basis of lessons learnt from the pilot project, the MPB introduced the Performance Management System (PMS) for programmes in 2003. However, this had limitations when it came to linking budget allocations to performance. Because it concentrated on using performance indicators in order to monitor budgetary programmes, it did not provide the diverse kinds of information needed by budget decision makers. Rather, it tended to create complaints from spending ministries and agencies about the additional workload involved in producing a performance plan and report (MPB, 2006a).

This led to growing pressure for the restructuring of the PMS from both inside and outside government. After reviewing the system with experts from outside government, the MPB found that the PMS needed some modifications: (1) extension of the scope of the PMS so that it included all budgetary programmes, and (2) exploring some means of strengthening the link between budget allocations and performance. As a result of the review, the MPB took two initiatives. One was to extend the PMS to all budgetary programmes within spending ministries and agencies; the other was to introduce Self-Assessment of Budgetary Programme (SABP) in an effort for integrating budget and

performance (MPB, 2006a).

In 2005, the Korean central government initiated a ‘top-down’ budget allocation strategy as one of four fiscal reforms. The top-down strategy was devised to boost each ministry’s and agency’s autonomy in budgeting, within expenditure limits determined by a committee comprised of the President, the Prime Minister, and Ministers. As a consequence, the MPB, as the fiscal authority, needed a tool for reviewing and screening the individual budgets which each of the ministries and agencies requested for their programmes (NABO, 2006b; Lee, 2006; Chin, 2005). This became another issue for the introduction of SABP.

### **3.3.2 Institutional Overview**

The design of SABP was strongly influenced by the Program Assessment Rating Tool (PART) initiated by the US President’s Management Agenda for performance and budget integration. As a result, SABP has a variety of things in common with the PART, though they are slightly different in some ways, such as the extent to which performance information is used in budgeting. Comparisons with the PART help us to understand the major characteristics of SABP.

#### **3.3.2.1 Self-Assessment of Budgetary Programme (SABP)**

Self-Assessment of Budgetary Programmes, as noted earlier, is an effort to strengthen the links between budget decisions and performance information. It is a means of

assessing performance and diagnosing programmes, using checklists, in the budget process. It also allows the MPB to check and screen programmes as it undertakes the process of reviewing the budget requests of spending ministries and agencies.

Self-Assessment of Budgetary Programmes assesses three sections of budgetary programmes, responding to checklists which consist of 15 common questions and up to three specific questions which depend on seven programme types. Fifteen questions are commonly applied to the seven types, and several questions are added to specific programmes depending on programme types. In order for SABP to be used to consider the characteristics of programmes, it is necessary to divide programmes into seven types, depending on their purpose and how they are implemented, as follows: (1) Social Overhead Capital (SOC) programmes, (2) Capital Acquisition programmes, (3) Other Direct programmes, (4) Investment programmes, (5) Loan programmes, (6) Subsidy to Local Government programmes, and (7) Subsidy to Private Sector programmes. A programme may be classified as falling into more than one category.

As will be described more specifically later, SABP gives weights of 30%, 20%, and 50% to these three sections respectively in order to produce overall numeric scores from 0 to 100. In the section on planning (30%), the percentage is equally distributed between two sub-sections: rationale and design (15%), and performance planning of programmes (15%). Using SABP strictly fixes these weights, which are determined by the MPB, in order to prevent manipulations of a programme's total score, while the PART allows spending agencies to adjust weights to emphasize the key factors of a programme.

The numeric scores are translated into one of four grades: (1) 'Effective' (2) 'Somewhat Effective' (3) 'Modest' and (4) 'Poor'. Table 3-3 summarizes the relationships between grades and overall numeric scores. The grade of 'Effective' is 85 points or more; 'Somewhat Effective' goes from 70 to fewer than 85 points; 'Modest' goes from 50 to fewer than 70 points; and, finally, 'Poor' gives less than 50 points as an overall score.

Table 3-3 Relations between grades and numeric scores

Grades	Score Bands
Effective	85 – 100
Somewhat Effective	70 - less than 85
Modest	50 - less than 70
Poor	Less than 50

Self-Assessment of Budgetary Programme treats the assessment cycle of programmes differently from the PART. In SABP, a third of all the budgetary programmes are assessed every year; whereas the PART assesses a fifth of programmes. In other words, all the Korean central government's programmes are assessed at least once every three years, and US federal programmes are assessed at least once every five years. Because policy development tends to vary in speed between the two countries, it may be rational that the assessment cycle of each is consistent with their rollover period for strategic performance plans: five years in the US and three years in Korea. Because SABP and PART are not used to assess all programmes every year, they may not provide timely performance information on some programmes in budgeting.

In this context, the MPB introduced Programme Reassessment in 2006, considering that

the shorter assessment cycle would enable SABP to provide performance information in a timely way, even though it might increase workloads and costs. Programme Reassessment allows the use of SABP to assess programmes, regardless of the assessment cycle, according to which a programme has to be assessed at least once in three years. In principle, a programme may be reassessed when it demonstrates evidence of significant improvement: for example, performance improvement, the development of new measures, or the fixing of new targets. In practice, using SABP, programmes are selected for reassessment every year by a review of programmes which spending ministries and agencies and the MPB (budget decision makers or programme examiners) have recommended. SAPB is used to reassesses about 20 programmes every year, whereas the PART is used to reassesses almost all programmes evaluated in the previous year.

For a better understanding of SABP, we need to examine the PART used by the US federal government, which strongly influenced the design of SABP. The next subsection offers a description of the PART.

### **3.3.2.2 The Program Assessment Rating Tool (PART)**

The Program Assessment rating Tool was introduced by the Office of Management and Budget (OMB) of the Bush administration in the fiscal year 2002. It was invented to address weaknesses in utilizing the performance information which the Government Performance and Results Act of 1993 (hereafter GPRA)<sup>16</sup> produced in the process of

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<sup>16</sup> The GPRA represented an effort to promote a connection between performance plans and budget. The

preparing budgets within the OMB (Johnson, 2003; cited by Dull, 2006).

The PART is a tool for assessing the performance of US federal programmes. The OMB (2008) reported that it was ‘a diagnostic tool used to assess the performance of Federal programs and to drive improvements in program performance,’ by providing ‘a consistent approach to assessing and rating across the Federal programs’.

The PART assesses performance of programmes, answering more than 25 questions written in yes/no format in four sections: (1) programme purpose and design; (2) strategic planning; (3) programme management; and (4) programme results/accountability. Twenty five questions are commonly applied to all the programmes; and a few questions are added for specific programmes depending on their type. The PART divides federal programmes into seven types: (1) direct federal programmes; (2) competitive grant programme; (3) block/formula grant programmes; (4) regulatory-based programmes; (5) capital asset and service acquisition programmes; (6) credit programmes; and (7) research and development.

The PART produces overall numeric scores from 0 to 100 for programmes, and it interprets the scores into one of four grades: ‘Effective’ (85-100), ‘Moderately Effective’ (70-84), ‘Adequate’ (50-69), and ‘Ineffective’ (0-49). Regardless of the overall scores, a rating of ‘results not demonstrated (RND)’ is given when a programme does not have

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GPRA requires that all US federal agencies undertake strategic planning, develop goals and objectives, measure performance with performance indicators, and consult the President and the Congress on the degree to which federal programme goals have been achieved annually (GAO, 2003).

acceptable performance measures or lacks baselines and performance data.

To produce a numerical score, the sections are weighted differently. For example, in 2008 weightings were distributed as follows: programme purpose/design, 20%; strategic planning, 10%; programme management, 20%; and programme results/accountability, 50%. Questions within a section, in principle, are weighed equally; but the weights may be adjusted to emphasize the key factor of a programme. The adjustment, however, is determined prior to the answering of any questions in order to avoid manipulation of the total score (OMB, 2008).

The PART assesses one fifth of federal programmes every year. In other words, a programme is required to be assessed at least once every five years. A programme, even though its assessment cycle has not yet been completed, may be reassessed when it provides evidence of significant improvement: for example, the development of new measures, or the fixing of new targets or results.

To complete the PART, the OMB provides guidance and training about its workings for spending agencies' staff. In response to the guidance, each agency makes a PART draft and submits it so that the OMB can review it and check consistency. When reviewing the draft, the OMB focuses on all the requirements of the guidance. If agencies have any disagreements with the revised draft, they can appeal it to a high level appeal board. Similarly to SABP in Korea, all these PART processes are completed using an online application called PARTWeb. Through the PARTWeb, agencies can enter information, and can use the application to collaborate within agencies as well as with the OMB. It is

also used to generate summaries for the public at [www.ExpectMore.gov](http://www.ExpectMore.gov) (OMB, 2008).

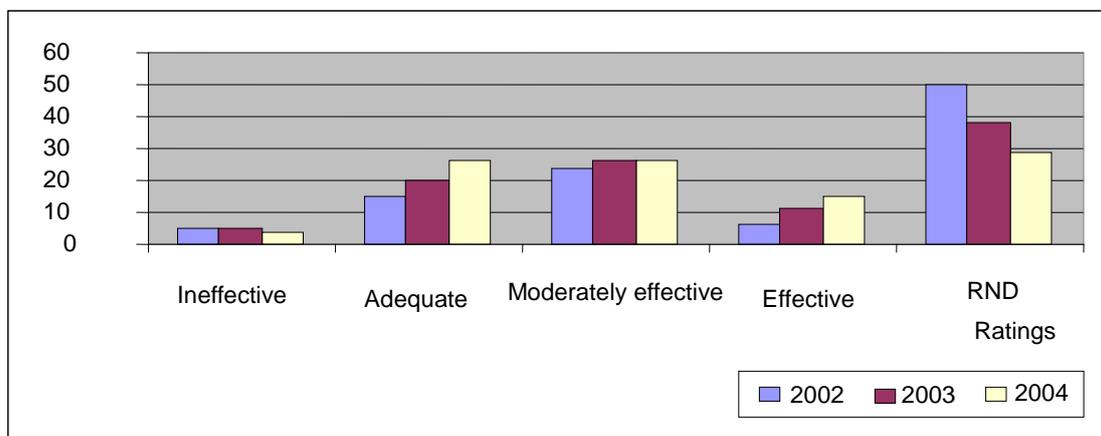
Recent results of the PART are presented in Table 3-4 and Figure 3-2. The ratings make an inverted U shape skewed towards the lowest category, without RND. The ratings of ‘Effective’ and ‘Adequate’ increase strongly from 2002 to 2004. The proportion of ‘Effective’ programmes leapt from 6% in 2002 to 15% in 2004, and ‘Adequate’ went from 15% to 26%. Showing a gradual decrease, the RND group accounted for a particular portion every year: 50% in 2002, 38% in 2003, and 29% in 2004. This continuous decline implies that the PART has been achieving significant development in establishing performance management: for example, developing performance indicators for programmes.

Table 3-4 Ratings by the PART

	2002	2003	2004
Ineffective	5%	5%	4%
Adequate	15%	20%	26%
Moderately effective	24%	26%	26%
Effective	6%	11%	15%
RND	50%	38%	29%

Note: modified NABO (2005)

Figure 3-2 Ratings by the PART



The key purpose of the PART is to provide performance information for budgeting. The PART has contributed to the structuring the OMB's use of performance information for its internal programme and budget analysis, although the results of the PART are one of the key factors for making budget decisions (GAO, 2004). Conducting a regression analysis of programme budgets on the PART scores, Gilmour and Lewis (2006) proposed that the PART scores had a significant correlation with budget allocations within the OMB.

Nonetheless, there are criticisms of the implementation of the PART. As with other assessment instruments, the PART is not an automatic or impartial device for translating information directly into budget allocations. The GAO (2004) pointed out that the PART has the following challenges: (1) inconsistency in awarding grades to programmes, particularly programmes with multiple purposes and goals, (2) a lack of harmony between the PART and GPRA in defining a unit of analysis, and (3) a lack of cooperation with the Congress. More seriously, a PART assessment itself may not be neutral because of political considerations. Gilmour and Lewis (2006) hinted that PART scores might be politicized, and suggested that political considerations influenced budget proposals for federal programmes.

### **3.3.2.3 Comparisons of SABP with the PART**

Modelled on the fundamental strategy of the US PART, SABP plays a role similar in many ways to that of the PART in preparing budgets. The contexts in which two systems operate make them slightly different in design and implementation, and there

are differences in the uses to which the results of the two are put.

The author will now make a detailed comparison between SABP and the PART. Table 3-5 summarizes differences in structure and information use. In terms of the weightings used to produce a numeric score, SABP applies fixed weights, whereas the PART gives some slight discretion to spending agencies.

Self-Assessment of Budgetary Programmes tends to be used in more various ways than the PART. The former tries to make a direct link between budget decisions and its own results when it assesses programmes as 'Poor'. The MPB has made a strong recommendation for ministries and agencies to reduce by 10% the budget of such programmes. Furthermore, results produced by SABP are considered in organizational or personnel performance evaluation. The PART, however, provides performance information as one of the key factors for budgeting.

In terms of the units responsible for the two systems, the SABP unit, the Bureau of Performance Management, is independent from the Budget Office, whereas the PART unit, the Budget and Performance Integration Unit, has a close association with the budget office, the Resource Management Office (RMO). In order to make consistency checks, budget makers of the RMO constitute a Programme Evaluation Team in the Budget and Performance Integration Unit. As explained earlier, SABP may also involve budget makers, but their roles are limited (Bang and Yun, 2007).

Table 3-5 Differences between SABP and the PART

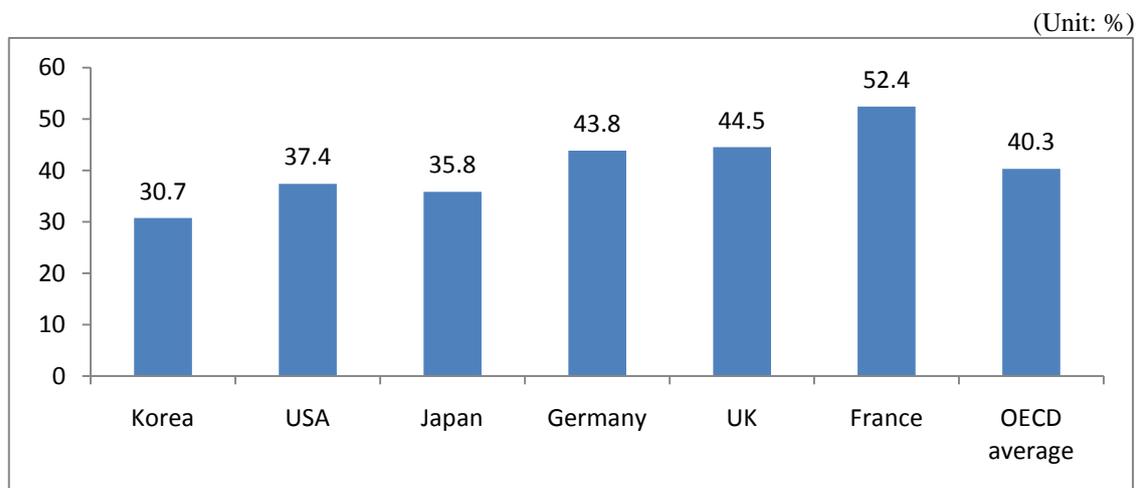
		SABP	PART
Configuration	Checklist	<ul style="list-style-type: none"> <li>◇ Three sections: planning, management, and results. However, Planning is divided into two sub-sections: rationale and design, and performance plan</li> <li>◇ Questions: 15 common questions and 0-3 specific questions depending on programme types.</li> </ul>	<ul style="list-style-type: none"> <li>◇ Four sections: programme purpose/design, strategic planning, programme management, and programme results/accountability.</li> <li>◇ Questions: 25 common questions and 5-10 specific questions depending on programme types.</li> </ul>
	Weight	<ul style="list-style-type: none"> <li>◇ Planning: 30% (purpose/design: 15%, and strategic planning: 15%), management: 20%, and results: 50%.</li> <li>◇ Weights are not changeable by ministries and agencies.</li> <li>◇ Weights of questions are not equal.</li> </ul>	<ul style="list-style-type: none"> <li>◇ Purpose/design: 15%, strategic planning: 15%, management: 20%, and results/accountability: 50%.</li> <li>◇ Weights are slightly flexible up to the point where questions are answered.</li> <li>◇ The weights of questions within a section, as a default, are equal.</li> </ul>
	Grade	<ul style="list-style-type: none"> <li>◇ Translating an overall numeric score into one of four grades: Effective, Somewhat Effective, Modest, and Poor.</li> <li>◇ RND (results not demonstrated) is not allowed.</li> </ul>	<ul style="list-style-type: none"> <li>◇ Same as described on the left. Additionally, the PART grants RND (Results Not Demonstrated), regardless of an overall score, when a programme does not have acceptable performance measures or lacks baseline and performance data.</li> </ul>
Specific unit		<ul style="list-style-type: none"> <li>◇ The central financial authority (MPB) is responsible for the management of SABP.</li> <li>◇ Within the MPB, a specific unit has been created to assess programmes using SABP.</li> </ul>	<ul style="list-style-type: none"> <li>◇ The OMB is responsible for the management of PART.</li> <li>◇ The Resource Management Office (RMO) within the OMB is responsible for both budget allocation and assessment.</li> </ul>
Use of Information	Budget allocation	<ul style="list-style-type: none"> <li>◇ Providing information as one of the key factors for budgeting.</li> <li>◇ In some programmes which are assessed with SABP, 'Poor' brings a direct link between budget allocations and the results.</li> </ul>	<ul style="list-style-type: none"> <li>◇ Providing information as one of the key factors for budgeting.</li> </ul>
	Others	<ul style="list-style-type: none"> <li>◇ Reflecting SABP results in ministries' and agencies' performance evaluation (compulsory by the GPA).</li> <li>◇ In some ministries and agencies, using SABP results for personnel performance assessment (voluntary).</li> </ul>	

### 3.3.3 Programmes assessed with SABP in Korean public finance

Korean central government expenditure consists of one general account, special accounts and funds. While the general account serves general purposes, the special accounts and funds finance specific purposes such as public corporation management and social insurance. The number of special accounts and public funds are changeable depending on individual underlying laws by the National Assembly. Indeed, Korean central government had 16 special accounts and 60 public funds in the fiscal year 2008. However, special accounts reached 18, public funds 63 in the fiscal year 2010.

As for level of expenditures, the Korean government (including local governments) spent 30.7% of GDP in the fiscal year 2007. Figure 3-3 illustrates the ratio of expenditure to GDP in the fiscal year 2007 (OECD, 2008). Specifically, local governments spend a higher proportion of public expenditure than the central government (57.0% vs. 43.0%). The central government provides 38.64% of inland tax revenues for a grant for local governments by law.

Figure 3-3 Expenditure ratio to GDP among major OECD countries



Source: OECD Economic Outlook 84(2008), and Public Finance of Korea (Ahn, 2010)

Korean government expenditure can be divided on the basis of expenditure purpose, into labour cost, current expenditures, and programmes. Programmes, as a package of activities for a policy (MPB, 2004), are a basic unit to which budgets are allotted. Programmes can be categorized into two groups, depending on the degree of controllability by the central government. For example, because the central government is required to give lump-sum grants for local entities on the basis of legal specifications, the government has very limited discretion to make decisions such as whether or not to allot grants, and how much to allot. The government is required to give the amount of grants automatically in accordance with a guideline specified by the law.

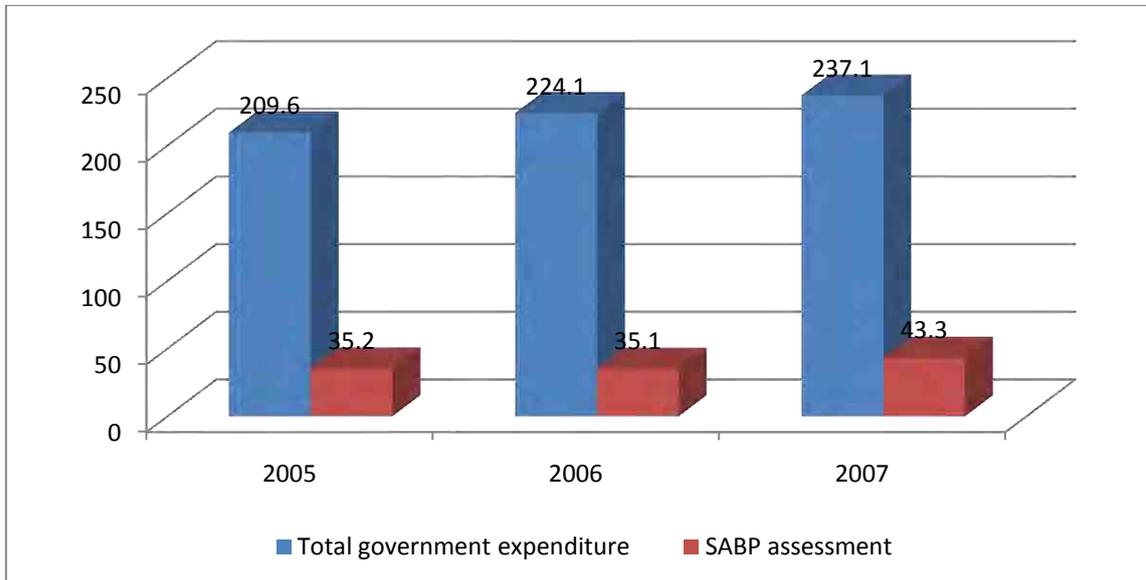
As well as excluding labour cost and current expenditure, the Ministry of Planning and Budget (MPB) also excludes some programmes such as grants for local entities from the SABP assessment. These excluded elements amounted to 31.0% (65,000 billion Won) of total government expenditure of 209,600 billion Won in the fiscal year 2005.

The MPB, similarly to the PART of the United States, assesses about a third of budget programmes with SABP every year, excluding some programmes such as lump-sum grants, labour cost and other programmes related to current costs. Figure 3-4 presents the amount of budget for programmes which MPB assessed with SABP during the years 2005, 2006, and 2007. MPB assessed programmes accounted for 35,200 billion Won out of total government expenditure of 209,600 billion Won in 2005, 35,100 billion Won out of 224,100 billion Won in 2006, and 43,300 billion Won out of 237,100 billion Won in 2007. As described earlier, in order to review the performance of programmes which were not assessed in a particular year the MPB has implemented Programme Re-assessment from the year of 2006 and the MPB has reassessed around 20 programmes

every year.

Figure 3-4 The budget amount of programmes assessed with SABP

(Unit: Trillion Won)



Source: Ministry of Planning and Budget (2007)

### 3.3.4 SABP Operating Mechanisms

The National Finance Act (NFA) stipulates that the MPB may assess budgetary programmes and then reflect the results in budgeting (Art. 8). On the basis of the law, the MPB manages Korean performance budgeting, which includes SABP. When using SABP, it plays a core role different from those of the spending ministries and agencies. The MPB, as the fiscal authority of Korean government, controls SABP. It establishes action plans and guidelines for SABP every year. It provides guidance on SABP<sup>17</sup> to spending ministries and agencies, so that they can use SABP. The guidance presents procedures and central directives about the utilization of assessment results. In order to

<sup>17</sup> Nominally, the OPC presents the Guidance in order to prevent redundancy.

ensure consistency throughout programmes, it explains specifically how to answer the checklists which inquire about programme consequences in three sections: Planning, Management, and Results. Table 3-6 shows an example of a specific standard for answering questions.

Table 3-6 A standard for answering a question (example)

<b>Common question 2-3</b>	<b>Is the program implemented as planned?</b>
Purpose	To determine whether funds are administered efficiently and apportioned in accordance with planned schedules and spent for the intended purposes.
Elements of <i>Yes or No</i>	<input type="checkbox"/> <b>Elements of <i>Yes</i>:</b> A <i>Yes</i> answer needs to clearly explain and provide evidence of each of the following: <ul style="list-style-type: none"> <li>o Programme funds were spent in accordance with the overall programme plan.</li> <li>o Programme funds were distributed to the intended recipients.</li> </ul> <input type="checkbox"/> <b>Elements of <i>No</i></b> <ul style="list-style-type: none"> <li>o Programme funds were not spent in accordance with the overall programme plan.</li> <li>o A programme has spent its budget exorbitantly or was in violation of the relevant laws.</li> <li>o In indirectly managed programmes, programme funds were not delivered to intended recipients.</li> </ul>

Source: The Guidance for Self-Assessment of Budgetary Programme (MPB, 2007)

To provide specialized implementation of SABP, the MPB instituted the Bureau of Performance Management and the Advisory Corps on Performance Management. The Bureau controls SABP, cooperating with the Budget Office of the MPB. It checks the consistency of SABP results (draft) which spending ministries and agencies submit. It provides SABP results for the Budget Office to utilize in the budget process.

The Advisory Corps on Performance Management is comprised of budget directors and experts outside the MPB. The Corps places an emphasis on giving recommendations for improving the design and operation procedures of programmes, and for developing performance indicators. On the basis of these recommendations, the MPB advises

spending ministries and agencies to amend SABP results (draft) or to improve programme implementation. They are required to make action plans responding to the recommendations, consulting with the MPB; and the MPB checks in the course of reviewing the SABP results whether the plans have been completed.

Spending ministries and agencies fulfil a practical role of implementing SABP on the spot. They classify programmes into three groups so that SABP can be used to assess a group per year. They measure programme performance with indicators, complying with the Guidance of the MPB. Furthermore, they conduct SABP and utilize the results in the process of preparing their budget requests.

In terms of a process, SABP is largely operated in two phases: (1) preparations, and (2) assessments. The first phase considers the question of what is to be assessed and how it will be assessed. This phase is closely related to the annual performance plan. Every year, spending ministries and agencies develop an annual performance plan which contains all their budgetary programmes<sup>18</sup>. Importantly, these programmes tend to be grouped so that they are consistent with SABP assessment units. Performance indicators are developed for them. The programmes are divided into three groups according to the year in which they are to be assessed. In other words, spending ministries or agencies select a third of their programmes for the SABP exercise of the following year.

The second phase is to assess programmes in compliance with the Guidance for SABP provided by the MPB (or OPC). Firstly, spending ministries or agencies self-assess programmes using SABP. Secondly, the MPB checks and reviews the draft SABP

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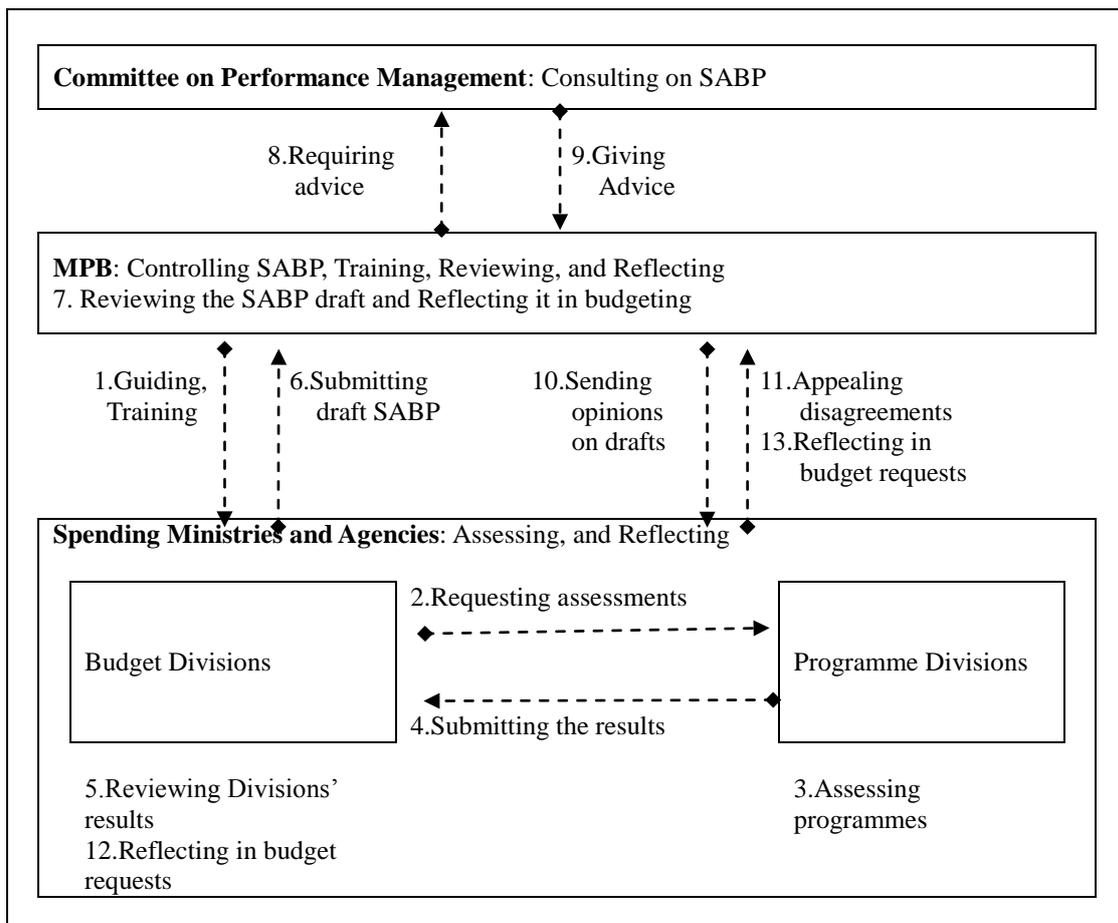
<sup>18</sup> In the Korean context, SABP is not used to assess routine and current programmes such as personnel management and operation programmes.

results which spending ministries and agencies submit. Within spending ministries and agencies, the programme managers who implemented programmes start the first stage of SABP assessment, making a draft of their own assessment. After reviewing and checking the managers' assessments, budget divisions submit draft SABP results to the MPB with their budget request documents. When spending ministries and agencies submit draft SABP results, the MPB reviews them on the basis of the Guidance for SABP.

When reviewing draft SABP results, the MPB tends to concentrate strongly on performance measurements such as performance indicators, the reasonableness of performance targets, and the achievement of targets. It reviews the appropriateness of individual performance indicators, mainly with regard to representativeness and the measurement instrument used (Questions 1-5 and 1-6), consulting with experts outside the government. It analyzes performance achievements which carry the greatest weight in the questions (Question 3-2), linking them to reasonableness of the target level (Question 1-7). When assessing the achievements of programme targets, spending ministries and agencies are required to give their own grades on the basis of their documents.

Figure 3-3 gives a comprehensive presentation of the operating mechanism of SABP. The figure shows that there are close relationships between the MPB and spending ministries and agencies. The MPB manages SABP as a centre of control, and spending ministries and agencies select and assess their programmes in response to the control. If SABP is to make a contribution to improving programme performance, harmony between them is essential.

Figure 3-5 The procedures and roles of SABP



Source: The Guidance for Self-Assessment of Budgetary Programme for 2007 (MPB, 2007)

### 3.3.5 Checklists as a Means of Assessing Performance

The MPB presents Guidance for completing SABP, which includes the checklists, every year. The checklists have 15-18 questions, depending on which of the seven types a programme falls into, and these are to be answered in a yes/no format in three sections: Planning, Management, and Results. The section on planning is divided into two sub-sections: rationale and design; and performance plan.

Each question is weighted so that SABP can produce overall numeric scores. To start

with, it has weights of 30%, 20%, and 50% for Planning, Management, and Results respectively. In the section on Planning, it allots the 15% to two sub-sections – rationale and design; and performance plan – equally. In principle, individual questions within the sections (or sub-sections) carry an equal weight. Exceptionally, the section on Results assigns 30% to Question 3-2 (achievement of targets), and 10% to Question 3-3 (consumer satisfaction). In the case where it adds specific questions, SABP re-allots weights to each question equally within the overall weight fixed for the section, after it has fixed the initial weights for Questions 1-5, 1-6, 1-7, and 3-2: 5, 5, 5, and 30% each.

The way in which SABP allocates weights between questions is critical. Recognizing that SABP aims to assess programme performance, a heavy weighting is given to questions related to programme performance. Questions 1-5, 1-6 and 1-7, which are related to performance measurement, account for half of the Planning section, and their weights are fixed regardless of specific questions added. When any one of them receives the answer ‘No’, a programme becomes liable to receive a lower score due to chain-linked questions, as will be described later. For example, when a programme sets its objectives inappropriately (i.e. Question 1-5 is answered ‘No’), it is not easy for that programme to receive more than 65 points, which indicates a grade of ‘Modest’. As will be seen later, the performance plan has been a critical factor in lowering average scores under SABP. Question 3-2 which assesses the attainment of targets carries the most weight.

As presented in Table 3-7, the individual checklists of programmes consist of the common checklist and the specific checklist. Commonly applied to all programmes, the

common checklist consists of 15 questions. Of these, seven belong to the section on Planning, four to Management, and four to Results. Having various combinations of questions, the specific checklist has one to three questions, depending on programme types. Let us take as an example a checklist for the Road Building Programme which belongs to the Social Overhead Capital (SOC) programme type. In this case, the checklist has 18 questions. Out of them, 15 are common questions and three are specific questions for SOC programmes.

In terms of the different sections, the Planning section has seven common questions and up to two specific questions. Social Overhead Capital programmes and Capital Acquisition programmes have the most – nine questions. The section on Management ranges from four to six questions, which consist of four common questions and up to two specific questions. The Loan and Subsidy types of programme have the most – six – questions on Management. And the last section, Results, uses four common questions without adding any specific questions.

Table 3-7 Checklists for SABP

■ Common checklist

(Unit: %)

Sections	Questions	Weights
Planning	1.1 Are the purpose and authority of the programme clear?	3.75
	1.2 Is it rational for the programme to spend public funds provided by the central government?	3.75
	1.3 Is the programme designed so that it is not redundant and doesn't duplicate any other programmes?	3.75
	1.4 Is the programme designed to be free of major flaws that would limit its effectiveness or efficiency?	3.75
	1.5 Are the performance objectives and the performance indicators developed so specifically that they will be suitable for measuring the programme's performance?	5.00
	1.6 Are the performance objectives and performance indicators developed to show a clear causal relationship with the purpose of the programme?	5.00
	1.7 Is the target, as set in terms of performance indicators, reasonable or ambitious?	5.00
	Subtotal	30.00
Management	2.1 Does the programme have procedures to regularly collect timely and credible management information, including information from key programme partners?	5.00
	2.2 Has the programme taken meaningful steps to address management deficiencies or problems revealed in the course of execution?	5.00
	2.3 Are funds allotted in a timely manner, and spent for the intended purpose?	5.00
	2.4 Does the programme make savings in the budget or improve the execution procedure?	5.00
	Subtotal	20.00
Results	3.1 Has the programme received an independent evaluation?	5.00
	3.2 Does the programme achieve its annual performance targets?	30.00
	3.3 Are the customers satisfied with the programme's service?	10.00
	3.4 Are the assessment results used to improve the programme?	5.00
Subtotal	50.00	
Total	100.00	

Note: Every weight except those of questions 1-5, 1-6, 1-7, and 3-2 may be varied, depending on the number of specific questions added.

■ **Specific checklist**

(Unit: %)

Sections	Questions	Weights
Planning	(SOC) Are possible major conflicts considered in planning?	2.50
	(SOC) Does the programme have any procedures to analyze alternatives or the relevancy of the programme?	2.50
	(CA) Does the programme procure facilities or equipment in a timely manner?	2.50
	(CA) Does the programme have any procedures to analyze alternatives or the relevancy of the programme?	2.50
	(OthD) Does the programme need to be continuously implemented?	3.00
	(Inv) Is the amount of investment reasonable?	3.00
	(SubL) Does the programme have the procedures to review and reflect the conditions of local governments in planning?	3.00
	(SubP) Has the programme reassessed whether the ongoing subsidy is necessary?	3.00
Management	(SOC) Does the programme manage its aggregate cost appropriately?	4.00
	(Loan) Are the loan terms and conditions set reasonable?	3.33
	(Loan) Is the revolving rate sound?	3.33
	(SubL) Have local governments taken meaningful steps for making the best possible use of allotted funds?	3.00
	(SubP) Is the selection of programme partners reasonable?	3.33
	(SubP) Does the programme have oversight practices that provide sufficient knowledge of the grantee's activities?	3.33

Note: The letters in parentheses represent the programme types related to the question. SOC means Social Overhead Capital programmes; CA means Capital Acquisition programmes; OthD means Other Direct programmes; SubL means Subsidy to Local Government programmes; SubP Subsidy to Private Sector programmes; Loan means Loan programmes, and Inv means Investment programmes.  
Source: Guidance for Self-Assessment of Budgetary Programmes, 2006 (MPB, 2006)

Each question is designed to be answered with a 'Yes' or a 'No', except for two questions: Questions 3-2 (achievement of targets) and 3-3 (consumer satisfaction), which carry the most weight. Questions 3-2 and 3-3 may receive one of four levels of

answer: ‘Yes’, ‘To a large extent’, ‘To a small extent’, and ‘No’. The four levels are translated into different scores. Table 3-8 presents the relationship between the four levels and scores. Answered with a ‘Yes’, a question takes a perfect score. Conversely, answered ‘No’, a question receives a zero.

Table 3-8 Relationship between the four levels of answer and scores in Questions 3-2 and 3-3

	Yes	To a large extent	To a small extent	No
Question 3-2	30.0	20.0	10.0	0.0
Question 3-3	10.0	6.7	3.3	0.0

Note: Question 3-3 may be varied when specific questions are added up.

Some questions are strongly linked to each other for the logical consistency of the checklist. Answers to Questions 1-5, 1-6, 1-7, and 3-2 are chain-linked. When Question 1-5 is answered ‘No’, Questions 1-6 and 1-7 are automatically answered ‘No’. In the case where Question 1-6 is answered ‘No’, Question 1-7 is necessarily answered ‘No’. When Question 1-7 is answered ‘No’, Question 3-2 may be rated, at best, ‘To a large extent’. It may be argued that RND (results not demonstrated) needs to be allowed as an answer to Question 3-2 when Questions 1-6 or 1-7 are answered ‘No’.

### 3.3.6 Use of SABP Results

Self-Assessment of Budgetary Programme has the primary aim of providing various kinds of performance information for budget decision makers. When making budget decisions, the MPB and spending ministries and agencies consider various pieces of

information which SABP provides.

In line with the National Finance Act, the MPB has made several provisions for utilizing SABP results in the budgeting process. In the Budget Request Guidelines, the MPB announces that any programmes which SABP rates 'Poor' shall have their budgets reduced by 10%, and that any programmes which do not present an evident improvement in performance will not have their budgets increased. The MPB made a 12.7 billion Won reduction from programmes rated 'Poor' in the budget year 2007, compared to the budget year 2006 (Park, 2006). In this sense, Korean performance budgeting tends to make a direct link between resource allocation and performance information provided by SABP in some programmes.

The National Assembly Budget Office (2006b) reported that 82.5% of central public administrators perceived that using SABP results, the current link between budget allocations and performance information, was appropriate.

The Office of Policy Coordination under the Prime Minister assesses the performance of ministries and agencies every year, based on the Government Performance Assessment Act (GPA). It assesses five functions of organizations: (1) Overall performance, (2) Finance, (3) Human resources, (4) Organizational structure, and (5) Information system. Collaborating with the OPC, five relevant ministries each assess one of the five functions. For example, having authority over government finance management, the MPB assesses Finance. Without using other assessments for it, the MPB regards SABP results as the means of assessing Finance. The five functions have different weights,

which are determined each year by the Commission for Government Performance Assessment, which the Prime Minister and an expert outside the government co-chair. The Prime Minister reports the assessment results to the President and consults the National Assembly.

Some spending ministries and agencies reflect SABP results in their personnel performance evaluation. This tends to affect performance-related pay for personnel. Now, there is a growing trend towards following this practice among other ministries and agencies. Additionally, the MPB used to reflect SABP results in assessing the extent to which spending ministries and agencies kept good fiscal discipline. The MPB may give a slight increase in current expenses, depending on the assessments.

### **3.3.7 Limitations**

Performance measurement is a critical element for successful performance budgeting (Robinson and Brumby, 2005). Self-Assessment of Budgetary Programmes plays a key role in producing various kinds of information related to planning, implementation, and the results of programmes. It has been shown that SABP has provided various kinds of performance information for making budget decisions, compared to the Performance Management System (PMS) (Park, 2008).

It is arguable whether Self-Assessment of Budgetary Programmes has made a contribution to integrating performance information into budget allocations; but it does,

at least, tend to provide an opportunity for budget decision makers to discuss programme performance with programme managers and examiners (MPB staff who review the draft SABP assessments). However, SABP reveals some challenges. This section focuses on describing limitations specific to SABP rather than general performance assessment.

Self-Assessment of Budgetary Programmes has intrinsic limitations in measuring programme performance. It is a tool for diagnostic rather than in-depth assessment. It is designed to elicit answers in a simple yes/no format that imposes restrictions on producing in-depth information about programme performance. The yes/no answer format results in an oversimplifying of answers. All the questions except Questions 3-2 and 3-3 have only to be answered either 'Yes' or 'No' in a dichotomous way, depending on whether or not a programme meets the requirements, regardless of the fundamental causes of achievement or non-achievement. This format may fail to assess the progress of programmes in terms of planning, management, or results, because most of them cannot be expressed in an on/off mode. In practice, programme managers have asked for the yes/no format to be amended. Also, a simple yes/no format has a limited ability to express causality between programmes and performance.

Many questions can contain subjective terms which involve assessors in a discrete judgement as to whether 'Yes' or 'No' is appropriate. They may allow multiple interpretations, and this can damage the consistency of SABP. In practice, together with consistency checks, the MPB has made efforts to ensure the consistency as follows: (1) it has made the Guidance on SABP detailed and specific, (2) it has set up a specialized

team which consists of programme examiners and budget decision makers, (3) it holds discussions with the Advisory Corps on Performance Management, which is comprised of budget makers and experts from outside government, and (4) it has made the terms used in checklists more objective. Nonetheless, the checklists still contain subjective terms which may damage the consistency of assessments.

Self-Assessment of Budgetary Programmes tends to neglect the long-term view and costs when it assesses programmes. The checklist, as shown in Table 3-7, does not include questions which take a long-term view. In terms of cost, it includes a single question which asks about saving money (Question 2-4). SABP is designed to concentrate on assessing whether or not programmes attain goals for the relevant year, without considering the unit cost incurred. In contrast, the PART requires spending agencies to present each year's target levels in the context of a long-term goal (Question 4.1<sup>19</sup>). It assesses cost-effectiveness in execution (Question 4.3<sup>20</sup>).

From viewpoint of Gilmour and Lewis (2005), Self-Assessment of Budgetary Programmes is similar to the PART in that it may lead to goal displacement when procedures overwhelm goals. The checklists include two sections which measure procedures other than performance: Planning and Management. These sections are devoted to assessing mainly the extent to which programmes prepare well-organized documents for implementation. When programmes have goals which are hard to measure, their goals may be displaced by their operation procedures. For example,

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<sup>19</sup> Has the programme demonstrated adequate progress in achieving its long-term performance goals? (OMB, 2008)

<sup>20</sup> Does the programme demonstrate improved efficiency or cost effectiveness in achieving programme goals each year? (OMB, 2008)

SABP does not have a classification ‘Results Not Demonstrated’ (or RND), for use when it cannot identify programme performance because of inappropriate performance indicators. In these programmes, such a goal displacement may be accelerated. This may allow Korean performance budgeting to distort budget allocations. Some argue that SABP should be modified to produce an RND (Park, 2006).

Many a score may not reflect genuine performance, because SABP does not classify programmes as RND. As stated earlier, scores of programmes depend heavily on a performance plan, due to the chain-link between questions. When a programme does not develop an appropriate performance indicator, it earns, at best, 70 points, the grade ‘Modest’, regardless of its actual performance. During 2005-2007, SABP assessments suggested that almost one in two programmes did not develop an appropriate performance indicator.

