

PERFORMANCE BUDGETING SYSTEM IN TURKEY:  
PROBLEMS AND SOLUTION PROPOSALS

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## ABSTRACT

### PERFORMANCE BUDGETING SYSTEM IN TURKEY: PROBLEMS AND SOLUTION PROPOSALS

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Effective and efficient use of public resources has a vital importance for Turkey, as for all countries. To serve this purpose, public financial management was reformed and performance budgeting system was begun to be implemented in Turkey.

In order performance budgeting system to be properly put into practice, the system should have been well designed, regulations should have been adequately prepared and necessary information, guidance and support should be provided to the implementers.

In this study, the implementation of performance budgeting system in Turkey was investigated from the perspective of public administrations under general budget and problems in the system were identified. Comments, experiences and suggestions of administrations were obtained via questionnaires and interviews, and analyzed. Additionally, regulatory legal documents and reports of administrations prepared within the performance budgeting concept were also investigated.

In order to provide constitution of a more properly designed system and more easy and smooth implementation, to obtain a well adopted system by the implementers and to get results of better quality, proposals were put forward corresponding to the identified problems.

Integrated analytic network process with a strategic resource allocation model proposal is presented to be used in update of performance programs in the aim of minimizing the deviations from targeted performance within budget constraints. The

proposed model is implemented for the Strategy Development Unit of the Undersecretariat of Treasury.

Keywords: Performance Budgeting, Strategic Planning, Performance Programming, Analytic Network Process, Resource Allocation

## ÖZ

### TÜRKİYE'DEKİ PERFORMANS ESASLI BÜTÇELEME SİSTEMİ: PROBLEMLER VE ÇÖZÜM ÖNERİLERİ

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Kamu kaynaklarının etkin ve verimli kullanılması tüm ülkeler için olduğu gibi Türkiye için de büyük önem taşımaktadır. Bu amaca hizmet etmek üzere, Türkiye'de kamu mali yönetimi reformu yapılmış ve performans esaslı bütçeleme sistemi uygulanmaya başlamıştır.

Performans esaslı bütçeleme sisteminin doğru işleyebilmesi için sistemin iyi kurgulanmış olması, düzenlemelerin yeterli nitelikte hazırlanmış olması ve uygulayıcılara gerekli bilginin, yönlendirmenin ve desteğin sağlanması gerekmektedir.

Bu çalışmada, Türkiye'deki performans esaslı bütçeleme sisteminin işleyişi, genel bütçeli kamu kurumları perspektifinden incelenmiş ve sistemdeki problemler tespit edilmiştir. Kamu kurumlarının görüş, deneyim ve önerileri anket ve görüşme vasıtasıyla edinilmiş ve analiz edilmiştir. İlave olarak, düzenleyici yasal dokümanlar ve performans esaslı bütçeleme kapsamında hazırlanan kurum raporları incelenmiştir.

Daha doğru tasarlanmış ve uygulayıcılar tarafından iyi benimsenmiş bir sistem oluşturulmasını ve uygulamanın daha kolay ve pürüzsüz olmasını ve daha kaliteli sonuçlar alınmasını sağlamak amacıyla, belirlenen problemlerin giderilmesine yönelik öneriler geliştirilmiştir.

Performans programlarının güncellenmesi aşamasında kullanılmak üzere; bütçe kısıtları altında, hedeflenen performanstan sapmaları enazlamak amacıyla, analitik ağ süreci ve stratejik kaynak dağılımı model önerisi sunulmuştur. Önerilen model Hazine Müsteşarlığı Strateji Geliştirme Dairesi Başkanlığında uygulanmıştır.

Anahtar kelimeler: Performans Esaslı Bütçeleme, Stratejik Planlama, Performans Programlama, Analitik Ağ Süreci, Kaynak Dağılımı

To My Family

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## LIST OF ABBREVIATIONS

ABC	: Activity Based Costing
AHP	: Analytic Hierarchy Process
ANP	: Analytic Network Process
CGB	: Central Government Budget
DEP	: Detailed Expenditure Program
GP	: Goal Programming
MCDM	: Multiple Criteria Decision Making
MoF	: Ministry of Finance
OECD	: Organization of Economic Co-operation and Development
PFMC Law	: Public Financial Management and Control Law
PSA	: Public Service Agreement
SDA	: Service Delivery Agreement
SDU	: Strategy Development Unit
SPO	: Undersecretariat of State Planning Office
SPSS	: Statistical Package for the Social Sciences
SWOT	: Strengths, Weaknesses, Opportunities, Threats
TCA	: Turkish Court of Accounts
TGNA	: Turkish Grand National Assembly
TL	: Turkish Liras
TOPSIS	: Technique for Order Preference by Similarity to Ideal Solution
UK	: Unites Kingdom
US	: United States
ZBB	: Zero-Based Budgeting

## **CHAPTER 1**

### **INTRODUCTION**

Government budgets, which are statements of government financial plans, are at the core of the public policy indicating how public resources are planned to be used in order to meet policy goals. In order to provide efficient allocation of public resources to public expenditures in conformance with the priorities of government via more informed budgetary decision making and to enhance transparency and accountability in public activities, performance budgeting system came into the picture.

As in the most developed and developing countries, performance budgeting approach was introduced to the public sector in Turkey in 2003 by the enactment of the Public Financial Management and Control Law. The Law covers the financial management and control of all public administrations; namely, social security institutions, local administrations and administrations within the scope of central government, which also includes three sub-budget categories that are general budget, special budget and regulatory and supervisory agency budget. The implementation of the Law could begin by 2005 in terms of budgeting process, and by 2006 in the proper sense.

The hypothesis that the performance budgeting system is not running properly in Turkey is questioned in this study. It is aimed to systematically analyze the problems faced by the public administrations under general budget related to the performance budgeting system in Turkey and to propose solutions so as to identify a proper system. The administrations that are not under general budget are out of the scope of this study. The reasons of choosing only the general-budget administrations are that they are the most restricted administrations in terms of budget and total budget of the general-budget administrations constitutes approximately 93.3% of the total central government budget.

In this study, first of all, literature survey related to performance budgeting is performed. Then, performance budgeting system implemented in Turkey is described, considering the actors, the tools used and the processes performed in the system.

In order to question the current practice in the system, a series of data collection processes are conducted. Questionnaires are formed and implemented to the administrations, followed by analysis of the data obtained. In addition, the regulatory documents related to the performance budgeting system are examined in detail and practices of general-budget administrations are investigated. Using the data collected by these various methods and the theoretical background of performance budgeting, the current situation of the system is analyzed under the following areas: legislation and methodology of the system, coordination within the system, consultancy given by the regulatory administrations, ownership provided by implementing administrations, implementation practice of administrations and administrative and external factors affecting the processes performed in the system. The elements of the performance budgeting system; namely, strategic plans, performance programs, budgets, activity reports and possible other tools constitute the sub-areas of the analysis.