Spending ministries and agencies appeared to exhibit leniency in assessing programmes. Indeed, they make little distinction of SABP scores and grades between programmes. As seen in Table 3-9, spending ministries and agencies on average assess performance 26 points higher than the MPB, and their scores show less variation than the MPB’s.

Table 3-9 Means and Standard Deviations of SABP scores (2005-2007)

	Mean	Std. Deviation
Spending ministries and agencies	88.23	10.27
MPB	62.05	13.18

Notes: 1) Spending ministries and agencies present their scores before the MPB reviews, and the MPB’s are the scores which the MPB reviews.

2) Source: MPB (re-cited Park, 2006).

Self-Assessment of Budgetary Programmes needs to reflect the opinions of the National

Assembly. In Korea, the National Assembly determines budget allocations for the various programmes every year. It depends heavily on the National Assembly whether or not SABP results are eventually reflected in budgeting. When conducting SABP, the MPB and spending organizations, at present, tend to have no collaboration with the National Assembly. They only have to discuss the results of SABP with the relevant commissions or sub-commissions of the National Assembly, when they have completed SABP. To allow SABP to produce pieces of performance information which the National Assembly wants, the National Assembly has to be involved in the process of SABP. The executive branch is required to build networks with the National Assembly so that it can discuss the considerations for SABP assessments in good time.

Despite of these limitations, SABP may be the process which enables budget makers or programme managers to understand the overall status of the planning, management and results of programmes. However, it needs to continue improving its checklists and operation mechanism, so that it can produce the necessary information for the process of budgeting.

### **3.4 Impacts of Korean Performance Budgeting**

In discussing the impacts of performance budgeting in Chapter 2, this research noted that they tend to vary depending on the different individual models of the system (Curristine, 2005). Since the Korean government conducted its pilot project for performance budgeting in 2000, it has evolved a Korean model of performance budgeting, taking the political and administrative environment into account. As a

consequence, Korean performance budgeting may have aspects that make it distinct from other models of performance budgeting.

### **3.4.1 Overall Impacts on the Korean Central Government**

Performance budgeting, as discussed earlier, has the key objective of improving organizational performance. With this objective in mind, the Korean central government installed the system in order to remove inefficiency in government operations, especially in public finance.

It has been widely argued that the pilot project for performance budgeting, known as Performance-Oriented Budgeting (2000-2002), did not improve efficiency in public spending. It failed to link public funding to performance information. An annual performance plan and report did not have the hoped-for result of producing various kinds of performance information helpful to budget decision makers. This caused them to neglect the system in the process of budgeting. Furthermore, because Performance-Oriented Budgeting was applied only to ‘major’ programmes (budget  $\geq$  one billion Won), it was always going to end up as something that affected only certain divisions, not the work of entire ministries and agencies. In the end, it did not attract senior management’s attention (Jun, 2003; Jun and Park, 2002). Chung (2003) proposed that it had little relationship with performance.

In 2003, the Performance Management System which replaced Performance-Oriented Budgeting was introduced for all the budgetary programmes of the 22 ministries and

agencies. However, because it had the same weakness as its predecessor in terms of the performance information it provided, it failed to improve the links between performance information and budget allocation (Chin, 2005). Few researchers argued that Korean performance budgeting – the Performance Management System – had had a positive effect on improving public finance.

In response to the criticisms, the MPB added Self-Assessment of Budgetary Programmes (SABP) to Korean performance budgeting in 2005. This was aimed at strengthening the links between budget allocations and performance information. It tended to provide a greater variety of performance information for budget decision makers than its predecessors. After the arrival of SABP, some researchers argued that Korean performance budgeting had begun to have some impact on the management of public finance. In its survey of central government administrators, the NABO (2006b) found that 70% of respondents perceived that SABP made some contribution to improving the performance of spending ministries and agencies. The MPB (2006a) reported to the Presidential Advisory Commission that, when supported by SABP, Korean performance budgeting strengthened the links between budget allocations and performance information. The links enabled Korean performance budgeting to contribute to enhancing efficiency (or effectiveness), transparency, and accountability in public expenditure.

In addition, the Korean government expected that Korean performance budgeting would improve fiscal transparency (MPB, 2003; Jun, 2003; Jun and Park, 2002). Spending ministries and agencies provide performance information on public expenditure on their

websites. For example, the SABP results are available on the websites of the MPB, the Office of Policy Coordination, and the spending ministries and agencies. The results facilitate citizens' access to public finance information, and taxpayers are informed of where and how the government has spent public funds (Nah, 2005). As a result, the system can help enhance the transparency of operations that involve public resources.

The Korean government anticipated that Korean performance budgeting would create and extend a performance-focused culture throughout the government, and that it would encourage programme managers to manage their programmes in a results-focused way, instead of an input-focused way (MPB, 2003; Jun, 2003; Jun and Park, 2002). Indeed, the MPB (2006a) has argued that Korean central administrators have now changed to a more performance-focused way of managing programmes, and that, furthermore, among public servants and throughout the government, there is a growing belief that performance measurement is required for achieving the budget. In order for Korean performance budgeting to have an effect on government operations, cultural changes are required; but these are not easy to achieve. Rather, it should be a long-term challenge (Curristine, 2005b).

More practically, Korean performance budgeting, as the GAO (2005) argued for the PART, may improve administrators' ability to assess budgetary programmes. As the uses of SABP results are extended<sup>21</sup>, spending ministries and agencies are making an increasing effort to elaborate performance indicators for their programmes. They have also strengthened administrator training in performance budgeting. This may result in

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<sup>21</sup> Some ministries or agencies have extended the use of SABP results into personnel performance evaluations.

enhancing their capacity to assess programmes (MPB, 2006a).

Nonetheless, arguments have been advanced that Korean performance budgeting has had little impact on performance. Some administrators have insisted that it can create additional workload without improving the performance of government activities. However, there have not yet been many studies – either qualitative or quantitative – of its impact over time (Chung, 2003; Koh, 2002).

### **3.4.2 Impacts on Budget Allocations**

Performance budgeting represents an attempt to change resource allocation in public finance. On the basis of performance, it seeks to create a new budget portfolio. In order to do this, an increasing number of governments have recently associated budget decisions with performance information. Nonetheless, many governments use it, at most, to display performance information in budget request documents. Korean performance budgeting, however, makes clear its intention of linking performance to the budgets of programmes which SABP has rated ‘Poor’. Indeed, when proposing budgets, the MPB has reduced those of programmes which SABP has assessed as ‘Poor’. The size of the reduction for the budget year 2006 was 25%, the reduction in 2007 was 24%, and the reduction for 2008 was 15% (Park, 2008).

It has been suggested that Korean performance budgeting tends to link budget decisions with performance information. This means that Korean performance budgeting might

lead to changes in the amounts of budgets allocated among programmes. Examining the relationships between budget growth and SABP grades, Park (2006) proposed that performance information has affected budget allocations. In particular, he suggested that for programmes graded 'Poor' there has been a close relationship between fund allocation and performance in the three stages of budgeting: request, proposal, and budget. However, his suggestions are limited in the extent to which they can be generalized, because he analyzed only a third of the programmes which had been assessed by SABP.

### **3.4.3 Impacts on Managerial Practices**

At the initial stage, performance budgeting tends to concentrate on producing useful information. As it evolves, it places an emphasis on behavioural and cultural changes. As discussed in Chapter 2, interacting with administrators inside organizations, performance budgeting may have various effects on the management activities of governments: e.g. those of finance and personnel (Giddens, 2007). While adjusting to performance budgeting, public administrators may change behaviours and culture in managing public finance and programmes.

The Korean performance budgeting model uses checklists which consist of 16-18 questions for assessing the three sections of budgetary programmes: planning, management, and results. The checklists cover potential issues which can arise in the life-cycle of a programme. In order to achieve high scores according to SABP,

programme managers may be willing or reluctant to adjust their management activities to match questions on the checklist. More specifically, the checklists are devised to assess various programme-managerial practices, such as the setting of a programme's objective and design; strategic planning; the measurement of performance; and the management of programmes.

As a result, the checklists, as evaluation indexes, tend to induce programme managers, as the assessed, to adjust their programme-managerial practices to match the questions on the checklist. As an example, Question 1-5 of the checklist asks programme managers whether or not their programmes have clear performance objectives. In answering 'Yes', they are forced to think through their programme's goals. In addition, SABP may trigger the formalization of a programme's operation procedure, because it requires evidence, such as documents, for a 'Yes'. As the area of SABP use expands from budgeting to organizational evaluation and personnel evaluation, spending ministries and agencies are tending to place an emphasis on changing their practices.

In practice, the MPB has prompted spending ministries and agencies to shift their management activities from input-oriented to results-oriented approaches. Park (2008) argued that spending ministries and agencies not only used SABP results in budgeting, but this also led to changing their management practices. He presented as evidence a programme which assists unemployed low-income families. The programme has changed from channelling assistance through a single provider to using several providers. Although Park has not shown the causal relationship of its strategic changes with SABP, this is expected to create a competitive atmosphere between providers

which may result in a reduction of costs.

In the end, this process may result in changing programme-managerial practices. However, the changes in processes are too complicated and varied to be expressed in a single definition. It is not yet evident that performance budgeting has changed managerial practices within Korean government because no research into this has been undertaken.

### **3.5 Conclusion**

Current performance budgeting in Korea forms a fundamental framework, developing what was started in the pilot project on Performance-Oriented Budgeting. Korean performance budgeting is underpinned by two laws: the National Finance Act (NFA) and the Government Performance Assessment Act (GPA). On the basis of the authority which it derives from the two laws, the MPB may evaluate budgetary programmes and reflect the assessments in its budgeting activities. It asks spending ministries and agencies to assess their programmes according to SABP, and to use the assessments in making budgetary decisions.

Korean performance budgeting has three main instruments for assessing programmes: the PMS, SABP, and the IES. The Korean Programme Management System (PMS) was designed in 2003 on the basis of the country's experience of the pilot project. In order to strengthen the link between budget decisions and performance, Self-Assessment of Budgetary Programmes (SABP) was added in 2005. An In-depth Evaluation System (IES) has been used to evaluate major programmes since 2006.

Indeed, SABP plays a core role in producing performance information for budgeting. Over the course of three years, SABP was used to assess 1717 programmes. It provided various kinds of performance information for budget makers, and there is some evidence that budget makers have used it for making budget decisions. In particular, by introducing a top-down budget allocation strategy, under which the MPB has tended to give individual ministries and agencies a higher degree of budgeting autonomy whilst strengthening responsibility for results, the MPB uses SABP as an instrument for reviewing and screening the budget requests which spending ministries and agencies make under the top-down strategy. Furthermore, the results of SABP are directly reflected in ministries' and agencies' performance evaluation<sup>22</sup> each year.

As a consequence, Korean performance budgeting has developed a high profile, attracting the attention of senior management throughout Korean central government. The MPB reduced by more than 10% the budgets of programmes which SABP had rated 'Poor'. Additionally, it is argued that Korean performance budgeting has been changing programme-managerial practices. The MPB argued that Korean performance budgeting has been implemented in a way that is both stable and successful, and that it has contributed to improving government operations.

However, there are opposing views on the impact of Korean performance budgeting. Some critics have suggested that Korean performance budgeting has produced a lot of extra paperwork without improving government performance. As proponents argue, Korean performance budgeting may have caused spending ministries and agencies to

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<sup>22</sup> According to the GPA, the Prime Minister evaluates ministries and agencies' performance every year and then reports the results to the President. Individual ministries and agencies consult the results with the relevant Committee of the National Assembly.

change their managerial and financial practices. However, these adjustments may produce quite opposite results. For example, spending ministries and agencies may develop inappropriate performance measures. If this is the case, Korean performance budgeting may distort management activities and work against productivity.

At present, there is not enough evidence to decide whether or not performance budgeting in Korea has had a positive effect on government performance and programme performance. Because Korean performance budgeting has a short history, there are few studies that identify its impacts. Without evidence, arguments may only be anecdotes. Impacts are not easy to identify in a quantitative way, because performance measurement is one of the most difficult jobs associated with performance budgeting. At the present time, therefore, it may not be reasonable to conclude that the system has had particular impacts on public finance in Korea.

Fortunately, however, SABP can provide numeric scores which represent programme performance. At least, this technique makes it possible to identify how performance information is utilized in the budget process. Furthermore, what is required now is to identify whether it has an effect on programme-managerial practices and performance, in order to explore the right direction for Korean performance budgeting.

## **CHAPTER 4 RESEARCH METHODOLOGY**

### **4.1 Introduction**

As described in Chapter 2, a performance budgeting system exists in a variety of forms, depending on the circumstances of different countries at different times. A key example is the Performance Budget recommended by the Hoover Commission in the United States, as well as the Planning-Programming-Budgeting System (PPBS), Zero-Based Budgeting (ZBB), and other techniques.

This variety of forms causes some difficulty in discussing the effects of performance budgeting. Robinson & Brumby (2005) stated that what researchers should be describing is not the efficacy of performance budgeting in general, but that of specific forms of performance budgeting. Indeed, there has been a wide range of arguments about what impact performance budgeting has had on government operations. Therefore, this thesis concentrates on testing the outcomes of the Korean model of performance budgeting. There are few empirical studies on the efficacy of Korean performance budgeting, because of its short history.

In this context, this thesis aims to identify how Korean performance budgeting changes programme performance, simultaneously analyzing both the association of budget decisions with performance information and the changes in programme-managerial practices within the Korean central government.

To achieve the objectives, this research employs a quantitative research approach, using budget change rates, SABP assessments, and subjective data collected by a questionnaire survey. The research endeavours to make a graphic analysis on the basis of the author's experience of implementing Korean performance budgeting. The author, who was involved in the installation and implementation of performance budgeting as an administrator of the MPB, has had many discussions and talks with other administrators within spending ministries (and agencies) and with outside experts. SPSS version 17.0 is used for statistical analysis.

This chapter aims to provide a description and an explanation of research methodology employed in this thesis. The next section, 4.2, develops specific research questions based on the preceding discussions. Section 4.3 provides descriptions of instruments for solving the research questions developed in Section 4.2. It demonstrates an analysis framework, and specifically introduces processes and instruments for collecting and analyzing data. Finally, Section 4.4 concludes by summarizing this chapter.

## **4.2 Developing Research Questions**

### **4.2.1 Earlier Studies**

This sub-section summarizes existing studies on performance budgeting in Table 4-1, concentrating on Korean and US performance budgeting since the 1990s.

Chung (2003) made a comparative study of the programme performance and the organizational performance of organizations that implemented performance budgeting during the years 2000-2002 and organizations that did not. Conducting an ANOVA (analysis of covariance) with 117 questionnaires collected from Korean central government administrators, he suggested that Korean performance budgeting did not lead to a significant difference in programme and organizational performance between the two groups of organizations. However, this survey concerned the pilot project on performance budgeting which took place during 2000-2002. The project did not have Self-Assessment of Budgetary Programmes (SABP) added to strengthen the links between budget decisions and performance in 2005. For this reason, Chung's findings are limited in the extent to which they can be generalized to Korean performance budgeting as a whole, as now practised.

In order to identify the effects of SABP, the National Assembly Budget Office (2006b) asked Korean central government administrators several questions about its effects. It found that more than 70% of respondents perceived that SABP had positive effects on government activities. They opined that SABP made a contribution to improving performance. In terms of performance measurement, 72.5% perceived that SABP constituted an appropriate measurement of programme performance. This research, however, has limitations in the extent to which it can yield in-depth insights into the system, because it limited itself to simple descriptive statistics in its analysis of responses to questions.

Park (2006) reported at the 2006 OECD Senior Budget Officials Meeting that the

Korean version of performance budgeting with SABP had had an influence on budget allocation. In his report, he regressed the percentage changes of programme budgets on the SABP grades in the budget year 2006, controlling several factors such as programme size. His study, however, analysed only a third of the programmes which SABP was used to assess, so that it had some limitations in the extent to which it could be generalized to Korean performance budgeting as a whole. In addition, Park (2008) stated that Korean performance budgeting not only produced useful information for budgeting but also changed programme management. However, he did not explore in detail any possible linkage between the Korean budgeting system and changes in managerial practices.

In contrast to the case of Korea, there are many empirical examinations of US performance budgeting systems which have a lot in common with the Korean version (see Table 4-1). Among researchers, there have been mixed arguments about the efficacy of performance budgeting. Jordan and Hackbart (1997) found that 29 out of 45 states (64.4%) agreed that performance achievement had had an influence on the Governor's budget recommendations. Melkers and et al. (1999) reported that 7.5% of state budget officers perceived that performance measurement had an effect in changing budget allocations. These researchers analysed subjective survey data collected from civil servants working for state or federal governments, because of the lack of availability of performance information.

Table 4-1 Summary of existing studies on public performance budgeting

Date (empirical work)	Author	Level of Government	Nature of Study	Findings
1. U.S studies				
1999-2000	Melkers, Willoughby and et al.	State and Local	Survey of state budget offices, state agency officials, and budget officers and department heads of city and county governments	The percentage of respondents who asserted that performance measurements were 'very effective' or 'effective' in changing budget appropriations were 7.5%(state budget officers), 24.2% (state agencies) and 16.9%(city/county respondents)
1997	Jordan & Hackbart	State	Survey of executive budget offices	29 out of 45 states agreed that 'achievement of performance standards affects recommendations in the Governor's Executive Budget.'
1997	Poister and Streib	Local	Survey of city government	60% of respondents reported moderate or substantial changes in budget allocations as an impact of performance measures.
1999	Flowers, G. et al.	Local	Semi-structured interview with administrators in Florida	Implementation of performance-based budgeting was affected by agent characteristics. A 'One-size-fits-all' approach to performance-based budgeting caused delays and conflicts in the implementation process.
2. Korean studies				
2003	Chung	Central	Survey of civil servants	Korean performance budgeting did not make a difference to performance of programmes and organizations.
2004 and 2005	Gilmour and Lewis	Federal	Regression analysis using PART scores for the FYs 2004, 2005	The total PART scores had an impact on budget allocations within the OMB, but the 'results' component scores of the PART had a smaller impact than that of the other components related to programme procedures.
2006	NABO	Central	Survey of civil servants	SABP made a contribution to improving performance of programmes, and measured performance appropriately. 70% of respondents reported that SABP helped make moderate improvements in programme performance.
2006 and 2008	Park	Central	Regression analysis and qualitative analysis	Korean performance budgeting had impacts on budget allocation between programmes, especially small-sized programmes. However, he analysed only a third of programmes which were assessed by SABP (2006). Korean performance budgeting had an effect on changing programme management to improve the 'effectiveness of service delivery' within spending ministries and agencies (2008).

Source: Added to and modified from Robinson, M & Brumby, J. (2005, IMF Working Paper).

Note: The American performance budgeting examined in the table was limited to recent models of performance budgeting since the 1990s.

On the other hand, using the numeric scores that were produced for individual programmes by the Program Assessment Rating Tool (PART), Gilmour and Lewis (2005, 2006) twice investigated the extent to which US performance budgeting affected budget allocation. They concluded that ‘the PART scores have a statistically significant impact on budget decisions within the OMB’, and that ‘the “results” component of the PART has a smaller impact on budget decisions than the “program purpose” component’. Their studies did not describe its contribution to improving programme performance, the dynamic process of the changes in budget decisions, and what impacts the PART had had on budget decisions within spending agencies and the National Assembly.

Studies, as summarized in the table, had a central focus on the performance budgeting system itself, and so tended to miss analyzing the effects of the system on specific government processes, such as budgetary programme management. In particular, although, by using various kinds of information produced by SABP, Korean performance budgeting was reported to show small signs of linkage between budget decisions and performance, there is a lack of evidence on whether it makes significant contributions to improving government operations such as programme-managerial practices and programme performance, as discussed in Chapters 2 and 3.

Along with identifying the links between budget decisions and performance, studies should not neglect to analyse the relationships of performance budgeting models with managerial practices, in order to identify the effects of performance budgeting on programme or organizational performance.

#### 4.2.2 Research Questions

The key intentions of performance budgeting are, as discussed in the previous chapters, to assess programme performance and link it to budget decisions. Even though it is not easy, many governments have tried to develop techniques aimed at measuring programme achievements quantitatively. Most governments, in particular those of the US and Korea, have recently concentrated on strengthening links between budget decisions and performance.

Similarly to other models of performance budgeting, Korean performance budgeting assesses budgetary programmes and then utilizes the assessment results in the process of budgeting. In order to measure programme performance, the Korean government developed SABP in 2005. The system enables programme managers to assess major issues raised in the process of programme implementation, from programme design to results feedback, and to translate the assessment results into numeric scores.

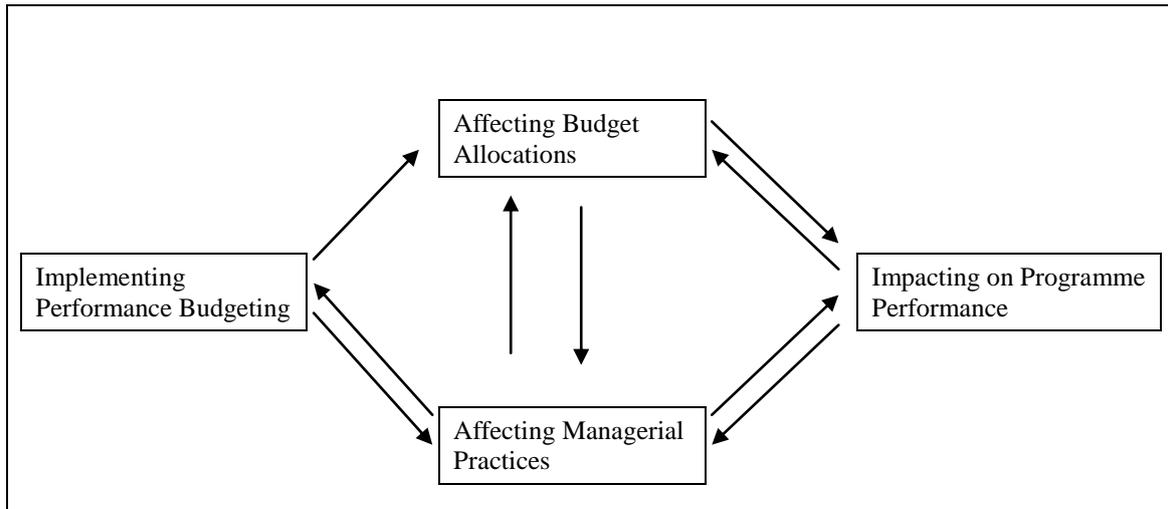
In the process of budgeting, budget makers utilize the performance information produced by SABP directly or indirectly, and partly or totally. That is, SABP scores are linked with budget allocations between programmes. In practice, the Ministry of Planning and Budget (MPB), the Korean finance authority, announced that it would use SABP results for restructuring the budgetary programmes of spending ministries and agencies in the budget process. Furthermore, the MPB asked spending ministries and agencies to make a reduction of more than 10% in the budgets of programmes which SABP rated as 'Poor' (Budget request guidelines, 2006-2008). In addition, the Korean

government uses SABP assessments for evaluating ministries' and agencies' performance (compulsory). Several ministries and agencies use SABP for personnel performance evaluation (optional).

As a result, it is presumed that performance budgeting will have an impact – negative, positive, or even neutral – on government management, although it is hard work to integrate budget decisions with performance (Curristine, 2005b). Not only may performance budgeting have an impact on key public management functions and components, but it may also change the very nature of policy and management in the public sector (Bouckaert and Halligan, 2008). More specifically, the integration of budget decisions with programme performance is expected to change budget allocations, programme-managerial practices, and eventually programme performance within spending ministries and agencies.

Based on these discussions so far, Figure 4-1 illustrates the impact paths of performance budgeting on programme performance. The links, in particular direct links, are expected to facilitate the reallocation of programme budgets according to programme performance. From Giddens' structuration perspective (2007), administrative actors have incessant interactions with a performance budgeting system while they implement it. These interactions may cause administrators to adjust their managerial practices related to programmes, finance, human resource, and so on.

Figure 4-1 Impact process of performance budgeting



Source: Adapted from Flowers et al. (1999)

Thus, as illustrated in Figure 4-1, Korean performance budgeting is expected to have an influence on management activities in relation to programmes. Firstly, it may change a range of programme budgets by associating budget decisions with SABP assessments. It may produce a ‘budget re-allocation effect’ from lower-performance to higher-performance programmes. The budget re-allocations between programmes may have an influence on performance. For example, programmes may be more efficient, in the sense that they may reduce cost per unit of output, if the re-allocations reduce wasteful budgets.

The Korean performance budgeting system may trigger modification of existing managerial practices, or even create new practices, in terms of the interaction between an institution and its actors, as described in Chapters 2 and 3. In particular, by assessing the results of individual programme management in an item-by-item manner, the introduction of SABP has a greater possibility of producing changes in managerial practices. In order to achieve a higher score, programme managers may be forced to

adjust their managerial practices in accordance with SABP standards such as checklists. In turn, such adjustments may change the performance of programmes or organizations. For example, spending ministries may reduce programmes that have proved difficult to implement, because SABP assesses the extent to which programmes have spent the budgets allocated in the budget process (checklist Question 2-2). In order to answer 'Yes' to Question 2-2, programmes are required to spend their budgets as planned. Performance budgeting may, therefore, prevent spending ministries and agencies from requesting excessive budgets. In addition, the publication of SABP assessments may put pressure on programme managers to adjust managerial practices regarding programme management (Park, 2008).

As a consequence, it is expected that adjustments of management activities such as budget allocations and managerial practices may affect programme performance. However, it is not evident whether such adjustments have contributed to improving performance of programmes or government operations. Korean performance budgeting may produce unintended reactions as a result of inconsistencies between different participants in the way they supply information on their programmes. Spending ministries and agencies, having more information about programmes than the MPB, may be able to distort their responses in assessing programme performance (Smith, 1995; Keaney, 2001; Park, 2006). For example, programme managers have a tendency to overstate their programme performance in order to receive as large a budget as possible. As a result, the assessment may not measure genuine programme performance.

SABP may produce goal displacement due to various performance measurement

problems. The goals of public programmes are so ambiguous or intangible that their outcomes are not easy to measure (Warner and Havens, 1968). Alternatively, public programmes are likely to be evaluated according to their outputs. For example, road building programmes tend to be measured by Km of road extension (output), instead of by the reduction in the expense of transport per Km achieved by the road extension (outcome). The output measurement tends to give programme managers an incentive to maximize outputs, regardless of whether the social outcome is desirable (Bohte et. al., 2000). As Lynn (1998) indicated, performance measurement in the public sector causes spending ministries and agencies to give more attention to procedures than to results or performance, because it is easier to measure the former than the latter.

In a sense, direct links between fund allocation and programme performance in Korean performance budgeting may, on occasion, act to reduce programme performance. For instance, if a programme does not achieve goals due to under-spending its budget, its subsequent budget reduction may result in accelerating its disadvantages rather than advantages. An unpredicted increase in the inflow of residents can mean that the number of police becomes inappropriate for securing the safety of a community, and this can cause an increase in crime. In this case, budget reduction may bring about decreasing inputs of police, and in turn lead to increasing crime in the community.

In the end, it is not reasonable to propose that Korean performance budgeting has contributed to improving programme performance without specific evidence. Here, the research raises basic questions of what contributions Korean performance budgeting has made to improving budgetary programmes. In particular, this research aims to identify

the impacts of Korean performance budgeting on programme performance, focusing on budget allocation changes among programmes and programme-managerial practice changes in the Korean central government which require further studies. To do so, the following research questions are examined:

(1) To what extent has Korean performance budgeting influenced budget allocations among spending programmes?

1.1) Does Korean performance budgeting change budget allocations at the three budget stages (request, proposal, and budget)?

1.2) At what grades of SABP ('Poor', 'Modest', 'Somewhat effective', or 'Effective') does the budgeting system have the most impact on budget decisions?

1.3) In what components of SABP scores does the budgeting system have the greatest impact on budget allocations (Planning, Management, and Results)?

1.4) Does the budgeting system make a difference in impact on budget allocations depending on programme characteristics?

(2) What are the effects of Korean performance budgeting on programme-managerial practices and programme performance?

2.1) What kind of managerial practices does Korean performance budgeting affect? This research is limited to explaining changes in seven practices: goal setting, budgeting, operation procedures, and support from higher management, taking SABP checklists into account.

2.2) What are the significant differences in changes to managerial practices depending on differences in organizations, uses of SABP assessment, and programme characteristics?

2.3) What are the significant differences in the extent to which changes in individual practices affect programme performance. Furthermore, this study identifies differences in the kinds of practices which affect programme performance between ministries and agencies.

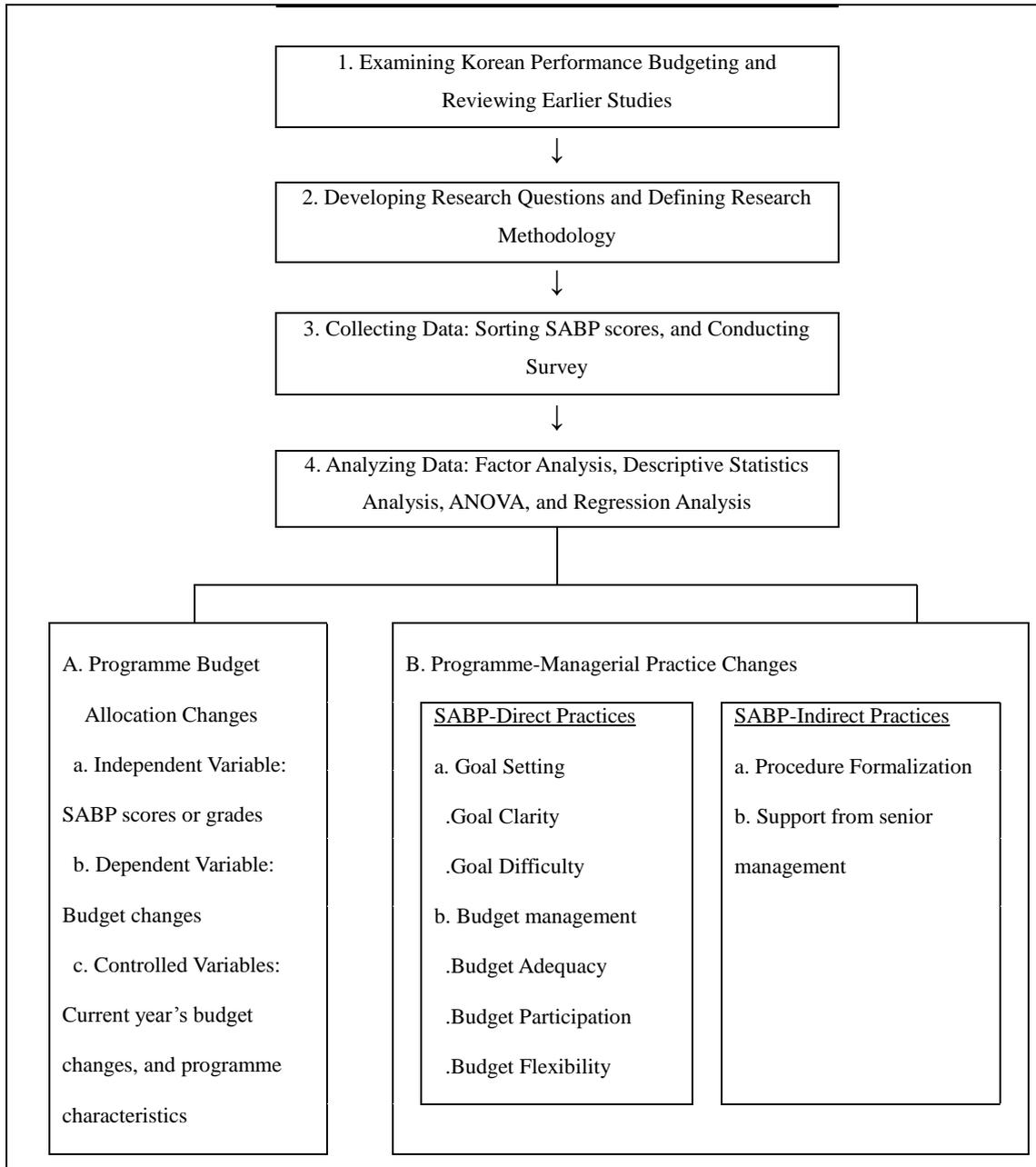
## **4.3 Methods of Analysis**

### **4.3.1 Analysis Framework**

The purpose of this research is to identify the impacts of Korean performance budgeting on programmes. Reviewing earlier studies of the impacts of performance budgeting in the public sector, the author defines two fundamental research questions focusing on budgetary programmes: (1) Did Korean performance budgeting have an impact on the programme budgets of the central government? (2) Did Korean performance budgeting affect managerial practices within spending ministries and agencies? Figure 4-2 depicts the framework of analysis for solving these questions.

Firstly, in order to identify possible changes in programme budgets brought about by Korean performance budgeting, the research examines the relationship between budget variations and assessment results by means of regression analysis. The assessment results are SABP scores or grades of programmes, and the budget variations are expressed as percentage changes for programmes in the three stages of budgeting (request, proposal, and budget).

Figure 4-2 Analysis framework



The current year's budget percentage changes to programmes are added to the models, because these are widely believed to affect budget decisions. These models control factors other than the assessment results for improving the accuracy of the models. Taking into account that, as noted in Chapter 3, programme groups have different characteristics in SABP scores and budget changes, controlled variables consist of:

method of programme management (direct or indirect), programme budget size (small or large), type of organization which the programmes belong to (ministry or agency), and type of programme mission (social welfare- or economy-related programmes).

In order to examine changes in programme-managerial practices within spending ministries and agencies, the research conducts a survey of the managerial practices of Korean central government administrators. As will be defined later, seven managerial practices which may affect programme performance are selected. These seven practices are closely related to SABP. Depending on the characteristics of SABP impacts, they can be divided into two groups: 'SABP-direct' and 'SABP-indirect' practices. SABP-direct practices are: programme goal clarity, programme goal difficulty, programme budget adequacy, programme budget participation, and programme budget flexibility. SABP-indirect practices are: extent of the formalization of programme operation procedures, and support from senior management. SABP-direct practices are affected more directly by SABP compared with SABP-indirect practices. For example, programme goal clarity and difficulty may be directly influenced by the SABP checklists related to goal setting in the section 'Planning' (Questions 1-5, 1-6, and 1-7). Procedure formalization may result from evidence-centric assessment in SABP which requires proper evidence, such as formal documents, for an answer 'Yes'.

This analysis measures the extent to which Korean performance budgeting has made a contribution to improving programme performance by conducting a survey of central government administrators.

In order to analyse the data collected from the survey, the research employs factor

analysis, descriptive statistics analysis, analysis of variance (ANOVA), and regression analysis. Using factor analysis, this study establishes the reliability of data collected from the survey. The descriptive statistics analysis describes the strength of the impact of Korean performance budgeting on individual factors and programme performance. ANOVA explains whether or not programme or organizational types, and the uses of SABP results make significant differences in managerial practice changes. Regression analysis of perceived programme performance to managerial practices examines which changes to programme-managerial practices affect programme performance, and what difference these make to the strength of the impact of individual practices on programme performance.

Hereafter, the author provides specific descriptions of the methods of analysis and, for convenience, these are divided into two parts: analysis of programme budget allocation changes; and analysis of programme-managerial practice and programme performance changes.

### **4.3.2 Analysis of Budget Allocation Changes**

#### **4.3.2.1 Constructing a Model**

This section provides a method for analysing the extent of any relationship between programme budget decisions and performance. It aims to construct regression models for analyzing how Korean performance budgeting has associated programme-budget decisions with performance. When constructing models, this research considers

elements of the budget decision-making procedure and participants' behaviour in Korea.

For the budget decision procedure in Korea, the Administration submits budget proposals to the National Assembly. In making their proposals, spending ministries and agencies present their requests to the MPB, which is the financial authority. The MPB reviews the requests and makes final proposals for the spending organizations. Based on the proposals which the Administration submits, the National Assembly makes the final budget appropriations.

Although there are many items to be considered in the budgetary process, decision-makers give strong consideration to percentage changes in budgets. Spending organizations try to expand their budgets by a certain percentage each year. The Korean financial authority and the National Assembly are interested in the budget growth rates for certain agencies and programmes (Yoon, 1993; Nah, 1992; Shin, 1991). Wildavsky et al. (1966) suggest that the previous budget and the Administration's proposals can affect the budget decision-making of the Administration and the Congress in the US government. Additionally, the Korean government may take into account programme performance when budgeting.

The budget decision process described above can be represented as simple equations. The budget request or the budget proposal can be stated as a function of the previous budget ( $\Delta\text{Budget}_t$ ) and programme performance ( $\text{Performance}_t$ ), considering other factors ( $D_r$  or  $D_p$ ) which may affect the budget decision.

$$\Delta\text{Request}_{t+1} = a + b \text{Performance}_t + c \Delta\text{Budget}_t + d D_t + e \dots\dots\dots (1)$$

and

$$\Delta\text{Proposal}_{t+1} = f + g \text{Performance}_t + h \Delta\text{Budget}_t + i D_p + j \dots\dots\dots (2)$$

The final budget appropriation in the National Assembly can be represented as a function of the budget proposal, considering other factors ( $D_n$ ) which may affect the budget decision.

$$\Delta\text{Budget}_{t+1} = k + l \Delta\text{Proposal}_{t+1} + m D_n + n \dots\dots\dots (3)$$

From the equations (2) and (3), the equation (3) is replaced by the equation (4) below.

$$\Delta\text{Budget}_{t+1} = o + p \text{Performance}_t + q \Delta\text{Budget}_t + r_k D_k + s \dots\dots\dots (4)$$

The three equations (1), (2), and (4) can be re-labelled, as below.

$$\Delta\text{Budget}_{it+1} = \alpha + \beta_1 \text{Performance}_t + \beta_2 \Delta\text{Budget}_t + \beta_{3k} D_k + \varepsilon \dots\dots\dots (5)$$

Where  $\Delta\text{Budget}_t$  means programme budget (request, proposal, or budget) percentage changes between the budget year t-1 and t.  $i = 1, 2, \text{ or } 3$ , indicating the three stages of budgeting. ‘ $\text{Performance}_t$ ’ means programme scores or grades which are SABP rated for programme results of the year t.  $D_k$  means six dummy variables, as controlled variables ( $k = 1, 2, 3, 4, 5 \text{ or } 6$ ).  $\alpha$  and  $\beta$  are a constant and regression coefficients. Finally,  $\varepsilon$  denotes an error term.

In the equation (5),  $\Delta\text{Budget}_{it+1}$ , a dependent variable, represents budget (request,

proposal, or budget) percentage changes (%) in the t+1 budget year (2006, 2007, and 2008) in the budget stage i (i = 1, 2, or 3);  $\Delta\text{Budget}_{1t+1}$  symbolizes percentage changes in the budget requests of programmes within spending ministries or agencies,  $\Delta\text{Budget}_{2t+1}$  means budget proposal percentage changes within the MPB, and  $\Delta\text{Budget}_{3t+1}$  means percentage changes of budgets appropriated by the National Assembly. Aiming to identify the extent to which Korean performance budgeting has had an impact on budget allocations between programmes, this research uses the rate of changes (%) instead of the absolute amount of changes. For example, in the budget year 2006, budget percentage changes are (2006 programme budgets - 2005 programme budgets) / 2005 programme budgets \* 100.

In terms of independent variables, 'Performance<sub>t</sub>' symbolizes scores, grades, or three kinds of component scores of programmes which SABP rated for in the year t. Basically, these models use SABP scores. Taking into account that the MPB has imposed a budget reduction of more than 10% on programmes which are rated 'Poor' according to SABP scores, this model utilizes grades as well. Considering that SABP grades are ordinal data, they are dummyized (1, 0). To identify differences in the impact of the three individual SABP components on budget allocations, component scores are analysed.

$\Delta\text{Budget}_t$  represents budget percentage changes (%) for the budget year t when SABP is used to assess programmes in order to produce the budget documents for the t+1 budget year. Incrementalists have proposed that budgets are more affected by the current year's budgets than other factors. If this view is accepted, the current year's budgets are one of the critical factors which affect budget decisions. In the budget year 2005,  $\Delta\text{Budget}_t$

means budget changes from the budget year 2004 to 2005.

$D_k$  ( $k = 1, 2, 3, 4, 5, \text{ or } 6$ ) are dummy variables representing 0 or 1. Taking into account that different programme groups have different SABP scores and budget changes, this model needs to control these factors so that they do not affect the results of the regression analysis. Different programmes construct different stakeholders. They formulate diverse political powers to affect fund distributions in the process of budgeting. The types of organization which programmes are installed in may have an influence on budget decisions. Budget bargaining power can vary, depending on the hierarchical level of the ministries and agencies. For example, agencies, even though they are independent in many ways, are controlled by the ministries they report to. Ministries are expected to be less affected by SABP assessments than agencies. In addition, during the years 2005-2007, the period being analysed, the Korean administration placed a policy emphasis on strengthening social welfare systems, because it needed to build a social safety net after the Asian foreign exchange crisis of 1997. So, it can be expected that social welfare-related programmes were less affected by SABP scores than other programmes.

$D_1$  and  $D_2$  indicate 'social welfare-related programmes' and 'economy-related programmes' respectively. According to their main purposes, programmes can be categorized, and these divisions, in general, depend on the UN's classification of the functions of governments (COFOG) based on government expenditure purpose: general public services, defence, public order and safety, economic affairs, environmental protection, housing and community amenities, recreation, culture and religion, health,

education, and social protection.

Indeed, the ministries and agencies of the Korean central government, although they may belong to a small, somewhat mixed zone, do have one primary purpose which can be categorized by the UN's classification. For example, the Ministry of Health and Welfare, the Ministry of Labour, the Ministry for Gender Equality, and the Commission for Youth are primarily concerned with health and social protection. The Ministry of Finance and Economy, the Ministry of Science and Technology, the Ministry of Agriculture, the Ministry of Commerce and Energy, the Ministry of Information and Communication, the Ministry of Construction and Transportation, the Ministry of Maritime Affairs, and the Small and Medium Business Administration are concerned with economic affairs<sup>23</sup> For the convenience of classification, 'welfare-related programmes' and 'economy-related programmes' are divided, according to which ministry or agency the programmes belong to. 'Welfare-related programmes' are defined as a group of programmes housed in the four ministries or agencies for health and social protection; 'economy-related programmes' is a group of programmes belonging to the eight ministries or agencies for economic affairs (Bang, 2008)<sup>24</sup>.

D<sub>3</sub> and D<sub>4</sub> are programme groups which depend on programme management types. The programmes of the Korean central government belong either to a ministry or to an agency (D<sub>3</sub>). Indicating a group of programmes which belong to ministries,

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<sup>23</sup> The Commission for Youth, the Ministry of Information and Communication, and the Ministry of Maritime Affairs, Ministry of Science and Technology were absorbed into the Ministry of Health and Welfare, the Ministry of Commerce and Energy, and the Ministry of Agriculture, Food, and Maritime Affairs respectively in 2008.

<sup>24</sup> Gilmour and Lewis (2006), in an analysis of the PART, grouped programmes in order to measure a programme's political content according to 'what department houses the programme'.

‘programmes belonging to ministries’ is a dummy variable (1, 0). If a programme belongs to an agency, it has the value 0. Also, programmes are implemented either by central government or by other organizations ( $D_4$ ). ‘Programmes managed directly by government’ includes programmes which the Korean central government implements directly. They have the value 1. Out of the seven programme types assessed by SABP, ‘SOC programmes’, ‘Capital Acquisition programmes’, and ‘Other Direct programmes’ are included in ‘programmes managed directly by government’, the remaining four types (‘Loan programmes’, ‘Investment programmes’, ‘Subsidy to Local Government programmes’, and ‘Subsidy to Private Sector programmes’) are implemented by the other organizations (Park, 2006).

$D_5$  and  $D_6$  are dummy variables for representing programme size.  $D_5$  is a dummy for ‘small programmes’ and  $D_6$  for ‘large programmes’. The budget size may make a difference to the impact of SABP on budget allocations. In Gilmour’s & Lewis’s view (2005), large-sized programmes are expected to be less affected by SABP than small-sized programmes, because large-sized programmes are, in general, well-established and have important ‘constituencies’ and ‘long histories’. Programmes can be grouped according to their budget size. Based on the quartiles, ‘small programmes’ are operationalized as programmes in the first quartile, and ‘large programmes’ are programmes in the fourth quartile. In this analysis, the four quartiles are divided on the basis of programme budgets for the budget year  $t$ . Programmes in the first quartile are 2.5 billion Won or smaller for ‘small programmes’, and programmes in the fourth quartile are 29.0 billion Won or greater.

This analysis model is similar in spirit to recent works by the GAO (2004), Gilmour and Lewis (2005, 2006), and Park (2006). The GAO (2004) made a regression analysis of budget percentage changes to PART scores. Firstly, putting programmes into three groups depending on their budget size (small, medium, large), it made simple regression analyses of each. Secondly, it replaced PART scores for four component scores of the PART. Adding previous budget changes and controlled variables to the GAO model, Gilmour & Lewis (2005, 2006) constructed their models. They controlled the political attributes of programmes such as programme age, programme size, and programme ideology. Park (2006) modified the models of Gilmour & Lewis (2005, 2006), substituting four grades for numeric scores.

Adjusting the recent works cited above to the Korean context, this research makes use of regression models as described above. The model used here is distinguished from that used by Gilmour & Lewis (2005, 2006) in the sense that it adjusts controlled variables to the Korean context. It is also different from Park (2006), who used SABP grades in his model. This model introduces SABP scores as a main independent variable, instead of SABP grades. Scores have some particular strengths for regression analysis compared to grades. Technically, scores are ratio variables, whereas grades are ordinal variables. As a result, grades tend to lose various kinds of information, so that they put some limitations on regression analysis (Leech et.al, 2008; Bryman, 2004; Hong et.al, 2000).

There are two alternative types of modified models: (1) the data- or function-transformed models, and (2) the independent variable-added models. Firstly, instead of

budget percentage changes, budget change amounts or budget amounts can be considered in the model. For budget amounts, a logarithmic form can be used for reducing the excessive data dispersion. Budget amounts and performance take a logarithmic form<sup>25</sup>. Secondly, the GDP deflator can be considered as an independent variable. However, the estimated results of these alternative models make little difference in correlations between budget decisions and programme performance. Table 4-2 summarizes estimated results for four alternative models using three-year pooled data from the budget proposal. The models are statistically significant at the level of 0.05. In terms of the coefficient of determination ( $R^2$ ), they are similar to the original model. At best, the coefficient is improved to around 0.9 in the logarithmic form. The results indicate that, as with the original model, SABP scores have a positive (+) effect on making budget decisions.

Table 4-2 Estimated results for the models in the budget proposal (three-year pooled data)

Models	Coefficients of independent variables			F-value	Adjusted R <sup>2</sup>
	SABP score	Budget <sub>t</sub>	GDP deflator		
Original model	0.590***	0.052**	-	13.56 ( $p < 0.001$ )	0.067
1. Budget change amounts model	2.589***	0.233***	-	40.64 ( $p < 0.001$ )	0.185
2. Budget amounts model	2.125***	0.919***	-	4072.60 ( $p < 0.001$ )	0.959
3. Log (budget amounts) model	1.019***	1.058***	-	401.041 ( $p < 0.001$ )	0.696
4. GDP inflator-added model	0.586***	0.052**	0.312	12.06 ( $p < 0.001$ )	0.066

Notes: 1. Dependent variable is budget change amount, budget amount, or Log(budget amount) in the year t+1.

2. \*\*\*, \*\*, and \* denote the significance level of 0.01, 0.05, and 0.1 respectively.

<sup>25</sup>  $\text{Log}(\text{Budget}_{it+1}) = \alpha + \beta_1 \text{Log}(\text{Performance}) + \beta_2 \text{Log}(\text{Budget}_t) + \beta_{3k} D_k + \varepsilon$

#### **4.3.2.2 Collecting Data**

This research analysed budget changes and scores (or grades) for 1717 programmes which were assessed using SABP in the fiscal years 2005, 2006, and 2007. In order to test differences in the impact of Korean performance budgeting at each budget stage, the budget percentage changes relate to three stages: requests, proposals, and budgets.

This research collected, principally, programme budget data and SABP grades (or scores) which the MPB and spending ministries and agencies published on their web sites. The research collected data related to budget changes by examining, on the relevant web sites, budget documents for each budget stage. The MPB and the National Assembly both publish budget documents on their home pages. The MPB and spending ministries and agencies have published SABP grades for 1717 budgetary programmes which they have assessed using SABP since 2005. The MPB's and other organizations' web sites all contributed SABP data used in the research; and SABP scores not published on these web sites were provided by the MPB.

#### **4.3.3 Analysis of Managerial Practice Changes**

##### **4.3.3.1 Selecting Variables**

The analysis, in part, aims to identify changes in programme-managerial practices and programme performance. The attributes of programme-managerial practices can be

enumerated in various ways, depending on perspectives as to programme and management. For this analysis, the attributes we shall deal with are confined to programme-performance-related practices on which Korean performance budgeting, in particular SABP, may have a direct or indirect impact. Korean performance budgeting may, as described in Chapter 3, affect and change managerial practices related to programme performance within spending ministries and agencies. For example, because individual questions on the SABP checklists ask programme managers to pre-plan programmes, monitor implementation, and assess results, SABP may have a direct impact on programme management practices.

Earlier management or organizational studies, as discussed in Chapter 2, discuss various factors which affect the programme performance that this research is interested in. From these, for this analysis, seven programme performance factors were selected with reference to the SABP checklists and the experience acquired from the pilot project on performance budgeting: programme goal clarity, programme goal difficulty, programme budget adequacy, programme budget participation, programme budget flexibility, programme operation procedure formalization, and support from senior management. For example, SABP assesses whether programmes have clear and ambitious objectives, using the checklists. This assessment affects goal clarity and difficulty of programmes. Based on the experience of the pilot project of 2000-2002, the MPB redesigned Korean performance budgeting so that it could attract the attention of senior management within spending ministries and agencies. It is expected that Korean performance budgeting will affect support from senior management. Table 4-3 summarizes seven selected variables and their grounds.

Table 4-3 Managerial practice variables and grounds

Components	Variables	Grounds	
		Existing Literatures	SABP Checklist and so on
Goal Setting	Goal Clarity	Hirst (1987), Locke (1968), Likert (1967), Stedry and Kay (1966), Hanson (1966)	Q 1-1, Q 1-5, Q 1-6, and Q 1-7
	Goal Difficulty	Hirst (1987), Locke (1968), Likert (1967), Stedry and Kay (1966), Hofstede (1967), Hanson (1966)	Q 1-1, Q 1-5, Q 1-6, and Q 1-7
Budgeting	Budget Adequacy	Nouri and Parker (1998), Leonard et al. (1995), Miliani (1975), Kenis (1979), Argyris (1953)	Q 1-2, and Q 2-3
	Budget Participation	Nouri and Parker (1998), Merchant (1981), Stedry (1960), Miliani (1975), Hanson (1966), Leonard et al. (1995), Miliani (1975), Kenis (1979), Argyris (1953)	Q 1-2, Q 2-2 and Q 2-4
	Budget Flexibility	Pitsvada (1983), Hanson (1966), Leonard et. al. (1995), Miliani (1975), Kenis (1979), Argyris (1953)	Q 1-2, Q 2-3, and Q 2-4
Others	Procedure Formalization	Dalton et al. (1980), Rogers and Mulnar (1976), Harrison (1974), Rizzo et al. (1970), Hackman and Lawler (1971)	Q 2-1, Q 2-2, and document-evident rule
	Support from senior management	Wart (2003), Sabatier and Mazmanian (1979)	Experience gained from the pilot project

#### 4.3.3.2 Defining and Measuring Variables

To identify the impact of Korean performance budgeting on programme-managerial practices and programme performance, data regarding the seven sets of managerial practices and programme performance were collected by an opinion survey of

administrators working for the Korean central government. This survey measured these eight variables by 35 items in a multiple-item scale way, using a seven-point Likert scale from 1 (very low) to 7 (very high). The multiple-item scale has the advantage of (1) capturing the totality of a broad concept, (2) drawing finer distinctions between people, and (3) reducing misunderstanding about questions, compared to a single question (Bryman & Cramer, 2005). The measured data have their usefulness enhanced by having their reliability and validity tested using statistical techniques.

Programme performance and these seven managerial practices are measured as follows. Table 4-4 presents specific items and their sources depending on these variables. The items were designed to modify slightly questions selected from existing studies, taking the Korean central government context into account. The questions were re-worded in order to help respondents understand them better, after a pilot-test was conducted with 23 administrators in three ministries (or agencies) of the Korean central government: the Ministry of Labour, the Ministry of the Environment, and the Korea Coast Guard, between 17 March, 2009 and 11 April, 2009.

### **(1) Programme Performance**

When it comes to programme performance, a dependent variable, this is operationalized based on the public sector production process model of Figure 2-1 (Rogers, 1990; Chung, 2003). Performance is measured according to six items: (1) The level of customer satisfaction with my programme has increased; (2) The efficiency of my programme has been enhanced; (3) The effectiveness of my programme has been

improved; (4) My programme has used less labour in order to achieve the same goals; (5) My programme has spent less money on achieving the same goals; and (6) My programme has achieved the objectives that had been set for it.

## **(2) Programme-Managerial Practices**

### **(2.1) Goal Setting: Clarity and Difficulty**

As discussed in Chapter 2, a goal is defined as the mission and objectives of an organization or a programme. Goals play a vital role in planning and managing programmes, in that they present guidelines for decision-making (Banner and Gangne, 1995). Setting goals for programmes is a critical element of performance budgeting (Davies, 1999), in the sense that clear and consistent goals underlie performance measurement (Wang, 2000).

This research considers two aspects of goal setting – clarity and difficulty – and measures them separately. Kenis (1979, pp 709) operationalized goal clarity as follows: ‘the extent to which goals are stated specifically and clearly, and are understood by those who are responsible for meeting them’. This survey follows Kenis (1979). It is measured with five items.

This survey operationalized goal difficulty following Hirst (1987), who refers to it as ‘the level of performance required to achieve a goal (Hirst, 1987, pp 774)’. He assesses goals as ‘easy (or low)’ or ‘difficult (or high)’ on the basis of the average level. Goal

difficulty is measured with three items.

## **(2.2) Budget Adequacy**

Budget adequacy is defined as the level of budget which is adequate for a programme to be fulfilled. In their survey study of the relationship between budget participation and job performance, Nouri and Parker (1998, pp 467) operationalized budget adequacy as ‘the degree to which an individual perceives that budgeted resources are adequate to fulfil job requirements’. This survey follows the concept of budget adequacy operationalized by Nouri and Parker (1998), and measures it with three items.

## **(2.3) Budget Participation**

This survey operationalized budget participation as the extent to which subordinates have an influence on, and are involved in setting, the budget, following Nouri and Parker (1998). In a similar spirit, Miliani (1975) surveyed the degree of budget participation in a private company with six questions, as follows: ‘(1) the portion of the budget the foreman was involved in setting; (2) the kind of reasoning provided to the foreman by a superior when the budget was revised; (3) the frequency of budget-related discussions initiated by the foreman; (4) the amount of influence the foreman felt he had on the final budget; (5) the importance of the foreman’s contribution to the budget; and (6) the frequency of budget-related discussions initiated by the foreman’s superior when budgets were being set’.

This survey measures budget participation with the six items used by Miliani (1975) adjusted to the context of the Korean central government.

#### **(2.4) Budget Flexibility**

Performance budgeting requires more flexibility of spending ministries and agencies in executing an allotted budget. Nonetheless, budget flexibility is relatively ‘neglected’ by both academic and practical studies (Pitsvada, 1983). Pitsvada (1983) refers to budget flexibility as the extent to which agencies have flexibility in executing an approved budget.

This survey, following Pitsvada (1983), operationalized budget flexibility as the extent to which programme managers have flexibility in executing the budget for their programmes. It is measured this using three items.

#### **(2.5) Procedure Formalization**

As the pressure on programmes to perform grows, operation procedures tend to become more formal in underlining clearly who is accountable. Formalization is defined as the extent to which the operational procedures of organizations are stipulated in documents. Dalton et al. (1980, pp 58) operationalized formalization as ‘the extent to which appropriate behaviour is described in writing’.

Based on Dalton et al. (1980), this survey operationalized procedure formalization as

the extent to which appropriate behaviour in implementing programmes is described in writing, and then measured this with three items.

## **(2.6) Support from Senior Management**

Leadership from senior management is a vital factor in making policy implementation successful (Sabatier and Mazmanian, 1979). Senior management can encourage or discourage their team to be motivated towards their goals. In Korea, it has been argued that lack of high level managerial support has been one of the critical factors which have caused performance budgeting not to work successfully (MPB, 2003; Jun & Park, 2002).

Based on earlier studies, this survey operationalizes support from senior management as the extent to which senior management gives advice and/or shows concern about their teams' programmes in management terms. This survey measures such support with five items.

Table 4-4 Items and their sources, depending on variables

Variables	Questions	Source
1. Goal Clarity	III-1. The strategic objectives and performance targets of my programme have been further clarified	Flowers (1999), Chung (2003) and Kenis (1979)
	III-3. The target groups of my programmes have been more specific	
	II-5. My programme has clearer objectives	
	III-6. I have understood the strategic objectives and targets of my programme better	

	III-8. My programme goals were more quantitative and measurable using performance indicators	
2. Goal Difficulty	III-2. My programme targets were made more ambitious III-4. I had to invest more effort in order to achieve programme goals III-7. My programme targets have become more difficult to achieve	Flowers (1999), Chung (2003) and Hirst (1987)
3. Budget Adequacy	IV-8. My programme budget has allowed me to achieve better performance IV-10. My programme budget has been sufficient for achieving goals IV-12. My programme has been allotted a budget more in accordance with the target level of programme	Nouri and Parker (1998), and Chung (2003)
4. Budget Participation	IV-1. My participation in budgetary decision-making has increased IV-3. The frequency of programme budget-related discussions initiated by me or my seniors has increased IV-4. My opinions have been more important in setting my budget targets of programme IV-6. My seniors have listened more to my opinions in budgeting IV-7. My superiors have provided better reasons when my programme budget has been revised IV-9. My budget-related opinions have been more important in making budgetary decisions	Nouri and Parker (1998), Chung (2003), and Miliani (1975)
5. Budget Flexibility	IV-2. I have chosen specific projects under my authority within the budget IV-5. My autonomy of budget implementation has been increased IV-11. My influence on specific budget implementation has increased	Chung (2003)
6. Procedure Formalization	V-2. Operation procedures or stipulations have been more important for my programme V-3. Operation procedures or stipulations of my programme have been more specific formally V-5. In the process of my programme management, rules have increased	Flowers (1999), and Chung (2003)
7. Support from senior management	V-1. My seniors have cared about my programme more V-4. My seniors have given advice or opinion on my programme more actively V-6. My seniors have been more interested in setting the objectives and targets of my programme V-7. My seniors have presented more concerns about my programme performance V-8. My seniors made an effort to provide as appropriate resources as possible for achieving my goals V-9. My seniors have paid more attention to performance management such as budget and assessment	Flowers (1999), and Chung (2003)
8. Programme performance	VI-1. The level of customer satisfaction with my programme has increased VI-2. The efficiency of my programme has been enhanced VI-3. The effectiveness of my programme has been improved VI-4. My programme has used less labour in order to achieve the same goals	Rogers (1990), and Chung (2003)

	VI-5. My programme has spent less money on achieving the same goals	
	VI-6. My programme has achieved the objectives that had been set for it	

#### **4.3.3.3 Collecting Data**

This survey was conducted with administrators who were in charge of budgets or programmes in the Korean central government between 15 June, 2009 and 7 August, 2009. The questionnaires were mailed to 33 ministries and agencies. In collaboration with the Korea Institute of Public Finance (KIPF), one of the government-sponsored research institutes, for improving the objectivity of data, the survey was specifically conducted as follows.

##### **(1) Objects of the Survey**

The purpose of this survey is to examine the extent of changes in managerial practices and programme performance caused by the performance budgeting which ministries and agencies of the Korean central government have implemented. In order to obtain as appropriate and unbiased information as possible, this survey took account of all the ministries and agencies which implemented the performance budgeting system.

Within the spending ministries and agencies, budget managers, programme managers, division managers, and directors were selected to answer the questionnaires, because they were directly involved in management activities related to budgets and programmes.

## (2) Configuration of the Questionnaire

The questionnaire is designed to measure administrators' perceptions of changes in programme performance and programme-managerial practices caused by Korean performance budgeting. It is comprised of 53 questions in six sections: demographic details, programme details, programme goal setting, programme budgeting, other practices, and programme performance. Each item is measured on a seven-point Likert scale from 1 (very low) to 7 (very high) except some demographic and programme-related items. Table 4-5 provides summarized descriptions of the questionnaire employed in the survey.

Table 4-5 Composition of questionnaire

Sections	Variables	Questions	
		Total	The number of question
I. Demographic details		8	I-1 to 8
II. Programme details		10	II-1 to 10
III. Goal setting	1. Goal clarity	5	III-1, 3, 5, 6, and 8
	2. Goal difficulty	3	III-2, 4, and 7
IV. Budgeting	3. Budget adequacy	3	IV-8, 10, and 12
	4. Budget flexibility	3	IV-2, 5, and 11
	5. Budget participation	6	IV-1, 3, 4, 6, 7, and 9
V. Other	6. Procedure formalization	3	V-2, 3, and 5
	7. Support from senior management	6	V-1, 4, 6, 7, 8, and 9
VI. Performance	1. Programme performance	6	VI-1 to 6
Total	8	53	

## (3) Respondents

This survey mailed 1458 questionnaires to civil servants of the Korean central government who were in charge of managing budgets or programmes, in 33 ministries

or agencies that had assessed their programmes using SABP during 2005-2007<sup>26</sup>. In terms of organizational mission, 462 questionnaires (31.69%) were sent to 10 social welfare-related ministries or agencies, 616 questionnaires (42.25%) to 12 economy-related ministries or agencies, and 380 questionnaires (26.06%) to 11 administrative organizations. The recipients and respondents are summarized in Table 4-6 below.

Table 4-6 Response rates of ministries and agencies

(Unit: person, %)

Ministries or Agencies	Recipient	Respondent	Response rate
1.Ministry of Education, Science and Technology	85	46	54.12
2.Ministry of Health and Welfare	91	38	41.76
3.Ministry of Culture, Sports and Tourism	80	53	66.25
4.Ministry of the Environment	39	32	82.05
5.Ministry of Labour	43	13	30.23
6.Ministry of Gender Equality	16	15	93.75
7.Ministry of Patriots and Veterans Affairs	30	28	93.33
8.Cultural Properties Administration	23	19	82.61
9.Korea Food and Drug Administration	22	10	45.45
10.Korea Meteorological Administration	33	32	96.97
Sub-total (Social Welfare-related Organizations)	462	286	61.90
1.Ministry of Strategy and Finance	38	-	0.00
2.Ministry of Food, Agriculture, Forestry and Fisheries	63	58	92.06
3.Ministry of Knowledge Economy	138	108	78.26
4.Ministry of Land, Transport and Maritime Affairs	114	61	53.51
5.National Tax Service	38	12	31.58
6.Korea Customs Service	32	13	40.63
7.Public Procurement Service	40	13	32.50
8.Korea National Statistical Office	44	20	45.45
9.Small and Medium Business Administration	37	22	59.46
10.Korea Intellectual Property Office	23	17	73.91
11.Rural Development Administration	24	15	62.50
12.Korea Forest Service	25	18	72.00
Sub-total (Economy-related Organizations)	616	357	57.95
1.Ministry of Foreign Affairs	26	5	19.23
2.Ministry of Unification	23	17	73.91
3.Ministry of Justice	26	21	80.77
4.Ministry of Defence	53	7	13.21
5.Ministry of Public Administration and Security	79	36	45.57

<sup>5</sup>These are no longer the same as at the time when the SABP assessments were made. Some ministries (or agencies) were consolidated, or their names were changed, in the 2008 administrative reorganization that reduced 22 ministries and 18 agencies to 17 ministries and 18 agencies.

6.Ministry of Government Legislation	29	-	0.00
7.Military Manpower Administration	24	-	0.00
8.Korea National Police	41	29	70.73
9.National Emergency Agency	25	12	48.00
10.Korea Coast Guard	29	22	75.86
11.Korea Communications Commission	25	15	60.00
Sub-total (Administrative Organizations)	380	164	43.16
Total	1458	807	55.35

Eight hundred and seven of the 1458 administrators (55.35%) gave responses through a self-completion questionnaire<sup>27</sup>. All the social welfare-related ministries and agencies gave more than 10 responses, and recorded the highest response rate of 61.90%, whereas the administrative organizations showed the lowest response rate with two agencies giving no responses (43.16%).

When it comes to distributions of respondents, 44.4% of respondents worked for ‘Economy-related organizations; 34.8% for ‘Social welfare-related organizations; and 20.7% for ‘Administrative organizations. In terms of organizational hierarchy, 68.0% belonged to ministries; and 32.0% to agencies. Most respondents, also, worked at headquarters (93.6%), and 6.2% at regional agents.

Table 4-7 presents the demographic features of respondents. Eighty two per cent of respondents were in a lower grade than 4. As regards age, 75.6% of respondents were in their thirties or forties. As regards length of service, 55.3% had worked for their ministry or agency for longer than 10 years.

<sup>27</sup> More precisely, 808 questionnaires were received. Of them, one questionnaire from the Ministry of Public Administration and Security was almost unfinished, with answers given to a demographic section only, and so it had to be excluded from this analysis.

Table 4-7 Demographic features of respondents

<b>Grade</b>	6 or lower (54.4%)		5 (27.6%)	4 (13.3%)	3 or higher (3.2%)	Other (0.9%)
<b>Age (year)</b>	29 or younger (6.8%)	30 to 39 (36.2%)		40 to 49 (39.4%)		50 or older (16.9%)
<b>Career Years</b>	Shorter than 3 (9.3%)	3 to 5 (15.4%)	6 to 10 (19.5%)	11 to 15 (20.0%)	Longer than 15 (35.3%)	

#### **(4) Reliability and Validity of the Measurements**

The quality of research work depends heavily on the reliability and validity of the data used, particularly as regards opinion surveys (Bell, 1987; Denzin and Lincoln, 1998; Bush, 2002; re-cited Zhui, 2008). A measurement is ‘reliable’ when it is stable over time without random errors; it is ‘valid’ when the differences between scores reflect ‘true’ differences in the elements which the researchers are attempting to measure (Churchill; 1979, Bryman; 2004). Although the reliability and validity of a measurement are conceptually distinguishable, they are closely related in that validity presumes reliability. Reliability is necessary, but not sufficient, for validity (Bryman; 2004, Churchill; 1979, Nunnally; 1967). This means that a reliable measurement will not always produce a valid piece of information. For example, when using a multiple-item scale, a ‘reliable’ set of items (or questions) will not always measure what it is intended it should measure.

This survey seeks to establish both reliability and validity by measuring true changes in programme-managerial practices and programme performance within the Korean

central government without including random errors. From a practical point of view, as with most research measurements, this survey takes some basic steps to ensure internal reliability and face validity (Bryman; 2004). Bryman (2004, pp 73) proposes that ‘face validity might be established by asking other people whether the measure seems to be getting at the concept’. In order to establish face validity, this survey, in the first instance, drew on items from existing works in this field. Then it consulted with civil servants and academic researchers whose experience or expertise enables them to say whether these suggested items reflect the concept of each variable in a Korean context. In order to establish reliability, this survey performs a series of reliability tests, following Chung’s (2002) and Nunnally’s (1994) approach. The survey follows three phases: (1) item-to-total correlation analysis, (2) factor analysis, and (3) Cornbach  $\alpha$  test. According to the domain sampling model, which assumes that any specific measurement used is intended to estimate a score which could be expected if all the items in the domain were used, items which are selected from the domain of a single concept should be closely correlated (Nunnally & Bernstein, 1994; Churchill, 1979).

To ascertain whether this can be applied for the survey, this survey first estimates the correlation of each specific item with the total of the other items (hereafter item-to-total correlation). The correlations may provide criteria for excluding or including an item. It is generally accepted that individual items are in a single domain when their correlations are above 0.3 (Chung; 2002). This survey deletes items whose item-to-total correlations are 0.3 or lower.

Secondly, factor analysis is conducted to determine the number of dimensions, after

deleting items with correlations of 0.3 or lower. In other words, factor analysis can check whether or not the potential items for each concept are in a single dimension (Churchill; 1979). Indicating the correlation of a specific item with a potential variable, factor loadings are required to be 5.0 or greater, depending on a generally accepted standard in social science works (Chung; 2002).

Thirdly, this survey estimates Cronbach  $\alpha$  which is widely used to check whether or not a set of items has internal consistency (Churchill; 1979). Although the accepted alpha levels vary between researchers, the figure 0.7 is typically used as an acceptable level of internal consistency (Nunnally, 1994; Leech et al., 2008). This survey deletes items with alpha levels lower than 0.8.

#### **4.3.3.4 Analyzing Data**

This survey measured the extent to which Korean performance budgeting contributed to changing the seven programme-managerial practices and programme performance using a multiple-item scale with 35 items. For this analysis, items for individual variables are required to be translated into a single value. An arithmetic mean of the items is used for individual variables. For example, take a questionnaire where 3, 4 and 5 were answered to three items which measured a specific variable. An arithmetic mean 4 of 3, 4, and 5  $[(3+4+5)/3]$  would be the respondent's level of the variable. With a listwise-deletion method, this survey excluded cases without a response in any one of the items.

In order to identify the extent to which Korean performance budgeting contributed to changing the seven kinds of programme-managerial practice and programme

performance, this research presents descriptive statistics such as their means and confidence intervals. These statistics help identify the perceived contribution of Korean performance budgeting to changing the seven kinds of practice and programme performance.

This research compares differences in changes in the seven types of practice and in performance between groups: organizations, programmes, and uses of SABP results. Analysis of variance (ANOVA) is a useful tool which identifies average differences between groups.

Finally, this research examines the relationships between the seven types of practice and programme performance. To do so, regression analysis is conducted. Regression analysis is known to provide useful information about relationships between variables (Dielman, 2001). Some recent studies have employed regression models for examining the relationships between organization- or individual-level factors and public organizational performance (Brewer and Selden, 2000; Kim, 2004; Nahm, 2008).

The regression model for this research is constructed in the box below.

$$\text{Merit} = \alpha + (\beta_1 \text{ Clarity} + \beta_2 \text{ Difficulty}) + (\beta_3 \text{ Adequacy} + \beta_4 \text{ Participation} + \beta_5 \text{ Flexibility}) + \beta_6 \text{ Formalization} + \beta_7 \text{ Support} + \varepsilon$$

where  $\alpha$  and  $\beta_1, 2, 3, \dots, \text{ and } 7$  denote a constant and regression coefficients, and  $\varepsilon$  is an error term.

In the regression model, ‘Merit’ is the dependent variable, representing the extent to which Korean performance budgeting has made a contribution to improving programme

performance.

In terms of independent variables, the first two terms, 'Clarity' and 'Difficulty', mean the perceived extent to which Korean performance budgeting has made a contribution to improving goal clarity and goal difficulty of programmes. The next three terms, 'Adequacy', 'Participation', and 'Flexibility', relate to changes in budget practices such as budget formulation and execution. These three terms indicate the extent to which Korean performance budgeting has made a contribution to changing programme budget adequacy, programme budget participation, and programme budget flexibility. The last two terms, 'Formalization' and 'Support', represent other managerial practice changes. The first of these means the perceived extent to which Korean performance budgeting has made a contribution to formalizing programme operational procedures. And the second is the extent to which Korean performance budgeting has made a contribution to drawing support from senior management.

#### **4.4 Conclusion**

The purpose of this chapter has been to describe the development of research questions and identify the analysis methods used to address them.

Firstly, based on the examination of existing literatures in Chapter 2 and Korean performance budgeting in Chapter 3, this research defines two main research questions. One is to describe the relationship between budget allocation and programme performance in Korean performance budgeting (Question 1); the other is to identify the

extent to which Korean performance budgeting has made a contribution to changing programme-managerial practices and improving programme performance (Question 2).

Secondly, this chapter provides specific descriptions of methods suitable for answering these research questions. In principle, this research follows analysis methods well-developed in the academic field of social science. Table 4-8 summarizes statistical techniques for analyzing budget allocation changes, managerial practice changes, and programme performance changes. In order to describe the relationship of budget allocation with programme performance (Question 1), regression analysis is employed. Programme budget percentage changes are regressed on SABP scores (or grades).

For the analysis of managerial practice changes and programme performance changes, after establishing the reliability of data collected from the survey through factor analysis, this research conducts descriptive statistics analysis, ANOVA analysis, and regression analysis. These analyses use data obtained from a survey of administrators within the Korean central government about managerial practice changes and programme performance.

Descriptive statistics present the extent of changes in managerial practices and programme performance caused by Korean performance budgeting. ANOVA analysis presents specific information on differences in the changes between groups: organizations, programmes, and uses of SABP results. Finally, regression analysis provides a useful piece of information about the relationship between managerial practices and programme performance. It identifies managerial practices which have a

significant effect on programme performance.

Table 4-8 Summaries of Analysis Methods

Research Questions	Statistical Techniques
1. Budget Allocation Changes	Regression Analysis
2. Managerial Practice Changes and Programme Performance Changes	A. Basic Analysis: Factor Analysis, Reliability Test
	B. Descriptive Statistics, ANOVA Analysis
	C. Correlation and Regression Analysis

In conclusion, this research is heavily centred on a quantitative research approach rather than a qualitative approach. However, the author endeavours to present a more vivid analysis, on the basis of his own experience and the talks he had with experts and other administrators whilst working as an administrator within the MPB during the period when he was engaged in installing and implementing Korean performance budgeting.

## **CHAPTER 5 A STATISTICAL ANALYSIS OF SABP**

### **RESULTS**

#### **5.1 Introduction**

Self-Assessment of Budgetary Programmes provides various kinds of performance information for Korean performance budgeting, using checklists which ask about planning, management, and the results of programmes.

For three consecutive years after SABP was introduced, in 2005, it made one or more assessments of individual programmes. In that period, it assessed a total of 1717 budgetary programmes, and produced overall numeric scores and grades for these. In 2005, it assessed 555 programmes, in 2006, 577 programmes, and in 2007, 585 programmes, based on the results of the fiscal years 2004, 2005, and 2006 respectively.

As described earlier, the SABP scores may be affected by organizational features, and programme types and other programme attributes. Programmes tend to differ in clarity or difficulty of their goals. For example, it can generally be easier to set measurable objectives for programmes belonging to agencies than to ministries.

These features may contribute to causing differences in the SABP scores between programme groups. In this context, this chapter describes the statistical features of SABP results in this period.

## **5.2 Statistical Characteristics**

### **5.2.1 Overall Review**

In terms of distribution, SABP scores exhibited an inverted U shape skewed a little towards the lower end. The average score for the three years was 62.1 points. During the years 2005, 2006, and 2007 there was not a vast difference in SABP scores. The average score recorded for 2005 was 60.1 points; in 2006 it was 59.9 points; and in 2007 it was 66.0 points. The 2007 scores showed an increase in the average of 5.9 points, due mainly to improvements in the Results section. However, the increase is not so encouraging, because it is the result of improvements not in performance-related questions (Questions 3-2 and 3-3) but in assessment-related questions (Question 3-1, 3-4). In these three years, the proportion of 'Yes' answers to Question 3-4 increased from 57.3% to 79.0%. This suggested that spending ministries and agencies were more eager to evaluate and to feed the results back into their programmes (Question 3-1) than to improve performance indicators, targets and performance (Questions 1-5, 1-6, 1-7, 3-2, and 3-3).

The grades of programmes, like the scores, formed an inverted U shape skewed a little towards the lower end. This is the shape presented in Table 5-1 and Figure 5-1. Out of the total of these 1717 programmes, 1078 (62.8%) were rated as 'Modest', 332 (19.3%) as 'Somewhat effective', 183 (10.7%) as 'Poor', and 124 (7.2%) as 'Effective'. Over this period, the higher grades increased gradually. The proportion of 'Effective' and

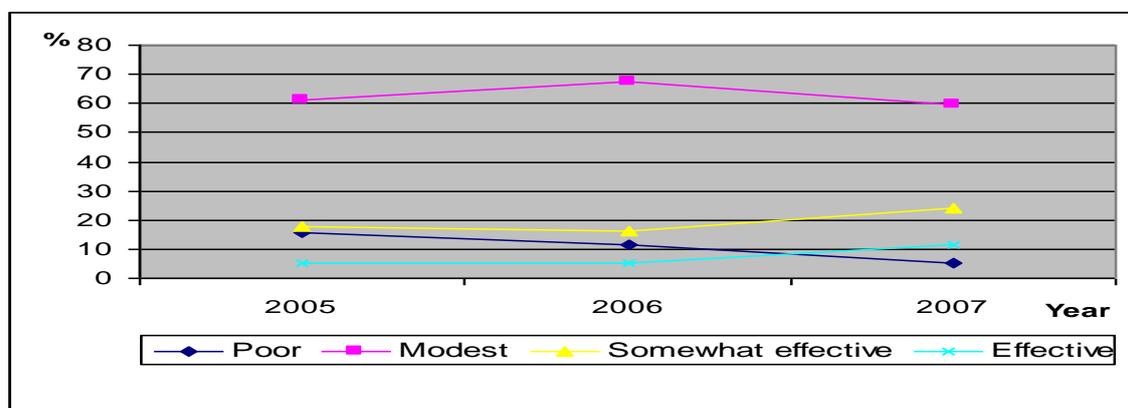
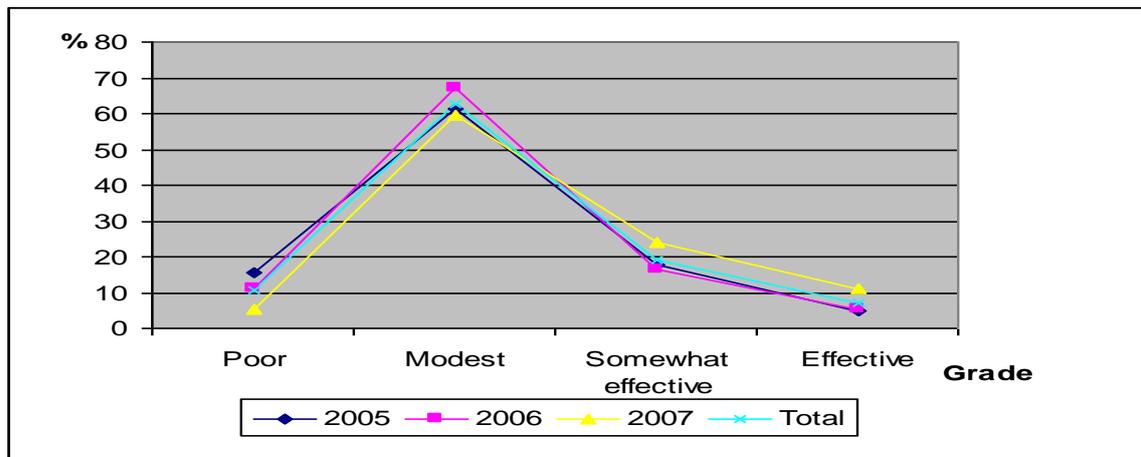
‘Somewhat effective’ rose from 22.9% in 2005 to 35.1% in 2007. By contrast, the number and proportion of ‘Poor’ grades significantly decreased from 15.7% (87 programmes) in 2005 to 5.3% (31 programmes) in 2007.

Table 5-1 Frequency distributions of grades

(Units: number of programmes, %)

Year	Total	Poor	Modest	Somewhat effective	Effective
2005	555 (100.0%)	87 (15.7)	341 (61.4)	99 (17.9)	28 (5.0)
2006	577 (100.0%)	65 (11.3)	388 (67.2)	94 (16.3)	30 (5.2)
2007	585 (100.0%)	31 (5.3)	349 (59.6)	139 (23.8)	66 (11.3)
Total	1,717 (100.0%)	183 (10.7)	1,078 (62.8)	332 (19.3)	124 (7.2)

Figure 5-1 Frequency graphs of grades



The next sections will describe the statistical features of SABP scores more specifically, preparing for an empirical analysis of the links between budgetary allocations and programme performance.

### 5.2.2 Characteristics of Questions

As stated earlier, the checklist consists of 15 common questions and up to 3 specific questions, depending on programme types in the three sections. The number of ‘Yes’ answers varied greatly between the questions. Table 5-2 shows the Yes/No distribution of programmes in terms of individual questions.

Table 5-2 Yes/No distribution between the questions

(Unit: number of programmes, %)

Sections	Questions	Yes		No		Small Extent		Large Extent	
		Number	%	Number	%	Number	%	Number	%
Planning    Performance Plan	1.1	1,713	99.8	4	0.2				
	1.2	1,685	98.1	32	1.9				
	1.3	1,605	93.5	112	6.5				
	1.4	1,481	86.3	236	13.7				
	1.5	1,688	98.3	29	1.7				
	1.6	966	56.3	751	43.7				
	1.7	455	26.5	1,262	73.5				
Management	2.1	1,422	82.8	294	17.1				
	2.2	1,491	86.8	224	13.0				
	2.3	1,183	68.9	534	31.1				
	2.4	889	51.8	827	48.2				
Results	3.1	906	52.8	801	46.7				
	3.2	209	12.2	91	5.3	1,125	65.5	292	17.0
	3.3	1,067	62.1	641	37.3	6	0.3	-	-
	3.4	1,102	64.2	608	35.4				

Note: Questions 2-1, 2-2, and 2-4 have missing value in a single programme; question 3-3 in three programmes; and question 3-4 in seven programmes.

In the Planning section, while more than nine out of ten programmes answered ‘Yes’ to the questions regarding the design and rationale of programmes (Questions 1-1, 1-2, 1-3, and 1-4), only five in ten programmes (56.3%) gave a ‘Yes’ to Question 1-6. More seriously, fewer than three in ten programmes (26.5%) answered ‘Yes’ to Question 1-7 which relates to a performance plan.

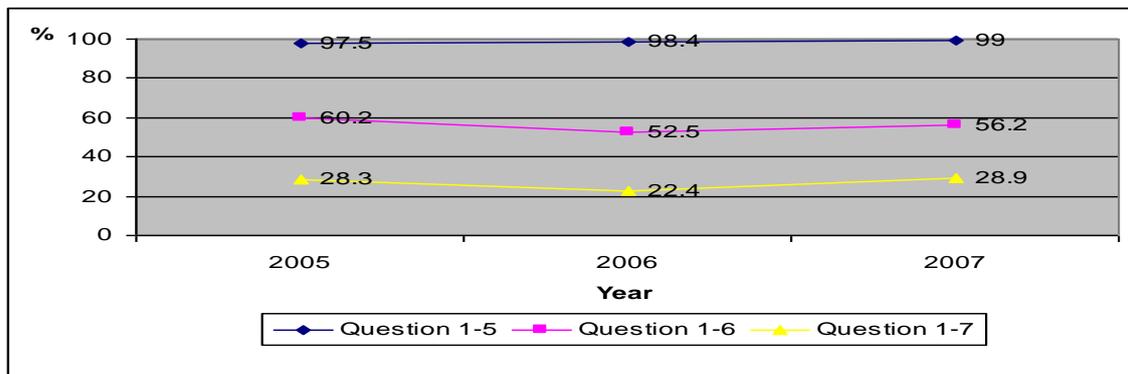
This suggests that spending ministries and agencies failed to develop a proper performance indicator or to set a reasonable level of performance targets. As seen in Table 5-3 and Figure 5-2, there was little difference in the number of ‘Yes’ answers to Questions 1-5, 1-6, and 1-7, meaning that there was little sign of improving performance indicators or target setting over the three years. In order to produce performance information useful for budgeting, spending ministries and agencies need to devise an improved performance plan.

Table 5-3 Proportion of ‘Yes’ answers to questions related to a performance plan

(Unit: number of programmes, %)

Question	2005	%	2006	%	2007	%
1.5	541	97.5	568	98.4	579	99.0
1.6	334	60.2	303	52.5	329	56.2
1.7	157	28.3	129	22.4	169	28.9

Figure 5-2 Graph showing the proportion of ‘Yes’ answers to questions related to a performance plan



In the Management section, those responsible for most programmes tended to answer 'Yes'. More than 80% gave a 'Yes' to Questions 2-1 and 2-2, meaning that they had created a system which monitored the status of programme implementation. However, many a 'Yes' was not repeated in Questions 2-3 and 2-4. In Question 2-3, the proportion of 'Yes' answers was 68.9%, and in Question 2-4 51.8%. This indicates that many programmes did not spend the budgets as planned, nor did they save any money.

When it comes to the Results section, most programmes tended not to be answered with a 'Yes'. One in two programmes answered 'No' to Question 3-1, indicating that there was no regular evaluation. In Question 3-2 in which SABP allows programmes to select one of four levels: 'No', 'To a small extent', 'To a large extent', and 'Yes', a massive proportion of 65.5% gave the answer 'To a small extent', and a 'Yes' or a 'No' accounted for only 17.5% of answers. This tended to be the result of the automatic link between Question 1-7 and Question 3-2. A 'Yes' to Question 1-7 is necessary if the answer to Question 3-2 is to be 'Yes'. When Question 1-7 is answered 'No', the answer to Question 3-2 is almost always 'To a small extent'. As seen in Table 3-12, three quarters of programmes responded 'No' to Question 1-7.

### **5.2.3 Characteristics of Sections**

The checklist for SABP, as described earlier, comprises three sections: Planning, Management, and Results. The Planning section is divided into two sub-sections: Rationale and Design; and Performance Plan. The Planning section is devised to assess the appropriateness of programme design, performance measures, and target setting.

The Management section assesses appropriateness of implementation. The Results section concentrates on regular evaluation, feedback of assessments, and the actual attainment of targets.

Table 5-4 and Figure 5-3 illustrate the distributions of scores among the three sections. The Planning section had an average score of slightly more than 20 points out of a total of 30 points over the three years. The Management section had an average score of around 15 points out of 20 points. The Results section recorded an average score of over 20 points out of 50 points.

Considering the weights allotted to the sections (Planning : Management : Results = 30% : 20% : 50%), the three scores were quite different. While the score for Planning and Management reached almost 80%, that for Results was less than 50%.<sup>28</sup> The sections on Planning and Management achieved 30% greater scores than the section on Results. In the Planning section, two sub-sections – Rationale and Design, and Performance Plan – had significantly different scores. While the sub-section for Rationale and Design was more than 90%, that for Performance Plan achieved around 60%, the second lowest in the sections. These differences in scores tended to be the result of the poor Performance Plan scores. This led to the lowering of the scores for the Results section, due to the automatic linkage of performance-related questions.

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<sup>28</sup> 80% and 50% were calculated with '(actual score/possible maximum score)\*100' and they are presented in the parentheses of Table 3-13.