Based on the findings of the analysis of the system; legislation-based, methodological, coordination and guidance-based, implementation-based and administrative problems are identified and summarized. Consequently, it is concluded that performance budgeting system is not properly, effectively and efficiently running in Turkey.

Therefore, proposals both in the strategic level to improve the effectiveness and in the operational level to improve efficiency of the system are presented. The proposed system consist of the following elements: (i) strengthened national level policy documents, (ii) restructured and improved performance budgeting documents, (iii) strengthened performance budgeting methodology, (iv) improved and assured quality of performance budgeting documents, (v) strengthened and clarified relationship between results and resources, (vi) clarified consequences of met and unmet commitments, (vii) strengthened coordination and consultancy, (viii) strengthened strategy development units, (ix) strengthened ownership and supervision by the Parliament, (x) established management information system, (xi) revised way of determination of expenditure ceilings, (xii) revised preparation process of performance budgets, (xiii) revised budget calendar, (xiv) strengthened performance

budgeting legislation, and (xv) strengthened complementary legislation for performance budgeting.

Finally, the ambiguity in prioritizing elements of performance programs and in updating performance programs, which are among the problems identified, is handled. The use of the analytic network process is suggested to be used in prioritization process. In addition, utilization of a resource allocation model is put forward for the update of performance programs. Priorities are among the inputs of the model, the aim of which is to minimize deviations from performance targets without exceeding the total amount of budget available. It is constructed for the use in update of performance program data of spending units. Furthermore, an application is done for the Strategy Development Unit of the Undersecretariat of Treasury.

This study may provide insight for administrations about the practice of the performance budgeting system implemented in Turkey, since it presents a detailed description of the system, followed by a statement of problem areas. It also provides possible solutions for the identified problems to the decision makers and the implementers. The proposed models for update of performance programs, in addition, enable spending units to allocate their scarce resources optimally so as to minimize the deviations from desired performance targets.

The contents of this study can be described as follows:

In Chapter 2, general information about budgeting and budgeting classifications is provided. In this chapter, comparison of budgets is also expressed.

In Chapter 3, performance budgeting system, its various approaches, components and models are explained.

In Chapter 4, the brief information about the performance budgeting practices of some of the OECD countries; namely, the Netherlands, United Kingdom, United States, Denmark and Sweden, are provided.

In Chapter 5, performance budgeting system implemented in Turkey is introduced taking into consideration the historical progress of budgeting, performance budgeting tools used in the system, the actors of the system and the performance budgeting processes.

In Chapter 6, the scope, the aim and the method of this study are demonstrated. In addition, studies done by academicians, government offices and international institutions related to the performance budgeting system are also mentioned.

In Chapter 7, information about the analysis of the questionnaire implemented within this study is given.

In Chapter 8, the current situation of the performance budgeting system in Turkey is explained in detail. The problems experienced in the system are summarized at the end of the chapter.

In Chapter 9, proposals to strengthen and to improve the performance budgeting system are put forward.

In Chapter 10, the proposed method for update of performance programs is explained in detail. Conceptual framework of the model is constructed and the application of the proposed model for the Strategy Development Unit of the Undersecretariat of Treasury is presented.

In Chapter 11, findings of this study are summarized and the contribution of this study is expressed. In addition, future research directions are stated in this chapter.

Detailed information about the performance budgeting practices of the selected OECD countries, the full versions of the questionnaire and interviews implemented within this study, information about the multiple criteria decision making methods and balanced scorecard, and supplementary information about the proposed system and model are provided in the appendices.

## **CHAPTER 2**

### **BUDGETING AND BUDGETING CLASSIFICATIONS**

#### **2.1. Conceptual Framework of Budgeting**

Budget can be defined as “a plan for getting and spending money to reach specific goals by a certain time” (Dropkin, Halpin and La Touche 2007). Budgeting is “a process for systematically relating expenditure of funds to accomplishment of planned objectives” (Schic 1972:a). It is also described as “the process of allocating finite resources to the prioritized needs of an organization” (NCES 2003).

Budget and budgeting are valid terms for individuals, families and companies as well as for governments. Government budget, which needs special attention within the context of this study, is “a comprehensive statement of government financial plans including expenditures, revenues, deficit or surplus, and debt” (OECD 2006). Government budgets are legal documents generally approved by legislative body.

#### **2.2. Budgeting Classifications**

The budget or budget document is a product of a budget cycle, which has four phases; executive preparation and submission, authorization by legislation, execution of budgets, and audit (Burkhead 1956). Budgeting referring to the executive preparation and submission phase can be classified according to the (i) budgeting base used, (ii) budgetary data contained and the way it is presented, or (iii) budget rules utilized.

##### **2.2.1. Classification by Budgeting Base**

Budgeting classification according to the budgeting base includes incremental budgeting, zero-based budgeting and compromise budgeting, which are referred as budgeting types in this study.

### Incremental Budgeting:

Incremental budgeting is a traditional budgeting strategy and is also referred as classical budgeting. In incremental budgeting, the previous period's budget is used as a basis and incremental amounts are added to the previous period's budget in order to obtain that of the next period (Fölscher 2007).

The advantage of incremental budgeting is limited to the fact that it is a simple and routine process, and change in the budget from period to period is gradual. However, its drawbacks are (i) the assumption that the situation and the strategy used in the previous period are valid in the next period, which ignores changing circumstances and can cause existing inefficiencies continue, (ii) the “spend it or lose it mentality” which encourages spending and discourages cost reduction<sup>1</sup>, (iii) short term focus, (iv) focus on inputs (Joiner and Chapman 1981) and, (v) limited useful information on the functions and activities of organizations (NCES 2003).

### Zero-Based Budgeting:

Peter A. Phyr (1972), who developed zero-based budgeting (ZBB), defined it in the following way:

Planning and budgeting process that requires each manager to justify his or her entire budget request in detail from scratch (hence zero base) and shifts the burden of proof to each manager to justify why he or she should spend any money at all.

It requires that “every assumption of a budget be justified, not only as to its costs but also as to its effectiveness in contributing to the goal of the activity” (Dropkin, Halpin and La Touche 2007).

The advantage of ZBB is that it provides effective allocation of resources by eliminating redundant and ineffective activities. Besides, ZBB results in the optimum allocation of resources according to some authors (Shim and Siegel 1994; Joiner and Chapman 1981). Additionally, it enables focusing on priority issues and ends, and provokes cost reduction. On the other hand, it is a time consuming process, and it requires detailed cost information and technical knowledge about costing, cost-benefit analysis, etc.