Table 5-4 Distribution of scores between sections

(Unit: points, %)

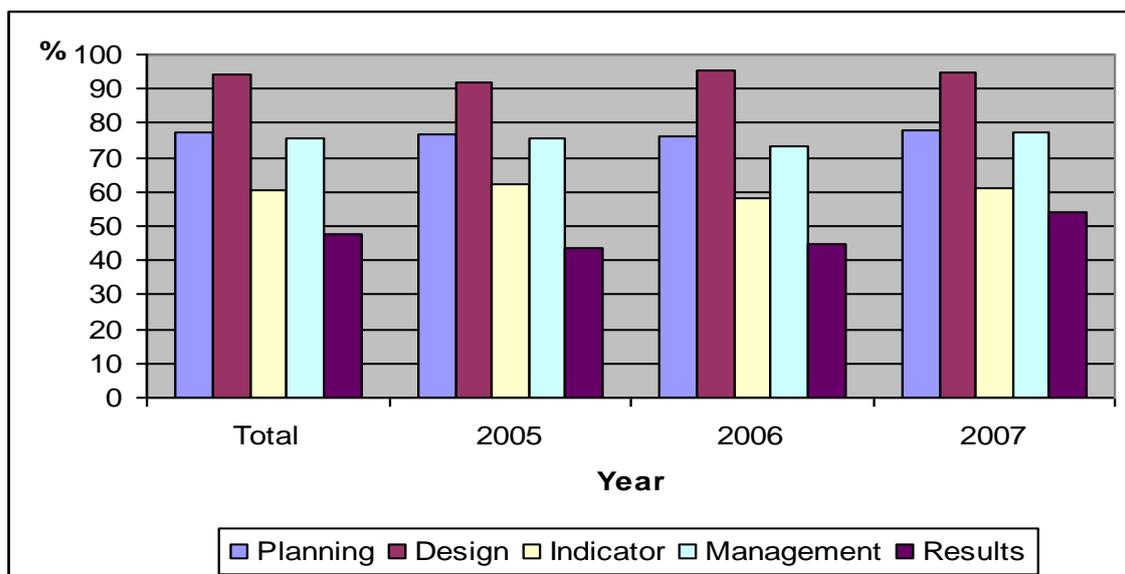
	Total	Planning (30)		Indicator (15)	Management (20)	Results (50)
		Design (15)				
2005 (%)	60.1	23.1 (77.0)	13.8 (92.0)	9.3 (62.0)	15.1 (75.5)	21.9 (43.8)
2006 (%)	59.9	22.9 (76.3)	14.3 (95.3)	8.7 (58.0)	14.7 (73.5)	22.3 (44.6)
2007 (%)	66.0	23.4 (78.0)	14.2 (94.7)	9.2 (61.3)	15.5 (77.5)	27.1 (54.2)
Total (%)	62.1	23.1 (77.1)	14.1 (93.9)	9.1 (60.4)	15.1 (75.6)	23.8 (47.6)

Notes: 1) Numbers in parentheses in the first row represent possible maximum scores.

2) (%) means '(actual score/possible maximum score)\*100'

3) Design and Indicator means 'Rationale and Design' and 'Performance Plan' for programmes in the Planning section

Figure 5-3 Graphs showing the distribution of scores between sections



## 5.2.4 Characteristics of Programme Types

Self-Assessment of Budgetary Programmes classifies budgetary programmes into seven types, depending on the way in which they are implemented. On the basis of whether the Korean central government manages a programme directly or indirectly, it can be

put into one of two groups: Directly Managed programmes, or Indirectly Managed programmes. Directly Managed programmes include SOC programmes, Capital Acquisition programmes, and Other Direct programmes, and the remaining four types are classified as Indirectly Managed programmes: Investment programmes; Subsidy to Private Sector programmes; Subsidy to Local Government programmes; and Loan programmes (Park, 2006; Guidance for SABP, 2007).

There is a difference between the scores of the various programme types<sup>29</sup>, and this is illustrated in Table 5-5 and Figure 5-4. In the period covered, Directly Managed programmes had higher average scores than Indirectly Managed programmes. More seriously, the gap increased from 2.5 points in 2005 to 5 points in 2007. This appeared to be due to the different ways of implementing programmes.

Depending on the manner of implementation, the actions of spending ministries and agencies affected programmes in diverse ways. Indirectly Managed programmes tend to be implemented through a multi-tier path, so that their management is more complicated than that of Directly Managed programmes. Because it is not easy to identify the effects of actions, spending ministries and agencies have a tendency to place an emphasis not on programme performance but on timely spending of the budgets they have allocated (Park, 2006).

In addition, programmes which have been devolved to local governments for

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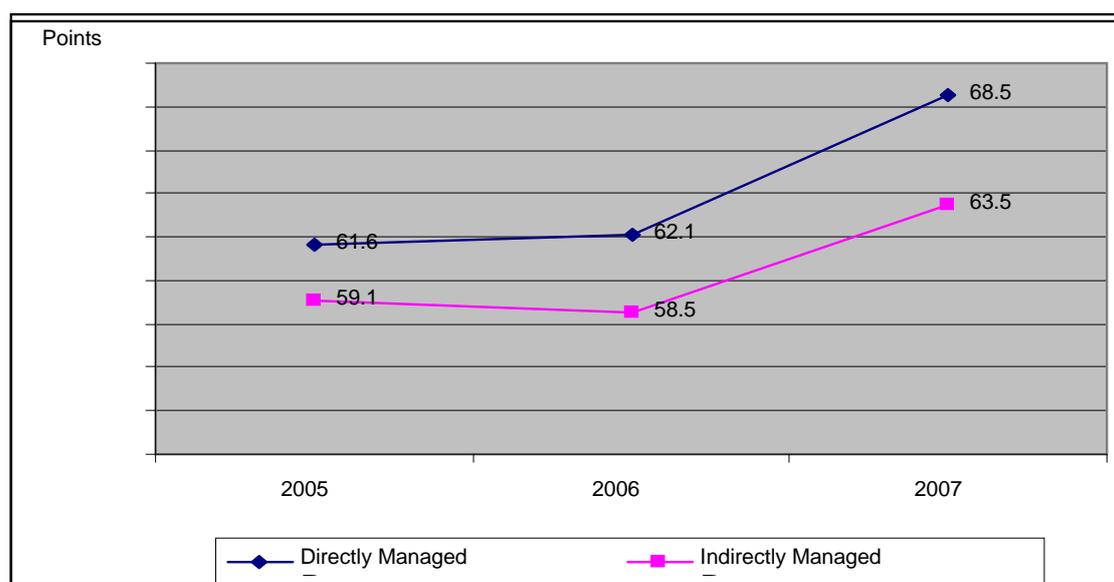
<sup>29</sup> This section analyzes 1603 programmes, but leaves out 114 programmes which are of a mixed type. Out of the 1603 programmes, 117 are SOC programmes, 148 are Investment programmes, 144 are Loan programmes, 384 are Subsidy to the Private Sector programmes, 287 are Subsidy to Local Government programmes, 22 are Capital Acquisition programmes, and 501 are Other Direct programmes.

implementation tend to experience the constraining influence of central government. As a result, Indirectly Managed programmes may pay relatively less attention to developing a performance plan and experience less pressure to achieve their goals. This may lead to a difference in SABP scores (Bang and Yun, 2007).

Table 5-5 Distributions of scores between programme types

		(Unit: points)			
		Total	2005	2006	2007
Directly Managed programmes	<b>Total</b>	<b>64.1</b>	<b>61.6</b>	<b>62.1</b>	<b>68.5</b>
	SOC	63.5	61.3	65.6	63.8
	Capital Acquisition	63.7	63.1	62.2	66.7
	Other Direct programmes	64.2	61.7	61.1	69.0
Indirectly Managed programmes	<b>Total</b>	<b>60.3</b>	<b>59.1</b>	<b>58.5</b>	<b>63.5</b>
	Invest	62.8	59.8	57.5	70.0
	Loan	59.8	58.9	58.5	62.7
	Subsidy to Private Sector	60.9	59.8	60.3	62.7
	Subsidy to Local Government	58.4	58.0	56.2	61.1

Figure 5-4 Graphs of scores distributed between programme types



In terms of the purposes of programmes, those dealing with economic matters (Economy-related programmes) had higher average scores than those dealing with social welfare issues (Welfare-related programmes) (see Chapter 4). Table 5-6 shows the average scores of the two groups. In total, Economy-related programmes had an average score of 62.66 points, whereas Welfare-related programmes had 58.65 points. More notably, the difference between them was becoming larger. In 2005 it was 2.91; in 2007 it increased to 7.33. The differences appeared to reflect the characteristics of the programmes. Including SOC programmes, which produce visible outputs, Economy-related programmes could achieve higher scores than Welfare-related programmes. Economy-related programmes tended to receive higher scores in the Performance Plan section, which had a big effect on their total score, because their performance indicators are easy to develop compared with those of Welfare-related programmes.

Table 5-6 Differences in average scores between Economy- and Welfare-related programmes

	Total	2005	2006	2007
Economy-related programmes (A)	62.66 (13.61)	60.14 (12.81)	61.52 (13.49)	67.08 (13.71)
Welfare-related programmes (B)	58.65 (10.20)	57.23 (10.54)	57.90 (11.11)	59.75 (9.34)
Difference (A-B)	4.01	2.91	3.62	7.33

Note: Standard deviations are reported in the parentheses.

Programmes can make differences in SABP scores, according to their budget size. Table 5-7 shows differences in average scores among the four quartiles.

Table 5-7 Differences in average scores according to budget size

	Number of programmes	Average scores
Total	1717	62.05 (13.18)
First quartile (budget ≤ 2.5 billion Won)	425	60.76 (13.08)
Second quartile (2.5 < budget < 7.9 billion Won)	433	61.97 (13.12)
Third quartile (7.9 ≤ budget < 29.0 billion Won)	430	62.11 (13.77)
Fourth quartile (budget ≥ 29.0 billion Won)	429	63.35 (12.65)

Note: Standard deviations are reported in the parentheses.

Programmes in the first quartile ( $\leq 2.5$  billion Won) had the lowest average scores of 60.76, while those in the fourth quartile ( $\geq 29.0$  billion Won) recorded the highest scores, 63.35. As suggested in the table, the bigger programmes are, the higher their scores are.

### 5.2.5 Characteristics of Organizational Groups

Self-Assessment of Budgetary Programmes was used to assess 1717 budgetary programmes which belonged to 18 ministries and 22 agencies during 2005-2007. Agencies, which report to ministries, have a different approach to programmes from ministries, in the sense that agencies mainly implement policies which are formulated by the ministries they report to. One thousand three hundred and thirty seven of the 1717 programmes (77.9%) were those of ministries, and the remaining 380 programmes (22.1%) were those of agencies. Of the 1337 ministry programmes, 434 (32.5%) were assessed in 2005, 448 (33.5%) in 2006, and 455 (34.0%) in 2007.

Table 5-8 and Figure 5-5 show the distributions of scores between ministries and

agencies. There is an obvious difference in the scores. The ministries' programmes did not reach the average score every year, and the agencies scored better than the ministries. In terms of the different years, ministries scored an average of 59.2 points in 2005, 59.4 points in 2006, and 65.2 points in 2007, whereas agencies scored an average of 63.3 points in 2005, 61.8 points in 2006, and 68.7 points in 2007. In the total of 1717 programmes, there was a gap of more than 3 points between ministries and agencies. While ministries scored 61.3 points, agencies scored 64.8 points.

This gap appeared to result from programme characteristics such as degree of goal clarity, complexity of planning, and diversity of stakeholders. Implementing policies or programmes made by the ministries they report to, agencies can set more concrete programme objectives than ministries. As a consequence, it is easier for them to develop a performance plan with performance objectives and performance indicators than it is for ministries. As seen in Table 3-17 and Figure 3-8, agencies had slightly higher average scores than ministries in the sub-section Performance Plan. This resulted in increased scores in the Results section, due to the chain-link between questions related to performance (Questions 1-5, 1-6, 1-7, and 3-2).

Table 5-8 Distributions of scores between organizational groups

(Unit: points, %)

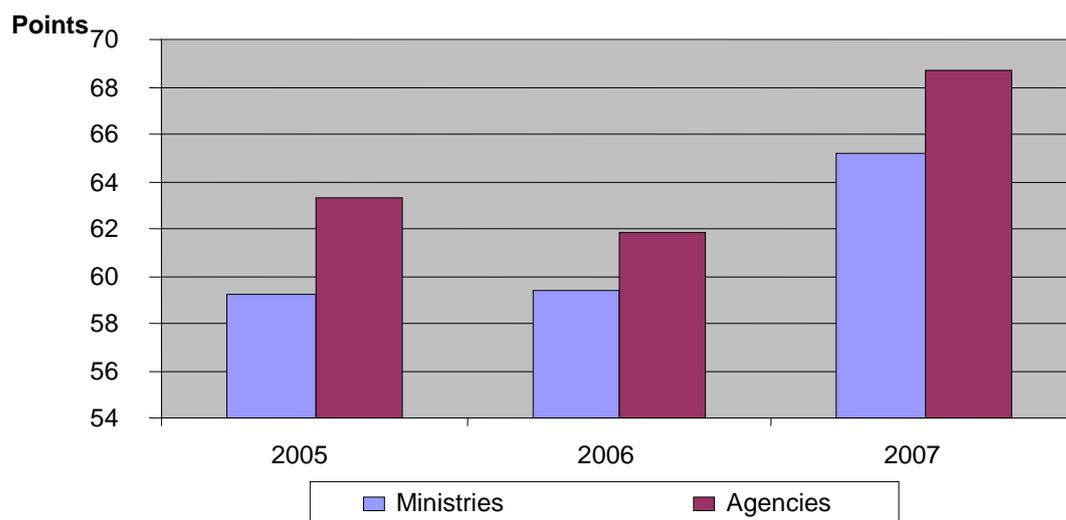
		Total	Planning (30)			Management (20)	Results (50)
			Design (15)	Performance Plan (15)			
Total	Ministries (%)	61.3	23.1 (76.9)	14.1 (94.0)	9.0 (59.8)	15.0 (74.9)	23.2 (46.4)
	Agencies (%)	64.8	23.3 (77.7)	14.0 (93.2)	9.3 (62.3)	15.6 (78.0)	25.9 (51.7)
2005	Ministries (%)	59.2	23.1 (76.9)	13.8 (92.0)	9.3 (61.8)	15.1 (75.3)	21.1 (42.2)
	Agencies (%)	63.3	23.0 (76.5)	13.6 (90.5)	9.4 (62.5)	15.4 (77.1)	25.0 (49.9)
2006	Ministries (%)	59.4	22.8 (76.1)	14.2 (94.9)	8.6 (57.3)	14.6 (72.8)	22.0 (44.0)
	Agencies (%)	61.8	23.3 (77.7)	14.4 (95.9)	8.9 (59.6)	15.3 (76.4)	23.2 (46.3)
2007	Ministries (%)	65.2	23.3 (76.1)	14.3 (94.9)	9.1 (57.3)	15.3 (72.8)	26.5 (44.0)
	Agencies (%)	68.7	23.6 (78.8)	14.0 (93.2)	9.7 (64.5)	16.0 (80.1)	29.1 (58.2)

Notes: 1) Numbers in parentheses in the first row are possible maximum scores.

2) (%) means '(actual score/possible maximum score)\*100'

3) Design means the sub-section Rationale and Design in the Planning section.

Figure 5-5 Graphs showing the distribution of scores between organizational groups



### **5.3 Conclusions**

Ministry of Planning and Budget (MPB), for three consecutive years after SABP was introduced, assessed a total of 1717 budgetary programmes, and produced overall numeric scores and grades for these. In 2005, it assessed 555 programmes, in 2006, 577 programmes, and in 2007, 585 programmes, based on the results of the fiscal years 2004, 2005, and 2006 respectively.

This Chapter has provided statistical descriptions of the SABP results of programmes which were executed in the fiscal years 2005, 2006 and 2007.

In terms of distribution, SABP scores exhibited an inverted U shape skewed a little towards the lower end. The average score for the three years was 62.1 points. However, there appeared to be a little difference in SABP scores among programme groups or checklists.

As for questions in the checklists, different questions made a vastly different score. While almost half of programmes gave a 'No' to Questions 1-6 and 1-7, only one in ten programmes gave a 'No' to Questions 1-1, 1-2, 1-3 and 1-5. This suggests that spending organizations may fail to develop a proper performance indicator or objective.

The three sections 'Planning', 'Management', and 'Results' appeared to make a difference in scores. Considering the weights allotted to the sections, the three scores

were quite various. While the score for the two sections Planning and Management reached almost 80%, that for Results was less than 50%. These differences in scores tended to be the results of the automatic linkage of performance-related questions.

There appeared to be differences in scores depending on the way in which programmes are implemented. Directly-managed or Economy-related programmes earned higher scores than Indirectly-managed or Welfare-related programmes. Due to tendency to place an emphasis not on performance but timely spending of the allotted budgets, Indirectly-managed programmes may pay relatively less attention to developing a performance plan and experience less pressure to achieve their goals (Park, 2006).

As for ministries and agencies, there appeared to be an obvious difference in SABP scores. The ministries' programmes (61.3) achieved lower mean scores than the agencies' (64.8). This gap appeared to result from programme characteristics such as goal clarity, and diversity of stakeholders. Implementing policies or programmes made by ministries, agencies can set more concrete and measurable objectives than ministries. This may result in agencies earning higher scores in Questions 1-5, 1-6, 1-7, and 3-2.

As a result, it is possible to conclude that the SABP results may be significantly different among programme groups such as programme types, the way in which programmes are implemented, organizations. The next two chapters will identify that the divergencies in the SABP results make a significant difference in effect of Korean performance budgeting.

# CHAPTER 6 EMPIRICAL ANALYSIS OF BUDGET ALLOCATION CHANGES

## 6.1 Introduction

The primary purpose of performance budgeting, as noted many times, is to improve the use of public finances through associating budget decisions with performance. However, as Schick (2003) has argued, performance budgeting efforts in many countries have not achieved this, because of difficulties in making links between performance and budget, or because of difficulties in performance measurement. Similarly, Korean performance budgeting, even with SABP, may not quite manage to reflect programme performance, or SABP scores, in budgeting. Assessments made using SABP may be only one of a range of factors affecting budget decisions, in the sense that the budgeting process has a political function of coordinating, and effecting a compromise between, the interests of different stakeholders (Wildavsky, 1961). From Dull's viewpoint (2006), senior administrators may view SABP as a constraint narrowing their intelligence-gathering resources to a transparent and neutral instrument which increases the political cost of budget decisions. In this sense, SABP may be trivialized or moved further away from its goals.

Nonetheless, recent works have argued that the Korean performance budgeting system

had influenced budget allocations between programmes. Park (2006, 2008) reported that the performance information generated by SABP had significant correlations with variations in programme budgets at each stage of budgeting. However, it would be premature, as Park (2006) himself recognized, for generalizations to be made from his conclusions, given that his investigation was conducted using observations of only a third of budgetary programmes for which SABP was used. The random element in selecting programmes to be assessed each year could have resulted in relatively better-performing or more easily linked programmes being evaluated in the first year of SABP.

Since Park (2006) completed his study, the assessment of all programmes using SABP has been completed as was planned. Now that SABP has been used to assess all programmes, it is worth giving comprehensive consideration to whether or not Korean performance budgeting has been using performance information, in the form of SABP scores, in the making of budget decisions. We need to decide whether or not budget participants at each budget stage have been considering the performance information produced by SABP. Furthermore, the extent of the linkage may vary, depending on the characteristics of programmes. For example, Korean performance budgeting may make a difference between SABP grades in associating budget decisions with programme performance, in the sense that the MPB tends to place particular emphasis on reducing the budgets of programmes rated 'Poor'.

In order to answer these questions, this research, as noted in Chapter 4, employed regression analysis. Section 5.2 provides descriptions of data to be analyzed, focusing on the assumptions of regression analysis. Section 5.3 describes analysis results,

estimating regression models which represent the relationship between budget changes and the SABP results of budgetary programmes within spending ministries and agencies, the MPB, and the Legislature (the National Assembly) respectively. Section 5.4 concludes with a discussion of the limitations of this investigation.

## **6.2 Data Descriptions**

The objective of this chapter is to identify whether and how SABP assessments have influenced budget allocations between budgetary programmes. For these investigations, the author used two kinds of key data related to budgetary programmes: programme budget variations; and programme scores or grades produced by SABP.

The research analysed 1717 programmes which were implemented, and then assessed using SABP, by the Korean central government in the fiscal years 2005, 2006, and 2007. The 1717 programmes covered all the programmes which it was planned to assess using SABP at the time when SABP was introduced. Five hundred and fifty five programmes, or 32.3%, were evaluated in 2005, 577 programmes, or 33.6%, in 2006, and 585 programmes, or 34.1%, in 2007.

The budget variations of these 1717 programmes, one of dependent variables in regression models, were individual percentage changes made at the different budget stages. An alternative strategy would be to consider the absolute amounts of individual budget changes made. Identifying the extent to which SABP scores changed programme

budgets, this research used percentage changes as suitable for representing extent. As noted in Chapter 4, they made little difference to the results of the analyses. The 555 programmes assessed in 2005 show percentage variations from 2005 to 2006; the 577 programmes assessed in 2006 show percentage variations from 2006 to 2007; and the 585 programmes in assessed in 2007 show percentage variations from 2007 to 2008. According to the budgeting stages, each year's percentage changes to budgets cover three groups: budget requests by spending ministries and agencies, budget proposals by the MPB (or the President), and final budgets set by the Legislature.

Some programmes experienced budget reductions, others had budget increases, and the rest kept the same level from one year to the next. The budget changes of these 1717 programmes varied from -100% to +1680% at the three budget stages. The highest change observed, 1680%, was a unique and unusual case from the budget year 2008; and the most frequent observation, or mode, was 0%. The budget variations at the point where spending ministries and agencies made their requests showed more variance than those at the proposal and final stage. In terms of standard deviation and variance, the request stage saw the highest figures of 79.2% and 6274.2% respectively. At the point of request, there was an average budget increase of 15.1%, whereas at the proposal or final stage it was almost half that: 7.9% and 8.7% respectively. Table 6-1 summarizes observations as to budget variations at each stage of budgeting.

Table 6-1 Descriptive statistics for individual budget stages

(Unit: %)

	Minimum	Maximum	Mean	Mode	Std. Deviation	Variance
Requested budget	-100.0	1680.0	15.1	3.0	79.2	6274.2
Proposed budget	-100.0	1652.0	7.9	0.0	76.5	5853.3
Final budget	-100.0	1648.0	8.7	0.0	76.7	5889.6

Budget changes were caused by various factors, such as performance and political context. The increase or decrease in the budgets of programmes did not always match their performance or SABP results. That is to say, some programmes saw a number of changes regardless of their performance or SABP assessments. Firstly, fulfilling its purpose might cause a programme to have its budget for the following year reduced by up to 100%. Secondly, a particular attribute of a programme might cause its budget to be changed, regardless of its performance. There were programmes which were being implemented because of the requirements of particular laws. These kinds of programmes were made to change their budgets because of legal factors other than performance. Additionally, some observations suggested that the results of analyses could be biased, because they deviated to such an extent from usual variations. Taking into account that observations from these programmes could distort the estimations of these regression models, the author excluded 317 programmes. Table 6-2 shows the specific number of these excluded programmes.

Table 6-2 Programmes excluded from this analysis

(Unit: number of programmes)

	Total	2005	2006	2007
Terminated programmes	40	13	17	10
Programmes required by law	16	3	5	8
Greater than 100% increase in budget	258	88	80	90
Missing data	3	2	1	-
Total	317	106	103	108

First of all, when considering those programmes with 100% reduction in budget, the author excluded 40 programmes which were terminated because they were completed or because they were transferred to other accounts or ministries/agencies. Out of these 40 programmes, 13 were assessed in 2005, 17 in 2006, and 10 in 2007. For example, the

‘Seventh Main National Road Building’ programme, one of the programmes assessed in 2005, reduced its budget from 293.5 billion Won<sup>30</sup> in 2005 to 0 Won in 2006 because it completed the building of the planned roads. This was regardless of its SABP scores (or grades).

Secondly, this analysis excluded 16 programmes in which budget decisions had to be made in compliance with the relevant laws. Social insurance programmes such as unemployment benefits, national health insurance, and other social welfare programmes established by law are often given budgetary allocations regardless of their performance. For example, the budget for unemployment allowances, in principle, increases or decreases depending not on performance but on economic conditions, at least in the short-term. More specifically, an economic recession causes an increase in unemployment allowances in accordance with the number of unemployed workers. In turn, this results in an increase in the relevant budgets.

Thirdly, the budget variations of these 1717 programmes may include extreme values that can lead the analysis to false conclusions. For example, the speeding up of a particular process in a road building programme (from the making of a drawing to its implementation) can result in an extreme increase in its budget for the next year. Such an extreme budget increase, as an outlier, might distort analysis of the results of budget variations caused by SABP. However, despite the general arguments that such an outlier may reduce the accuracy of the regression outcomes, so far there is no widely accepted standard which defines extreme values as an outlier. For this analysis, the author

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<sup>30</sup>) The Won is the unit of Korean money. One Won, Korean money, is an equivalent to about 1 over 2000 UK Pound, as of June 2009.

excluded cases where budget changes were more than 100%. Although this may seem like an arbitrary standard, it was still the fact that a large number of cases were considered, which lessened the need to rule out variations which would be explainable on the basis of SABP. In a similar context, in their analysis of the PART, Gilmour and Lewis (2006) defined outliers as greater than 100% variations. According to this standard, this study excluded 258 programmes which included 88, 80, and 90 programmes for the assessment years 2005, 2006, and 2007 respectively. As for timing, out of these 258 programmes, 149 had an increase of more than 100 % for the current year's budget, and the remaining 108 had such an increase in the next year's budget changes.

Other possible outlier guidelines would have been anything greater than 10 %, 30 %, or 50 % budget changes. From the incrementalists' viewpoint, budget decisions depend very much on a baseline which, in general, is the budget for the previous year. Some variations from the baseline are normal and common in the process of budgeting (Nah, 2007): 10 % (Bailey and O'Corner, 1975; Kemp, 1982), 25 % (Feno, 1966), and 30 % (Wildavsky, 1984). Indeed, the aggregated level of Korean public expenditure saw a steady increase of 10% every year (Yoon: 1993, Shin: 1991).

When, however, observation data are sorted in accordance with these standards, this may cause losses in the number of samples without making significant improvements in terms of analysis consequences. Indeed, these outlier standards made little change in the regression results of the primary analysis where outliers were greater than 100%, except that standard errors became smaller and estimates became more precise.

Finally, the author excluded three programmes – two in 2005 and one in 2006 – because they were not allocated any budgets in the current year (they were initiated in the budget year t+1), so percentage rate changes for the next year’s budget from the current year’s budget could not be defined.

Having made these changes, the author analysed observations from 1400 programmes, excluding the total of 317 programmes. Table 6-3 makes a comparison between the full sample of 1717 programmes and the truncated sample of 1400 programmes in terms of distribution characteristics at the presidential budget stage. Only observations at the presidential budget stage are described here, for the sake of convenience, because the other stages had a similar distribution. The degree to which the distribution was skewed decreased from 10.1 to -0.5, suggesting that it came close to a normal distribution (Leech et. al; 2008).

Table 6-3 Budget change differences at the presidential budget stage

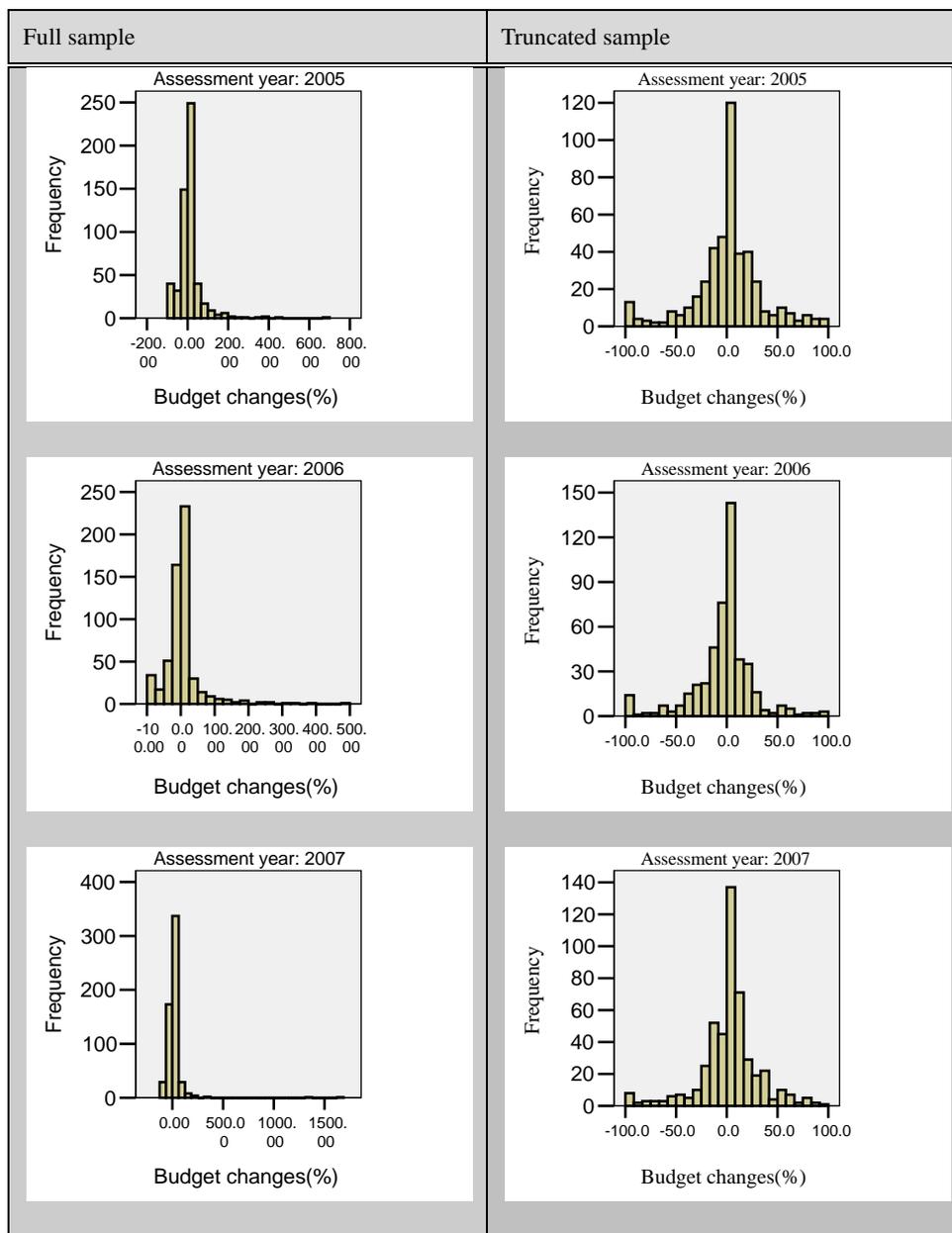
(Unit: number of programmes, %)

	Programmes	Min.	Max.	Mode	Std. Deviation	Variance	Kurtosis	Skewness
Full sample (A)	1717	-100.0	100.0	0.0	76.5	5853.4	182.8	10.1
Truncated sample(B)	1400	-100.0	100.0	0.0	31.2	975.4	2.7	-0.5
Difference(A-B)	317	0.0	0.0	0.0	45.3	4878.0	180.1	10.6

Figure 6-1 illustrates six histograms concerned with budget percentage changes of programmes at the presidential budget stage. The three histograms on the left represent the full sample of 1717 programmes. The top left histogram is for 555 programmes assessed in 2005; the histogram below that is for 577 programmes assessed in 2006; and the lowest histogram shows 585 programmes assessed in 2007. The three histograms of

the truncated sample of 1400 programmes are on the right side of Figure 5-1. The histogram of 449 programmes for 2005 is presented at the top right, below which we can see 577 programmes for 2006, and the bottom right histogram shows 477 programmes for 2007. The distributions look less skewed and more normal compared to the full sample on the left hand side.

Figure 6-1 Histograms of budget changes to assessed programmes



Note: Histograms on the right are those for the truncated samples at the presidential budget stage.

The key independent variable in this analysis is programme performance information measured by SABP. As described in Chapter 3, the information comprises two types: the grade and the score of individual programmes. The score, a sum of three component scores, is translated into one of four grades: ‘Poor’, ‘Modest’, ‘Somewhat effective’, and ‘Effective’. In order to determine a score and a grade for individual programmes, a two-step process is needed. Firstly, spending agencies give a score and a grade to their programmes<sup>31</sup> and then the MPB corrects and determines these by checking their consistency against all programmes. It is the corrected scores or grades that are considered in the process of budgeting. The MPB has endeavoured to provide them in good enough time for spending ministries and agencies to use them in processing budget requests, and has considered them in making budget proposals. This analysis used the SABP scores (or grades) or component scores of 1400 programmes as determined by the MPB.

<sup>31</sup> The distribution of grades or scores awarded by spending ministries and agencies showed a different shape from that of scores awarded by the MPB. The difference in average scores between them was as much as 30 points. Spending ministries and agencies gave an average score of around 90 points, but the average score was down by around 30 points in the MPB’s review. Spending ministries and agencies had a strong tendency to rate their programmes ‘Effective’ (70.4%). On the other hand, they were mostly modified to ‘Modest’ in the process of the MPB’s review of the SABP assessments drafted by spending ministries and agencies. In the MPB’s review, the portion of ‘Effective’ grades decreased significantly from 70.4% to 7.1%. <Table> below summarizes two kinds of grade distribution. Contrary to grade distribution weighted to the upper end in spending ministries’ and agencies’ awards, the grades fixed by the MPB made a bell shape distribution skewed to the lower end and were heavily weighted ‘Modest’. Eight hundred and eighty nine out of a total of 1400 programmes (63.5%) received the grade ‘Modest’. ‘Poor’ and ‘Effective’ grades accounted for 10.1% and 7.1% respectively. ‘Somewhat effective’ accounted for 19.3%, or 270 programmes.

< Table > Comparison of distribution between spending agencies and the MPB

(Unit: number of programmes)

Grade \ Stage	Spending ministries (and agencies)	MPB
Poor	7 (0.5 %)	141 (10.1 %)
Modest	67 (4.8 %)	889 (63.5 %)
Somewhat effective	340 (24.3 %)	270 (19.3 %)
Effective	986 (70.4 %)	100 (7.1 %)
Total	1400 (100.0 %)	1400 (100.0 %)

Table 6-4 and Figure 6-2 make a comparison of the truncated sample with the full sample in terms of scores set by the MPB. The truncated sample appeared to be little different in its distribution from the full sample. In total, the two samples had similar average scores: (truncated sample vs. full sample) 61.9 vs. 62.1 in three-year pooled data, 60.0 vs. 60.1 in 2005, 59.8 vs. 59.9 in 2006, and 65.9 vs. 66.0 in 2007.

Table 6-4 Distribution of scores set by the MPB

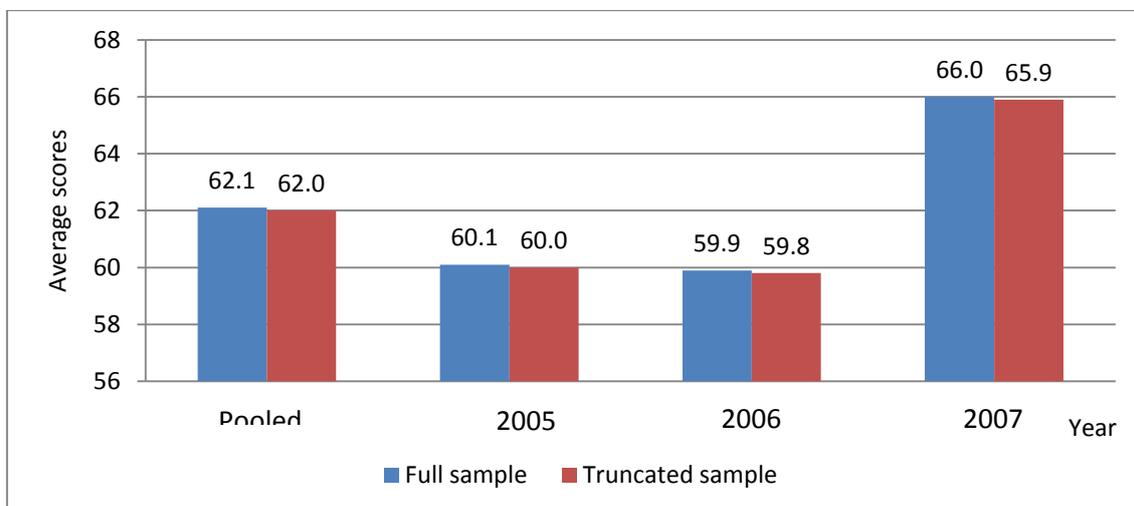
(Units: number of programmes, points)

Programme groups	Number of programmes	Average scores				Variance	Standard Deviation	Skewness	Kurtosis
		Pooled	2005	2006	2007				
1. Full sample	1717	62.1	60.1	59.9	66.0	173.85	13.19	0.334	0.079
2. Truncated sample	1400	62.0	60.0	59.8	65.9	170.72	13.07	0.324	0.203
Large programmes (≥ 29.0 billion Won)	363	63.5	63.2	61.1	66.3	158.50	12.59	0.163	0.660
Small programmes (≤ 2.5 billion Won)	362	60.6	58.0	57.7	65.3	167.21	12.93	0.569	0.215
Programmes related to welfare	230	58.8	57.7	58.3	59.7	106.16	10.30	-0.072	1.060
Programmes related to the economy	513	62.8	60.1	61.9	66.9	183.03	13.53	0.506	-0.284
Programmes managed directly by central government	515	64.5	62.6	61.9	68.9	170.18	13.05	0.431	-0.569
Programmes managed by ministries	1081	61.2	59.2	59.5	65.0	161.41	12.70	0.312	0.351

Notes: 1. Average scores are SABP scores according to the MPB.

2. Average budget changes are for budgets finally allocated by the National Assembly.

Figure 6-2 Graphic comparison of the truncated sample with the full sample



The scores of the truncated sample highlighted various features among the different programme groups, or controlled variables, such as large or small programmes, welfare- or economy-related programmes, programmes managed directly or indirectly by the central government, or programmes managed by ministries or agencies. Individual programme groups were distributed differently from the total truncated sample. 'Programmes managed directly by the central government' had higher average scores (64.5) than those for the total truncated sample, and 'Programmes related to welfare' had the lowest average (58.8). 'Large programmes' and 'Programmes managed directly by the central government' showed a relatively high performance compared to that of other groups.

In terms of SABP grades, the truncated sample appeared to retain the full sample's features. Table 6-5 makes a comparison of the truncated sample with the full sample in terms of grade distribution. In total, individual grades accounted for a similar proportion: (truncated sample vs. full sample) 10.1% vs. 10.7% 'Poor', 63.5% vs. 62.8% 'Modest', 19.3% vs. 19.3% 'Somewhat effective', and 7.1% vs. 7.2% 'Effective'. In addition, the distribution of the truncated sample is similar to that of the full sample in terms of years. Another similarity is that the grades for the truncated sample improved over the years. The proportion of 'Poor' grades decreased gradually, in the same way as the full sample: (truncated sample vs. full sample) 15.1% vs. 15.7% in 2005, 10.3 % vs. 11.3% in 2006, and 5.0% vs. 5.3% in 2007. On the other hand, the proportion (or number) of 'Somewhat effective' and 'Effective' grades increased dramatically from 22.9% (103 programmes) in 2005 to 35.3% (168 programmes) in 2007.

Table 6-5 Distributions of grades set by the MPB for the truncated sample

(Units: Number of programmes)

Year	Total	Poor	Modest	Somewhat effective	Effective
2005	449 (100.0%)	68 (15.1 %)	278 (61.9 %)	84 (18.7 %)	19 (4.2 %)
(Full sample)		(15.7 %)	(61.4 %)	(17.9 %)	(5.0 %)
2006	474 (100.0%)	49 (10.3 %)	326 (68.8 %)	77 (16.3 %)	22 (4.6 %)
(Full sample)		(11.3 %)	(67.2 %)	(16.3 %)	(5.2 %)
2007	477 (100.0%)	24 (5.0 %)	285 (59.7 %)	109 (22.9 %)	59 (12.4 %)
(Full sample)		(5.3 %)	(59.6 %)	(23.8 %)	(11.3 %)
Total	1400 (100.0%)	141 (10.1 %)	889 (63.5 %)	270 (19.3 %)	100 (7.1 %)
(Full sample)		(10.7 %)	(62.8 %)	(19.3 %)	(7.2 %)

Figure 6-3 shows scatter diagrams of the relationship between the reviewed SABP scores or grades and the budget variations of 1400 programmes at the presidential budget stage. They imply that budget changes may have some relationship with SABP grades or scores.

However, fit-lines on the scatter diagrams gradually become flatter from 2005 to 2007. This suggests that linear relationships between budget changes and SABP assessments might be getting weaker over the years. A correlation analysis between them presents linear relationships in a quantitatively clearer way. Table 6-6 provides Pearson correlation coefficients between proposed budgets and SABP scores set by the MPB.

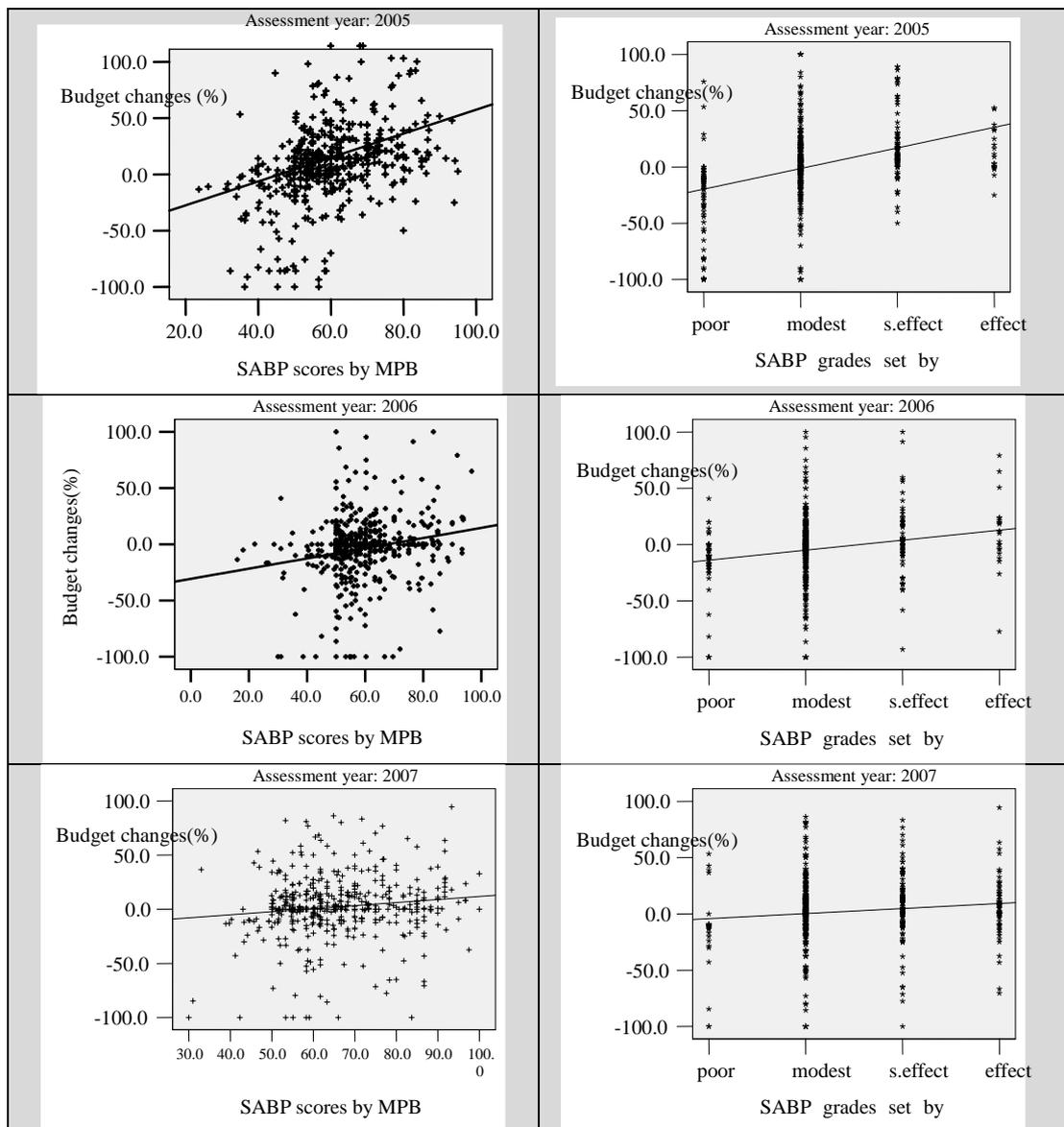
Table 6-6 Pearson correlation coefficients between proposed budgets and SABP scores set by the MPB

Assessment year	2005	2006	2007
Pearson coefficients	0.388***	0.195***	0.124***

Note: \*\*\* denotes statistically significant at the 0.01 level (one-tailed test).

The Pearson correlation coefficients decreased from 0.388 in 2005 to 0.124 in 2007. This confirmed that the linear relationships between budgets and scores might be gradually weakening from 2005 to 2007.

Figure 6-3 Scatter diagrams of the relationship between budget changes and SABP assessments at the presidential budget stage



Note: For the convenience of explanation, only scatter/dot diagrams for the presidential budget stage are shown because histograms for the other stages are similar.

## **6.3 The Results of the Analysis**

### **6.3.1 Introduction**

A public budget, in general, is defined as a plan of expected revenues and expenditures for a public organization within a fiscal year (Nah, 2007). It is widely argued that budget decisions are affected by various macro- or micro-factors such as relevant policies, value preferences, budgeting participants, the current year's budget, and public financial resources. Because these factors are changeable, depending on the times when budget decisions are made, various countries may formulate different budget documents in terms of size or programmes.

In modern societies, participants who prepare and determine budget documents work separately, in principle. Budgets are known to be formulated through three stages. The budgeting process begins with spending agencies requesting funds from a budgetary authority in the Executive branch. The budgetary authority reviews the request documents and makes a budget proposal, considering the economic or political reality and its resource constraints. Finally, the Legislature deliberates and determines on the budget documents proposed by the Executive branch.

Due to the involvement of different participants at each budget stage, fund distributions may be made in a different way from one individual budget stage to the next. Table 6-7 presents the differences for each stage or assessment year in the aggregated budgets of

the 1400 programmes which will be analyzed in this chapter. In the budget year 2007, although spending ministries and agencies wanted to invest an average 52.1 billion Won per programme, the Legislature ended up allocating a smaller average budget of 51.3 billion per programme. More specifically, for one of the road-building programmes in the budget year 2006, the Ministry of Land, Transport and Maritime Affairs, as a spending ministry, decided to invest 770.8 billion Won; the MPB, as the budget authority, proposed reducing the budget to 658.9 billion Won; and finally the Legislature allocated 675.9 billion Won, that is, less than the spending agency requested. This indicates that, at different stages, different criteria may be applied when budget decisions are being made. Here, it is presumed that participants in each budget stage might utilize SABP results in different ways.

Table 6-7 Differences between programme budgets at different budget stages in Korea

(Unit: billion Won)

Assessment year	Number of assessed programmes	Spending authorities	MPB	National Assembly
2005	449	28860.4 (64.3)	28208.3 (62.8)	28563.0 (63.6)
2006	474	19087.2 (40.3)	18591.1 (39.2)	18735.0 (39.5)
2007	477	24836.3 (52.1)	24317.2 (51.0)	24458.6 (51.3)

Note: Average budget per programme is reported in the parentheses.

These three parties (spending agencies, the MPB, and the Legislature) are the principal participants in budgeting. They play the role of a budget saver or a budget spender, depending on the stage of the budget process. Different role-players may rely on different judgements about resource allocations. There may often be disagreement on budget decisions between them. However, it is not easy for a spender to ignore a series

of standards which a saver uses. For example, the MPB, as a budget saver, may use SABP assessments when reviewing spending ministries' and agencies' budget requests. If that is the case, spending ministries and agencies will not find it easy to ignore SABP results. Similarly, such a relationship could occur between budget practitioners and programme managers within spending organizations. That is to say, the SABP results may be a critical factor in budgeting.

Therefore, this section investigates how much SABP results affected budget decisions within spending ministries and agencies, the MPB, and the Legislature (or the National Assembly) respectively. The section describes the relationship between budget decisions and SABP scores (or grades) in order, from the MPB to spending ministries (or agencies) and the National Assembly, taking into consideration that the MPB manages Korean performance budgeting using SABP. This section uses the regression models presented in Chapter 4.

### **6.3.2 Relationships between SABP Assessments and Budget Allocations by the MPB**

In Table 6-8, regression estimates are provided. Model 1 is a simple regression analysis of the difference between percentage changes to budgets and SABP scores, and Model 2 is a multiple regression analysis introducing the current year's budget changes and six controlled variables. These equations are statistically significant at  $p < 0.001$ . In Model 2, the collinearity appears not to be serious in the sense that VIFs (Variance Inflation

Factors) were lower than 10.0 (Menard, 1995; Hair et al., 1995; Neter et al., 1989; Mason et al., 1989; Marquardt, 1970; Kennedy, 1992; cited O'Brien, 2007; Basioudis and Ellwood, 2005).<sup>32</sup> The estimates suggest that SABP scores exerted a statistically significant influence on programme budget decisions during the processing of budget proposals. For the three-year pooled data, the coefficients of the SABP score terms in both models were significantly positive (+) at the significance level of 0.01 (two-tailed test). Substantively, the coefficients suggest that a 10 point increase in the SABP score would result in a 5.9% budget increase being proposed by the MPB. For the individual budget years, the SABP scores had a statistically significant relation (+) with budget proposal changes in the three budget years 2006, 2007, and 2008. The suggestion is similar to Park's conclusion (2006) on the relationship between SABP grades and budgets for the budget year 2006.

From the incrementalists' viewpoint that the budget baseline, like the current year's budget, matters in making next year's budget decisions, it is to be expected that the current year's budget changes in these equations would have a positive (+) relation with the next year's budget changes, the dependent variable. The current year's budget changes had an impact on budget decisions in the three-year pooled data, but not in each year. In this sense, it is not easy to determine that the current year's budget changes were closely correlated with the next year's budget decisions at the stage of budget proposal. This might illustrate the criticism that aggregated expenditure is significant in the incrementalist's theorem, but budgets of individual programmes are not. While there

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<sup>32</sup> In terms of tolerances, the critical variables in these models, SABP scores and the current year's budget changes, are over 1-R<sup>2</sup>, whereas several dummy variables for controlling in individual equations are slightly below 1-R<sup>2</sup> (the same within the spending ministries and agencies, and the National Assembly).

is an incremental regularity in the aggregated expenditure of an organization or a country, this does not occur in the individual budgets of programmes (Natchez and Bupp; 1973, Kanter; 1972, Nah; 1992, cited Nah; 2007).

The results of the regression analysis suggest that differences between the kinds of programmes influenced budget allocations. For 'Programmes related to welfare' and 'Programmes related to the economy', this study expected that they would be affected by changes in policy priorities since the Korean foreign exchange crisis of 1997. Because the crisis made unemployment higher than ever, the Korean government made it a policy priority to strengthen the social safety net with measures such as a social insurance programme, an unemployment allowances programme, and a national health insurance programme. As a result, 'Programmes related to welfare' would receive a greater increase in budget than other programme groups. By contrast, 'Programmes related to the economy' would be given lower budget allocations than 'Programmes related to welfare' (Bang, 2008). In the three-year pooled data, the estimates indicate that 'Programmes related to welfare' have a significantly positive (+) correlation with budget proposals whereas 'Programmes related to the economy' have not. This suggests that 'Programmes related to welfare' may request relatively higher increases in their budget proposal. This may be the result of continuing expansionary investment in building a social safety net for the vulnerable class since the year 1997. In the individual years, the results showed that the two programme groups did not have a significant correlation with budget proposals. As a result, it is suggested that it was hard to determine that resources were not reallocated from 'Programmes related to the economy' to 'Programmes related to welfare'.

As described in Chapter 5, a different management process, direct or indirect, may make a difference in SABP scores or grades, due to the diversity in complexity of programme management techniques. For example, insufficient funds, or funds not available at the right time, may cause 'Programmes subsidized by local governments' to be implemented poorly (The Board of Audit and Inspection of Korea, 2003). Such poor implementation may lower SABP scores, and thus cause the central government to reduce their subsidy to local governments. Conversely, a relatively good implementation of 'Programmes managed directly by the central government' may lead to a higher average score than that for indirectly managed programmes. In the end, these differences may result in differences in the budget allocations between them. The estimates indicate that 'Programmes managed directly by the central government' had a significantly positive (+) relationship with budget proposals within the MPB (significance level: 0.05). This would imply that they were allotted a higher budget than those managed indirectly.

Table 6-8 Relationship of SABP scores to changes made to budget proposals by the MPB

Independent variables	2006 budget		2007 budget		2008 budget		Three-year pooled data	
	Model 1	Model 2						
Score	1.063 <sup>***</sup> (0.119)	1.095 <sup>***</sup> (0.124)	0.453 <sup>***</sup> (0.105)	0.433 <sup>***</sup> (0.107)	0.282 <sup>***</sup> (0.103)	0.259 <sup>**</sup> (0.108)	0.585 <sup>***</sup> (0.062)	0.590 <sup>***</sup> (0.063)
Budget changes for the current year (%)	-	0.008 (0.046)	-	0.037 (0.043)	-	0.112 <sup>***</sup> (0.043)	-	0.052 <sup>**</sup> (0.025)
Programmes related to welfare (0,1)	-	7.276 (5.379)	-	7.969 <sup>**</sup> (4.053)	-	0.613 (3.674)	-	5.438 <sup>**</sup> (2.419)
Programmes related to the economy (0,1)	-	-4.200 (3.425)	-	-1.018 (3.180)	-	0.577 (3.320)	-	-1.819 (1.916)
Programmes belonging to ministries (0, 1)	-	3.967 (3.930)	-	3.632 (3.459)	-	2.217 (3.428)	-	2.659 (2.083)
Programmes managed directly by government(0,1)	-	-0.648 (3.275)	-	5.456 (2.874)	-	6.256 <sup>**</sup> (2.844)	-	3.801 <sup>**</sup> (1.736)
Small programmes(0,1)	-	-1.825 (4.056)	-	-4.339 (3.195)	-	3.976 (3.173)	-	-0.967 (1.988)
Large programmes(0,1)	-	-0.953 (3.511)	-	-0.709 (3.445)	-	-3.123 (3.458)	-	-0.255 (2.077)
Constant	-63.037 <sup>***</sup> (7.325)	-66.319 <sup>***</sup> (8.497)	-30.735 <sup>***</sup> (6.414)	-34.307 <sup>***</sup> (7.313)	-16.434 <sup>***</sup> (6.932)	-20.286 <sup>***</sup> (8.153)	-36.502 <sup>***</sup> (3.925)	-40.617 <sup>***</sup> (4.509)
F	79.105 <sup>***</sup>	10.749 <sup>**</sup>	18.663 <sup>***</sup>	3.709 <sup>**</sup>	7.468 <sup>***</sup>	2.832 <sup>**</sup>	89.047 <sup>***</sup>	13.561 <sup>***</sup>
Adjusted R <sup>2</sup>	0.148	0.148	0.036	0.044	0.013	0.030	0.059	0.067
N	449		474		477		1400	

Notes: 1. Dependent variable is the percentage changes in the budget proposals at the MPB stage.

2. Standard errors are reported in the parentheses.

3. \* is statistically significant at the 0.10 level; \*\* at the 0.05 level; and \*\*\* at the 0.01 level in two-tailed tests.

For the four levels of grades: ‘Poor’, ‘Modest’, ‘Somewhat effective’, and ‘Effective’, it is to be expected that they might have a different impact on budget decisions, given that the MPB has placed an emphasis on treating programmes differently in the process of making budget decisions, depending on SABP grades. The MPB has recommended in the Budget Request Guidance that spending ministries and agencies should reduce by more than 10% the budgets of ‘Poor’ programmes and that ‘Modest’ programmes should present evidence of having improved their performance in order to augment their budgets.

To ascertain how different the impacts are, depending on the levels of grades, the author substituted three dummyized grade levels (0, 1) in place of the term ‘score’ in Model 2 of Table 6-8. Representing performance differences between programmes more clearly than the grade ‘Modest’, the three grades ‘Poor’, ‘Somewhat effective’, and ‘Effective’ are selected. The estimates are presented in Table 6-9. This shows that each level of grade had a statistically significant correlation with budget decisions made in preparing budget documents. The ‘Poor’ grade had a negative (-) correlation with budget decisions, whereas the ‘Somewhat effective’ and ‘Effective’ grades had a positive (+) correlation. This suggests that programmes which achieved higher performance were allocated a higher budget.

In particular, the results indicate that ‘Poor’ grades had a stronger impact on budget decisions than the other grade levels, in the sense that a ‘Poor’ (-0.343, -0.125, -0.134, or -0.219) had the highest standardized coefficients of the three grade levels in terms of absolute value. The rest of the grades might be becoming weaker in their impact over

the years. In the budget year 2008, they did not have a significant correlation with budget decisions. This appeared to result from the MPB's emphasis on giving 'Poor' programmes a budget reduction of more than 10%. In some respects, this confirms the arguments of the SABP's opponents that it might be used only as a tool for cutting programmes' budget requests in the budget year 2008, when the momentum of fiscal reform was becoming weak. Budget makers may use SABP not as a tool for giving a positive incentive but as a penalty to programme managers.

Table 6-9 Differences in the impact of the different grades on changes made to budget proposals by MPB

Independent variables	2006 budget	2007 budget	2008 budget	Three-year pooled data
Poor	-32.901*** (-0.343)	-12.229*** (-0.125)	-17.856*** (-0.134)	22.704*** (-0.219)
Somewhat effective	16.520*** (0.187)	7.140* (0.089)	3.013 (0.043)	9.099*** (0.115)
Effective	13.038* (0.076)	14.449** (0.102)	3.131 (0.035)	9.532*** (0.079)
Budget changes for the current year (%)	-0.001 (-0.001)	0.038 (0.040)	0.118*** (0.125)	0.051** (0.052)
Programmes related to welfare (0,1)	7.818 (0.070)	8.522** (0.104)	0.166 (0.002)	5.284** (0.063)
Programmes related to the economy (0,1)	-3.493 (-0.050)	-0.859 (-0.014)	0.671 (0.011)	-1.567 (-0.024)
Programmes belonging to ministries (0, 1)	2.371 (0.029)	3.034 (0.042)	1.161 (0.017)	1.349 (0.018)
Programmes managed directly by government(0,1)	-0.886 (-0.012)	5.109* (0.084)	5.801** (0.095)	3.213* (0.050)
Small programmes (0,1)	-3.067 (-0.035)	-4.014 (-0.061)	4.013 (0.062)	-1.073 (-0.015)
Large programmes (0,1)	-1.742 (-0.023)	-0.841 (-0.012)	-3.519 (-0.051)	-0.985 (-0.014)
Constant	2.294 (-)	-8.581 (-)	-2.326 (-)	-2.848 (-)
F	10.279***	3.063***	2.761***	13.296***
Adjusted R <sup>2</sup>	0.172	0.042	0.036	0.081
N	449	474	477	1400

Notes: 1. Dependent variable is the percentage changes in the budget proposals at the MPB stage.

2. Standardized coefficients are reported in the parentheses.

3. \* is statistically significant at the 0.10 level; \*\* at the 0.05 level; and \*\*\* at the 0.01 level in two-tailed tests.

In the meantime, SABP is used to assess three components which have different weights

in budgetary programmes: planning (30%), management (20%), and results (50%). As described in Chapter 3, the results component may represent the performance of a programme better than the other two components (Gilmour and Lewis, 2006). It may be expected that this component should have a larger impact on budgeting decisions than the planning or management components, taking into account the primary goal of performance budgeting: linkage of programme performance to budget decisions.

To identify how SABP results for the different components of programmes had critical impacts on budgeting decisions, the author substituted three kinds of SABP component scores for the term 'score' in Model 2. Table 6-10 reports the results of the regression analysis. The three-year pooled data suggests that the three components had a positive (+) relationship with budget changes at the significance level of 0.01. Considering the weights for each component (30%, 20%, and 50%), the results component appeared to have had a relatively low impact on budgeting decisions. While the results component carries 2.5 times the weight of the management component, their standardized coefficients, which represent the strength of the correlation, were almost at the same level (0.156 vs. 0.142). This inconsistency became clearer over the years. While the results component had the largest impact on budget allocations in the budget year 2006, the management component had the largest impact in the budget years 2007 and 2008. Therefore it is difficult to propose that the results component had the strongest impact on the consideration of budget proposals within the MPB. In this sense, the MPB may be giving a reward for procedural compliance rather than actual performance or results.

For individual budget years, the regression results were not consistent. In the budget

year 2006, all three components were significantly correlated with budget proposals. In terms of strength of impact, the results component was the highest, the planning component was the second highest, and the management component was the lowest (Results > Planning > Management). This may reflect the weights given to components in SABP scores. In the budget years 2007 and 2008, the regression results show that only the management component had a statistically significant correlation with budget decisions.

Table 6-10 Relationship of programme components' SABP scores to changes made to budget proposals by MPB

Independent variables	2006 budget	2007 budget	2008 budget	Three-year pooled data
Planning	1.251*** (0.170)	0.542 (0.085)	0.149 (0.026)	0.574*** (0.089)
Management	1.040*** (0.130)	1.091*** (0.153)	0.889** (0.116)	1.081*** (0.142)
Results	1.050*** (0.285)	0.280 (0.087)	0.214 (0.065)	0.516*** (0.156)
Budget changes of the current year (%)	0.008 (0.008)	0.045 (0.047)	0.106** (0.112)	0.052** (0.054)
Programmes related to welfare (0,1)	7.398 (0.067)	8.141** (0.099)	0.593 (0.008)	5.486** (0.065)
Programmes related to the economy (0,1)	-4.234 (-0.060)	-0.066 (-0.001)	0.983 (0.016)	-1.233 (-0.019)
Programmes belonging to ministries (0, 1)	3.718 (0.046)	3.596 (0.049)	2.369 (0.035)	2.572 (0.035)
Programmes managed directly by government(0,1)	-1.055 (-0.015)	4.662 (0.076)	6.041** (0.099)	3.694** (0.057)
Small programmes(0,1)	-1.871 (-0.022)	-5.027 (-0.077)	3.734 (0.058)	-1.136 (-0.016)
Large programmes(0,1)	-0.864 (-0.012)	-1.072 (-0.015)	-3.044 (-0.044)	-0.468 (-0.007)
Constant	-67.772*** (-)	-42.882*** (-)	-26.375*** (-)	-45.974*** (-)
F	8.583***	3.469***	2.632***	11.573***
Adjusted R <sup>2</sup>	0.145	0.050	0.033	0.070
N	449	474	477	1400

Notes: 1. Dependent variable is the percentage changes in the budget proposals at the MPB stage.

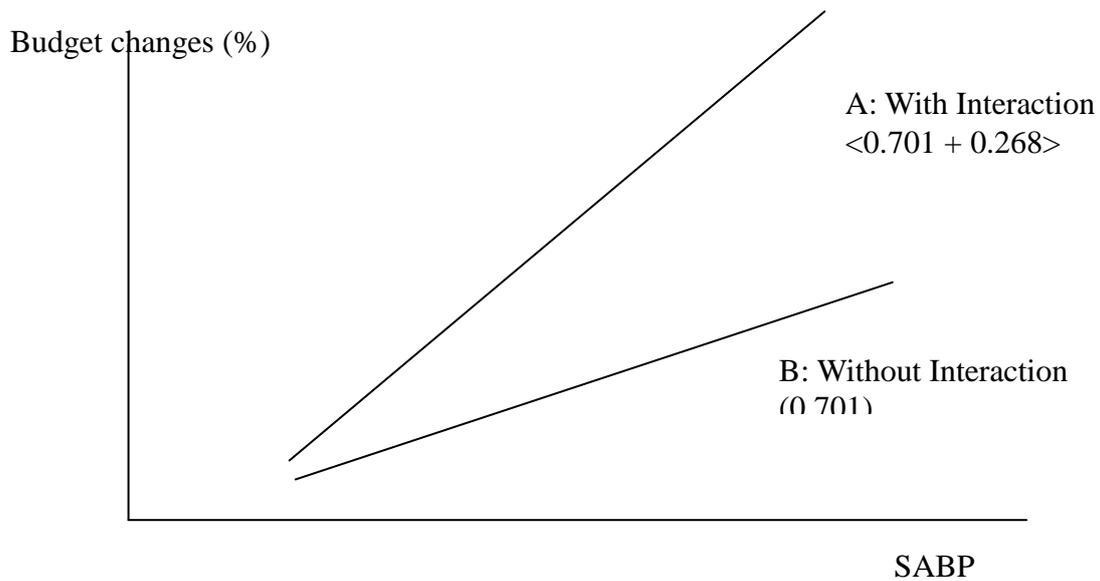
2. Standardized coefficients are reported in the parentheses.

3. \* is statistically significant at the 0.10 level; \*\* at the 0.05 level; and \*\*\* at the 0.01 level in two-tailed tests.

Different groups of programmes, as described earlier, had a different distribution of SABP scores (or grades) and budget changes. For example, as shown in Table 6-4, ‘Programmes managed directly by the central government’ (64.5) on average achieved higher scores than the other groups. ‘Programmes related to welfare’ had the lowest average scores (58.8) and the highest budget increases (3.55%) on average. Presumably, the SABP results of each group of programmes may have a different impact on budget decisions. Discerning interaction effects can help describe differences in the impact of SABP results on budget changes among programme groups.

To do this, the author introduced six interaction terms of controlled variables with SABP scores into Model 2 as independent variables. The estimates are shown in Table 5-11. In the three-year pooled data, they indicate that ‘Small programmes ( $\leq 2.5$  billion Won)’ had a statistically significant interaction with SABP scores. The interaction term had positive (+) impacts on budget changes. It is indicated that the programmes with a positive interaction effect had a larger coefficient of the term ‘score’, because the coefficient of the interaction term was added. In this case, interacting positively (+) with SABP scores, the ‘Small programmes’ had a larger coefficient of the term ‘score’, 0.969 ( $0.701 + 0.268$ ). Figure 6-4 gives a simple illustration of the interaction effect. Line A in the figure presents a graph with interaction effect, whereas line B is without interaction effect. This suggests that ‘Small programmes’ appeared to have made the positive interaction effect (+) accelerate the impact of SABP scores on their budget changes. That is to say, the ‘Small programmes’ group had wider variations in their budget changes, depending on the difference in their SABP scores, than other groups.

Figure 6-4 Example of interaction effect



In the individual budget years, the regression results were not similar to those for the three-year pooled data. They were not consistent over the budget years. In the budget year 2006, they suggest that ‘Programmes related to welfare’ had a significant interaction (+) with SABP scores, whereas ‘Large programmes ( $\geq 29.0$  billion Won)’ and ‘Programmes belonging to ministries’ had a negative (-) interaction. Particularly, the negative interaction effect of ‘Large programmes’ and ‘Programmes belonging to ministries’ played a role in reducing the coefficients of the term ‘score’. This suggests that the programmes weakened the marginal impact of the score variations on budget proposals. In the budget year 2007, the results of the regression analysis suggest that ‘Small programmes’ had a positive (+) interaction with SABP scores, whereas ‘Programmes belonging to ministries’ had a negative (-) interaction. In the budget year 2008, the results indicate that there were no significant interactions between variables.

As stated in Chapter 5, the author expected that the impact of SABP assessments on

budget allocations would be unequal and would depend on the size of individual programmes. The expectation was that SABP assessments would matter more for ‘Small programmes’ than for large ones. Budgets for small programmes are more sensitive to SABP grades or scores than those of large programmes, because large programmes are ‘well established; they have important constituencies and, usually, long histories (Gilmour and Lewis, 2006)’. These regression results suggest that ‘Large programmes’ might be less subject to change by SABP scores in the process of budgeting than ‘Small programmes’.

The experience of budget makers gave some support to the findings on the impact of ‘Large programmes’ on budget allocations. One budget maker who was in charge of road-building programmes, relatively large programmes, in the MPB described his experience of the process of budgeting as follows:

*It was not easy to utilize SABP scores or grades in allocating budgets to programmes, because SABP is not good at producing performance information for my programmes. Most of my programmes were related to the building of roads, and so their primary performance was realized in the long term, after they had been completed. As a result, SABP ended up measuring the progress of the construction process. That, however, was not useful for budget decisions (Personal communication with the author, 2005-2006)<sup>33</sup>.*

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<sup>33</sup> This witness provided information during 2005-2006 when the author was in charge of managing SABP at the MPB. In reviewing SABP assessments submitted by spending agencies, the author had personal communication with a number of programme managers and budget makers. Here the author is summarizing the discussions (hereafter same).

Table 6-11 Interaction effects between SABP scores and programme groups at the MPB stage

Independent variables	2006	2007	2008	Three-year pooled data
Score	1.463 <sup>***</sup> (0.329)	0.725 <sup>***</sup> (0.294)	0.168 (0.257)	0.701 <sup>***</sup> (0.161)
Score*Programmes related to welfare	1.082 <sup>**</sup> (0.487)	-0.276 (0.351)	0.389 (0.357)	0.179 (0.221)
Score*Programmes related to the economy	0.374 (0.286)	-0.017 (0.253)	-0.092 (0.280)	-0.004 (0.150)
Score*Programmes belonging to ministries	-0.526 <sup>*</sup> (0.313)	-0.524 <sup>*</sup> (0.292)	0.055 (0.272)	-0.192 (0.160)
Score*Programmes managed by government	0.063 (0.267)	-0.140 (0.241)	0.024 (0.217)	0.011 (0.133)
Score*Small programmes	0.166 (0.355)	0.494 <sup>*</sup> (0.256)	0.270 (0.245)	0.268 <sup>*</sup> (0.153)
Score*Large programmes	-0.856 <sup>***</sup> (0.291)	0.248 (0.264)	-0.242 (0.282)	-0.242 (0.156)
Budget changes for the current year (%)	-0.007 (0.045)	0.036 (0.043)	0.113 <sup>***</sup> (0.043)	0.053 <sup>**</sup> (0.025)
Programmes related to welfare (0,1)	-55.166 <sup>*</sup> (28.668)	24.791 (20.727)	-22.096 (22.164)	-4.821 (13.214)
Programme related to the economy (0,1)	-26.022 (17.233)	0.688 (15.204)	6.980 (18.799)	-1.113 (9.395)
Programmes belonging to ministries (0, 1)	35.822 <sup>*</sup> (19.568)	34.647 <sup>*</sup> (17.738)	-1.509 (18.244)	14.759 (10.143)
Programmes managed directly by government(0,1)	-4.550 (16.442)	13.426 (14.738)	5.018 (14.691)	2.979 (8.523)
Small programmes (0,1)	-11.170 (21.039)	-33.034 <sup>**</sup> (15.363)	-13.628 (16.391)	-17.125 (9.551)
Large programmes (0,1)	52.108 <sup>***</sup> (18.351)	-15.054 (16.315)	12.864 (18.972)	15.233 (10.034)
Constant	-88.835 <sup>***</sup> (20.466)	-51.827 <sup>***</sup> (20.442)	-14.535 (17.813)	-48.037 <sup>***</sup> (10.348)
F	7.554 <sup>***</sup>	2.742 <sup>***</sup>	2.022 <sup>**</sup>	8.702 <sup>***</sup>
Adjusted R <sup>2</sup>	0.170	0.049	0.029	0.072
N	449	474	477	1400

Notes: 1. Dependent variable is the percentage change in budget proposals at the MPB stage.

2. Standard errors are reported in the parentheses.

3. \* is statistically significant at the 0.10 level; \*\* at the 0.05 level; and \*\*\* at the 0.01 level in two-tailed tests.

These empirical results, statistically significant relationships between changes to budget proposal and SABP scores, were significantly consistent with experience within the MPB. In the Budget Office of the MPB, the linking of budget choices with programme

performance began to attract more attention among budget makers as they prepared budget documents. One of the staff in the Budget Office described his experience as follows:

*When I was discussing my budget decisions with higher-level budget makers in the review commission in the MPB, they started by asking me which level of SABP scores or grades my programmes showed. In the case of a mismatch of these with the budget allocation, they required me to present convincing reasons. So I tried to link budgets with SABP scores or grades, particularly 'Poor', as much as I possibly could, in the course of preparing for the review (Personal communication with the author, 2005-2006).*

However, the regression coefficients of the term 'score' suggest that the impact of SABP results on budget decisions might be decreasing over the years. The coefficients had been decreasing by four or five times, from 1.095 to 0.259 in Model 2, throughout the three years. There could be several possible explanations for this phenomenon. Firstly, differences in the composition of programmes between the assessment years might cause SABP assessments to have different impacts on programme budget allocations. For example, programmes might be selected to make the integration of assessment results with budget allocations easier in the first year of using SABP than in the second or third year. Secondly, this may confirm concerns inside and outside government about the implementation of SABP being merely for appearances, due to the decline in reforming drive in the later part of the Participatory Administration's term. Bang (2008) proposed that the driving force towards budgetary reform within the Korean central

government became weaker in the later years of the Participatory Administration (2003-2007). As the driving force declined, efforts towards integrating SABP results with budgets might have been little activated, even within the Executive branch. Although this phenomenon needs in-depth analysis, this issue is beyond the scope of this research.

### **6.3.3 Relationships between SABP Assessments and Budget Requests by Spending Ministries and Agencies**

In the budgeting process, spending ministries and agencies are a starting point which may have an effect on the preparation of budget documents within the MPB. In this sense, spending ministries and agencies play a critical role in ‘soft-landing’ Korean performance budgeting, if we take into account their practical impact on budget proposals within the MPB. This section investigates whether or how spending ministries and agencies used SABP assessments in the process of making budget requests for programmes. The basic frame for analysis is the same as in Section 6.3.2.

The regression results are presented in Table 6-12. All equations but Model 1 in the budget year 2008 are significant at  $p < 0.05$ . In the three-year pooled data, the regression results indicate that SABP scores had a statistically significant correlation (+) with budget decisions. This implies that performance information produced by SABP made a significant contribution to preparing budget requests within spending ministries and agencies. The results suggest that, as in the MPB, the current year’s budget changes were a significant factor in making the next year’s budget decisions. Characteristics of

programmes appeared to affect budget allocations by spending ministries and agencies. 'Programmes related to welfare' and 'Programmes belonging to ministries' had a statistically significant correlation (+) with budget decisions. This suggests that these programmes might be allotted larger budgets than other programmes, regardless of SABP scores.

For the individual budget years, the regression results indicate that the correlation between SABP assessments and budget decisions was not consistent. The correlation was statistically significant in the budget years 2006 and 2007, but not in 2008. As was the case with the MPB, the coefficients of the term 'score' were decreasing significantly throughout the three budget years (0.815 -> 0.376 -> 0.166). This means, as suggested by the correlation analysis, that the impact of SABP on budget requests might have been decreasing during the same period.

Within spending ministries and agencies, budget makers seemed to have given more emphasis to performance in making their budget requests since the introduction of SABP. Many programme managers in spending ministries and agencies experienced more difficulty when formulating budget requests for their programmes. One of programme managers said:

*Unlike in the period before SABP budgeting, there were an increasing number of discussions about programme performance with the budget makers in my ministry. My budget office asked me to develop performance indicators to measure programme performance, and to present these measurements along*

*with my programme budget requests. In addition, after the office checked and reviewed my SABP assessments, it modified the budget requests for my programmes. (Personal communication with the author, 2005-2006)*

This trend appeared to spread throughout the government, regardless of proper performance measurement. One budget manager in a spending ministry/agency gave the following comments about the linkage effort:

*It was not easy for spending ministries and agencies to neglect SABP assessments in the process of budgeting. It was more difficult to convince the MPB or the National Assembly committee in cases where the SABP score and the budget change did not match. For example, when increasing or not reducing budget of programmes rated 'Poor', we needed to give plausible reasons or even to present action plans for improving their performance. (Personal communication with the author, 2005-2006)*

Table 6-12 Relationships between SABP scores and changes to budget requests in spending ministries and agencies

Independent variables	2006		2007		2008		Three-year pooled data	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Score	0.815*** (0.116)	0.866*** (0.121)	0.376*** (0.109)	0.372*** (0.112)	0.166 (0.109)	0.185 (0.114)	0.463*** (0.063)	0.493*** (0.064)
Budget changes for the current year (%)	-	0.073* (0.044)	-	0.048 (0.045)	-	0.126*** (0.046)	-	0.080*** (0.026)
Programmes related to welfare (0,1)	-	3.030 (5.217)	-	9.797** (4.223)	-	0.121 (3.876)	-	5.557** (2.456)
Programmes related to the economy (0,1)	-	-3.482 (3.322)	-	-0.903 (3.313)	-	-3.762 (3.503)	-	-2.668 (1.945)
Programmes belonging to ministries (0, 1)	-	4.204 (3.812)	-	3.766 (3.604)	-	6.292* (3.616)	-	4.160** (2.115)
Programmes managed directly by government (0,1)	-	-2.268 (3.176)	-	3.284 (2.995)	-	2.896 (3.000)	-	1.355 (1.763)
Small programme (0,1)	-	-0.265 (3.934)	-	-4.162 (3.328)	-	0.576 (3.348)	-	-1.679 (2.018)
Large programme (0,1)	-	-4.916 (3.405)	-	2.118 (3.590)	-	-6.815* (3.648)	-	-3.648 (2.038)
Constant	-44.822*** (7.127)	-48.412*** (8.241)	-21.642*** (6.684)	-25.634*** (7.619)	-3.021 (7.330)	-8.210 (8.601)	-24.367*** (4.001)	-29.234*** (4.577)
F	49.206***	7.397***	11.795***	2.876***	2.319	2.459**	53.598***	10.580***
Adjusted R <sup>2</sup>	0.097	0.103	0.022	0.031	0.003	0.024	0.036	0.052
N	449		474		477		1400	

Notes: 1. Dependent variable is the percentage change in budget requests at the spending ministries and agencies stage.  
 2. Standard errors are reported in the parentheses.  
 3. \* is statistically significant at the 0.10 level; \*\* at the 0.05 level; and \*\*\* at the 0.01 level in two-tailed tests.

Table 6-13 below presents the regression results for the models which replaced the score terms in Model 2 with three levels of grade ('Poor', 'Somewhat effective', and 'Effective'). The four equations are significant at  $p < 0.01$ .

Table 6-13 Differences between grades in their impact on changes to budget requests in spending ministries and agencies

Independent variables	2006	2007	2008	Three-year pooled data
Poor	-25.524*** (-0.282)	-13.209*** (-0.131)	-15.223** (-0.108)	-19.748*** (-0.189)
Somewhat effective	14.898*** (0.179)	3.170 (0.038)	2.605 (0.036)	7.502*** (0.094)
Effective	11.339 (0.070)	11.032 (0.075)	1.379 (0.015)	7.362** (0.060)
Budget changes for the current year (%)	0.064 (0.066)	0.047 (0.048)	0.131*** (0.132)	0.080*** (0.081)
Programmes related to welfare (0,1)	3.488 (0.033)	10.456*** (0.123)	-0.108 (-0.001)	5.402** (0.064)
Programmes related to the economy (0,1)	-2.847 (-0.043)	-0.601 (-0.009)	-3.579 (-0.055)	-2.440 (-0.037)
Programmes belonging to ministries (0, 1)	3.182 (0.041)	2.981 (0.040)	5.360 (0.074)	3.012 (0.040)
Programmes managed directly by government(0,1)	-2.620 (-0.039)	2.884 (0.046)	2.516 (0.039)	0.840 (0.013)
Small programmes (0,1)	-1.226 (-0.015)	-3.797 (-0.056)	0.641 (0.009)	-1.760 (-0.024)
Large programmes (0,1)	-5.647* (-0.080)	-2.183 (-0.030)	-7.145** (-0.099)	-4.296** (-0.060)
Constant	5.267 (-)	-2.566 (-)	4.828 (-)	2.545 (-)
F	7.337***	2.402***	2.380***	10.410***
Adjusted R <sup>2</sup>	0.124	0.029	0.028	0.063
N	449	474	477	1400

Notes: 1. Dependent variable is the percentage change in budget requests at the spending ministries and agencies stage

2. Standardized coefficients are reported in the parentheses.

3. \* is statistically significant at the 0.10 level; \*\* at the 0.05 level; and \*\*\* at the 0.01 level in two-tailed tests.

In the three-year pooled data, each level of grade had a statistically significant relationship with the next year's budget requests within the spending ministries and agencies. 'Poor' grades were negatively (-) correlated with budget requests, whereas 'Somewhat effective' and 'Effective' grades were positively (+) correlated. This

suggested that each level of grade appeared to have been used appropriately in the budget request process. To paraphrase, ‘Somewhat effective’ and ‘Effective’ programmes were increasing their budget requests, whereas ‘Poor’ programmes were decreasing their budget requests. Furthermore, ‘Poor’ grades appeared to have a stronger impact on budget requests than the other grade levels. The absolute values of the standardized coefficients gave a suggestion of this (poor: 0.189 > somewhat effective: 0.094 > effective: 0.060).

For the individual budget years, results of the regression analysis suggest that ‘Poor’ grades alone tended to be associated in a statistically significant way with request changes. The impact of ‘Poor’ grades on budget requests appeared to be getting weaker throughout these three years (standardized coefficients: -0.282 vs. -0.131 vs. -0.108). This confirms the concerns that SABP assessments might be used as a tool for cutting budgets.

Table 6-14 provides the regression results for the model which substituted the three component scores for the overall scores in Model 2. The equations have a statistical significance at  $p < 0.01$ .

In the three-year pooled data, the results indicate that the three components had statistically significant impacts on budget requests within spending ministries and agencies. Similarly within the MPB, the strength of impact was not consistent with the weights given to SABP components. Although the planning component had 1.5 times more weight than the management component, its impact was presented as weaker

(standardized coefficients: 0.055 vs. 0.116). Given their comparative weights (20% vs. 50%), the results component appeared to have a relatively weak impact compared to the management component. In a sense, it is implied that the use of SABP might result in a goal displacement which concentrated on operation procedures rather than results.

Table 6-14 Relationships between programme components' SABP scores and changes to budget requests in spending ministries and agencies

Independent variables	2006	2007	2008	Three-year pooled data
Planning	0.893** (0.129)	0.518 (0.079)	-0.029 (-0.005)	0.361* (0.055)
Management	0.623* (0.082)	0.973*** (0.132)	0.899** (0.112)	0.889*** (0.116)
Results	0.900*** (0.259)	0.213 (0.064)	0.173 (0.180)	0.480*** (0.144)
Budget changes for the current year (%)	0.073* (0.029)	0.055 (0.056)	0.120*** (0.121)	0.082*** (0.083)
Programmes related to welfare (0,1)	3.062 (0.029)	10.034** (0.118)	0.012 (0.000)	5.405** (0.064)
Programmes related to the economy (0,1)	-3.943 (-0.060)	0.051 (0.001)	-3.219 (-0.049)	-2.255 (-0.035)
Programmes belonging to ministries (0, 1)	4.299 (0.056)	3.707 (0.049)	6.581* (0.091)	4.240** (0.057)
Programmes managed directly by government(0,1)	-2.612 (-0.039)	2.532 (0.040)	2.791 (0.044)	1.431 (0.022)
Small programmes (0,1)	-0.355 (-0.004)	-4.830 (-0.071)	0.387 (0.006)	-1.749 (-0.024)
Large programmes (0,1)	-4.775 (-0.068)	-2.431 (-0.034)	-6.716* (-0.093)	-3.841* (-0.054)
Constant	-45.887*** (-)	-34.090*** (-)	-14.297 (-)	-32.037*** (-)
F	5.960***	2.697***	2.413***	8.949***
Adjusted R <sup>2</sup>	0.100	0.035	0.029	0.054
N	449	474	477	1400

Notes: 1. Dependent variable is the percentage change in budget requests at the spending ministries and agencies stage

2. Standardized coefficients are reported in the parentheses.

3. \* is statistically significant at the 0.10 level; \*\* at the 0.05 level; and \*\*\* at the 0.01 level in two-tailed tests.

Table 6-15 below shows the estimated results for the equations with the six interaction terms. The four equations have a statistical significance at  $p < 0.01$ .

Table 6-15 Interaction effects between SABP scores and programme groups in spending ministries and agencies

Independent variables	2006	2007	2008	Three-year pooled data
Score	1.102*** (0.321)	0.636** (0.307)	0.290 (0.271)	0.648*** (0.163)
Score*Programmes related to welfare	0.977** (0.475)	-0.183 (0.366)	0.426 (0.377)	0.171 (0.224)
Score*Programmes related to the economy	0.300 (0.279)	-0.043 (0.264)	0.046 (0.296)	-0.030 (0.153)
Score*Programmes belonging to ministries	-0.517 (0.306)	-0.455 (0.305)	-0.297 (0.287)	0.261 (0.163)
Score*Programmes managed by government	0.138 (0.260)	-0.207 (0.251)	-0.090 (0.229)	-0.049 (0.136)
Score*Small programmes	0.333 (0.346)	0.487* (0.268)	0.260 (0.259)	0.293* (0.155)
Score*Large programmes	-0.483* (0.284)	0.245 (0.275)	-0.057 (0.298)	-0.100 (0.159)
Budget changes for the current year (%)	0.064 (0.044)	0.046 (0.045)	0.128*** (0.046)	0.082*** (0.026)
Programmes related to welfare (0,1)	-53.503* (27.970)	21.069 (21.628)	-25.213 (23.403)	-4.151 (13.420)
Programmes related to the economy (0,1)	-20.674 (16.813)	2.307 (15.866)	-6.015 (19.849)	-0.276 (9.541)
Programmes belonging to ministries (0, 1)	35.592* (19.092)	30.436* (18.217)	25.727 (19.263)	20.506** (10.301)
Programmes managed directly by government(0,1)	-10.808 (16.042)	15.418 (15.379)	9.114 (15.512)	4.167 (8.656)
Small programmes (0,1)	-19.389 (20.526)	-32.622** (16.031)	-16.171 (17.307)	-19.405** (9.699)
Large programmes(0,1)	25.108 (17.904)	-16.392 (17.025)	-2.883 (20.032)	2.966 (10.190)
Constant	63.330*** (19.968)	-41.102** (18.668)	-15.629 (18.808)	-39.344*** (10.509)
F	5.154***	2.154***	1.746***	6.917***
Adjusted R <sup>2</sup>	0.115	0.033	0.021	0.056
N	449	474	477	1400

Notes: 1. Dependent variable is the percentage change in budget requests at the spending ministries and agencies stage

2. Standard errors are reported in the parentheses.

3. \* is statistically significant at the 0.10 level; \*\* at the 0.05 level; and \*\*\* at the 0.01 level in two-tailed tests.

In the three-year pooled data, the results indicate that no individual programme groups but ‘Small programmes’ had statistically significant interaction with SABP scores. In the three budget years, the results indicate that the interaction effects were inconsistent

between the three budget years. In 2006, 'Welfare-related programmes (+)' and 'Large programmes (-)' had a significant interaction with SABP scores, whereas, in 2007, only 'Small programmes' had a statistically significant association (+) with SABP scores. In 2008, there were no significant interactions. In the budget year 2006, the results suggest that 'Welfare-related programmes' might be more sensitive to SABP scores. This appeared to result from the higher proportion of 'Small programmes' in 'Programmes related to welfare'. 'Programmes related to welfare' had the highest proportion of 'Small programmes' (31.7%) in the programme groups (average: 25.9%, 'Programmes directly managed by government': 28.5%, 'Programmes related to the economy': 16.2%, 'Programmes belonging to ministries': 22.6%).