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<sup>1</sup> <http://basiccollegeaccounting.com/budgeting-incremental-budget/>

### Compromise Budgeting:

Joiner and Chapman (1981) suggested compromise budgeting as a middle course between incremental budgeting and zero-based budgeting. According to their definition, this budgeting type neither does a zero base nor ignores the realities in the environment. The point is that less beneficial activities or programs are cut back to a realistic level by focusing on reallocation based on the current situation (Joiner and Chapman 1981).

This approach is found in the literature under the name of cutback budgeting, which is defined as an approach that examines the base budget for possible cuts by considering the programs and their advocates in a competing position with each other for the resources (Behn 1985, quoted in Kelly and Rivenbark 2003). It is an old approach; yet, its tracks can be found in the practice under the name “backward budgeting”, by which governments determine the available revenue increase and made program funding decision based on available resources (Kelly and Rivenbark 2003).

### **2.2.2. Classification by Budgetary Data**

Budgeting can be categorized according to the budgetary data contained and the way it is presented. The importance of this classification lies in the fact that the way of grouping revenue and expenditure items is closely related with the character of the budgetary decisions (Burkhead 1956).

Although, “there is an almost infinite variety of ways in which budgetary data may be classified” (Burkhead 1956), the most widely-known ones are line-item budgeting, program budgeting, functional budgeting, and institutional budgeting, which are referred as budgeting structures in this study.

### Line-Item Budgeting:

Line item is defined by OECD (2006) as “an appropriation that is itemized on a separate line in a budget”. In public budgeting, it refers to the most detailed level of appropriation approved in law (OECD 2006). Line-item budgeting, which is also called object account or class budgeting or historical approach, presents the budget in various input sections, such as personnel, travel, office supplies, etc.

The advantage of line-item budgeting is that it allows assessment of the reasonableness of the cost estimates, whereas the disadvantages of this structure are as

follows: (i) it is costly and timely to produce, (ii) decision making is focused on small items, and (iii) budget is inflexible (Irene 2007).

#### Program Budgeting:

In program budgeting, resource allocation and expenditures are primarily based on programs of the organization. Schic (2007) noted that “core idea is that expenditures should be grouped and decided in terms of governmental objectives”, which directs governments to construct a program structure as the basis for formulating the budget.

The major advantages of program budgeting are the future-oriented structure referring to the examination of the effect of current decisions on future results (Shim and Siegel 1994) and output/outcome oriented approach.

#### Functional Budgeting:

Functional budgeting uses functional classification referring to the expenditures of government. It provides “general aggregative information on government operations” (Burkhead 1956). Therefore, it can be reflected as a broader version of program budgeting. This structure can be best used when the aim is to measure “the change in the nature of government programs” (Burkhead 1956) and the priorities of government.

#### Institutional Budgeting:

This budgeting structure classifies the revenues and expenditures based on the administrations and their departments.

### **2.2.3. Classification by Budget Rules**

Budget rules refer to the determination of “how spending, *more generally budget*, decisions are made and reported” (Schic 2007, italics added). Planning-programming budgeting and performance budgeting constitutes the main strategies in this classification.

#### Planning-Programming Budgeting:

Planning-programming budgeting integrates planning and budgeting processes by using systems theory and cost-benefit analysis (Kelly and Rivenbark 2003) and is presented in an output-oriented program format (Sweeny and Rachlin 1987). Cutt

(1974) defined it as “a marriage between overall planning and the translation of planning objectives into programs on the one hand, and budgeting procedures on the other”.

In this approach, services are presented based on programs, which are then divided into sub-programs, activities and projects (Özen 2008). “Program classification principle” (Robinson and Brumby 2005), which implies the classification of expenditures by programs, is the core of program budgeting. Possible expenditures are evaluated based on their marginal benefit to programs (Kelly and Rivenbark 2003).

The main advantage of this approach is the focus on long-range planning (NCES 2003). Moreover, it aims at rationalizing policy making and attaining proposed objectives in an effective manner (Fishel 1971).

#### Performance Budgeting:

Performance budgeting has various definitions in the literature. According to the OECD definition (2005), performance budgeting is budgeting approach that links funds allocated and measurable results. U.S. General Accounting Office (1999) defined performance budgeting as “the concept of linking performance information with the budget”. In fact, it is neither a budgeting technique nor a budgeting format; but an integration of operational accountability into the budgeting (Kelly and Rivenbark 2003).

This approach has various terms besides performance budgeting; such as performance-based budgeting, results-based budgeting, performance funding, and budgeting for results. Performance budgeting is focused on “spending results rather than the money spent” (Carter 1994), which makes this approach outcome and result oriented.

#### **2.2.4. Review of Budgeting Types, Structures and Strategies**

The core properties of budgeting types, structures and strategies are summarized in Table 1.

Organizations can use only one of the budgeting types and structures as well as a combination or “hybridized versions” to address the organization-specific needs and purposes (NCES 2003) since the choice of budgeting structure and budget base to be used are independent (Hager et al. 2001).

**Table 1: Comparison of budgets**

Classification	Budgeting	Focus	Function	Aim
<b>By Budget Base</b>	Incremental Budgeting	Inputs, Short-term	Control	Accountability
	Zero-based Budgeting	Ends	Planning	Effectiveness, Efficiency
	Compromise Budgeting	Ends	Control, Planning	Efficiency
<b>By Budget Structure</b>	Line-item Budgeting	Inputs	Control	Accountability
	Program Budgeting	Means, Long-term	Management	Accountability, Effectiveness
	Functional Budgeting	Means, Long-term	Control	Accountability
	Institutional Budgeting	Inputs	Control	Accountability
	Planning-programming Budgeting	Means, Ends, Long-term	Planning	Effectiveness, Efficiency
<b>By Budget Rule</b>	Performance Budgeting	Ends, Outcomes, Long-term	Planning, Management	Effectiveness, Efficiency, Accountability

It is worth to assess the combination of performance budgeting with budgeting bases and structures. Kelly and Rivenbark (2003) stated that “performance budgeting fits nicely within the line-item format and is consistent with the incremental approach”. However, when program structure is used with performance budgeting, “the performance budget changes the focus of discussion from detailed line items to the broader objectives and performance of public programs” and enables more informed decision making in budgeting (Shah and Shen 2007).

Since this study handles performance budgeting system in Turkey, Chapter 3 is allocated for the detailed description of performance budgeting.

## CHAPTER 3

### PERFORMANCE BUDGETING

#### 3.1. Conceptual Framework of Performance Budgeting

Performance budgeting is defined by Robinson and Brumby (2005) as follows:

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 resource allocation decision-making.

In the World Bank PremNotes (2003), it is defined as a budgeting approach that tries to link performance information to resource allocation.

Performance budgeting can be considered as an analytic tool when it refers to “any system that provides information on the volume of outputs, the activities of government agencies, their workload, indicators of demand or need for public services, or the impact of expenditure”; or as a decision rule when it refers to “the budget systems which formally link increments in spending to increments in results” (Schic 2007).

#### 3.2. Need for and Aim of Performance Budgeting

The main objectives of performance budgeting in governments are strengthening allocative efficiency referring to efficient allocation of public expenditures in conformance with the priorities of government and productive efficiency (OECD 2007, Sterck and Bouckaert 2006, Robinson and Brumby 2005).

Shah and Shen (2007) summarized the possible favorable sides of performance budgeting as (i) improved public management in terms of efficiency and effectiveness, (ii) “more informed budgetary decision making”, and (iii) “high transparency of and accountability for government activities”.

### **3.3. Performance Budgeting and Other Approaches**

Performance budgeting can be considered within larger systems and as “a part of a broader set of management and budgetary reforms designed to improve the efficiency and effectiveness of the public sector and/or to facilitate the achievement of fiscal sustainability” (Robinson and Brumby 2005).

Performance budgeting can be defined in the context of strategic management. The reason is that it works well and requires the core components of strategic management, such as long-term planning, and enables strategic allocation of funds.

Moreover, performance budgeting fits well to the management for results approach, which is “the use of formal performance information to improve public sector performance” (Robinson and Brumby 2005). That is, it can be put into the budgetary part of management for results strategy and considered as its sub-system.

Furthermore, performance information systems constitute the grounding element of a performance budgeting system since they enable performance related data. Performance management, correspondingly, is an integral or complementary part of performance budgeting. Performance measurement includes the generation, track, evaluation and reporting of performance data. These components are used in performance budgeting for budgeting and accountability purposes. Besides, Kusek and Rist (2004) described result-based monitoring and evaluation systems as a tool for feedback about the fulfillment of outcomes into the decision-making process. Therefore, it is also a complementary tool for performance budgeting.

### **3.4. Performance Budgeting Approaches**

Performance budgeting not only involves the development of performance information, but also the use of performance information in budget development and resource allocation (OECD 2007). The level of the usage and the influence of the performance information on budgeting may differ. In this context, there are three different approaches, which are presentational performance budgeting, performance-informed budgeting, and direct performance budgeting (OECD 2007).

#### **3.4.1. Presentational Performance Budgeting**

Presentational performance budgeting does not use performance information for resource allocation, but for presentational purposes. That is, performance information is out of the budget development process and “there is no link between

performance information and funding” (OECD 2007). In this case, this approach becomes an analytic tool. It aims accountability (OECD 2007) and is also referred as performance-reported budgeting (Shah and Shen 2007).

#### **3.4.2. Performance-Informed Budgeting**

Performance-informed budgeting, also called indirect performance budgeting, uses performance information as well as other related information in budget decisions (OECD 2007). Therefore, performance information has impact on but not a sole determinant of resource allocation or funding. That is, “there is no direct or mechanical link between performance (planned or actual) and funding” (OECD 2007).

Performance information can be used in budget process in government (i) for planning purposes, where planned future performance is used for funding decisions, and/or (ii) for accountability purposes, where agencies are hold accountable for actual performance *especially to public*, and budget allocations are informed (OECD 2007, italics added).

#### **3.4.3. Direct Performance Budgeting**

Direct performance budgeting involves direct linkage between performance information and budgeting, by which resource allocation is based directly and solely on performance information and achieved results (OECD 2007). This approach aims resource allocation and accountability (OECD 2007) and is also referred as performance-determined budgeting (Shah and Shen 2007:a) and formula-based performance budgeting.

#### **3.5. Components of Performance Budgeting**

Shah and Shen (2007:b) specified the components of performance budgeting within its definition as follows:

Performance budgeting is a system of budgeting that presents the purpose and objectives for which funds are required, the costs of proposed programs and associated activities for achieving those objectives, and outputs to be produced or services to be rendered under each program.

In this context, performance budgeting tools in public sector can be classified as long-term documents, medium-term documents, budgeting, and evaluation reports. Besides; accrual-based accounting is a contributory tool for performance budgeting.

### **3.5.1. Long-Term Documents**

Long-term documents include the objectives that an organization plans to achieve in three to seven years. They benefit the policy determination step and generally serve as a tool for the association of the objectives of the organizations with the medium-term objectives and the priorities of the government.

Long-term documents are generally in the form of strategic plans. More formal versions, which are public service agreements made between government and public administrations, and service delivery agreements made between public administrations and their departments are used in the United Kingdom.

### **3.5.2. Medium-Term Documents**

Medium-term documents include targets of an organization spanning up to three years and determined in accordance with the long-term documents of the organization. They can be put in the policy determination step as a sub-step and also serve an important function as a supplementary or base document in the preparation of budgets. They are in the form of performance plans or performance programs. Performance agreements are the formal versions of medium-term documents.

### **3.5.3. Evaluation Reports**

Evaluation reports include the results of activities performed by an organization, and the comparison of the planned results and the actual performance in the related year. They constitute the evaluation part and are generally in the form of performance reports and activity reports.

### **3.5.4. Accrual-Based Accounting<sup>2</sup>**

Accrual-based accounting and budgeting can add value to performance budgeting as contributory applications, since (i) time horizons can be extended in both forward and backward directions (Tarschys 2002), (ii) decision making can be improved by enhanced information (Blöndal 2003), and (iii) improved discipline can be obtained for budget execution purposes (Blöndal 2004).

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<sup>2</sup> Accounting system can be defined as a “system for recording financial transactions” (OECD 2006). Two main accounting systems are (i) cash accounting that recognizes transactions and events when cash is received or paid, and (ii) accrual accounting that recognizes revenue when it is earned and expenses as they are incurred (OECD 2006).

### **3.6. Performance Budgeting Models**

Erüz (2005) put performance budgeting into three categories, which are models based on strategic plans, models based on performance agreements and models converted into budget format. However, according to OECD classification (2007), which is more proper, the models are the ones that use additional performance documents beside budgets and the ones that use budgets including performance information.

#### **3.6.1. Models Based on Additional Performance Documents**

Models based on strategic plans and on performance agreements, the two classifications of Erüz (2005), can be put into this category.

In models based on strategic plans; budgeting begins with the medium or long-term strategic planning process. Performance programs that are prepared in accordance with strategic plans constitute the base for budgets (Erüz 2005) and append performance information into budgeting process. Performance reports constitute the accountability mechanism for performance (Erüz 2005).