#### **6.3.4 Relationships between SABP Assessments and Budget Appropriations by the National Assembly**

The National Assembly has the final say in determining public budgets on the basis of budget proposals presented by the President. However, budget proposals are not binding on the National Assembly, because it has the authority, under the Korean Constitution, to modify them regardless of budget proposals or SABP assessments. In this respect, it is difficult to achieve the primary objective of the performance budgeting system without close cooperation between the National Assembly and the Executive. This section, therefore, examines how the nature of the relationship between budget decisions and SABP scores was affected by the National Assembly.

Table 6-16 provides the regression results of Model 1 and Model 2 for the National Assembly. All equations have a statistical significance at  $p < 0.05$ . It is indicated that SABP scores had a statistically significant correlation (+) with budget allocations within the National Assembly for all equations. This implies that, the higher scores the programmes had, the bigger budgets they were allocated. However, other variables did not have a consistent relationship with budget allocations. In the three-year pooled data, 'the current year's budget changes', 'Programmes related to welfare', and 'Programmes managed by government' had a statistically significant correlation (+) with budget percentage changes, whereas they were not consistent for the individual budget years.

From the incrementalists' viewpoint that budget allocations within the National Assembly rely considerably on budget proposals presented by the President (Nah, 2007), these regression results may be similar to those made at the MPB stage. According to the incrementalists, the National Assembly may closely reflect presidential proposals in its final budgets. In practice, only 249 (17.8%) of the 1400 programmes which were assessed by SABP were modified in the budget allocation process of the National Assembly. Furthermore, 181 (95.1%) of these 249 programmes appeared to have been fine-tuned, taking into account that they had received budget changes of the same order in the Executive and the National Assembly (just 4.9% had a different sign: +/-  $\rightarrow$  -/+, +/-  $\rightarrow$  0, or 0  $\rightarrow$  +/-).

Considering carefully, it might be suggested that the National Assembly would rather respect presidential budget proposals than make active use of SABP assessments.

Table 6-16 Relationship of SABP scores to final budget changes at the National Assembly stage

Independent variables	2006		2007		2008		Three-year pooled data	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Score	0.953*** (0.116)	0.992*** (0.120)	0.485*** (0.109)	0.460*** (0.112)	0.262** (0.103)	0.240** (0.108)	0.553*** (0.062)	0.560*** (0.063)
Budget changes for the current year (%)	-	0.037 (0.044)	-	0.018 (0.045)	-	0.107** (0.043)	-	0.053** (0.025)
Programmes related to welfare (0,1)	-	10.171* (5.199)	-	8.535** (4.218)	-	-0.310 (3.691)	-	5.767** (2.423)
Programmes related to the economy (0,1)	-	-3.096 (3.310)	-	-0.405 (3.309)	-	0.020 (3.336)	-	-1.280 (1.919)
Programmes belonging to ministries (0, 1)	-	2.077 (3.799)	-	3.556 (3.600)	-	4.038 (3.444)	-	2.861 (2.087)
Programmes managed directly by government(0,1)	-	-1.918 (3.166)	-	5.801 (2.991)	-	5.874** (2.857)	-	3.336* (1.739)
Small programmes (0,1)	-	-2.557 (3.920)	-	-3.968 (3.325)	-	0.537 (3.188)	-	-2.431 (1.991)
Large programmes(0,1)	-	-2.736 (3.393)	-	0.369 (3.586)	-	-4.553 (3.474)	-	-1.052 (2.010)
Constant	-55.174*** (7.108)	-57.328*** (8.213)	-32.562*** (6.671)	-36.403*** (7.611)	-14.937** (6.950)	-18.348** (8.191)	-34.031*** (3.933)	-37.943*** (4.516)
F	67.525***	9.806***	19.717***	3.757***	6.428**	2.467**	79.250***	12.434***
Adjusted R <sup>2</sup>	0.129	0.136	0.038	0.045	0.011	0.024	0.053	0.061
N	449		474		477		1400	

Note: 1. Dependent variable is the percentage changes to final budgets at the National Assembly stage.

2. Standard errors are reported in the parentheses.

3. \* is statistically significant at the 0.10 level; \*\* at the 0.05 level; and \*\*\* at the 0.01 level in two-tailed tests.

Table 6-17 shows the regression results for the impact of each SABP grade on budget allocation within the National Assembly. The equations have a statistical significance at  $p < 0.01$ .

Table 6-17 Differences between grades in their impact on changes to budget request in the National Assembly

Independent variables	2006	2007	2008	Three-year pooled data
Poor	-29.313*** (-0.319)	-12.467*** (-0.123)	-17.412*** (-0.130)	-20.856*** (-0.201)
Somewhat effective	15.014*** (0.178)	8.420** (0.100)	3.249 (0.047)	9.249*** (0.117)
Effective	12.438* (0.076)	15.187** (0.103)	2.948 (0.033)	9.208*** (0.076)
Budget changes for the current year (%)	0.029 (0.029)	0.019 (0.020)	0.113*** (0.119)	0.053** (0.054)
Programmes related to welfare (0,1)	10.678** (0.100)	9.061** (0.106)	-0.614 (-0.009)	5.651** (0.067)
Programmes related to the economy (0,1)	-2.464 (-0.037)	-0.264 (-0.004)	0.142 (0.002)	-1.027 (-0.016)
Programmes belonging to ministries (0, 1)	0.636 (0.008)	2.961 (0.039)	3.028 (0.044)	1.672 (0.022)
Programmes managed directly by government (0,1)	-2.112 (-0.031)	5.451* (0.086)	5.394* (0.089)	2.790 (0.043)
Small programmes (0,1)	-3.659 (-0.044)	-3.646 (0.053)	0.588 (0.009)	-2.539 (-0.036)
Large programmes (0,1)	-3.411 (-0.048)	0.194 (0.003)	-4.934 (-0.072)	-1.739 (-0.024)
Constant	4.679 (-)	-9.301** (-)	-1.753 (-)	-2.343 (-)
F	9.112***	3.129***	2.513***	12.000***
Adjusted R <sup>2</sup>	0.153	0.043	0.031	0.073
N	449	474	477	1400

Notes: 1. Dependent variable is the percentage changes to final budgets at the National Assembly stage.

2. Standardized coefficients are reported in the parentheses.

3. \* is statistically significant at the 0.10 level; \*\* at the 0.05 level; and \*\*\* at the 0.01 level in two-tailed tests.

In the three-year pooled data, the estimates indicate that each level of grades had a statistically significant correlation with budget allocations. Programmes rated as 'Poor' were negatively (-) correlated with budget allocations, whereas 'Somewhat effective'

and 'Effective' grades were positively (+) correlated. This suggests that the grade levels of programmes might have an effect on budget allocations within the National Assembly. In the individual years, the results indicate that while there were significant correlations in all grades in 2006 and 2007, this did not happen in 2008.

As at the MPB stage, programmes graded 'Poor' were the most likely to be subject to change in the process of budget allocation. It was even the case that 'Poor' grades by themselves had a statistically significant correlation (-) with budget allocations for the budget year 2008, when the impact of SABP assessments on budget decisions appeared to be the weakest in the three years.

Table 6-18 provides estimates for the equations which represent correlations between the three SABP components and budget allocations within the National Assembly. All three equations have a statistical significance at  $p < 0.05$ .

In the three-year pooled data, the results indicate that these three components had a statistically significant correlation (+) with budget appropriations. Given the weights given to SABP assessments (20%, 30%, and 50%), the results component did not appear to have stronger impact on budget allocations than the other components.

In the individual budget years, the results indicate that the three components had a significant effect on budget decisions in 2006, whereas only the management component was significantly correlated in 2008. Even the impact of the management component appeared to have been getting weaker over the three years.

Table 6-18 Relationship of programme components' SABP scores to final budget changes in the National Assembly

Independent variables	2006	2007	2008	Three-year pooled data
Planning	0.938*** (0.133)	0.492 (0.074)	0.158 (0.027)	0.468** (0.072)
Management	0.925*** (0.121)	1.03*** (0.139)	0.707** (0.092)	0.989*** (0.130)
Results	1.021*** (0.289)	0.353* (0.105)	0.207 (0.063)	0.526*** (0.159)
Budget changes for the current year (%)	0.037 (0.038)	0.025 (0.025)	0.103** (0.109)	0.054** (0.056)
Programmes related to welfare (0,1)	10.131* (0.095)	8.577** (0.101)	-0.326 (-0.005)	5.684** (0.068)
Programmes related to the economy (0,1)	-3.240 (-0.048)	0.307 (0.005)	0.321 (0.005)	-0.806 (-0.012)
Programmes belonging to ministries (0, 1)	2.208 (0.028)	3.560 (0.047)	40152 (0.061)	2.883 (0.039)
Programmes managed directly by government(0,1)	-1.883 (-0.027)	5.145* (0.081)	5.716** (0.094)	3.349* (0.052)
Small programmes (0,1)	-2.574 (-0.031)	-4.513 (-0.066)	0.358 (0.006)	-2.536 (-0.036)
Large programmes (0,1)	-2.700 (-0.038)	0.030 (0.000)	-4.494 (-0.065)	-1.251 (-0.018)
Constant	-55.770*** (-)	-43.017*** (-)	-22.848** (-)	-41.619*** (-)
F	7.814**	3.336***	2.168**	10.503***
Adjusted R <sup>2</sup>	0.132	0.047	0.024	0.064
N	449	474	477	1400

Notes: 1. Dependent variable is the percentage changes to final budgets at the National Assembly stage.

2. Standardized coefficients are reported in the parentheses.

3. \* is statistically significant at the 0.10 level; \*\* at the 0.05 level; and \*\*\* at the 0.01 level in two-tailed tests.

Table 6-19 provides estimates for the equations with the six interaction terms within the National Assembly. In the three-year pooled data, the estimates indicate that 'Small programmes' had a statistically significant interaction (+) with SABP scores. This means that 'Small programmes' had a larger coefficient of the term 'score' in the equation. It is suggested that 'Small programmes' might have budgets that were more sensitive to increases or decreases in SABP scores than other programmes.

These results, however, were not consistent in the individual budget years. In the budget

year 2006, only ‘Large programmes’ had a statistically significant interaction (-) with SABP scores; in 2007 this was only the case for ‘Small programmes’ (+); and in 2008 there were no significant interactions.

Table 6-19 Interaction effects between SABP scores and programme groups in the National Assembly

Independent variables	2006	2007	2008	Three-year pooled data
Score	1.298*** (0.320)	0.661** (0.307)	0.192 (0.258)	0.654*** (0.161)
Score*Programmes related to welfare	0.717 (0.473)	-0.185 (0.365)	0.266 (0.359)	0.086 (0.221)
Score*Programmes related to the economy	0.208 (0.278)	0.015 (0.263)	-0.150 (0.281)	-0.061 (0.151)
Score*Programmes belonging to ministries	-0.407 (0.304)	-0.490 (0.304)	0.034 (0.273)	-0.175 (0.161)
Score*Programmes managed by government	0.143 (0.259)	-0.061 (0.251)	-0.014 (0.217)	0.044 (0.134)
Score*Small programmes	0.247 (0.345)	0.510* (0.267)	0.344 (0.246)	0.304** (0.153)
Score*Large programmes	-0.671** (0.283)	0.286 (0.275)	-0.214 (0.283)	-0.175 (0.157)
Budget changes for the current year (%)	0.026 (0.044)	0.018 (0.045)	0.109** (0.044)	0.055** (0.025)
Programmes related to welfare (0,1)	-31.250 (27.850)	20.000 (21.602)	-15.349 (22.250)	1.000 (13.238)
Programmes related to the economy (0,1)	-14.950 (16.741)	-0.579 (15.847)	10.386 (18.871)	2.915 (9.412)
Programmes belonging to ministries (0, 1)	29.391 (19.010)	32.546* (18.196)	1.877 (18.314)	14.063 (10.162)
Programmes managed directly by government (0,1)	-10.903 (15.973)	9.115 (15.360)	7.059 (14.748)	0.388 (8.538)
Small programmes (0,1)	-16.625 (20.439)	-33.632** (16.012)	-21.889 (16.454)	-20.819** (9.568)
Large programmes (0,1)	38.945** (17.827)	-16.340 (17.004)	9.529 (19.045)	10.205 (10.052)
Constant	-76.352*** (19.882)	-48.588*** (18.646)	-15.609 (17.881)	-44.371*** (10.367)
F	6.617***	2.667***	1.862**	8.035***
Adjusted R <sup>2</sup>	0.149	0.047	0.025	0.066
N	449	474	477	1400

Notes: 1. Dependent variable is the percentage changes to final budgets at the National Assembly stage.

2. Standard errors are reported in the parentheses.

3. \* is statistically significant at the 0.10 level; \*\* at the 0.05 level; and \*\*\* at the 0.01 level in two-tailed tests.

## 6.4 Conclusion

In this chapter, the author aimed to identify how Korean performance budgeting has had an effect on the budget decision of programmes, employing analysis techniques of regressing budget changes on SABP assessments (scores or grades)<sup>34</sup> at the three budget stages respectively.

As a result of the regression estimations, Korean performance budgeting, with its use of SABP, has been empirically proven to have had an impact on budget decisions, at each budget stage, in the three budget years 2006, 2007, and 2008. Table 6-20 summarizes results estimating the regression model 2, focusing on the relationship of the next year's budget changes with SABP scores and the current year's budget changes (%).

Table 6-20 Variations of the 'score' and 'current year's budget changes' coefficients between budgeting stages in Model 2

Independent variables	Budget stage	Three-year pooled data	2006 budget	2007 budget	2008 budget
SABP scores	Spending organizations (Request)	0.493*** (0.064)	0.866*** (0.121)	0.372*** (0.112)	0.185 (0.114)
	MPB (Proposal)	0.590*** (0.063)	1.095*** (0.124)	0.433*** (0.107)	0.259** (0.108)
	National Assembly (Budget)	0.560*** (0.063)	0.992*** (0.120)	0.460*** (0.112)	0.240** (0.108)
Current budget change (%)	Spending organizations (Request)	0.080*** (0.026)	0.073* (0.044)	0.048 (0.045)	0.126*** (0.046)
	MPB (Proposal)	0.052** (0.025)	0.008 (0.046)	0.037 (0.043)	0.112*** (0.043)
	National Assembly (Budget)	0.053** (0.025)	0.037 (0.044)	0.018 (0.045)	0.107** (0.043)

Notes: 1. These results are from Model 2. Dependent variable is the percentage changes to budgets. More specifically, it is the percentage changes to budgets at the spending agencies stage, to budget proposals at the MPB stage, and to final budgets at the National Assembly stage.

2. Standard errors are reported in the parentheses.

3. \* is statistically significant at the 0.10 level; \*\* at the 0.05 level; and \*\*\* at the 0.01 level in two-tailed tests.

<sup>34</sup> In total, all regression models are statistically significant. And collinearity appears not to be serious.

The results of regression indicated that SABP scores had a significant correlation with the budget percentage changes at the three budget stages in the three years. In terms of the current year's budget changes, the results suggested that they still had affected budget decisions of programmes. In particular, the current year's budget changes appear to have had the strongest impacts on budget requests within spending ministries and agencies.

On the other hand, there appeared to be differences in the strength of the correlations between SABP scores and the next year's budget changes, depending on the budget stages. As suggested in Table 6-20, out of the three budget stages, the one where SABP scores exerted the most effect on budget decisions appeared to be the MPB (or President's) stage (MPB > Legislature > spending ministries and agencies). This may have resulted from the MPB, both as a financial authority and as a performance budgeting system manager, encouraging budget makers to reflect SABP assessments in the process of budgeting. More specifically, the MPB demonstrated every year that it had induced budget makers to allocate different budgets to programmes depending on the levels of programme performance assessed by SABP (Budget Request Guidelines, 2006-2008).

The coefficients, as shown in the table, had been decreasing throughout the three years at each stage of budgeting. This suggests that Korean performance budgeting, with its use of SABP, may have had a decreasing impact on budget decisions. This phenomenon can, as described earlier, result from differences in the composition of programmes between the assessment years: how easily individual programmes can integrate budget

decisions with performance. Another possible explanation is the decline in budget-reforming drive (Bang, 2007). The decline in driving force might cause the Executive branch to make little effort to integrate SABP results with budgets. Although this phenomenon needs in-depth analysis, this issue is beyond the scope of this research.

Conclusively speaking, Korean performance budgeting is likely to be characterized as an approach based on performance budgeting models, in that SABP scores, representing performance, have had a significant effect on budget allocations among programmes. Nonetheless, Korean performance budgeting may appear to show, partly, an attribute of incremental budgeting, given that the current year's budget has critically affected budget decisions.

The present empirical analysis is expected to contribute to work in this academic area, in that, by giving a more comprehensive analysis of Korean performance budgeting, with its use of SABP, it provides generalized and various empirical evidence of its impact on budget allocations. This analysis, however, has been subject to some constraints in making interpretations, in the sense that Korean performance budgeting may have idiosyncratic features. Given these constraints, which are listed below, the author does not intend to give specific solutions here, because these would be beyond the scope of this research.

Firstly, this empirical analysis suggests that some controlled variables had a significant interaction with SABP scores. However, this research does not describe the evident reasons for, and processes of, the interaction effect because these go beyond its scope.

Secondly, the regression models used here did not have very high coefficients of determination ( $R^2$ ), although these were similar to those of existing works.<sup>35</sup> For Model 2, the determination coefficients ranged from 0.040 to 0.190 (Adjusted  $R^2$ : 0.022 – 0.170). The determination coefficients were at their highest at the MPB stage, and decreased between the budget years of 2006 and 2008. This might result from the decreasing impact of SABP on budget decisions over the three budget years. Although there may be room for improving determination coefficients, this is not easy, because budget decisions are affected not only by SABP assessments but also by many other factors that would be difficult to include in the models.

Thirdly, the regression results suggest that the National Assembly made significant use of SABP assessments in deliberating on the budget documents proposed by the Executive branch. From Dull's viewpoint (2006), the Legislature may not want to use SABP assessments in budgeting, because its political decisions can be restricted by linking budget deliberations to SABP assessments introduced by the Executive branch.

In addition, budget changes in the MPB and the National Assembly have shown an increase (+) or decrease (-) of a similar, though not quite the same, order. Indeed, the National Assembly may have made only a few modifications to the President's budget proposals because by law it is not allowed to increase individual programme budgets, or to add new budget expenditure items to the Presidential budget proposals, without the Executive's agreement (Article 57 of the Korean Constitution). If this is the case, we cannot exclude the possibility of there being a spurious correlation which is not related

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<sup>35</sup>) GAO (2004) showed 0.039 – 0.149 and Gilmour and Lewis (2005) ranged from 0.10 -0.41.

to the intended link of budgets to SABP assessments. Further work is required to investigate budgeting behaviours within the National Assembly.

# **CHAPTER 7 EMPIRICAL ANALYSIS OF VARIATIONS IN MANAGERIAL PRACTICE**

## **7.1 Introduction**

This author investigated, in Chapter 6, whether and how performance budgeting in Korea affected budget decisions on programmes by regressing programme budget changes in relation to scores produced by the process known as Self-Assessment of Budgetary Programmes. The regression results suggested that Korean performance budgeting had significantly positive impacts on budget allocations between programmes. That is to say, programmes with higher SABP scores were allocated higher budgets. These results were to a large extent consistent with the experience of administrators within the Korean central government. Judging by these results, it could be presumed that the performance budgeting system has made a contribution to budget makers linking programme performance with budget decisions in the fiscal years 2006, 2007, and 2008.

As a separate issue from the association of budget decisions with performance, the performance budgeting system may affect programme-managerial practices and, beyond that, performance of programmes. Linking programme performance to budget decisions or personnel performance evaluation may stimulate programme or budget managers to adjust their behaviours. For example, the use of SABP in Korea may cause

administrators to change managerial practices in order that their programmes can be given satisfactory scores or grades, because the Korean central government reflects SABP results in making budget decisions and in evaluating personnel performance.

For this research, in order to ascertain the impact of Korean performance budgeting on programme-managerial practices and programme performance, an opinion survey of administrators within the Korean central government was undertaken. The survey collected useful pieces of information which could indicate changes in programme-managerial practices and programme performance which the Korean performance budgeting system, with its use of SABP, had generated. By analyzing the data, this study identifies whether or not Korean performance budgeting has improved programme performance, how programme-managerial practices have changed within spending organizations, and how changes in practice have made a contribution to improving performance of programmes.

In this chapter, Section 7.2 establishes the quality of data: its reliability and validity. It presents the results of reliability tests of its measurements, and gives a brief description of the collected data. Section 7.3 illustrates changes in programme management activities within spending ministries and agencies. Similarly to the links between performance and budget decisions, the contribution of Korean performance budgeting to changing managerial practices might be made in different ways, depending on programmes, organizations, and the uses to which they put SABP assessments. This section places an emphasis on identifying how Korean performance budgeting has changed the managerial practices of programmes, and what differences it has made to the practices depending on programmes, organizations, and the uses of SABP

assessments. Section 7.4 describes the contribution of Korean performance budgeting to improving programme performance. It deals with the extent to which Korean performance budgeting has made a contribution to improvements in programme performance and the relationship of programme performance to changes in managerial practice. Furthermore, it describes differences in the contribution of Korean performance budgeting to the improvement of programme performance in different organizations and programmes, and differences in the use of SABP assessments. Section 7.5 concludes with a summary and discussion of the limitations of work described in this chapter.

The analytical software SPSS (version 17.0), which is widely used in the field of social science, was employed for these analyses.

## **7.2 Data Descriptions**

### **7.2.1 Quality of the Data**

The survey questionnaires, as described in Chapter 4, were designed to perceive the extent of changes in programme-managerial practices and programme performance which the Korean performance budgeting system, with its use of SABP, had made within the Korean central government. The survey collected two kinds of information related to budgetary programmes: the extent of changes in performance of programmes; and the extent of changes in programme-managerial practices. Along with performance of programmes as the dependent variable, this study selected, as independent variables,

seven managerial practices that Korean performance budgeting might affect: (1) programme goal clarity, (2) programme goal difficulty, (3) programme budget adequacy, (4) programme budget participation, (5) programme budget flexibility, (6) programme operation procedure formalization, and (7) support from senior management. These eight variables were measured with multiple items ranging from 3 to 6.

To improve the quality of these measures, this analysis requires tests of its reliability and validity. Firstly, in order to establish validity, this survey selected items for measuring the variables from existing literatures. Then, it asked 23 public administrators and three academic researchers who had experience or expertise in the area whether or not these suggested items reflected the concept of each variable.

As a tool for testing reliability, this research conducted an exploratory factor analysis (Chung, 2002; Kim and Lee, 2006). Factor analyses were made separately for the eight potential variables, because the 35 items (or questions) for measuring them were established by leading researchers in this field. The factor analysis presented 1) item-total correlations between each item and the total of the other items within a factor (hereafter item-to-total correlation:  $r$ ), to test whether each item was consistent with the others for measurement of the specific factor, 2) eigenvalues and factor loadings, to determine which factors remain in a survey, and 3) Cronbach's alpha, to check the internal consistency of a measurement.

For item-to-total correlations ( $r$ ), each item is required to be above 0.3 so that it is in the same dimension (Leech, Barret and Morgan, 2008; Chung, 2002). Table 7-1 shows the item-total correlations. The correlation coefficients ranged from 0.644 to 0.869, indicating that each item had close correlations with the total of the other items for the

specific factor. It is suggested that all the items used for this survey probably fitted together in each relevant potential variable.

Table 7-1 Corrected item-to-total correlations

Potential Variables (or factors)		Item No.	Corrected item-total correlation ( <i>r</i> )
Independent variables	1. Goal clarity	III-1	0.808
		III-3	0.838
		III-5	0.867
		III-6	0.853
		III-8	0.761
	2. Goal difficulty	III-2	0.758
		III-4	0.734
		III-7	0.794
	3. Budget adequacy	IV-8	0.750
		IV-10	0.787
		IV-12	0.786
	4. Budget participation	IV-1	0.715
		IV-3	0.645
		IV-4	0.783
		IV-6	0.788
		IV-7	0.800
		IV-9	0.770
	5. Budget flexibility	IV-2	0.731
		IV-5	0.747
		IV-11	0.742
	6. Procedure formalization	V-2	0.754
		V-3	0.758
		V-5	0.685
	7. Support from senior management	V-1	0.794
		V-4	0.807
		V-6	0.860
		V-7	0.864
V-8		0.814	
V-9		0.849	
Dependent variable	1. Programme performance	VI-1	0.842
		VI-2	0.876
		VI-3	0.869
		VI-4	0.862
		VI-5	0.836
		VI-6	0.775

Secondly, principal axis factor analysis without rotation was performed, in order to

assess the underlying construct for these eight factors. This factor analysis produces eigenvalues representing the amount of variance which a factor accounts for. Eigenvalues are used to determine which factors remain in an analysis. Following Kaiser's criterion (Eigenvalue  $\geq 1$ , 1958, 1973), factors with an eigenvalue of more than 1 are included.

Table 7-2 shows the number of factors with eigenvalues greater than 1.0, their eigenvalues, and their proportions of variance which the factors accounted for in each of the eight potential variables. In these eight potential variables, the number of factors with an eigenvalue greater than 1.0 was one each. The factor accounted for 63-76% of the relevant variance. As a result, it is suggested that individual items were selected from the population of the same concept, and that they were respectively conceptualized as these eight potential variables.

Table 7-2 Factors with an eigenvalue greater than 1.0 in eight potential variables.

Potential Variables (or factors)	Number of items	No. of factors with Initial Eigenvalue of 1 or more	Extraction sums of squared loadings	
			Eigenvalue	% of Variance
1. Goal clarity	5	1	3.713	74.264
2. Goal difficulty	3	1	2.113	70.438
3. Budget adequacy	3	1	2.155	71.820
4. Budget participation	6	1	3.798	63.303
5. Budget flexibility	3	1	2.032	67.740
6. Procedure formalization	3	1	2.016	67.190
7. Support from senior management	6	1	4.444	74.072
8. Programme performance	6	1	4.552	75.863

The meaning of a factor, in general, is determined by the items which load most highly on it. A generally accepted criterion of high loading, which represents a correlation between each item and a factor, is over 0.4 (Bryman and Cramer, 2005; Leech et al., 2008). Cronbach's coefficient alpha is a reliability coefficient most commonly used to

assess whether or not items in a factor form a reliable scale. This coefficient indicates the extent to which individual items are consistent with one another in measuring the specific factor (Leech et al., 2008). Cronbach's alpha requires a common standard of 0.7 or greater (Nunnally, 1994; Leech et al., 2008).

Table 7-3 Unrotated factor loadings and Cronbach's alpha in eight potential variables

Potential Variables		Item No.	Unrotated Factor Loading	Cronbach's Alpha
Independent variables	1. Goal clarity	III-5	0.908	$\alpha = 0.935$ (n=5)
		III-6	0.892	
		III-3	0.875	
		III-1	0.841	
		III-8	0.788	
	2. Goal difficulty	III-7	0.889	$\alpha = 0.876$ (n=3)
		III-2	0.832	
		III-4	0.795	
	3. Budget adequacy	IV-10	0.866	$\alpha = 0.884$ (n=3)
		IV-12	0.865	
		IV-8	0.811	
	4. Budget participation	IV-7	0.852	$\alpha = 0.910$ (n=6)
		IV-6	0.838	
		IV-4	0.831	
		IV-9	0.821	
		IV-1	0.745	
		IV-3	0.673	
	5. Budget flexibility	IV-5	0.833	$\alpha = 0.863$ (n=3)
		IV-11	0.826	
		IV-2	0.810	
	6. Procedure formalization	V-3	0.856	$\alpha = 0.858$ (n=3)
V-2		0.852		
V-5		0.747		
7. Support of higher management	V-7	0.897	$\alpha = 0.945$ (n=6)	
	V-6	0.892		
	V-9	0.879		
	V-8	0.841		
	V-4	0.832		
	V-1	0.820		
Dependent variables	1. Programme performance	VI-2	0.907	$\alpha = 0.949$ (n=6)
		VI-3	0.900	
		VI-4	0.889	
		VI-1	0.870	
		VI-5	0.859	
		VI-6	0.796	

Extraction method: Principal axis factoring.

Table 7-3 above presents unrotated loadings and Cronbach's alpha from each potential

variable. The table shows that the loading values of each item are spread between 0.673 and 0.908, indicating that they were in the rule of 0.4. Also, Cronbach's alphas for the eight potential variables ranged from 0.876 to 0.949, suggesting that they were high enough for their items to form a consistent and reliable scale for the different potential variables.

In conclusion, the items of the eight potential variables were highly correlated with one another, in the sense that item-total correlations ( $r$ ) and factor loadings were sufficiently high over a generally accepted criterion. It is suggested that each potential variable was in the same dimension. Results of the reliability test suggest that each item formed a consistent and reliable scale for measuring relevant potential variables. The results of factor analysis suggest that this survey measured these eight variables with an appropriate scale.

### **7.2.2 General Characteristics of the Data**

In the previous section, the eight variables for this study were determined through conducting a factor analysis and a reliability test. Because, as was noted earlier, this survey measured the eight variables with multiple items recorded along a seven-point Likert scale ranging from 1 (very low) to 7 (very high), this study processed the raw data collected from administrators. Excluding the cases without response in any one of the items (listwise-deletion method), this survey used an arithmetic mean of values for multiple items as a single value which represents a variable.

Table 7-4 shows summaries of cases processed by the listwise-deletion method. Out of

these eight variables, budget flexibility presented the lowest exclusion rate of 0.9%, whereas goal clarity had the highest rate of 5.6%. Goal clarity included the item III-3 (making programme target groups more specific), with the lowest response rate (no respondents: 34). However, this study included the item III-3 because when it was excluded<sup>36</sup> it made little difference in the results of the analyses.

When it comes to the distributions of these eight variables, they were likely to form a similar shape. These variables, although they were a little left-skewed, were distributed in an approximately normal shape, considering that the degree to which the eight variables were skewed was less than plus or minus one (Leech et al., 2008). The mass of these distributions was concentrated on figures above the middle (or median) score 4.0 on this scale. This suggested that the administrators of the central government assessed Korean performance budgeting somewhat positively.

Table 7-4 Case processing summaries

Variables	Cases		Distribution					
	Valid	Excluded	Mean	Std. Deviation	Variance	Skewness	Kurtosis	
Independent	1. Goal clarity	762 (94.4%)	45 (5.6%)	4.39	1.00	1.01	-0.51	1.92
	2. Goal difficulty	785 (97.3%)	22 (2.7%)	4.48	1.03	1.06	-0.24	1.26
	3. Budget adequacy	800 (99.1%)	7 (0.9%)	3.95	1.10	1.21	-0.58	0.64
	4. Budget participation	795 (98.5%)	12 (1.5%)	4.22	0.95	0.91	-0.47	1.74
	5. Budget flexibility	800 (99.1%)	7 (0.9%)	3.98	1.02	1.04	-0.51	1.09
	6. Procedure formalization	799 (99.0%)	8 (1.0%)	4.35	0.95	0.89	-0.46	1.62
	7. Support from senior management	780 (96.7%)	27 (3.3%)	4.41	1.01	1.02	-0.41	1.33
Dependent	1. Programme performance	798 (98.9%)	9 (1.1%)	4.38	1.04	1.08	-0.39	1.41

Note: The total number of cases is 807.

<sup>36</sup>: 'Goal clarity' without Question III-3 indicated that the number of excluded cases was reduced to 3.3 %.

It is meaningful to examine relationships between the eight variables. Table 7-5 presents the results of the Pearson correlation analysis. It indicates that eight variables were significantly correlated with one another at the level of 0.01. The dependent variable of programme performance had a significantly positive relationship with all the independent variables. In particular, support from senior management was the most closely related with performance of programmes in the eight independent variables ( $r = 0.804$ ). The high correlation coefficient confirmed previous studies which found that senior management might play a critical role in improving the performance of budgetary programmes when performance budgeting was in operation (Jun and Park, 2002).

Table 7-5 Correlations between eight variables (Pearson)

	Goal clarity	Goal difficulty	Budget adequacy	Budget participation	Budget flexibility	Procedure formalization	Support from senior management	Programme performance
Goal clarity	1	-	-	-	-	-	-	-
Goal difficulty	0.754***	1	-	-	-	-	-	-
Budget adequacy	0.490***	0.315***	1	-	-	-	-	-
Budget participation	0.716***	0.589***	0.751***	1	-	-	-	-
Budget flexibility	0.532***	0.359***	0.842***	0.818***	1	-	-	-
Procedure formalization	0.651***	0.611***	0.582***	0.771***	0.613***	1	-	-
Support from senior management	0.695***	0.614***	0.579***	0.792***	0.613***	0.856***	1	-
Programme performance	0.724***	0.611***	0.602***	0.773***	0.626***	0.758***	0.804***	1

Note: \*\*\* denotes that correlation is statistically significant at the 0.01 level (2-tailed)

## **7.3 Impacts on Managerial Practices**

### **7.3.1 Introduction**

This section focuses on identifying evidence of whether Korean performance budgeting has had an impact on programme-managerial practices or not. The budgeting system may have had no influence on managerial practices. Conversely, managerial practices may have been changed, and these changes may have been different for different administrators and in different ministries (and agencies).

Table 7-4 above presented descriptive statistics for the sample survey of eight practices which this research is interested in. Judging by this sample survey, even though it was not large, performance budgeting has had a positive effect on programme management activities within the Korean central government. As for target setting of programmes, respondents rated this at more than 4.00, suggesting that Korean performance budgeting has made a contribution to setting programme targets that are slightly clearer and more ambitious. When it comes to budgeting, this was a little different from the other sections. Public administrators perceived that, although they had participated in budgeting more frequently, the amount of their budgets had not been more adequate than expected, and the operation of their budgets had not been more flexible than expected. Encouragingly, respondents observed that the performance budgeting system caused their senior administrators to assist them more eagerly to improve the performance of their programmes. Finally, they were likely to consider that Korean performance budgeting

had made a slight contribution to improving performance of programmes, its primary objective. This result is consistent with NABO (2006b).

Results for the sample survey present several hints that public administrators in the Korean central government had slightly changed their programme-managerial practices since the government introduced the performance budgeting system in order to associate budget decisions with performance of programmes. In particular, the sample survey demonstrates that SABP results have been used in managing programmes or/and evaluating personnel performance. Although SABP was introduced to strengthen links between fund allocation and performance, it has developed to the point where it is considered even for evaluating personnel performance. Out of 578 respondents who managed budgets or/and who managed programmes using SABP, 480 confirmed that they had used SABP assessments in making budget decisions for their programmes or/and in evaluating their own performance (83.04%).

However, it was possible that, by chance, this survey might have sampled respondents who were not typical of the population. If this was the case, any observed changes in programme-managerial practices might be a product of chance and so might not be a real reflection of managerial practices. To ascertain whether the budget system had made a contribution to a real change in managerial practices and, furthermore, in performance of programmes, this section (1) examines and tests descriptive statistics for these seven practices, and (2) compares differences in these seven practices between administrators, programmes, and organizations (ministries and agencies), and their use of SABP results, employing an analysis of variance (ANOVA) technique.

This study estimated the confidence intervals of the seven practices at the 95% level. Table 7-6 provides arithmetic means and their confidence intervals for changes in the seven managerial practices. Of the seven practices, five, including goal clarity, goal difficulty, budget participation, procedure formalization, and support from senior management, form a confidence interval of over 4.00. The other two, budget adequacy and budget flexibility, range between 3.80 and 4.10. This suggests that Korean performance budgeting has made a greater contribution to changing the five practices than expected, whereas it cannot be determined that it has done so for the remaining two.

Table 7-6 Means and confidence intervals for the seven managerial practices

	Valid cases	Mean	95% Confidence Interval	
			Lower	Upper
1. Goal clarity	762	4.39	4.31	4.46
2. Goal difficulty	785	4.48	4.41	4.56
3. Budget adequacy	800	3.95	3.87	4.02
4. Budget participation	795	4.22	4.16	4.29
5. Budget flexibility	800	3.98	3.91	4.05
6. Procedure formalization	799	4.35	4.28	4.42
7. Support from senior management	780	4.41	4.34	4.48

The following sub-sections give specific descriptions of how Korean performance budgeting has made a contribution to adjusting programme-managerial practices related to programme goal setting, programme budget management, programme operational procedures, and support from senior management in the course of managing programmes.

### **7.3.2 Impacts on Programme Goal Setting**

Budgetary programmes, in general, are required to present their goals in the process of budgeting. Goals have attracted more attention generally since budget systems have begun to concentrate on performance or results. This is also true in the case of Korean performance budgeting. Specifically, when introducing performance budgeting with SABP, the Korean central government asked programme managers to make their programmes' goals sufficiently clear and ambitious for them to provide good motivation (MPB; 2006a; 2006b, NABO; 2006b; 2007). The government anticipated that the goals set for programmes would become more specific, that it would be more difficult to achieve them, and that eventually such a change would improve performance of programmes.

The following sub-sections describe how Korean performance budgeting has made a contribution to changing specific practices related to goal setting.

#### **7.3.2.1 Impacts on the Clarity of Programme Goals**

Table 7-6 displays arithmetic means and their confidence intervals for the levels at which 762 respondents assessed their goal clarity. The results of the sample survey give some hints as to how Korean performance budgeting has changed managerial practices in terms of setting programmes' goals.

Public administrators in the Korean central government perceived a slight improvement

in recognizing and understanding their programmes' goals because these goals had been stated more specifically and clearly. Respondents gave the mean score of 4.39 out of 7.00 to the level of clarity of programme goals, suggesting that the performance budgeting system had made slightly more contribution to setting goals clearly than had been expected.

As seen in Table 7-7, the survey, however, reflected statistically significant differences between various cohorts such as managers, organizations, programmes, and their use of SABP results.

Firstly, managers are categorized as belonging to one of two groups: budget managers and programme managers. The budget managers are in charge of making programme budgets, and the programme managers are involved in designing, planning, and implementing programmes. However, not all programme managers manage their programmes using SABP<sup>37</sup>. In Table 7-7, 'No. of programmes in charge' denotes the number of programmes which a manager manages using SABP.

Table 7-7 shows the ANOVA results for differences in the perceived contribution of performance budgeting to changing goal clarity among managers. The survey results suggest that budget managers perceived a higher contribution by performance budgeting to changing levels of goal clarity than programme managers did (4.53 vs. 4.33,  $p < 0.01$ ). On the other hand, no significant difference was found between programme managers who managed programmes using SABP and those who did not.

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<sup>37</sup> Programmes are put into two categories. One group is assessed using SABP; the other isn't.

As for the organizations which respondents worked for, these were of two types, according to the organizational hierarchy of the Korean central government: ministry and agency. Ministries are controlled by ministers, the secretaries of the President, and may have agencies under their control. Agencies, in general, enforce the policies which the ministries they report to make. Further, ministries and agencies are divided into three groups according to their main mission: economy-related, social welfare-related, or other administrative organization<sup>38</sup>. Also, respondents were categorized according to where they worked: headquarters or regional agents.

Depending on the organization to which they belonged, respondents had slightly different perceptions of the contribution of Korean performance budgeting to changing goal clarity. Table 7-7 presents the results of the ANOVA analysis for goal clarity among organizations. Administrators in agencies saw the budget system as making a greater contribution to increasing goal clarity than did administrators in ministries (4.25 vs. 4.70,  $p < 0.01$ ). The other groups in the table do not make a statistically significant difference to the findings on goal clarity. The result is a suggestion that Korean performance budgeting made slightly more of a contribution to setting clear programme goals in agencies than it did in ministries.

It is meaningful to take the characteristics of programmes into account when describing changes in goal clarity, because different programmes have different goals. In Table 7-7, the results of the ANOVA for goal clarity among programmes are presented.

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<sup>38</sup> The criterion for this categorization followed the MPB. For convenience's sake, in budgeting, the MPB puts all ministries and agencies into one of three groups.

Firstly, as described in Chapter 3, programmes assessed by SABP were divided into seven types. There was no statistically significant difference between them in the contribution that Korean performance budgeting made to increasing goal clarity, as far as their administrators perceived. Programme ages, however, were likely to make a slightly significant difference ( $p < 0.1$ ). The second oldest programmes (11-15 years) had the highest mean scores (4.61) and the youngest programmes had the lowest mean scores (4.28). It is suggested that performance budgeting had the strongest effect on the goal clarity of mid-age programmes (6 to 15 years). In another activity, programmes were divided into four groups on the basis of the quartiles of the budgets of the 1717 programmes which SABP was used to assess between 2005 and 2007<sup>39</sup>. As seen in Table 7-7, the budget amounts and SABP grades of programmes were not likely to make a difference to the perceived contribution of Korean performance budgeting to changing the degree of goal clarity. It is suggested that the SABP grades and budget amounts of programmes did not have significant relationships with changes to the degree of goal clarity.

The uses to which SABP assessments are put may be one of the critical factors which have an impact on various managerial practices within public organizations, because they could reform the structure of incentives. It may be presumed that different uses of SABP assessments have a different effect on managerial practices. As described earlier, ministries and agencies have reported that they use SABP results for managing programmes (including budget decisions) and/or personnel performance. This survey includes four groups which are categorized according to the uses to which they put

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<sup>39</sup> Budgets of programmes are for the year assessed by SABP.

SABP results. One is a group which uses the results for programme management (including budget decisions); the second uses them for personnel performance management; the third uses them for both programme and personnel performance management; and the fourth group is for ‘others’<sup>40</sup>.

Table 7-7 presents the results of the ANOVA test for perceived contribution to changing the degree of goal clarity among these four groups. The results show that these four groups’ use of SABP assessments made a significant difference in the degree to which Korean performance budgeting changed their goal clarity ( $p < 0.01$ ). The third group, with their multi-purpose use of SABP results (for both programme *and* performance management), saw the highest mean scores (4.74). It is suggested that multi-purpose use had a greater effect on goal clarity than single-purpose use (for programme *or* performance management). Among the groups with single-purpose use of SABP assessments, the group that used these in programme management had higher mean scores than the group which used them in personnel performance management (4.35 vs. 4.10). However, this can be generalized only on a very limited basis, because there were not many cases of using SABP assessments for personnel performance management (valid cases = 14, 3%). It is suggested that, because the Korean central government is only just starting to use SABP assessments for personnel performance management,

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<sup>40</sup> Programme management activities include budgeting for programmes. For this analysis, Question 2-9 in the questionnaire re-coded ‘① Budgeting’, ‘③ Programme management’ and ‘⑤ Budgeting and programme management’ into ‘① Programme management’; ‘② Personnel performance evaluation’ into ‘② Personnel performance evaluation’; ‘④ Budgeting and personnel performance evaluation’, ‘⑥ Programme management and personnel performance evaluation’ and ‘⑦ Budgeting, personal performance evaluation, and programme management’ into ‘③ programme and personnel performance management’; and ‘⑧ Others’ into ‘④ Others’ (Hereafter the same).

administrators might not yet perceive the impacts of these on goal clarity.

To sum up, budget managers perceived a greater contribution by Korean performance budgeting to changing goal clarity than programme managers. Managers perceived that programme goals might be set more clearly when SABP assessments were used for making budget decisions than when they were used for personnel performance management. As a result, it is suggested that Korean performance budgeting has made a slight contribution to making programme goals clearer and more specific.