In models based on performance agreements; public service agreements made between government and public administrations, and service delivery agreements made between public administrations and their departments are used to attach performance information into budgeting process (Erüz 2005).

#### **3.6.2. Models Based on Budgets Including Performance Information**

In models based on budgets including performance information, which can also be referred as models converted into budget format; there are neither separate performance documents nor performance reports, rather budgets include both performance information and resource allocation (Erüz 2005).

## CHAPTER 4

### PERFORMANCE BUDGETING IN SOME OF THE OECD COUNTRIES

The member countries of the Organization for Economic Co-operation and Development (OECD) that use performance budgeting system are the Australia, Canada, Denmark, Korea, Netherlands, New Zealand, Sweden, Turkey, United Kingdom and United States. As a result of a quick review of the literature about budgeting systems of the countries (OECD 2007; Akkaş 2008), considering the systematic resemblance to Turkey; the Netherlands, United Kingdom and United States are selected for further investigation. In addition, Denmark and Sweden are chosen in order to analyze all approaches of performance budgeting. Indeed, Netherlands, Sweden, United Kingdom and United States are pioneers in results-oriented financial management (Pollitt and Bouckaert 2004, Lüder and Jones 2003 quoted in Sterck and Bouckaert 2006)<sup>3</sup>.

The main parameters considered in the investigation of the countries are (i) performance budgeting approach, (ii) performance budgeting tools, (iii) responsible organization(s), and (iv) budget ceilings. Details of the performance budgeting system in these countries are summarized in Tables 40-44 in Appendix A. Still, core properties are expressed below.

#### 4.1. Performance Budgeting in the Netherlands

A more policy-oriented program budgeting was introduced in the Netherlands in 2001; budget format was changed and organized along policy lines or the desired outcomes of the Dutch government (OECD 2007). The policy objectives, the instruments and the estimated means to achieve them, and the outputs to be delivered

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<sup>3</sup> In addition, the Netherlands, United Kingdom, and United States are among the countries, practices of which were investigated in the establishment of the system of Turkey.

are described in the explanatory statements of budget articles (Sterck and Bouckaert 2006). Therefore, it can be stated that performance informed budgeting based on outcome/program structure is the general approach. Tools used in the Netherlands for performance budgeting are (i) budgets including performance information, (ii) performance agreements and (iii) annual policy reviews (Oral 2005, OECD 2007).

Performance agreements are done between the ministries and the agencies; yet, doing so is not mandatory and there are no sanctions for underachievement of targets specified in performance agreements (Oral 2005).

Performance budgeting system in the Netherlands has an important characteristic that can be inspired by: budget lines include a “general goal or objective” that can be cascaded to “operational goals”, which enables showing how programs are linked to wider political policy objectives (OECD 2007). Moreover; in order to pay more attention to the annual reports and accounts, budgets and annual reports are discussed at different times in the Parliament (Sterck and Bouckaert 2006).

#### **4.2. Performance Budgeting in the United Kingdom**

In the United Kingdom (UK), performance informed budgeting is the general approach where performance information is used for accountability purposes. Increases in expenditure are linked to performance targets or evaluations (OECD 2007). However, there is no predetermined direct relationship between achieved performance and resource allocation (Noman 2008). Moreover, direct performance budgeting is utilized in health and labor/employment sectors (OECD 2007). Tools used in the UK for performance budgeting are (i) strategic plans for five-year periods, (ii) public service agreements (PSAs), (iii) service delivery agreements (SDAs), (iv) spending reviews, and (v) departmental performance reports (Noman 2008, OECD 2007).

PSAs are done between Her Majesty’s (HM) Treasury and departments, and include aims, objectives, targets, and efficiency savings for and the resources of government departments as well as who is responsible for delivery of service (Noman 2008). SDAs are the agreements that include statements relating to how the targets will be achieved as well as key output or process targets required to achieve the outcome target set in the PSA.

Performance budgeting system in the UK has important characteristics that can be inspired by: (i) clear and outcome-focused goals are set by the government at

national level, (ii) HM Treasury works with both the departments and the Prime Minister's Delivery Unit, which enables focusing on priority areas, (iii) Ministers are actively involved in setting objectives of departments due to the authorization for approval, challenge, and ultimate sign-off, and (iv) there is a requirement that "the targets set should be consistent with overall spending envelope of departments" (Noman 2008). Moreover, a technical note relating to how the targets will be measured and a delivery plan relating to how the targets will be achieved are prepared by each department (OECD 2007). Another application that may be benefited is that "the risks on delivery of the targets are considered as part of the regular monitoring process" (Ellis and Mitchell 2002).

#### **4.3. Performance Budgeting in the United States**

In the United States (US), performance informed budgeting is the general approach (OECD 2007)<sup>4</sup>. Performance budgeting is based on strategic plans (Özen 2008) and on program structure (Oral 2005). Tools used in the US for performance budgeting are (i) strategic plans for at least six-year periods, (ii) annual performance plans, (iii) annual performance reports, and (iv) Program Assessment Rating Tool (Groszyk 2002, Özen 2008)

Performance budgeting system in the US has an important characteristics that can be inspired by: performance plans of agencies are linked to the agency budget requests and should include performance goals that cover, in some manner, every listed program in the budget requests of the agency (Groszyk 2002). One property of the content of performance plans in the US that is different from Turkey is that individual goals need not be costed; only the funding for a set of performance goals need to be determined in the US (Groszyk 2002).

#### **4.4. Performance Budgeting in Denmark**

In Denmark, performance informed budgeting is the general approach; yet, direct performance budgeting is utilized in education and health sectors (Ginnerup et al. 2007). Tools used in Denmark for performance budgeting are (i) performance-

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<sup>4</sup> In United States, states have right to determine their budget system (Özen 2008). Therefore, the properties stated in this part are those of the performance budgeting system for federal departments and agencies.

based contract system, (ii) a performance related pay system, (iii) annual reports and (iv) the Danish Quality Award (Thorn and Lyndrup 2002).

Performance management initiatives are voluntarily put into practice based on the recommendations of the Ministry of Finance (Ginnerup et al. 2007). Performance contracts are used, if any, in different levels of management as cascaded from up to bottom, which enables ownership of the targets by each and all employees. There are no sanctions for underachievement of targets specified in performance contracts; indeed, there is a performance pay system used as an incentive for the achievement of targets (Thorn and Lyndrup 2002).

Performance-based contract model in Denmark has important requirements that can be inspired by: (i) focus should be primarily on external targets, (ii) the contracts with the directors general should be incorporated with the contracts for agencies, and (iii) the performance-related part of the director general's salary should be linked to the performance of the agency (Ginnerup et al. 2007).

#### **4.5. Performance Budgeting in Sweden**

In Sweden, presentational performance budgeting is the general approach, where individual ministries decide whether to produce and present performance information in budget negotiations (OECD 2007). Moreover, direct performance budgeting is utilized in education and trade/industry sectors (OECD 2007). Performance budgeting is based on strategic plans (Yardımcıoğlu 2006). Tools used in Sweden for performance budgeting are the budget bills and the letter of appropriations (OECD 2007, Blöndal 2001).

The Budget Bill includes proposed appropriations for the coming budget year and a retrospective report of performance by policy area in relation to the goals set by the Parliament (Küchen and Nordman 2008). That is, it is a tool to link policy objectives to expenditure (OECD 2007).

Performance-based contract model in Sweden has an important characteristic that can be inspired by: a letter of appropriation is sent to each government agency by the relevant ministry, in which the goals to be achieved by the agency during the coming year and the feedback and performance information that must be provided to the ministry are stated (OECD 2007).

## CHAPTER 5

### PERFORMANCE BUDGETING IN TURKEY

#### 5.1. Historical Perspective

Public budgeting in Turkey can be examined in three periods according to the budgeting types and approaches used as (i) the period of 1924-1973, (ii) the period of 1973- 2003, and (iii) the period after 2003.

The first period began with the first budget of the Republic of Turkey that was developed in 1924 (Öner 2001). The most important development in the period, from perspective of budgeting, is the General Accounting Law enacted in 1927 (Law No 1050). The classical budgeting approach and administrative-based classification were used (Demir 1991). Moreover, separation of current and investment expenditures was implemented after 1950 (Öner 2001) and one additional expenditure assortment was used as capital constitution and transfer expenditures after 1964 (Kızıldağ 2005).

Planning-programming budgeting was the budgeting approach that was used in the period of 1973-2003, by which classification was structured as programs, subprograms, activities and projects, and expenditures (Kızıldağ 2005). The code structure used in budgeting was modified to enable administrative and functional classification (Demir and Öner 2005). However, functional classification could not be implemented properly; rather administrations were grouped by their functions in service classification (Kızıldağ 2005).

The third period began in December 2003 by the enactment of the Public Financial Management and Control Law (PFMC Law), by which the General Accounting Law of 1927 (Law No 1050) was abolished. By the PFMC Law, performance budgeting approach became an obligation for government agencies. However, the implementation of the Law could begin by 2005 in terms of budgeting process, yet became fully effective in 2006 across all administrations under general government.

## **5.2. Performance Budgeting in Turkey**

Performance budgeting approach came into operation by the PFMC Law (amended in 2005 by the Law No 5436). The term “performance-based budgeting” is used in the law and explained by stating that public administrations prepare their program/project-based resource allocation and budgets based on strategic plans, objectives and performance indicators.

### **5.2.1. Budgeting Categories in the PFMC Law**

There are three broad types of institutions defined in the PFMC Law; public administrations within the scope of central government, social security institutions, and local administrations. They are also referred as public administrations within the scope of general government. The PFMC Law covers the financial management and control of these public administrations. Accordingly, there are three broad categories of budgets, which are central government budget, social security institution budget and local administration budget. Central government budget also includes three sub-budget categories that are general budget, special budget and regulatory and supervisory agency budget (PFMC Law)<sup>5</sup>. Performance budgeting is a general approach adopted for all of the budgeting categories mentioned.

### **5.2.2. Performance Budgeting Tools**

Performance budgeting tools are strategic plans, performance programs, budgets and accountability reports. Moreover, there is a complementary tool called analytical budget classification.

#### Strategic Plans:

Strategic plans include medium and long-term objectives, core values and policies, goals and priorities, and performance indicators of public administrations as

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<sup>5</sup> General budget refers to the budgets of public administrations that are the legal entity of the government. Special budget is the budget of each public administration which is established as affiliated or related to a ministry for the performance of a defined public service, to which revenues are allocated, and which is authorized to spend from such revenues, with the establishment and operation principles arranged through special law. Regulatory and supervisory agency budget refers to the budget of each regulatory and supervisory agency, which is established in the form of board, agency or supreme board by special laws. There are 50 general budget administrations; 127 special budget administrations, 94 of which are universities and 8 regulatory and supervisory agencies.

well as the methods followed to achieve those and resource allocation. They define the current and the desired position of organizations as well as the way to close the gap between the two. Strategic plans cover five-year-periods in Turkey. The liability of public administrations to prepare strategic plans is stated in the Article 9 of the PFMC Law, which came into force on January 2005.

#### Performance Programs:

Performance programs include (i) performance targets and performance indicators of a public administration related to the program period, (ii) activities and projects to be executed, and resource requirement so as to achieve the targets and (iii) information on the related administration. The public administrations are liable to prepare performance programs (Article 9 of the PFMC Law). Performance programs cover three-year-periods and are prepared each year. That is, there is a three-year-rolling horizon for performance programs. The targets of the first year are definite, whereas those of the following two years are set as indicators<sup>6</sup>.

#### Budgets:

A multi-year budget framework is utilized on the basis of the annual budget process. Time horizon for budgets is three years. The appropriations of the first year are become definite by the Central Government Budget Law. The ones of the following two years are set as indicators by the administrations and not legalized.

The administrations within the general budget prepare expenditure budgets, and the general revenue budget is prepared by the Ministry of Finance. The other administrations prepare both revenue and expenditure budgets.

#### Analytical Budget Classification:

Budgets are prepared according to the analytical budget classification. The classification of expenditure budgets is based on four categories as institutional, functional, financing, and economical classification. Details of the coding system are presented in Appendix B.

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<sup>6</sup> The By-Law on Preparation of Performance Programs was revised in July 2009, by which the period of performance programs became one year. Details of the regulation are discussed in Chapter 8.

### Accountability Reports:

Accountability reports present the activity results. They include (i) the resources used, and the reasons of the deviation arising regarding the budget targets and realizations, (ii) financial information comprising the information regarding the activities of associations, institutions and organizations aided through assets and liabilities, (iii) information on activities and performance information performed as per strategic plans and performance program, and (iv) the general information on the related administration. Public administrations and the spending units<sup>7</sup> are liable to issue accountability reports each year (PFMC Law).

### **5.2.3. Actors of the Performance Budgeting System**

Main actors of the performance budgeting system can be classified as regulatory administrations and implementing administrations. There are two regulatory administrations; namely, the Undersecretariat of State Planning Organization (SPO) and the Ministry of Finance (MoF).