Table 7-7 ANOVA results for perceived changes in goal clarity among groups

		Valid cases	Mean	Std. Deviation	95% Confidence Interval	
					Lower	Upper
Manager's Job**	1. Budget	220	4.53	1.03	4.39	4.67
	2. Programme	535	4.33	0.99	4.24	4.41
No. of programmes in charge	1. No programme	255	4.30	0.93	4.18	4.41
	2. One or more programmes	329	4.36	1.04	4.25	4.47
Organization size***	1. Ministry	520	4.25	0.99	4.16	4.33
	2. Agency	237	4.70	0.97	4.57	4.82
Organization mission	1. Economy Org.	334	4.47	0.94	4.37	4.57
	2. Social welfare Org.	264	4.32	1.10	4.18	4.45
	3. Administration Org.	158	4.33	0.97	4.18	4.48
Department	1. Headquarters	708	4.39	1.02	4.31	4.46
	2. Regional agent	48	4.35	0.76	4.13	4.57
Programme types	1. SOC	12	4.57	1.14	3.84	5.29
	2. Capital acquisition	29	4.34	0.75	4.05	4.62
	3. Other direct programme	124	4.51	0.94	4.34	4.67
	4. Investment	13	4.66	0.80	4.18	5.14
	5. Loan	6	4.17	0.51	3.63	4.70
	6. Subsidy to private sector	61	4.24	1.12	3.95	4.53
	7. Subsidy to local government	50	4.07	1.33	3.69	4.45
Programme ages*	1. 5 years or less	133	4.28	0.98	4.11	4.45
	2. 6 to 10 years	96	4.52	1.06	4.31	4.74
	3. 11 to 15 years	28	4.61	1.06	4.20	5.02
	4. 16 years or more	40	4.15	1.06	3.81	4.49
Budget size	1. 2.3 billion Won or less	103	4.39	0.84	4.23	4.56
	2. 2.4 to 7.7 billion Won	84	4.32	1.02	4.10	4.54
	3. 7.8 to 30.8 billion Won	67	4.14	1.28	3.83	4.46

		Valid cases	Mean	Std. Deviation	95% Confidence Interval	
					Lower	Upper
Programme grades by SABP	4. 30.9 billion Won or more	35	4.65	1.07	4.28	5.02
	1. Effective	32	4.33	1.09	3.94	4.72
	2. Somewhat effective	67	4.48	1.06	4.23	4.74
	3. Modest	155	4.39	0.91	4.25	4.53
	4. Poor	33	3.99	1.47	3.47	4.51
Use of SABP results ***	1. Programme management	326	4.35	1.07	4.23	4.46
	2. Personnel performance management	14	4.10	1.23	3.89	4.81
	3. Programme and performance management (1+2)	102	4.74	0.73	4.60	4.89
	4. Others	7	4.26	1.97	2.44	6.07

Note: \*, \*\*, and \*\*\* mean that there was a significant difference at 0.1, 0.05, and 0.01 between groups in a one-way ANOVA.

### 7.3.2.2 Impacts on the Difficulty of Programme Goals

Public administrators perceived that Korean performance budgeting caused them to set the goals for their programmes at a more ambitious level than had been expected. In this survey, goal difficulty saw an average of 4.48 – slightly higher than 4.00 (modest), as shown in Table 7-6.

As with goal clarity, there is a slight difference between groups. Table 7-8 presents the ANOVA test results for differences in the perceived contribution of Korean performance budgeting to changing goal difficulty among respondent groups. The ANOVA results indicate that budget managers perceived a greater contribution by Korean performance budgeting to changing goal difficulty than programme managers (4.58 vs. 4.44,  $p < 0.1$ ). This suggests that budget managers were slightly more in favour of this role of performance budgeting than programme managers. There were no statistically

significant differences between programme managers who managed their programmes with SABP and those who did not.

Table 7-8 presents the ANOVA test results for differences between organizations in their perception of the extent to which Korean performance budgeting contributed to changing goal difficulty. The mean scores of individual groups ranged from 4.31 to 4.86, indicating that performance budgeting made a slightly greater contribution to setting ambitious goals for programmes than had been expected. More specifically, administrators who worked for agencies saw higher mean scores than those who worked for ministries (4.31 vs. 4.86,  $p < 0.01$ ). However, there was no significant difference in the degree of perceived goal difficulty between organizations dealing with the economy, organizations dealing with social welfare, and administrative organizations, nor between administrators working at headquarters and regional agents.

The results of the ANOVA test between programme groups are presented in Table 7-8. The results suggest that differences in the budget amount of programmes made a difference to the impact of Korean performance budgeting on the goal difficulty of programmes. Large programmes ( $\geq 30.9$  billion Won or more) had the highest mean scores; small programmes (2.3 billion Won or less) had the second highest; and mid-size programmes (2.4-30.7 billion Won) had the lowest (4.62 vs. 4.86 vs. 4.19,  $p < 0.01$ ). Also, the results suggest that SABP grades made a slightly significant difference in the contribution of Korean performance budgeting to changing goal difficulty. As the SABP grades of programmes rose, the mean scores increased (4.20 vs. 4.50 vs. 4.55 vs. 4.86,  $p = 0.089$ ). This meant that the contribution of performance budgeting to changing goal

difficulty was greater in high grade programmes than in low grade programmes. On the other hand, no statistically significant difference was found between the seven programme types, or between programmes of different ages.

Table 7-8 presents the results of the ANOVA test for differences between the four types of user of SABP assessments in their perceptions of the contribution of Korean performance budgeting to changing goal difficulty. According to the results, administrators perceived that its use for programme management made a higher contribution to changing goal difficulty than its use for personnel performance management (4.51 vs. 4.00). As with goal clarity, multi-purpose use of SABP (for both programme *and* performance management) saw the highest mean scores (4.71,  $p < 0.1$ ). This suggested that the performance budgeting system made a significantly different contribution to the setting of ambitious programme goals depending on what SABP assessments were used for.

As a result, the findings suggest that the performance budgeting system in Korea has made a slight contribution to setting programme goals that are clearer and more difficult to achieve. The results of the ANOVA test indicate that multi-purpose use of SABP results (for both programme *and* performance management) caused programmes to set clearer and more ambitious goals than single-purpose use. Among groups making single-purpose use of SABP results (for programme management *or* personnel performance management), those using them for programme management experienced more of a contribution to setting ambitious goals than those using them for personnel performance management. This suggests that what SABP assessments are used for is

critical for changing managerial practices. It implies that proper uses of SABP assessments may be one of the critical success factors for the Korean performance budgeting system.

Table 7-8 ANOVA results for changes perceived in goal difficulty among groups

		Valid cases	Mean	Std. Deviation	95% Confidence Interval	
					Lower	Upper
Manager's Job*	1. Budget	231	4.58	1.07	4.45	4.72
	2. Programme	547	4.44	1.01	4.35	4.52
No. of programmes in charge	1. No programme	261	4.40	0.95	4.29	4.52
	2. One or more programmes	339	4.50	1.06	4.39	4.62
Organization size***	1. Ministry	534	4.31	0.98	4.22	4.39
	2. Agency	246	4.86	1.04	4.41	4.99
Organization mission	1. Economy Org.	344	4.52	0.98	4.41	4.62
	2. Social welfare Org.	274	4.48	1.09	4.35	4.61
	3. Administration Org.	161	4.41	1.04	4.25	4.57
Department	1. Headquarter	730	4.48	1.04	4.40	4.55
	2. Regional agent	49	4.55	0.85	4.31	4.79
Programme types	1. SOC	12	4.69	1.38	3.82	5.57
	2. Capital acquisition	33	4.41	0.91	4.09	4.74
	3. Other direct programme	124	4.66	0.98	4.48	4.83
	4. Investment	13	4.82	0.90	4.28	5.36
	5. Loan	6	4.22	0.58	3.61	4.83
	6. Subsidy to private sector	61	4.41	0.96	4.17	4.65
	7. Subsidy to local government	53	4.26	1.36	3.88	4.63
Programme ages	1. 5 years or less	134	4.41	0.99	4.24	4.58
	2. 6 to 10 years	100	4.63	1.05	4.43	4.84
	3. 11 to 15 years	29	4.79	1.06	4.39	5.20
	4. 16 years or more	43	4.34	1.16	3.98	4.70
Budget size***	1. 2.3 billion Won or less	105	4.62	0.92	4.44	4.79
	2. 2.4 to 7.7 billion Won	85	4.43	0.95	4.22	4.63
	3. 7.8 to 30.8 billion Won	70	4.19	1.28	3.88	4.49
	4. 30.9 billion Won or more	39	4.86	1.13	4.50	5.23
Programme grades by SABP*	1. Effective	32	4.86	1.18	4.44	5.29
	2. Somewhat effective	69	4.55	1.02	4.31	4.80
	3. Modest	160	4.50	0.95	4.35	4.64

		Valid cases	Mean	Std. Deviation	95% Confidence Interval	
					Lower	Upper
Use of SABP results*	4. Poor	35	4.20	1.52	3.68	4.72
	1. Programme management	338	4.51	1.11	4.39	4.63
	2. Personnel performance management	15	4.00	1.27	3.30	4.70
	3. Programme and performance management (1+2)	101	4.71	0.76	4.56	4.86
	4. Other	8	4.34	2.04	2.67	4.98

Note: \*, \*\*, and \*\*\* mean that there was a significant difference at 0.1, 0.05, and 0.01 between groups in a one-way ANOVA.

### 7.3.3 Impacts on Budget-Managerial Practices

For performance budgeting to achieve its objectives, public administrators need to adjust their programme-managerial strategies. The use of SABP as an assessment tool for Korean performance budgeting was expected to lead to the changing of managerial practices related to budgeting. For example, because SABP was designed to check whether programmes were allocated budgets that were adequate for the achievement of their goals, programme or budget managers may change their practices of making decision about the budget amount of programmes. Indeed, it was argued that spending ministries and agencies in Korea made decreasing budget requests due to a top-down budget strategy<sup>41</sup> and Korean performance budgeting (Lee, 2006).

As indicated in Table 7-6, public administrators gave mean scores of 3.95 to budget adequacy and 3.98 to budget flexibility, indicating that the performance budgeting system made less of a contribution to improving them than expected. Budget

<sup>41</sup> The financial authority announced the budget ceiling for spending ministries and agencies. Individual spending agents made their budget requests with more discretion under the ceiling.

participation, however, had mean scores of 4.22. This suggested that performance budgeting did not contribute with satisfaction enough to make budget allocations to programmes more adequate, even though there were increasing discussions about the budgets of programmes.

Below, the contributions of Korean performance budgeting to changing specific practices related to budget management are described, focusing on the differences between organizations, programmes, and the uses to which SABP assessments are put.

#### **7.3.3.1 Impact on the Adequacy of Programme Budgets**

To achieve performance of programmes, it is essential to employ proper and adequate resources such as money and labour. For example, the economy (input/input), one of the programme performance definitions used in the public sector, rests heavily on the provision of an adequate amount of money and labour, neither too much nor too little of either. Therefore, public administrators were presumed to seek budgets that were adequate to achieve the goals for their programmes. Table 7-9 shows the results of the ANOVA test for differences in respondent groups' perceptions' perceptions of the contribution of Korean performance budgeting to improving the adequacy of programme budgets.

As indicated in Table 7-9, all kinds of managers marked mean scores of slightly less than 4.00, although this made little statistically significant difference. Managers perceived that performance budgeting did not necessarily result in making budgets more

adequate.

For organizations, the table summarizes the results of the ANOVA test for differences in the contributions of Korean performance budgeting to improving budget adequacy among organizations. Budget adequacy was a slightly different item from the managerial practices related to goal setting.

As for the three groups categorized by organizational mission, they showed a significant difference in their mean scores for budget adequacy ( $p < 0.01$ ). Organizations related to the economy, such as the Ministry of Land, Transportation, and Maritime Affairs, and the Ministry of Knowledge Economy, had the highest mean scores of 4.17. Administrative organizations such as the Ministry of Public Administration and Security saw the lowest score of 3.69. This implies that performance budgeting had more of an effect on organizations related to the economy. Because these organizations had relatively more programmes with tangible outputs, such as roads and houses built, it might be easier to estimate their programme budgets than those of other organizations.

Between ministries and agencies, and between workers at headquarters and regional agents, there was no statistically significant difference in the extent of their perceptions of contribution to improving budget adequacy.

The characteristics of programmes might affect the adequacy of the programme budgets they receive. Table 7-9 summarizes the ANOVA results for differences perceived in the contribution of Korean performance budgeting to improving budget adequacy among programmes.

The results, in the table below, show that the type, age, and SABP grades of programmes made significant differences in the contribution of the budgeting system to improving the adequacy of their programme budgets. As far as the seven programme types are concerned, investment-type programmes had the highest mean scores; loan-type programmes had the lowest mean scores (4.82 vs. 4.22); SOC-related programmes saw relatively high mean scores (4.69). In terms of the age of programmes, mid-age programmes (6 to 15 years) had higher levels of improvement in budget adequacy than other age groups (4.19). As for the SABP grades of programmes, administrators perceived that performance budgeting affected the adequacy of the budgets of programmes achieving the middle grades ('Modest' or 'Somewhat effective') more than that of the budgets of programmes achieving the other two grades (4.23 or 4.01 vs. 3.66 or 3.26,  $p < 0.01$ ).

On the other hand, the ANOVA results indicate that the budget amount of programmes did not make a significant difference in the contribution of Korean performance budgeting to improving their adequacy.

Table 7-9 below shows the ANOVA results for differences in the contribution of Korean performance budgeting to improving budget adequacy among the four users of SABP assessments. There was a significant difference in the contribution to improving budget adequacy, depending on what SABP results were used for ( $p < 0.01$ ). Administrators observed that the contribution of performance budgeting to the adequacy of programme budgets was slightly improved for organizations using SABP results for personnel

performance management rather than for programme management activities (3.82 vs. 3.90). In other ways, these two single-purpose users experienced less of an improvement in budget adequacy than the multi-purpose users who used SABP results for both programme and personnel performance management (4.27).

As a result, public administrators perceived that the contribution of performance budgeting to the budget adequacy of programmes might be smaller than expected, although they differed slightly according to organizational mission, characteristics of programmes, and uses of SABP assessments. For the different types, ages, and SABP grades of programmes, Korean performance budgeting had significantly different effects on the adequacy of programme budgets. Still, it is implied that programmes experience different levels of budget adequacy according to what their SABP results are used for.

Table 7-9 ANOVA results for changes perceived in budget adequacy among groups

		Valid cases	Mean	Std. Deviation	95% Confidence Interval	
					Lower	Upper
Manager's Job	1. Budget	235	3.87	1.12	3.72	4.01
	2. Programme	558	3.98	1.09	3.89	4.07
No. of programmes in charge	1. No programme	264	3.97	1.02	3.85	4.10
	2. One or more programmes	347	3.98	1.12	3.86	4.10
Organization size	1. Ministry	538	3.91	1.10	3.82	4.00
	2. Agency	257	4.04	1.10	3.90	4.17
Organization mission***	1. Economy Org.	355	4.17	1.05	4.06	4.28
	2. Social welfare Org.	278	3.82	1.10	3.70	3.95
	3. Administration Org.	161	3.69	1.13	3.51	3.86
Department	1. Headquarter	746	3.96	1.10	3.89	4.04
	2. Regional agent	48	3.76	1.09	3.44	4.07
Programme types*	1. SOC	12	4.69	1.38	3.82	5.57
	2. Capital acquisition	33	4.41	0.91	4.09	4.74
	3. Other direct programme	124	4.66	0.98	4.48	4.83

		Valid cases	Mean	Std. Deviation	95% Confidence Interval	
					Lower	Upper
Programme ages***	4. Investment	13	4.82	0.90	4.28	5.36
	5. Loan	6	4.22	0.58	3.61	4.83
	6. Subsidy to private sector	61	4.41	0.96	4.17	4.65
	7. Subsidy to local government	53	4.26	1.36	3.88	4.63
	1. 5 years or less	140	3.93	1.04	3.76	4.10
	2. 6 to 10 years	100	4.19	1.16	3.96	4.42
	3. 11 to 15 years	32	4.19	0.99	3.83	4.54
Budget size	4. 16 years or more	44	3.39	1.27	3.00	3.77
	1. 2.3 billion Won or less	110	3.96	1.04	3.76	4.16
	2. 2.4 to 7.7 billion Won	89	4.00	1.16	3.76	4.24
	3. 7.8 to 30.8 billion Won	70	3.72	1.20	3.43	4.00
Programme grades by SABP***	4. 30.9 billion Won or more	40	4.11	1.26	3.71	4.51
	1. Effective	35	3.66	1.31	3.21	4.11
	2. Somewhat Effective	75	4.23	1.25	3.94	4.52
	3. Modest	161	4.01	0.94	3.86	4.15
Use of SABP results**	4. Poor	35	3.26	1.31	2.81	3.71
	1. Programme management	347	3.82	1.15	3.69	3.94
	2. Personnel performance management	14	3.90	1.28	3.17	4.64
	3. Programme and performance management (1+2)	107	4.27	0.87	4.11	4.44
	4. Others	8	3.42	1.88	1.85	4.98

Note: \*, \*\*, and \*\*\* mean that there was a significant difference at 0.1, 0.05, and 0.01 between groups in a one-way ANOVA.

### 7.3.3.2 Impacts on Budget Participation

It was expected that there might be increasing discussions within spending ministries and agencies, and decreasing deliberations within the financial authority, after the introduction of ‘top-down’ budget allocation strategy into the Korean central government gave more budgetary discretion to spending ministries and agencies. It was anticipated that this might lead managers to participation in budget discussions. Table 7-10 presents the ANOVA results for differences in the perceived contribution of Koran performance budgeting to changing the extent of budget participation among respondent

groups.

This survey, as described earlier, suggests that there was growing participation in the process of budgeting, in the context of budget participation marking a mean score of 4.22. As indicated in Table 7-10, managers showed a slight difference in their perceptions of the extent of budget participation. Budget managers had higher mean scores than programme managers (4.31 vs. 4.18,  $p < 0.1$ ). Amongst programme managers, managers who used SABP had higher mean scores than those who did not (4.12 vs. 4.25,  $p < 0.1$ ).

The Korean performance budgeting system might make a different contribution to changing the degree of managers' budget participation depending on their organization. Table 7-10 compares the mean scores of budget participation among groups of organizations. It is indicated that there was a significant difference in the contribution of the budget system to changing budget participation according to the organizations' characteristics. Agencies had higher mean scores than ministries (4.45 vs. 4.12,  $p < 0.01$ ). In terms of organizational mission, organizations related to the economy recorded higher mean scores than the other organizations (4.40 vs. 4.10 or 4.06,  $p < 0.01$ ). However, no statistically significant difference was found between managers operating at headquarters and regional agents.

There might be a significant difference in budget participation between groups of programmes. Table 7-10 presents the ANOVA results for perceived differences in the contribution of Korean performance budgeting to changing the extent of budget participation between groups.

These seven programme types had significantly different mean scores ranging from 4.12 to 4.50. Of them, SOC-type programmes had the highest mean scores, whereas programmes which subsidized local governments had the lowest mean scores. Programme age might vary the effect of Korean performance budgeting on budget participation. Mid-age programmes (6-15 years) had a higher level of budget participation than the other age groups (4.48 or 4.55 vs. 4.12 or 3.90,  $p < 0.01$ ). There was also likely to be a significant difference in the contribution of performance budgeting to changing budget participation ( $p < 0.05$ ) according to the budget amounts of the programmes. Programmes in the fourth quartile had the highest mean scores (4.57), whereas those in the third quartile had the lowest (3.99).

On the other hand, the ANOVA results indicate that SABP grades might not make statistically significant differences in the contribution of Korean performance budgeting to changing budget participation.

As in the case of previous managerial practices, the different uses to which SABP results were put seemed to be significant for the different effects that Korean performance budgeting had on budget participation. Table 7-10 presents the ANOVA results for differences in the contribution of Korean performance budgeting to changing the degree of budget participation between the four types of SABP user. It is suggested that there were statistically significant differences between the four types. The mean scores were slightly higher for those using the assessments for programme management rather than for personnel performance management (4.23 vs. 3.99,  $p < 0.05$ ). These two

single-purpose users had lower mean scores than multi-purpose users who used the assessments for both programme and personnel performance management (4.48).

Table 7-10 ANOVA results for changes perceived in budget participation among groups

		Valid cases	Mean	Std. Deviation	95% Confidence Interval	
					Lower	Upper
Manager's Job*	1. Budget	235	4.31	0.95	4.19	4.43
	2. Programme	554	4.18	0.96	4.10	4.26
No. of programmes in charge*	1. No programme	264	4.12	0.83	4.02	4.22
	2. One or more programmes	344	4.25	1.00	4.15	4.36
Organization size***	1. Ministry	537	4.12	0.96	4.04	4.20
	2. Agency	254	4.45	0.91	4.34	4.56
Organization mission***	1. Economy Org.	352	4.40	0.86	4.31	4.49
	2. Social welfare Org.	276	4.10	1.03	3.97	4.22
	3. Administration Org.	162	4.06	0.97	3.91	4.21
Department	1. Headquarters	743	4.23	0.95	4.17	4.30
	2. Regional agent	47	4.05	0.99	3.76	4.34
Programme types*	1. SOC	12	4.50	1.12	3.79	5.21
	2. Capital acquisition	33	4.47	0.71	4.22	4.72
	3. Other direct programme	128	4.26	1.00	4.09	4.44
	4. Investment	16	4.39	0.48	4.13	4.64
	5. Loan	6	4.14	0.69	3.42	4.86
	6. Subsidy to private sector	63	4.13	1.03	3.87	4.39
	7. Subsidy to local government	51	4.12	1.20	3.78	4.46
Programme ages***	1. 5 years or less	138	4.12	0.89	3.97	4.27
	2. 6 to 10 years	100	4.48	0.99	4.28	4.68
	3. 11 to 15 years	31	4.55	1.00	4.19	4.92
	4. 16 years or more	43	3.90	1.08	3.56	4.23
Budget size**	1. 2.3 billion Won or less	108	4.23	0.83	4.07	4.39
	2. 2.4 to 7.7 billion Won	89	4.25	0.96	4.05	4.45
	3. 7.8 to 30.8 billion Won	68	3.99	1.23	3.69	4.28
	4. 30.9 billion Won or more	41	4.57	0.96	4.27	4.87
Programme grades by SABP	1. Effective	35	4.18	0.99	3.84	4.52
	2. Somewhat effective	75	4.42	1.13	4.16	4.68
	3. Modest	159	4.22	0.81	4.10	4.35
	4. Poor	34	3.93	1.39	3.45	4.42
Use of SABP	1. Programme management	345	4.23	1.00	4.11	4.32

results*		Valid cases	Mean	Std. Deviation	95% Confidence Interval	
					Lower	Upper
	2. Personnel performance management	15	3.99	1.06	3.40	4.57
	3. Programme and performance management (1+2)	106	4.48	0.77	4.33	4.63
	4. Others	8	4.04	1.69	2.63	5.45

Note: \*, \*\*, and \*\*\* mean that there was a significant difference at 0.1, 0.05, and 0.01 between groups in a one-way ANOVA.

### 7.3.3.3 Impacts on Flexibility in Budget Execution

Performance budgeting requires programme managers to exercise appropriate discretion in implementing their budgets in changeable circumstances (Diamond; 2001). Nonetheless, according to Table 7-6, administrators perceived that Korean performance budgeting had less of an effect on flexibility in operating budgets than they would have expected (3.98). That is to say, they did not perceive much of a contribution by the Korean performance budgeting system to increasing such flexibility. Table 7-11 below summarizes the ANOVA results for differences in the perceived contribution of Korean performance budgeting to changing the degree of flexibility in operating budgets among respondent groups.

Managers of budgets and programmes had, as indicated in the table, mean scores of slightly lower than 4.00, indicating that the contribution of performance budgeting to increasing flexibility was not greater than expected. Between these managers, significant differences were not found.

As seen in Table 7-11 below, there was a significant difference in budget flexibility depending on what kinds of mission organizations had.

Organizations related to the economy saw higher mean scores of 4.18, suggesting that the performance budgeting system made a slightly greater contribution to increasing budget flexibility than expected (4.18 vs. 3.85 or 3.77,  $p < 0.01$ ). Between ministries and agencies, or between those working at headquarters and regional agents, there was no significant difference in the contribution of the budget system to changing budget flexibility for them.

Table 7-11 makes comparisons between the mean scores of groups of programmes. The table shows that the age of programmes made a slight but significant difference in the contribution of Korean performance budgeting to the flexibility of their budget operations. Mid-age programmes (6-15 years), as with previous practices, saw the highest mean scores, whereas the other age groups had mean scores of lower than 4.00 (4.17 or 4.22 vs. 3.90 or 3.64,  $p < 0.05$ ). It is suggested that the performance budgeting system might make more of a contribution than expected to increasing flexibility in implementing programmes in the mid-age group alone.

On the other hand, there were no statistically significant differences in the contribution of Korean performance budgeting to changing budget flexibility in relation to programme type, budget amount, or SABP grades.

The table, also, summarizes the ANOVA results for differences in the contribution of Korean performance budgeting to improving budget flexibility among the four types of SABP user.

The results show that, among these four users of the SABP assessments, there were statistically significant differences in the flexibility they had for executing budgets. The two single-purpose users (for programme management; and for personnel performance management) had mean scores of lower than 4.00, indicating that for them there might be no critical effect of the budgeting system on the flexibility they had for operating budgets. The multi-purpose users (for both programme *and* personnel performance management) had mean scores of 4.30. It is implied that, when SABP assessments were used for managing programmes as well as personnel performance, then performance budgeting could make a greater contribution to increasing the flexibility of budget operation.

Table 7-11 ANOVA results for perceived changes in budget flexibility among groups

		Valid cases	Mean	Std. Deviation	95% Confidence Interval	
					Lower	Upper
Manager's Job	1. Budget	234	3.95	1.03	3.81	4.08
	2. Programme	559	3.99	1.02	3.90	4.07
No. of programmes in charge	1. No programme	265	3.96	0.94	3.85	4.08
	2. One or more programmes	347	3.99	1.07	3.87	4.10
Organization size	1. Ministry	538	3.95	1.01	3.86	4.04
	2. Agency	257	4.04	1.03	3.91	4.17
Organization mission ***	1. Economy Org.	355	4.18	0.97	4.08	4.28
	2. Social welfare Org.	277	3.85	1.03	3.72	3.97
	3. Administration Org.	162	3.77	1.05	3.60	3.93
Department	1. Headquarter	746	3.99	1.02	3.92	4.06
	2. Regional agent	48	3.81	1.01	3.53	4.11
Programme types	1. SOC	12	4.31	1.22	3.53	5.08
	2. Capital acquisition	33	4.31	0.85	4.01	4.62
	3. Other direct programme	131	3.96	1.05	3.78	4.15
	4. Investment	16	3.98	0.94	3.48	4.48
	5. Loan	6	4.06	0.49	3.54	4.57
	6. Subsidy to private sector	64	4.01	1.13	3.73	4.29
	7. Subsidy to local government	51	3.70	1.14	3.38	4.02

		Valid cases	Mean	Std. Deviation	95% Confidence Interval	
					Lower	Upper
Programme ages**	1. 5 years or less	140	3.90	0.95	3.74	4.05
	2. 6 to 10 years	100	4.17	1.13	3.95	4.40
	3. 11 to 15 years	32	4.22	0.99	3.86	4.57
	4. 16 years or more	44	3.64	1.10	3.30	3.97
Budget size	1. 2.3 billion Won or less	110	4.03	0.88	3.86	4.19
	2. 2.4 to 7.7 billion Won	89	4.01	1.13	3.77	4.25
	3. 7.8 to 30.8 billion Won	69	3.70	1.20	3.41	3.99
	4. 30.9 billion Won or more	41	4.07	1.04	3.75	4.40
Programme grades by SABP	1. Effective	35	3.69	1.20	3.27	4.10
	2. Somewhat effective	75	4.19	1.17	3.92	4.45
	3. Modest	161	4.00	0.91	3.85	4.14
	4. Poor	35	3.54	1.16	3.15	3.94
Use of SABP results***	1. Programme management	346	3.90	1.06	3.79	4.01
	2. Personnel performance management	15	3.80	1.15	3.17	4.43
	3. Programme and performance management (1+2)	106	4.30	0.87	4.13	4.47
	4. Others	8	3.54	1.87	1.98	5.10

Note: \*, \*\*, and \*\*\* mean that there was a significant difference at 0.1, 0.05, and 0.01 between groups in a one-way ANOVA.

### 7.3.4 Impacts on Other Programme-Managerial Practices

Under Korean performance budgeting, as described in Chapter 3, SABP is used to assess budgetary programmes on the basis of reports which programme managers make about the results of programme implementation. During the assessment, programme managers are urged to present written documents as evidences for the SABP score (or grades) awarded to their programmes. This could lead to greater documentation or formalization of operational procedures.

Apart from the question of procedure formalization, the MPB and some researchers used to put the failure of the PMS attempt of 2000 down to a lack of support from senior management. It was argued that the introduction of the PMS into only part of central government did not attract senior management's support. When the MPB introduced performance budgeting with SABP in 2005, it did so widely across the central government, to all ministries and agencies.

Taking this into account, this section aims to identify how performance budgeting with SABP affected these two factors: procedure formalization and support from senior management.

#### **7.3.4.1 Impacts on Formalization of Programmes' Operational Procedures**

As demonstrated in Table 7-6 above, public administrators perceived that Korean performance budgeting made a slightly greater contribution to formalizing the procedures of programme management activities than expected (4.35). This is consistent with the above expectation. More specifically, Table 7-12 below shows differences in respondent groups' perceptions of the contribution of Korean performance budgeting to procedure formalization. As for managers' job, although a slight gap between the mean scores is shown, it was not statistically significant. The findings suggest that it was not critical for procedure formalization which jobs or what kinds of programmes administrators were in charge of.

The characteristics of organizations might make a difference in the formalization of

programme operational procedures. Table 7-12 presents variations of the extent of the contribution of Korean performance budgeting to formalizing operational procedures among the three categories of organization. All types of organizations had mean scores of greater than 4.00, indicating that performance budgeting had a greater effect on formalization of operational procedures than expected.

Among the different types of organization, there were statistically significant differences in the contribution of Korean performance budgeting to procedure formalization. Agencies had higher mean scores than ministries (4.64 vs. 4.21,  $p < 0.01$ ). This suggested that agencies, whose jobs are more standardized, had higher levels of procedure formalization than ministries. Organizations whose work was related to the economy showed higher mean scores than the other organizations (4.49 vs. 4.28 or 4.17,  $p < 0.01$ ). The findings suggest that differences between the missions of organizations lead to Korean performance budgeting having a different impact on the extent of procedure formalization.

On the other hand, there were no significant differences between the mean scores of administrators working at headquarters and regional agents.

The extent to which programme operational procedures are formalized may depend on the attributes of programmes such as type, budget, and age. Table 7-12 summarizes the ANOVA results for differences in the contribution of Korean performance budgeting to formalizing operation procedures among groups of programmes. It shows that the extent of the formalization might not be equal, depending on the age, budget size and SABP

grades of programmes.

The mid-age group (6-15 years) might have more formal procedures, given that this group received a greater contribution from performance budgeting to formalization of the procedures of its programmes than the other groups (4.54 or 4.57 vs. 4.23 or 4.01,  $p < 0.01$ ). Large-sized or highly graded programmes had higher mean scores. It is suggested that large programmes and highly graded programmes might have more formal and better-organized operation procedures.

As suggested in the findings so far, what their SABP assessments were used for was critical for the extent to which programmes had their procedure formalization affected by performance budgeting. Table 7-12 makes comparisons between the four types of user of SABP results. All the four groups had mean scores of greater than 4.00, indicating that performance budgeting made a greater contribution to formalizing operation procedures than expected.

However, statistically significant differences were found among the four types of user of SABP assessments. Out of the two single-purpose users, those who used SABP assessments for programme management had higher mean scores than those who used them for personnel performance management (4.31 vs. 4.07,  $p < 0.1$ ). The multi-purpose users had higher mean scores than the single-purpose users (4.56). This suggests that the performance budgeting system might make greater contributions to formalizing the procedures of programme operations when SABP assessments are considered for programme management as well as personnel performance management.

Table 7-12 ANOVA results for changes perceived in procedure formalization among groups

		Valid cases	Mean	Std. Deviation	95% Confidence Interval	
					Lower	Upper
Manager's Job	1. Budget	236	4.23	0.99	4.30	4.55
	2. Programme	556	4.32	0.93	4.24	4.39
No. of programmes in charge	1. No programme	265	4.27	0.87	4.17	4.38
	2. One or more programmes	345	4.37	0.96	4.27	4.47
Organization size ***	1. Ministry	539	4.21	0.93	4.13	4.29
	2. Agency	255	4.64	0.91	4.53	4.76
Organization mission ***	1. Economy Org.	353	4.49	0.89	4.40	4.58
	2. Social welfare Org.	275	4.28	0.99	4.16	4.40
	3. Administration Org.	165	4.17	0.96	4.02	4.32
Department	1. Headquarters	743	4.37	0.94	4.30	4.43
	2. Regional agent	50	4.15	1.02	3.86	4.44
Programme types	1. SOC	10	4.73	1.11	3.94	5.53
	2. Capital acquisition	33	4.52	0.83	4.22	4.81
	3. Other direct programme	130	4.42	0.94	4.25	4.58
	4. Investment	16	4.42	0.48	4.16	4.67
	5. Loan	6	4.11	0.98	3.08	5.14
	6. Subsidy to private sector	64	4.18	0.96	3.94	4.42
	7. Subsidy to local government	52	4.15	1.21	3.82	4.49
Programme ages ***	1. 5 years or less	141	4.23	0.90	4.08	4.38
	2. 6 to 10 years	100	4.54	0.98	4.35	4.74
	3. 11 to 15 years	30	4.57	0.98	4.20	4.93
	4. 16 years or more	44	4.01	1.03	3.70	4.32
Budget size	1. 2.3 billion Won or less	110	4.40	0.80	4.25	4.55
	2. 2.4 to 7.7 billion Won	89	4.27	0.91	4.07	4.46
	3. 7.8 to 30.8 billion Won	68	4.13	1.24	3.83	4.43
	4. 30.9 billion Won or more	40	4.58	1.03	4.24	4.91
Programme grades by SABP*	1. Effective	34	4.68	0.85	4.38	4.97
	2. Somewhat effective	75	4.37	1.00	4.14	4.60
	3. Modest	161	4.30	0.86	4.17	4.43
	4. Poor	35	4.08	1.43	3.59	4.57
Use of SABP results*	1. Programme management	345	4.31	1.00	4.20	4.42
	2. Personnel performance management	15	4.07	1.11	3.45	4.68
	3. Programme and performance management (1+2)	107	4.56	0.76	4.41	4.70
	4. Others	8	4.25	1.16	3.28	5.22

Note: \*, \*\*, and \*\*\* mean that there was a significant difference at 0.1, 0.05, and 0.01 between groups in a one-way ANOVA.

#### **7.3.4.2 Impacts on Support from Senior Management**

Different leadership may result in differences in performance of programmes and even of organizations. Similarly, failure or success of an institution such as a budget system may depend heavily on the type of leadership given. SABP in Korea, in a sense, aimed to attract senior management's support for their staff, so that the latter would manage programmes efficiently under the performance budgeting system. According to Table 7-6, regardless of which jobs administrators had, or what kinds of programmes they managed, they perceived that the contribution of performance budgeting to attracting support from senior management was greater than expected (4.41). Table 7-13 shows the ANOVA results for differences in the perceived contribution of Korean performance budgeting to attracting senior management's support for managers.

As indicated in the table, there was no significant difference between budget managers and programme managers, or between programme managers who managed programmes using SABP and those who managed without using SABP.

The contributions of performance budgeting to inducing senior management to pay attention to programme management were significantly different between organizations. Table 7-13 presents the ANOVA results for differences in the contribution of Korean performance budgeting to increasing support from senior management according to the type of organization.

The results indicate that agencies had significantly higher mean scores than ministries

(4.72 vs. 4.27,  $p < 0.01$ ). Out of three groups classified by organizational mission, those whose work related to the economy had, by a small margin, the highest mean scores (4.56 vs. 4.35 or 4.21,  $p < 0.01$ ). This suggests that performance budgeting needs to be designed to reflect the characteristics of organizations in order for senior management to give support to their staff and programme management

On the other hand, administrators working at headquarters and regional agents did not show any significant difference in the extent to which they attracted senior management's support.

Programmes might attract different levels of support from senior management depending on their characteristics, such as type, age, and size. Table 7-13 presents the ANOVA results for differences in the contribution of Korean performance budgeting to attracting the support of senior management among various groups of programmes.

The results, in the table below, indicate that there were significant differences in senior management's support among the four programme age groups. Mid-age programmes (6 to 15 years) had higher mean scores than the two other groups (4.70 or 4.66 vs. 4.18 or 4.16,  $p < 0.01$ ). Of the four programme size groups, large sized programmes (30.9 billion Won or more), had significantly higher mean scores than the other three groups (4.86 vs. 4.37, 4.38, or 4.15,  $p < 0.05$ ).

On the other hand, these seven programme types and four SABP grades might not make a significant difference in the extent to which the performance budgeting system attracts

high level managerial support.

Table 7-13 shows the ANOVA results for differences in the contribution of Korean performance budgeting to changes in high level managerial support depending on the four types of user of SABP results. There was a significant difference between users in attracting high level managerial support. As has already been noted for other factors, the multi-purpose use of assessments had a greater effect on drawing the support of senior management than the two single-purpose types of use (4.69). Among single-purpose users, the use of SABP scores for programme management produced higher mean scores than their use for personnel performance management (4.37 vs. 3.92,  $p < 0.01$ ). This suggests that multi-purpose use of SABP results might have a stronger impact on high level managerial behaviour than single-purpose uses.

Table 7-13 ANOVA results for perceived changes in support from senior managers

		Valid cases	Mean	Std. Deviation	95% Confidence Interval	
					Lower	Upper
Manager's Job	1. Budget	234	4.48	1.04	4.34	4.61
	2. Programme	539	4.38	1.00	4.30	4.47
No. of programmes in charge	1. No programme	256	4.32	0.89	4.21	4.43
	2. One or more programmes	337	4.44	1.07	4.32	4.55
Organization size***	1. Ministry	530	4.27	1.01	4.19	4.36
	2. Agency	245	4.72	0.94	4.60	4.84
Organization mission***	1. Economy Org.	343	4.56	0.96	4.46	4.67
	2. Social welfare Org.	270	4.35	1.04	4.22	4.47
	3. Administration Org.	161	4.21	1.03	4.05	4.37
Department	1. Headquarter	726	4.43	1.01	4.36	4.51
	2. Regional agent	48	4.18	0.91	3.91	4.44
Programme types	1. SOC	11	4.88	1.46	3.90	5.86
	2. Capital acquisition	32	4.55	0.71	4.30	4.81
	3. Other direct programme	126	4.40	1.06	4.21	4.59
	4. Investment	16	4.70	0.80	4.27	5.12
	5. Loan	5	4.27	1.00	3.03	5.50
	6. Subsidy to private sector	62	4.24	1.08	4.00	4.51
	7. Subsidy to local government	51	4.35	1.33	4.00	4.73
Programme ages***	1. 5 years or less	135	4.18	1.00	4.02	4.35
	2. 6 to 10 years	97	4.70	1.03	4.50	4.91
	3. 11 to 15 years	30	4.66	1.27	4.19	5.14
	4. 16 years or more	45	4.16	1.18	3.81	4.52
Budget size**	1. 2.3 billion Won or less	108	4.37	0.84	4.21	4.53
	2. 2.4 to 7.7 billion Won	84	4.38	0.98	4.16	4.59
	3. 7.8 to 30.8 billion Won	68	4.15	1.47	3.79	4.50
	4. 30.9 billion Won or more	39	4.86	1.12	4.50	5.23
Programme grades by SABP	1. Effective	35	4.56	1.01	4.22	4.91
	2. Somewhat effective	72	4.40	1.17	4.13	4.68
	3. Modest	157	4.39	0.93	4.24	4.54
	4. Poor	34	4.19	1.63	3.62	4.76
Use of SABP results***	1. Programme management	340	4.37	1.09	4.25	4.49
	2. Personnel performance management	15	3.92	1.41	3.14	4.71
	3. Programme and performance management (1+2)	104	4.69	0.73	4.55	4.83
	4. Others	8	4.15	1.80	2.64	5.65

Note: \*, \*\*, and \*\*\* mean that there was a significant difference at 0.1, 0.05, and 0.01 between groups in a one-way ANOVA.

### 7.3.5 Conclusion

As described earlier, institutions may cause organizational personnel to change their mode of behaviour (Giddens; 2007). Similarly, a performance budgeting system, itself an institution, may affect the programme-managerial practices of managers in the public sector.

This study measured the extent of the contributions which Korean performance budgeting has made to changing seven programme-managerial practices: goal clarity, goal difficulty, budget participation, procedure formalization, support from senior management, budget adequacy, and budget flexibility. The first five practices had mean scores of greater than four, indicating that performance budgeting makes more of a contribution to changing them than expected. The two remaining practices saw mean scores of slightly lower than four (3.95 and 3.98). However, it is not easy to determine that the budget system does not affect them, taking into account that the mean scores came close to four. In the end, it is suggested that Korean performance budgeting has made a slight contribution to changing managerial practices within the Korean central government.

On the other hand, Korean performance budgeting appears to bring changes of different extents to these seven managerial practices, depending on the organization, the programme, and the uses to which SABP results are put. Table 7-14 summarizes the results of the ANOVA test for differences in changes to these seven managerial practices.

Table 7-14 Summary of the ANOVA results

	Goal clarity	Goal difficulty	Budget adequacy	Budget participation	Budget flexibility	Procedure formalization	High level support
Manager's job	**	*		*			
No. of programmes in charge				*			
Ministry or agency	***	***		***		***	***
Organization mission			***	***	***	***	***
Headquarters or not							
Programme types			*	*			
Programme ages	*		***	***	**	***	***
Budget size		***		**		*	**
Programme grades by SABP		*	***			*	
Use of SABP results	***	*	***	*	***	*	***

Note: \*, \*\*, and \*\*\* denote that there was a significant difference at 0.1, 0.05, and 0.01 between groups in a one-way ANOVA.

What public managers do within organizations is not likely to be critical for changes to managerial practices. Budget managers' perceptions of managerial practices are not likely to be significantly different from programme managers'; and also, it does not make a significant difference to changes in these practices whether programme managers manage programmes with or without SABP.

As for organizations, significantly different contributions by Korean performance budgeting to changing the practices of different types of organization are found. There is a significant difference between practice changes in ministries and those in agencies, and also between the three groups classified by organizational mission. In general, agencies had higher mean scores than ministries. This suggests that performance budgeting makes a greater contribution to changing the managerial practices of agencies than those of ministries. Out of the three groups classified by mission, organizations whose work is related to the economy might have higher mean scores than the other groups (social welfare-related or administrative organization). This suggests that

performance budgeting might have a greater effect on the practices of these organizations than the other types of organization.

In terms of the characteristics of programmes, programme age tends to affect the contribution of Korean performance budgeting to changes in practices. Mid-age programmes (6-15 years) are likely to experience a greater degree of change in every practice but goal difficulty. The budget amount of programmes might affect the extent of changes to four practices: goal difficulty, budget participation, procedure formalization, and support from senior management.

As expected, what the SABP results are used for is critical to all these seven practices. Out of the two possibilities for single-purpose use, use for programme management, including budget management activities, may mean that performance budgeting makes more of a contribution to changing managerial practices than use for personnel performance management. Both these single-purpose uses might have a smaller effect on managerial practices than multi-purpose use of SABP results, that is use for both programme and personnel performance management.

As a consequence, this survey might make some suggestions as to how the performance budgeting system could make a contribution to changing managerial practices in public organizations. However, the author has not yet identified what impacts it has had on performance of programmes. The next section describes what improvement in programme performance has been brought about by performance budgeting, examining managers' perceptions of this. Additionally, the section identifies what kinds of the

managerial practices have had an effect on programme performance, regressing performance of programmes on the seven managerial practices.

## **7.4 Impacts on Programme Performance**

### **7.4.1 Impacts on Programme Performance**

A performance budgeting system aims to improve performance of programmes and, eventually, operations of government. As described earlier, after the Korean central government introduced performance budgeting, it added SABP, so that the budget system could strengthen links between budget decisions and performance of programmes. These efforts are expected to make some changes to managerial practices and performance of programmes. As described previously, public administrators perceived that performance budgeting made a slight contribution to adjusting programme-managerial practices within the Korean central government.