The SPO is responsible for long-term development plans, macroeconomic monitoring and forecasting, and preparation and execution of investment plans. Moreover, the regulation related to strategic planning is to be determined by the SPO (PMFC Law). In this context, two documents were prepared by the SPO; the By-Law on the Procedures and Bases for Strategic Planning, which came into force in May 2006, and the Strategic Planning Guidebook for Public Administrations, which was published in June 2006 as the second edition.

The MoF has the overall responsibility for fiscal policy. MoF is also authorized to determine the issues related to performance programming and budgeting, and accountability reporting by the PFMC Law (2003). In this context, three documents were prepared by the MoF; the By-Law on the Preparation of Performance Programs of Public Administrations, which came into force in July 2008; the Guidebook for Preparation of Performance Programs, which was published in July 2008<sup>8</sup> and the By-Law on the Preparation of Accountability Reports of Public Administrations, which came into force in March 2006.

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<sup>7</sup> Departments of administrations that have allocated appropriation within the budget of the administration and spending authorization are referred as spending units in the Article 3 of the PFMC Law.

The term “implementing administration” refers to an administration to be in charge of performance budgeting. All public administrations covered in the PFMC Law including the SPO and the MoF are implementing administrations for performance budgeting. More definitely, they are in charge of development of strategic plans, performance programs and activity reports as well as preparation of budgets based on performance budgeting approach.<sup>9</sup> All administrations under the central government have their own units, called Strategy Development Units, which are responsible for coordination and guidance in performance budgeting implementation.<sup>10</sup>

#### **5.2.4. Performance Budgeting Process**

Performance budgeting process can be illustrated from the perspective of both regulatory and implementing sides.

Budgeting process begin with the publication of Medium Term Program and ends with the publication of the Central Government Budget (CGB) Law in the Official Gazette. CGB Law “indicates the revenue and expenditure estimations of the public administrations included in the central government and that grants authority and permission for their realization and implementation” (PFMC Law). Budgeting process is shown schematically as a flowchart in Figure 1.

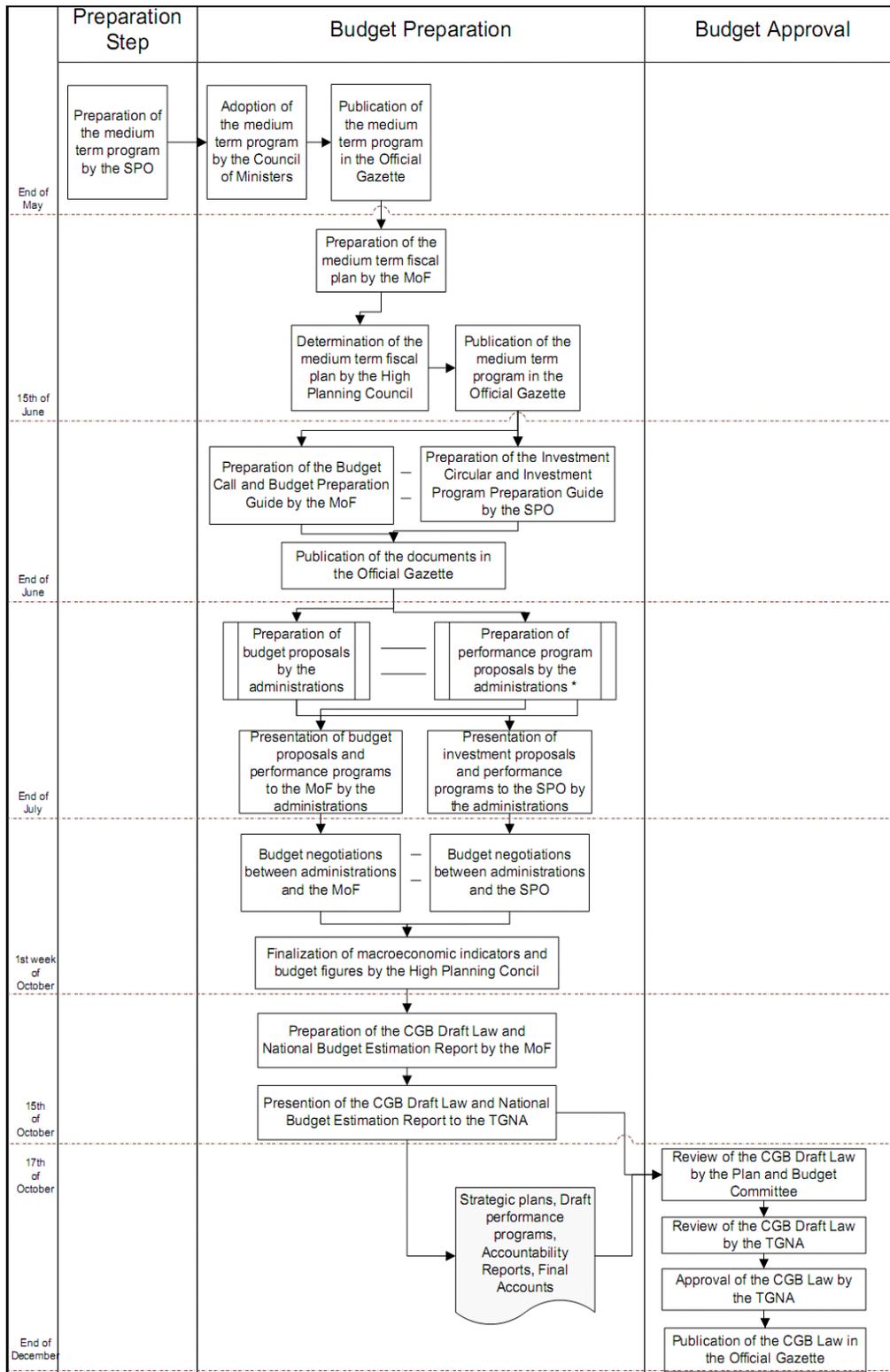
The main documents of the process need some explanation. Medium term program includes basic macro policies, principles, and economic figures as targets and indicators in line with the development plans and strategic plans of the institutions and the requirements of general economic conditions.

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<sup>8</sup> The By-Law on Preparation of Performance Programs and the Guidebook for Preparation of Performance Programs were revised in July 2009. Details of the regulation are discussed in Chapter 8.

<sup>9</sup> There are exceptions related to the principles and procedures for the regulatory and supervisory agencies.

<sup>10</sup> The By-Law on the Working Procedures and Principles of Strategy Development Units was published in February 2006.



\*The details of the performance programming process are illustrated in Figure 2.