In addition, administrators observed a slight contribution by performance budgeting to improving performance of programmes. In this area, they showed, as shown in Table 7-6, mean scores of 4.38, indicating that performance budgeting made a slightly greater contribution to improvement in performance of programmes than expected. In particular, the mean had a confidence interval of 4.31 - 4.45 at the level of 95%. It could be 95% determined that programme performance had been improved more than expected, because this indicates that the mean for programme performance was greater than 4.00 95 out of 100 times,

Similarly to what was demonstrated with the seven managerial practices, there were significant differences in administrators' perceptions of the contribution of Korean performance budgeting to programme performance, depending on the administrators' organizations and programmes, and on the uses to which they put SABP assessments.

Table 7-15 below presents the results of the ANOVA for differences perceived in the contribution of the performance budgeting system to performance of programmes among respondent groups.

Firstly, what roles administrators played within organizations might make a difference to their perceptions of performance of programmes. The results, in Table 7-15, indicate that budget managers awarded significantly higher mean scores than programme managers (4.50 vs. 4.33,  $p < 0.05$ ). This suggests that budget managers might assess the effects of performance budgeting more positively than programme managers. However, there were no statistically significant differences between managers who managed programmes with and without SABP.

Public administrators' observations of the contribution of Korean performance budgeting to improving programme performance varied depending on the organization to which they belonged. Table 7-15 shows comparisons of the perceived contribution to improving programme performance among organizations. As in the case of the managerial practices discussed above, agencies gave higher mean scores than ministries (4.67 vs. 4.24,  $p < 0.01$ ). Among the three groups classified by organizational mission, ministries and agencies whose work was related to the economy had higher mean scores than other organizations (4.56 vs. 4.24 or 4.25,  $p < 0.01$ ). This suggests that different

organizations may experience different contributions by performance budgeting to improving their programme performance.

However, no statistically significant differences were shown between administrators who worked at headquarters and regional agents.

As described in Chapter 6, different types of programme may have different links between budget allocations and performance. Similarly, programme types may have a different effect on performance. Table 7-15 presents the ANOVA results for differences in the perceived contribution of performance budgeting to improving programme performance among various groups of programmes. This indicates that different groups of programmes experienced different contributions by performance budgeting to improving their programme performance.

Administrators perceived that there were significant differences shown in the mean scores for the seven types of programmes ( $p < 0.05$ ). SOC-type programmes had the highest mean scores (5.00), whereas programmes which subsidized local governments had the lowest mean scores (4.01).

For programmes of different ages, the results also showed a significantly different effect on their programme performance. Mid-age programmes (6-15 years) had higher mean scores than the other age groups (4.64 or 4.60 vs. 4.21 or 3.93,  $p < 0.01$ ).

The budget amounts of programmes also had different effects on improvement in programme performance ( $p < 0.01$ ). Large-sized programmes experienced the greatest

effect of performance budgeting on programme performance (4.74), whereas programmes with budgets of 7.8 to 30.8 billion Won were affected less than expected (3.93).

Also, differences in the SABP grades achieved by programmes were significantly linked with differences in the effect of Korean performance budgeting on improving programme performance ( $p < 0.05$ ). Programmes with a grade 'Effective' had the highest mean scores (4.45), whereas programmes with a grade 'Poor' had the lowest mean scores (3.86). This suggests that the higher the grades programmes achieved, the greater the contribution of the performance budgeting system to their programme performance.

Korean performance budgeting may have a different effect on performance of programmes depending on which of the four types of use of SABP assessments an organization chooses. Table 7-15 presents the ANOVA results for comparisons of mean scores among these four types of SABP user. Out of the two single-purpose users (for programme management *or* for personnel performance management), those using SABP results for programme management perceived a greater contribution to improving their performance than those using them for personnel performance management (4.34 vs. 3.94). Groups which used SABP assessments for managing both programmes and personnel performance (multi-purpose use) had the highest mean scores of the four groups. This suggests that multi-purpose use of SABP assessments made a greater contribution to improving the performance of programmes than the two single-purpose uses.

To sum up, public administrators, as tabulated in Table 7-6, recorded mean scores of 4.38 for the contribution of Korean performance budgeting to improving performance of programmes. It is suggested that performance budgeting might make a slightly greater contribution to improving the performance of programmes than expected.

More specifically, the results of the ANOVA test indicate that administrators had significantly different perceptions of the contribution of Korean performance budgeting to performance, depending on their organizations, programmes, and the uses to which they put SABP assessments. The performance budgeting system had a greater effect on the performance of programmes in agencies than in ministries. In terms of programmes, the budget system had a greater impact on SOC-type and large-sized programmes.

The different types of use of SABP assessments may lead to different impacts of Korean performance budgeting on performance of programmes. Out of the two single-purpose uses, the use of SABP results for programme management had a greater effect on performance of programmes than their use for personnel performance management. Multi-purpose use of these results brought a greater contribution to improving performance of programmes than the two single-purpose uses. This suggests that, for Korean performance budgeting, what SABP assessments are used for is critical for performance of programmes.

Table 7-15 ANOVA results for differences in performance among groups

		Valid cases	Mean	Std. Deviation	95% Confidence Interval	
					Lower	Upper
Manager's Job**	1. Budget	235	4.50	1.09	4.36	4.64
	2. Programme	556	4.33	1.02	4.24	4.41
No. of programmes in charge	1. No programme	264	4.31	0.97	4.19	4.43
	2. One or more programmes	346	4.37	1.05	4.26	4.48
Organization size***	1. Ministry	538	4.24	1.03	4.15	4.33
	2. Agency	255	4.67	1.00	4.55	4.80
Organization mission***	1. Economy Org.	354	4.56	0.98	4.45	4.66
	2. Social welfare Org.	274	4.24	1.09	4.12	4.37
	3. Administration Org.	164	4.25	1.04	4.09	4.41
Department	1. Headquarter	743	4.39	1.04	4.31	4.46
	2. Regional agent	49	4.27	1.01	3.80	4.56
Programme types**	1. SOC	11	5.00	1.57	3.95	6.05
	2. Capital acquisition	33	4.56	0.63	4.33	4.78
	3. Other direct programme	131	4.36	1.00	4.18	4.53
	4. Investment	16	4.75	0.57	4.44	5.06
	5. Loan	6	4.31	0.36	3.93	4.68
	6. Subsidy to private sector	63	4.31	1.00	4.06	4.56
	7. Subsidy to local government	52	4.01	1.32	3.64	4.37
Programme ages***	1. 5 years or less	141	4.21	0.97	4.05	4.37
	2. 6 to 10 years	99	4.64	0.90	4.46	4.82
	3. 11 to 15 years	30	4.60	1.38	4.09	5.11
	4. 16 years or more	45	3.93	1.10	3.60	4.26
Budget size***	1. 2.3 billion Won or less	110	4.39	0.81	4.24	4.55
	2. 2.4 to 7.7 billion Won	87	4.43	0.89	4.25	4.62
	3. 7.8 to 30.8 billion Won	70	3.93	1.34	3.61	4.25
	4. 30.9 billion Won or more	40	4.74	1.24	4.34	5.13
Programme grades by SABP**	1. Effective	35	4.45	0.99	4.11	4.79
	2. Somewhat effective	75	4.42	1.13	4.15	4.68
	3. Modest	160	4.40	0.91	4.26	4.54
	4. Poor	35	3.86	1.45	3.36	4.35
Use of SABP results*	1. Programme management	344	4.34	1.10	4.22	4.46
	2. Personnel performance management	15	3.94	1.49	3.12	4.77
	3. Programme and performance management (1+2)	107	4.57	0.74	4.43	4.72
	4. The others	8	4.06	1.90	2.47	5.65

Note: \*, \*\*, and \*\*\* mean that there was a significant difference at 0.1, 0.05, and 0.01 between groups in a one-way ANOVA.

## **7.4.2 Differences in the Impact of Managerial Practices on Programme**

### **Performance**

By this point, it has been identified that Korean performance budgeting has made a slight contribution to changing the seven managerial practices and to improving performance of programmes. However, there is as yet no description of how the performance of programmes is related to the seven managerial practices. For this analysis, this study focused on managerial practices which may affect the performance of programmes, on the basis of existing researches and the SABP checklists. Accordingly, it is presumed that the seven practices selected for this study might have an impact on the performance of programmes. Indeed, these eight variables, as seen in Table 7-5 (Pearson correlation), appeared to be closely related. Also, the impact of the practices on performance may vary because the practices tend to have been adjusted differently to performance budgeting. Ordinary least squares multi-regression analysis may identify the relationships and impact differences of these seven managerial practices on programme performance.

The majority of zero-order correlation coefficients between managerial practices and performance perceived by administrators, as presented in Table 7-5, were statistically significant at  $p < 0.01$ . The prevalence of significant relationships may suggest some weakness in the measures in this survey. To determine whether ordinary least squares multi-regression analysis is the appropriate estimator, multicollinearity was tested by collinearity statistics. Seven independent variables had variance inflation factor (or VIF) values lower than 10.00, indicating that there is no severe multicollinearity among

independent variables (Menard, 1995; Hair et al., 1995; Neter et al., 1989; Mason et al., 1989; Marquardt, 1970; Kennedy, 1992; cited O’Breien, 2007; Basioudis and Ellwood, 2005).

The results of regression analysis for improvement in programme performance appear in Table 7-16. The adjusted  $R^2$  for the model, the coefficient of determinant, was 0.73, and the equation achieved statistical significance at the  $p < 0.01$  ( $F = 268.69$ ). All the seven independent variables in the equation had positive (+) coefficients.

Of these variables, five (the exceptions were goal difficulty and budget flexibility) had a statistically significant correlation with the dependent variable, the performance of programmes.

Table 7-16 Relationships of programme-managerial practices with programme performance

	Unstandardized Regression Coefficients	Standardized Regression Coefficients	Standard error	<i>t</i>
Goal clarity	0.238***	0.229	0.038	6.329
Goal difficulty	0.032	0.032	0.033	0.962
Budget adequacy	0.066*	0.070	0.035	1.875
Budget participation	0.147***	0.133	0.053	2.766
Budget flexibility	0.030	0.029	0.043	0.683
Procedure formalization	0.172***	0.156	0.045	3.854
Support from senior management	0.342***	0.328	0.044	7.746
(Constant)	-0.053	-	.109	-0.486
<i>F</i>	268.687***			
$R^2$	0.728			
Adjusted $R^2$	0.726			
N	709 (Listwise)			

Note: 1. Dependent variable is the performance of programmes.

2. \* is statistically significant at the 0.10 level; \*\* at the 0.05 level; and \*\*\* at the 0.01 level in two-tailed tests.

Among the two goal-setting variables, goal clarity was positively associated with

performance of programmes ( $p < 0.01$ ). That is to say, administrators who had strong perceptions of goal clarity reported higher levels of performance of programmes than administrators who did not. It is suggested that when programmes had a high level of goal clarity, this might create high levels of performance. Goal difficulty did not have a significant correlation with programme performance.

As for the three variables related to budget management, the results of regression analysis indicate that two, budget adequacy and budget participation, had significantly positive (+) correlations with performance of programmes, whereas budget flexibility did not. This means that managers who perceived a high level of budget adequacy were more likely to express improvement in performance of programmes ( $p = 0.1$ ). Administrators with strong perceptions of budget participation were likely to convey higher levels of programme performance ( $p < 0.01$ ). It is implied that increasing participation of programme managers in budgeting might cause budgets to be adequate, and that, when programmes have adequate budgets, this might enhance areas of performance such as economy and efficiency. However, budget flexibility was not significantly associated with performance of programmes.

The results of regression analysis indicate that the levels of procedure formalization and high level managerial support had positive (+) effects on performance of programmes. This means that administrators who reported a high level of procedure formalization were more likely to perceive a high level of programme performance ( $p < 0.01$ ). Administrators with strong perceptions of high level managerial support tended to report a high level of performance of programmes ( $p < 0.01$ ). This suggests that it is

necessary to formalize operational procedures and to attract senior management's support in order to improve the performance of programmes.

As for the levels of impact of the seven managerial practices on programme performance, the results of regression analysis showed that the support of senior management had the largest standardized regression coefficient. This suggests that the support of senior management was the area which showed the strongest effect of Korean performance budgeting on the performance of programmes. The finding confirms the argument that high-level managerial support is critical if performance budgeting is to make a contribution to improving performance of programmes (Jun and Park, 2002).

Ministries and agencies in Korea differ in many of their characteristics: for example, in the structure and culture of their organizations, and in the attributes of their programmes. This may cause Korean performance budgeting to have different impacts on programme-managerial practices, and in turn to produce differences in their impacts on performance of programmes. To confirm this, the present study conducted two separate ordinary least square regression analyses for ministries and agencies. The results of regression analysis for ministries and agencies are each presented in Table 7-17.

Firstly, on the left side of Table 7-17, there are the results of regression analysis for ministries. The results are similar to those shown in Table 6-40 for pooled data. The results indicate that goal clarity ( $p < 0.01$ ), budget adequacy ( $p < 0.01$ ), budget participation ( $p < 0.1$ ), procedure formalization ( $p < 0.01$ ), and the support of senior

management ( $p < 0.01$ ) had significantly positive (+) correlations with the performance of programmes in ministries. Goal difficulty and budget flexibility, however, did not have significant relationships with performance of programmes.

The results of regression analysis for agencies are presented on the right side of Table 7-17. The results show that goal clarity ( $p < 0.01$ ), procedure formalization ( $p < 0.1$ ), and high level managerial support ( $p < 0.01$ ) were significantly correlated to the performance of programmes. However, the three variables related to budget management might not have a significant correlation with the performance of programmes. This suggests that, if programmes set goals that were clear and specific and had formal operational procedures, they might find it easier to improve their own performance.

Table 7-17 Results of regression analyses comparing ministries and agencies

	Regression Coefficient for Ministries ( $\beta$ )	Regression Coefficient for Agencies ( $\beta$ )
Goal clarity	0.164*** (.043)	0.415*** (.074)
Goal difficulty	0.043 (.041)	-0.019 (.058)
Budget adequacy	0.163*** (.040)	-0.110 (.067)
Budget participation	0.107* (.064)	0.037 (.097)
Budget flexibility	0.077 (.052)	0.084 (.083)
Procedure formalization	0.135*** (.054)	0.136* (.082)
Support from senior management	0.311*** (.051)	0.347*** (.085)
F	211.730***	63.135***
$R^2$	0.756	0.677
Adjusted $R^2$	0.753	0.666
N	486 (Listwise)	219 (Listwise)

Note: 1. Dependent variable is the performance of programmes.

2. \* is statistically significant at the 0.10 level; \*\* at the 0.05 level; and \*\*\* at the 0.01 level in two-tailed tests.

3. Standard errors are reported in the parenthesis.

## 7.5 Conclusion

In this chapter, this study has investigated variations in, and the relationship of programme-managerial practices with, performance of programmes operated under the Korean central government's system of performance budgeting. To achieve its aims, the study administered an opinion survey of public administrators which looked at seven managerial practices and at programme performance using a questionnaire with 53 questions. The survey collected 808 questionnaires and excluded one questionnaire which was not completely answered.

The survey results show that these seven managerial practices had mean scores of slightly below or above 4.00. This suggests that Korean performance budgeting makes at least as great a contribution to improving managerial practices as expected.

The results of ANOVA tests show significant differences in mean scores, suggesting that performance budgeting makes a different contribution to adjusting managerial practices depending on organizations, programmes, and uses of SABP assessments. Performance budgeting brings greater changes to managerial practices in agencies or organizations whose work is related to the economy than to those in ministries, organisations that deal with social welfare, and administrative organizations.

Clearly, the uses to which SABP results are put make a significant difference in the effect of performance budgeting on all seven managerial practices. Of the two single-purpose uses, the use of SABP results for programme management meant that

managerial practices were affected more strongly than they were when the results were used for personnel performance management. Multi-purpose use of SABP results (for programme management *and* personnel performance management) meant that performance budgeting had a greater effect on managerial practices than the two single-purpose uses.

According to the survey, administrators perceive that Korean performance budgeting has made a slight contribution to enhancing performance of programmes. The results of ANOVA tests indicate that performance budgeting makes a different contribution to improving performance of programmes, depending on organizations, programmes, and the uses to which SABP results are put. Administrators in agencies had stronger perceptions of performance improvement than those in ministries. Of the two single-purpose uses of SABP assessments, use for programme management made a greater contribution than use for personnel performance management. The multi-purpose use of SABP assessments made a greater contribution to improving performance than single-purpose uses.

These seven managerial practices are likely to have a correlation with performance of programmes. The results of regression analysis indicate that goal clarity, budget adequacy, budget participation, procedure formalization, and support from senior management had statistically significant correlations with performance of programmes. However, no statistical significance was found in goal difficulty and budget flexibility.

Furthermore, ministries and agencies are likely to experience different impacts of

managerial practices on programme performance. It is indicated that five practice variables (the exceptions were goal difficulty and budget flexibility) had a significant relationship with programme performance in ministries, whereas four variables (the exceptions were goal clarity, procedure formalization, and support from senior management) were not statistically significant in agencies. In particular, administrators are likely to perceive that senior management's support is one of the critical factors for improving performance of programmes in both ministries and agencies.

Several limitations of this research should be noted. The measures used in this study are cross-sectional, perceptual and subjective rather than objective. A more complete analysis would require longitudinal data on performance budgeting dynamics and patterns within ministries and agencies of the Korean central government. Finally, it is required to specifically analyse the organizational process by which the performance budgeting system changes programme-managerial practices and performance of programmes.



## CHAPTER 8 CONCLUSION

### 8.1 Summary of the Thesis

This study has aimed to identify the impact of Korean performance budgeting on government operations which have an important budgetary element. It set out to examine what influence performance budgeting in Korea has had on the links between programme budget decisions and programme performance, and on the changes in programme-managerial practices and programme performance. In order to achieve these objectives, this research mainly employs a quantitative approach, using ANOVA (analysis of variance) and regression analysis.

The author of this thesis found several kinds of evidence relating to the impact of Korean performance budgeting on government operations. The following is a summary of the key research findings in response to the research questions.

*Firstly, this study found that budget decisions have a statistically significant correlation with the performance of programmes or the scores (or grades) of Self-Assessment of Budgetary Programmes (SABP)*

This study regressed budget percentage changes on SABP assessments, controlling other factors. Regression results indicated that there was a correlation between budget

allocations and programme performance during the three budget years 2006, 2007, and 2008. Programme performance (or SABP assessments) was usually considered in relation to budget decisions at the three budget stages: budget request, budget proposal, and final budget allocation. However, impacts varied a little between the three budget stages. It is at the budget proposal stage that SABP scores tend to have their greatest impact on budget decisions, whereas they appear to have their smallest impact at the budget request stage.

Of the four grades by the SABP: 'Poor', 'Modest', 'Somewhat effective', and 'Effective', the grade 'Poor' appears to have the strongest impact on budget decisions. This is consistent with the recommendations of the annual Budget Request Guideline that spending ministries and agencies should reduce by more than 10% the budgets of programmes assessed as 'Poor' by SABP. With regard to the three programme components that SABP is used to assess – planning, implementation, and results – the results component, which represents programme performance most directly (Gilmour and Lewis, 2005, 2006), tends to show the least correlation. Rather, it is the management component that analysis shows to have the greatest effect on budget decisions.

*Secondly, this study found that Korean performance budgeting tends to initiate changes in programme-managerial practices within spending ministries and agencies, and that the extent to which Korean performance budgeting makes a contribution to changing these practices may depend on programme characteristics, particular organizations, and the uses to which SABP assessments are put.*

The survey was conducted in order to identify the extent to which Korean performance budgeting has made a contribution to changes in seven managerial practices: programme goal clarity, programme goal difficulty, programme budget participation, programme operation procedure formalization, support from senior management, budget adequacy and budget flexibility. According to the survey, the first five of these practices had mean scores greater than 4.00 on a seven-point Likert scale, indicating that Korean performance budgeting has made more contribution to changing them than expected. However, the final two had mean scores of slightly lower than 4.00, suggesting that Korean performance budgeting had not had the expected effect on them.

Results of the ANOVA using data from this survey indicate that administrators had slightly different perceptions of the extent to which the performance budgeting system had made a contribution to changing managerial practices, depending on the type of programme which they managed, the type of organization which they belonged to, and the purposes for which they used SABP assessments. Consistently in the seven practices, those who belonged to agencies perceived a greater contribution than those who belonged to ministries. Multi-purpose use (for both programme management *and* personnel performance management) had a greater effect on changes in managerial practices than single-purpose use (for programme management *or* for personnel performance management).

*Thirdly, this study suggests that Korean performance budgeting can improve programme performance, and that its contribution to improving programme performance may vary depending on programme characteristics, organizations, the*

*uses of SABP assessments, and so on.*

Results of the survey suggest that Korean performance budgeting may make a greater contribution to improving programme performance than expected, in the sense that mean scores for this were greater than 4.00 on a seven-point Likert scale.

In terms of managers' jobs, those who were in charge of managing budgets perceived a greater contribution of performance budgeting to the improvement of programme performance than others. There was a significant difference in perceived contribution, depending on the organization which administrators belonged to and the programmes which they managed. Administrators perceived that different uses of SABP assessments might make a significant difference in the contribution of performance budgeting to the improvement of programme performance. Use for programme management, including programme budget management, had a stronger impact on performance than use for personnel performance management. Multi-purpose use (for both programme *and* personnel performance management) was stronger than single-purpose uses (for either programme management *or* personnel performance management).

*Finally, this research suggests that some managerial practices may have a significant effect on programme performance, and that they may make a difference in the extent to which programme performance is improved.*

This study regressed programme performance on the seven managerial practices listed above, in order to identify performance factors. The results of the regression analysis indicate that five practices – goal clarity, budget adequacy, budget participation,

operation procedure formalization, and support from senior management – had significant correlations with the performance of programmes, whereas goal difficulty and budget flexibility did not.

Results of the regression analysis suggest that ministries and agencies may have different performance factors. Administrators in ministries perceived that the above five practices had a significant relationship with performance, whereas those in agencies perceived this to be true of just three of these practices – goal clarity, procedure formalization, and support from senior management.

As summarized above, this research has provided empirical evidence for the association of budget decisions with programme performance, and for changes in programme-managerial practices and performance. While linking budget decisions with SABP assessments, Korean performance budgeting tends to make a contribution to the improvement of managerial practices and programme performance. Furthermore, these findings, as will be shown below, provide several clues for designing and implementing performance budgeting.

## **8.2 Policy Implications**

These findings suggested that Korean performance budgeting may have an impact on a variety of government activities. As summarized above, not only has it made a link between budget decisions and programme performance, it has also made a contribution to changing programme-managerial practices and to improving programme

performance. It is implied from these findings that the checklists used for SABP and proper use of SABP results for performance management played a critical role in making the impacts. As a result, designers of performance budgeting should give deliberate consideration to creating assessment items and accountability systems for programmes' results. First of all, designers need to develop assessment items in a specific and objective way, in order that they can have an intended impact on specific practices. As seen from these findings, having a close relationship with the checklists used for SABP, the seven managerial practices are beginning to have been changed by Korean performance budgeting. Furthermore, it is required that the Korean performance budgeting system be designed to strengthen accountability for the results of programme implementation. It needs, for instance, to have proper links to budget decision, or to enlarge the use of SABP assessments.

From an implementation point of view, performance budgeting tends to be associated with difficulties in three main areas: performance measurement, links between budget decisions and performance, and responsibility or accountability for resource use (Andrews, 2003). Korean performance budgeting too is likely to cause problems in these areas. On the basis of findings focusing on these areas, this thesis proposes several solutions for addressing the problems in Korean performance budgeting, as follows.

Firstly, Korean performance budgeting needs to improve the procedures involved in SABP. In the process of assessing programmes using SABP, spending ministries and agencies show a 'leniency tendency'. As noted in Chapter 3, they tend to award scores of about 90 points out of 100 to their programmes, making these scores, on average, 30

points higher than those awarded by the MPB. In other words, SABP scores awarded by spending ministries and agencies vary little between programmes, so that they cannot provide useful pieces of performance information for prioritising programmes in making budget decisions. As a result of this leniency, managers may neglect SABP assessments at the stage of making budget requests. Accordingly, the Korean government should seek procedures or instruments which encourage spending ministries and agencies accurately to assess the real performance of their programmes.

Secondly, the Korean government should strive to strengthen the uses of performance information – SABP assessments – for making budget decisions, although the findings do give a comprehensive suggestion that Korean performance budgeting has linked budget decisions with performance. The use that Korean performance budgeting has made of SABP grades in linking budget decisions with programme performance varies between different types of organization and different types of programme. For example, the ‘Poor’ grade is likely to have a stronger impact on budget decisions than the other three grade levels (‘Modest’, ‘Somewhat effective’, and ‘Effective’). In a sense, this implies that Korean performance budgeting tends to concentrate on using SABP assessments as a tool for cutting the budgets of programmes with the grade ‘Poor’. Weakening the links of programmes with the other grades may have the effect of de-emphasizing the importance of results, ‘as managers continue to view the results-emphasis as an add-on instead of the core focus of the budget’ (Andrews, 2003).

Thirdly, this research suggests that, in the long run, the Korean government should need to create a more specific and clearer accountability framework for managers, so that

they can focus on performance budgeting. According to this study, the different uses of SABP assessments have made different contributions to changing managerial practices and programme performance. Multi-purpose use (for both programme management *and* personnel performance evaluation) has had a stronger effect on changes in practices and performance than single purpose use (for programme management *or* for personnel performance evaluation). In addition, the contribution which Korean Performance budgeting has made to changing practices and performance differs between ministries and agencies. Thus, the Korean government needs to develop further uses for SABP assessments, so that they can play a role in establishing incentives and sanctions to stimulate managers to increase their efforts (Diamond, 2005). Furthermore, budget reformers should take a different approach to designing incentives and sanctions for each type of organization.

Fourthly, the survey results add several implications for Korean performance budgeting. One of these relates to the fact that Korean administrators perceived that Korean performance budgeting made only a small contribution to expanding managers' flexibility in executing their budgets. Taking into account that budget flexibility is critical for implementing performance budgeting (Diamond, 2001), the Korean government should explore ways to ensure flexibility in executing budgets. Another implication relates to support from senior management, which can be a key factor in improving programme performance under Korean performance budgeting. The survey indicates that support from senior management has had the largest impact on programme performance of the seven practices. Hence, the Korean government needs to find ways of drawing more support from senior management.

For Korean performance budgeting to take a step forward in the future, the Korean government should continue to make regular checks on several areas of managerial performance, as described below.

Programme managers should set clear and specific goals for their programmes, so that the relationship between goals and programme outcomes may be clearly seen. Many governments fail in this area – outcomes are not considered; outputs are confused with inputs; targets lack a ‘real-world’ value, are poorly detailed, and are disconnected from the activities and projects needed to achieve them (Andrews, 2003). As suggested by the experience of SABP assessments so far, Korean performance budgeting may fail to measure actual performance of programmes.

The Korean government should continue to check whether Korean performance budgeting encourages budget managers to link budget decisions to performance. Along with reviewing the strength of the link between budget decisions and performance regularly, the Korean government could reorganize programmes for the assessment. In several groups of programmes, managers working within Korean performance budgeting may have little opportunity to use their SABP assessments in budgeting. For example, the SABP assessments may not affect budget decisions on programmes, as is the case with the national insurance programme and the unemployment benefit programme, because their budgets are allocated by law. Assessing these programmes may require additional time and cost. The National Assembly Budget Office (2007) reported that the Korean government paid 6.2-8.1 billion Won for evaluating government performance each year.

### **8.3 Future Research Areas**

It is significantly meaningful that this research has provided a more comprehensive analysis of the impacts of Korean performance budgeting than any research previously undertaken in Korea. Along with an analysis of whether or not Korean performance budgeting has linked budget decisions to programme performance, this study has examined the extent to which Korean performance budgeting has made a contribution to changing programme-managerial practices and to improving programme performance.

Several interesting questions arising from this analysis, however, can be expected to provide clues as to which areas require further research in the future.

This thesis examines the extent to which Korean performance budgeting has made a contribution to changing the seven programme-managerial practices which may have an influence on programme performance. However, it would be possible to make further studies of the reasons why Korean performance budgeting has made different contributions to changing these, depending on organizational culture, Korean administrative traditions, and other factors.

Additionally, further research could examine the organizational process of the performance budgeting system and how this changed programme-managerial practices and performance of programmes. Further research might examine longitudinal data on performance budgeting dynamics and patterns within ministries and agencies of the Korean central government.

Further study could work with a specific focus on SABP assessments themselves, so that it can specifically define the characteristics of SABP scores (or grades). A useful idea for future research is whether or not SABP scores represent the ‘actual’ performance of programmes. SABP may, as noted earlier, share some of the problems identified in other tools designed for measuring performance.

As for the regression models used for analysing the links between budget decisions and performance in Chapter 5, they consider various factors which affect budget decisions. It was not easy, however, for these models to consider macro-data such as the inflation rate – although another model to which a GDP deflator was added made little difference to the results of regression analysis. It is for this reason that the regression models did not have very high coefficients of determination ( $R^2$ ). Further study should explore techniques with which regression models can include these factors.



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# APENDICES

## APENDIX 1 A QUESTIONNAIRE (ENGLISH)

### Survey of the Performance Budgeting System in Korea

This survey is conducted to examine the features of the performance budgeting system, including the Self-Assessment of Budgetary Programmes, which comes under the control of the Ministry of Strategy and Finance.

I declare that information collected here will be used only for this research and will be kept confidential.

Thank you very much for your help and cooperation.

Nohwoon Park, Korean Institute of Public Finance  
Incheul Cho, Ph.D student, Birmingham University

Contact Telephone: 02-2186-2267

Email: jweon@kipf.re.kr

#### I. In respect of your organization. Please tick appropriate answer.

I-1. To what area does your organization's mission belong?

① Economic management                       ② Social                       ③ Administrative

I-2. Your organization?

① Ministry                       ② Agency

I-3. Your department?



II-7. Which type of the 7 programme types on which SABP is used does your assessed programme relate to?

*\* When your programme relates to more than 1 type, please tick just the main type out of the 7 types.*

- ① SOC Investment  
 ② Capital acquisition  
 ③ Other direct program  
 ④  
 ⑤ Loan government  
 ⑥ Subsidy to private sector  
 ⑦ Subsidy to local government

II-8. What is the age of your programme in the assessment year?

- ① 5 years or less  
 ② 6-10  
 ③ 11-15  
 ④ 16 years or more

II-9. For what purpose were your assessment results used?

- ① Budgeting  
 ② Personnel performance evaluation  
 ③ Programme management  
 ④ Budgeting, and personnel performance evaluation  
 ⑤ Budgeting, and programme management  
 ⑥ Programme management, and personnel performance evaluation  
 ⑦ Budgeting, personnel performance evaluation, and programme management  
 ⑧ Other  
 ( )

II-10. If you used the SABP results for budgeting, how much impact did they make on budget decisions of your programmes? Please tick (V) the appropriate box below.

1	2	3	4	5	6	7
Very low			Modest			Very high

**III. Tick (V) the box below, which offers a subjective assessment of variations in 'goal setting practices' related to your programme since the implementation of performance budgeting or SABP.**

<Measurement unit>

1	2	3	4	5	6	7
Very Low			Modest			Very High

No.	Questions	1	2	3	4	5	6	7
III-1	The strategic objectives and performance targets of my programme have been further clarified.							
III-2	My programme targets were made more ambitious.							
III-3	The target groups of my programmes have been more specific.							

III-4	I had to invest more effort in order to achieve programme goals.								
III-5	My programme has clearer objectives.								
III-6	I have understood the strategic objectives and targets of my programme better.								
III-7	My programme targets have become more difficult to achieve.								
III-8	My programme goals were more quantitative and measurable using performance indicators.								

**IV. Tick (V) the box below to indicate your opinion of how ‘budgeting practices’ have changed as a result of the implementation of performance budgeting.**

<Measurement unit>

1	2	3	4	5	6	7
Very Low			Modest			Very High

No.	Questions	1	2	3	4	5	6	7
IV-1	My participation in budgetary decision-making has increased.							
IV-2	I have chosen specific projects under my authority within the budget.							
IV-3	The frequency of programme budget-related discussions initiated by me or my seniors has increased.							
IV-4	My opinions have been more important in setting my budget targets of programme.							
IV-5	My autonomy of budget implementation has been increased.							
IV-6	My seniors have listened more to my opinions in budgeting.							
IV-7	My superiors have provided better reasons when my programme budget has been revised.							
IV-8	My programme budget has allowed me to achieve better performance.							
IV-9	My budget-related opinions have been more important in making budgetary decisions.							
IV-10	My programme budget has been sufficient for achieving goals.							
IV-11	My influence on specific budget implementation has increased.							
IV-12	My programme has been allotted a budget more in accordance with the target level of programme.							

**V. Tick (V) the appropriate box below to indicate your subjective assessment of variations in “other managerial practices” related to your programme since the implementation of performance budgeting.**

<Measurement unit>

1	2	3	4	5	6	7
Very Low			Modest			Very High

No.	Questions	1	2	3	4	5	6	7
-----	-----------	---	---	---	---	---	---	---

V-1	My seniors have cared about my programme more.								
V-2	Operation procedures or stipulations have been more important for my programme.								
V-3	Operation procedures or stipulations of my programme have been more specific formally.								
V-4	My seniors have given advice or opinion on my programme more actively.								
V-5	In the process of my programme management, rules have increased.								
V-6	My seniors have been more interested in setting the objectives and targets of my programme.								
V-7	My seniors have presented more concerns about my programme performance.								
V-8	My seniors made an effort to provide as appropriate resources as possible for achieving my goals.								
V-9	My seniors have paid more attention to performance management such as budget and assessment.								

**VI. Tick (V) the appropriate box below to indicate your subjective assessment of variations in your programme performance since the implementation of performance budgeting.**

<Measurement unit>

1	2	3	4	5	6	7
Very Low			Modest			Very High

No.	Questions	1	2	3	4	5	6	7
VI-1	The level of customer satisfaction with my programme has increased.							
VI-2	The efficiency of my programme has been enhanced.							
VI-3	The effectiveness of my programme has been improved.							
VI-4	My programme has used less labour in order to achieve the same goals.							
VI-5	My programme has spent less money on achieving the same goals.							
VI-6	My programme has achieved the objectives that had been set for it.							

**Thank you very much.**

## APPENDIX 2 A QUESTIONNAIRE (KOREAN)

### 성과예산제도 (재정사업 자율평가제도)에 관한 설문조사

안녕하십니까?

바쁘신 업무 중에도 귀중한 시간을 내어 설문조사에 참여해주신 데에 대하여 먼저 깊이 감사드립니다.

본 조사의 목적은 재정사업 자율평가제도 등 성과예산제도가 재정사업의 계획, 집행 등 운영관리행태에 미친 영향을 종합적으로 진단하여 효율적인 예산배분제도를 모색하는데 있습니다. **귀하의 답변은 우리나라 재정운용 방식 개선을 위한 귀중한 자료가 된다는 점을 감안하여, 자율평가제도 등 성과예산제도에 따라 사업을 평가하고 예산편성 등에 반영하면서 귀하께서 평소 느끼신 바에 대해 다소 시간이 걸리더라도 성실한 답변을 부탁드립니다.**

본 설문조사는 익명으로 실시되고 개인의 의견은 보호됩니다. 귀하께서 답변하신 내용은 통계 목적 이외에는 타 용도로 사용되지 않을 것입니다.

귀하와 귀 부처·청의 무궁한 발전을 기원합니다.

감사합니다.

I. 귀하의 신상과 관련하여 해당번호에 V 표시해 주시기 바랍니다.

I-1. 귀하께서 근무하는 부/청은 다음 어디에 속합니까?

- ① 경제부처/청                      ② 사회부처/청                      ③ 일반행정부처/청

I-2. 귀하께서 근무하고 계신 기관은?

- ① 부처                                      ② 청

I-3. 귀하께서 근무하고 계신 부서는?

- ① 본부                      ② 소속기관                      ③ 기타

I-4. 귀하의 공무원 재직기간은?

- ① 3년 미만                      ② 3년이상-5년미만                      ③ 5이상-10년미만  
④ 10이상-15년미만                      ⑤ 15년 이상

I-5. 귀하의 현보직 근무년수는?

- ① 1년 미만                      ② 1-2년                      ③ 3-4년                      ④ 5년이상

I-6. 귀하의 직급은?

- ① 6급 이하                      ② 5급                      ③ 4급                      ④ 3급 이상                      ⑤ 기타

I-7. 귀하의 연령은?

- ① 20대 이하                      ② 30대                      ③ 40대                      ④ 50대 이상

I-8. 정부업무를 ‘예산업무’와 ‘비예산 업무’ 등 두 가지로 분류할 때, 귀하의 업무는 어느 업무에 해당합니까?

- ① 예산업무(재정기획관실, 각 실국 예산담당자)                      ② 예산외의 다른 업무



II-7. 귀하의 사업은 자율평가제도상 7가지 사업유형 중 어느 것에 해당합니까?

\* 두 가지이상 유형에 동시에 속하는 경우에는 주된 사업유형 하나만

표시바랍니다.

- ① SOC                      ② 시설구매                      ③ 기타 직접                      ④ 출자출연  
 ⑤ 용자                      ⑥ 민간보조                      ⑦ 지방자치단체 보조

II-8. 귀하의 사업의 평가년도 당시 사업년수는?

- ① 5년이하                      ② 6-10년                      ③ 11-15년                      ④ 16년 이상

II-9. 귀하의 사업에 대한 자율평가결과가 정부업무평가 이외에 어떤 목적으로 활용되었는지 V 표시하거나 ( )에 기재해 주시기 바랍니다.

- ① 예산편성                      ② 개인 인사고과평정 및 성과급  
 ③ 사업계획수립 및 집행관리                      ④ ①+ ②  
 ⑤ ①+ ③                      ⑥ ②+ ③  
 ⑦ ①+ ②+ ③  
 ⑧ 기타 ( )

II-10. 자율평가결과를 예산편성시 활용한 경우, 평가결과가 귀하의 사업예산 변화에 영향을 미친 수준은 어느정도인지 적당한 박스에 V 표시바랍니다.

1	2	3	4	5	6	7
매우낮음			보통			매우높음

III. 다음은 귀하의 사업운영과 관련한 “목표설정 관행”에 재정사업 자율평가제도 등 성과예산제도가 미친 영향에 관한 사항입니다. 적당한 박스에 V 표시를 해주시기 바랍니다.

☞ 예산담당자의 경우(I-8에서 ①에 답하신 경우) 재정사업 전반에 관한 관행의 변화에 대해 응답해 주시기 바랍니다.

<평가기준>

1	2	3	4	5	6	7
매우낮음			보통			매우높음

번호	질문	1	2	3	4	5	6	7
III-1	내 사업의 전략목표와 성과목표가 보다 더 명확해졌다.							
III-2	내 사업은 목표치가 보다 의욕적으로 설정되어 예전에 비해 달성이 어려워졌다.							
III-3	내사업이 목표하는 대상이 더욱 분명해졌다.							
III-4	내 사업의 목표수준 달성을 위해서는 보다 많은 노력이 요구되었다.							
III-5	내 사업이 추진하려는 의도가 보다 명확해졌다.							
III-6	나는 내 사업에 대한 전략/성과목표(치)를 보다 잘 인식하게 되었다.							
III-7	내 사업의 목표수준은 보다 더 어려워졌다.							
III-8	내 사업목표는 성과지표 이용 등 계량적 측정가능성이 보다 더 높아졌다.							

IV. 다음은 귀하의 사업운영과 관련한 “예산관행”에 재정사업 자율평가제도 등 성과예산제도가 미친 영향에 관한 사항입니다. 적당한 박스에 V 표시를 해주시기 바랍니다.

☞ 예산담당자의 경우(I-8에서 ①에 답하신 경우) 재정사업 전반에 관한 관행의 변화에 대해 응답해 주시기 바랍니다.

<평가기준>

1	2	3	4	5	6	7
매우낮음			보통			매우높음

번호	질문	1	2	3	4	5	6	7
IV-1	나는 내 사업의 예산편성과정에 보다 많이 참여하게 되었다.							

IV-2	나는 예산범위 내에서 내 사업의 세부사업을 보다 자율적으로 결정했다.								
IV-3	내 사업은 예산과 관련하여 내가 참석하는 회의가 보다 많아졌다.								
IV-4	내 사업은 예산목표 설정시 내 의견이 보다 중요해졌다.								
IV-5	내 사업의 예산 집행시 전용 등 나의 자율성이 보다 높아졌다.								
IV-6	내 사업의 예산편성시 상급자들이 내 의견을 보다 존중해 주었다.								
IV-7	내 상급자는 내 예산요구를 수정할 경우 그 사유를 보다 충분히 알려 주었다.								
IV-8	내 사업의 예산은 사업목표를 달성하는 데 보다 충분해졌다.								
IV-9	내 사업의 예산규모 결정시 내 의견이 보다 중요해졌다.								
IV-10	내 사업은 임무를 달성하는데 있어 예산부족 문제가 완화되었다.								
IV-11	내 사업은 예산 집행에 관한 내 영향력이 더욱 커졌다.								
IV-12	내 사업은 성과목표 수준을 고려해서 예산규모가 합리적으로 결정되었다.								

V. 다음은 귀하의 사업운영 관행 중 일부와 관련하여 재정사업 자율평가제도 등 성과예산제도가 미친 영향에 관한 사항입니다. 적당한 박스에 V 표시를 해주시기 바랍니다.

☞ 예산담당자의 경우(I-8에서 ①에 답하신 경우) 재정사업 전반에 관한 관행의 변화에 대해 응답해 주시기 바랍니다.

<평가기준>

1	2	3	4	5	6	7
매우낮음			보통			매우높음

No.	질문	1	2	3	4	5	6	7
V-1	내 사업에 대한 상급자의 관심이 증가했다.							
V-2	내 사업은 예전에 비해 운영절차나 규정이 보다 중시되었다.							
V-3	내 사업과 관련된 운영절차, 지시, 명령체계 등이 더욱 구체화되었다.							
V-4	내 상급자는 내 사업에 대해 적극적으로 자문/조언해 주었다.							
V-5	내 사업을 추진하는 과정에서 지켜야하는 공식적인 규칙이 더 늘었다.							
V-6	내 사업의 성과목표(치) 설정시 내 상급자의 관심이 높아졌다.							
V-7	내 상급자는 예전에 비해 내 사업의 성과에 대해 더 많은 관심을 가졌다.							
V-8	내 상급자는 내 사업 목표 달성을 위해 예산, 인력 등 자원을 가능한 한 충분히 공급하려고 노력했다.							
V-9	내 상급자는 예산의 집행 및 평가와 같은 성과관리에 대한 관심이 많아졌다.							

VI. 다음은 재정사업 자율평가제도 도입 등 성과예산제도 시행 이후 귀하의 사업 성과와 관련된 사항입니다. 적당한 박스에 V 표시를 해주시기 바랍니다.

☞ 예산담당자의 경우(I-8에서 ①에 답하신 경우) 재정사업 전반에 관한 관행의 변화에 대해 응답해 주시기 바랍니다.

<평가기준>

1	2	3	4	5	6	7
매우낮음			보통			매우높음

번호	질문	1	2	3	4	5	6	7
VI-1	내 사업의 고객은 내 사업의 서비스에 대해 더 만족하게 되었다.							
VI-2	내 사업은 예전에 비해 보다 효율적(efficient)으로 수행되었다.							
VI-3	내 사업은 예전에 비해 보다 효과적(effective)으로 수행되었다.							
VI-4	내 사업은 인력투입에 비해 보다 경제적(economic)으로 수행되었다.							
VI-5	내 사업은 투입된 예산에 비해 경제적(economic)으로 수행되었다.							
VI-6	내 사업은 설정된 목표를 충분히 달성하였다.							

수고하셨습니다. 대단히 감사합니다.