**Figure 1: Budgeting process**

The medium term fiscal plan, as consistent with the medium term program, includes deficit and borrowing positions targeted, total revenue and expenditure projections for the following three years and the ceilings of appropriation proposals of administrations excepting regulatory and supervisory agencies. The appropriations are legalized by the CGB Law based on the first level of the functional classification and on the second level of the economical classification. Moreover, the appropriations based on the first level of the institutional classification are also stated in the CGB Law. Information about classifications are presented in Appendix B. After approval by the Assembly, CGB Law is approved by the President of Turkish Republic<sup>11</sup> and published in the Official Gazette before the beginning of the fiscal year.

Performance budgeting process from the perspective of the implementing administrations within the general budget can be summarized in four steps; preparation of strategic plans, performance programs, budgets, and activity reports.

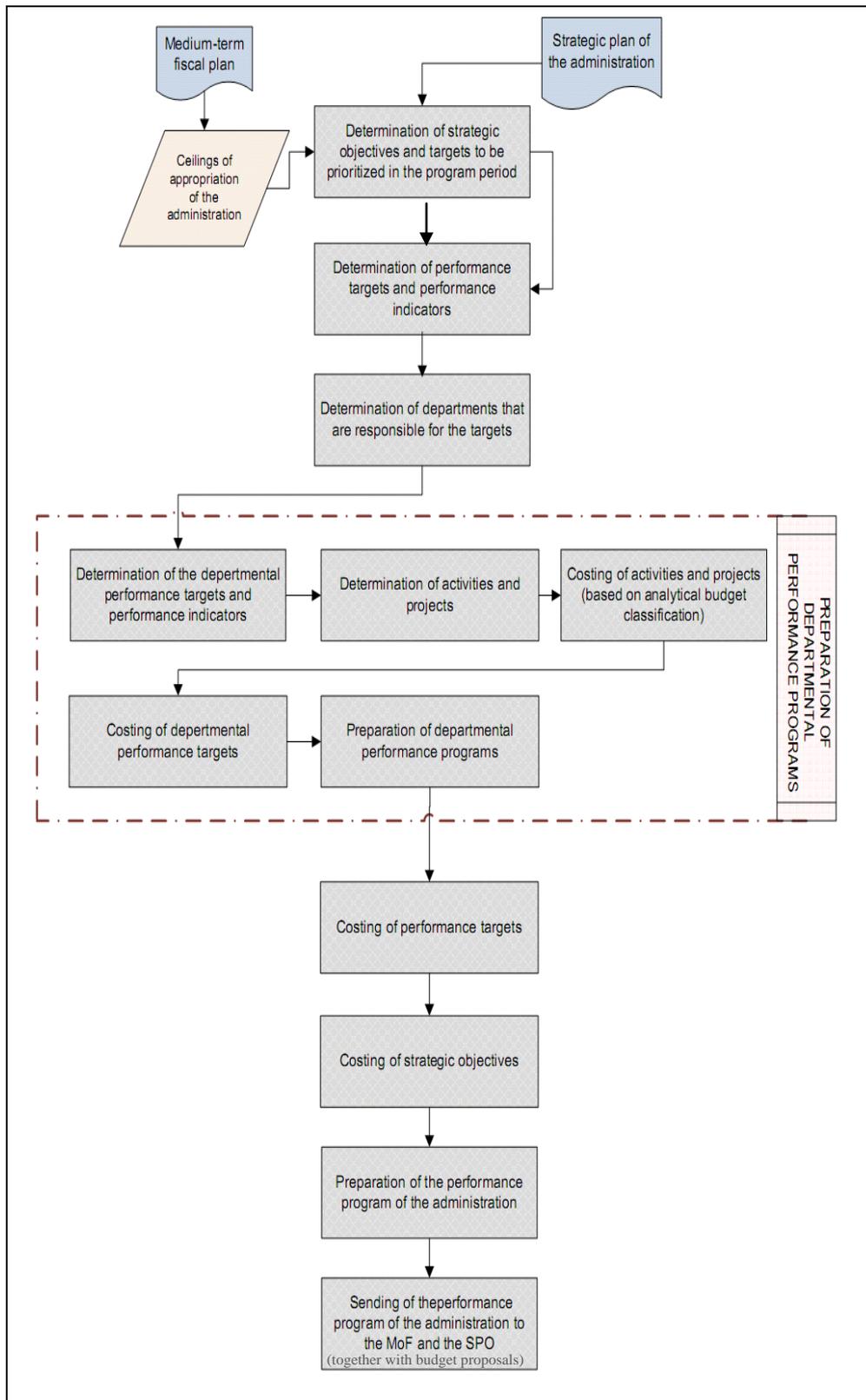
Performance budgeting process begins with the development of the strategic plan of the organization. Strategic plans of administrations are sent to the SPO, the MoF, the Court of Accounts and the Turkish Grand National Assembly. Based on the elements and their relationships, an influence diagram for strategic planning system is constructed, which is shown in Figure 20 in Appendix C. Budgeting processes are held and performance programs are prepared every year based on the strategic plans.

Performance program proposals are prepared in accordance with the strategic plan under budgetary constraints, which are the budget ceilings determined in the medium-term fiscal plan. Therefore, performance programming process is executed hand-in-hand with the preparation of budgets. An influence diagram for performance programming and budgeting system is constructed, which is shown in Figure 21 in Appendix C. Performance programs are prepared by both the administrations and their spending units<sup>12</sup>. The main features of the performance programming process are constructed in the Guidebook for Preparation of Performance Programs and stated below. Preparation of performance program proposals is illustrated in Figure 2.

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<sup>11</sup> The President of Turkish Republic has no vote authority for the Central Government Budget Law.

<sup>12</sup> The By-Law on Preparation of Performance Programs was revised in July 2009, by which the period of performance programs became one year. Details of the regulation are discussed in Chapter 8.



**Figure 2: Preparation of performance program proposals**

In case of a change in appropriations, public administrations revise their performance programs accordingly. Since there may be budget change twice, there are three versions of performance programs; proposal, draft and eventual, as in the budget. The process for update of performance programs is illustrated in Figure 3. The point to be satisfied at performance programs is that the resource requirement of an administration should be equal to the resources available.

Public administrations prepare their proposals for budget revenue and expenditures in the framework of strategic plans and the principles stated in Budget Preparation Guide.<sup>13</sup> Spending units also prepare departmental budget proposals. Budgets are prepared in the detail of fourth level of economical classification, in an electronic form which is called “e-bütçe” and runs through internet. Well-reasoned statements for budget proposals are also denoted in the documents. Performance programs have an important role in budgeting to enable the link between strategic plans and budgets.

Accountability reports are prepared and issued each year by the heads of public administrations<sup>14</sup> and heads of the spending units. One copy of the accountability reports of the administrations within central government are sent to the MoF and to the Court of Accounts<sup>15</sup>.

#### **5.2.5. Budget Flexibilities**

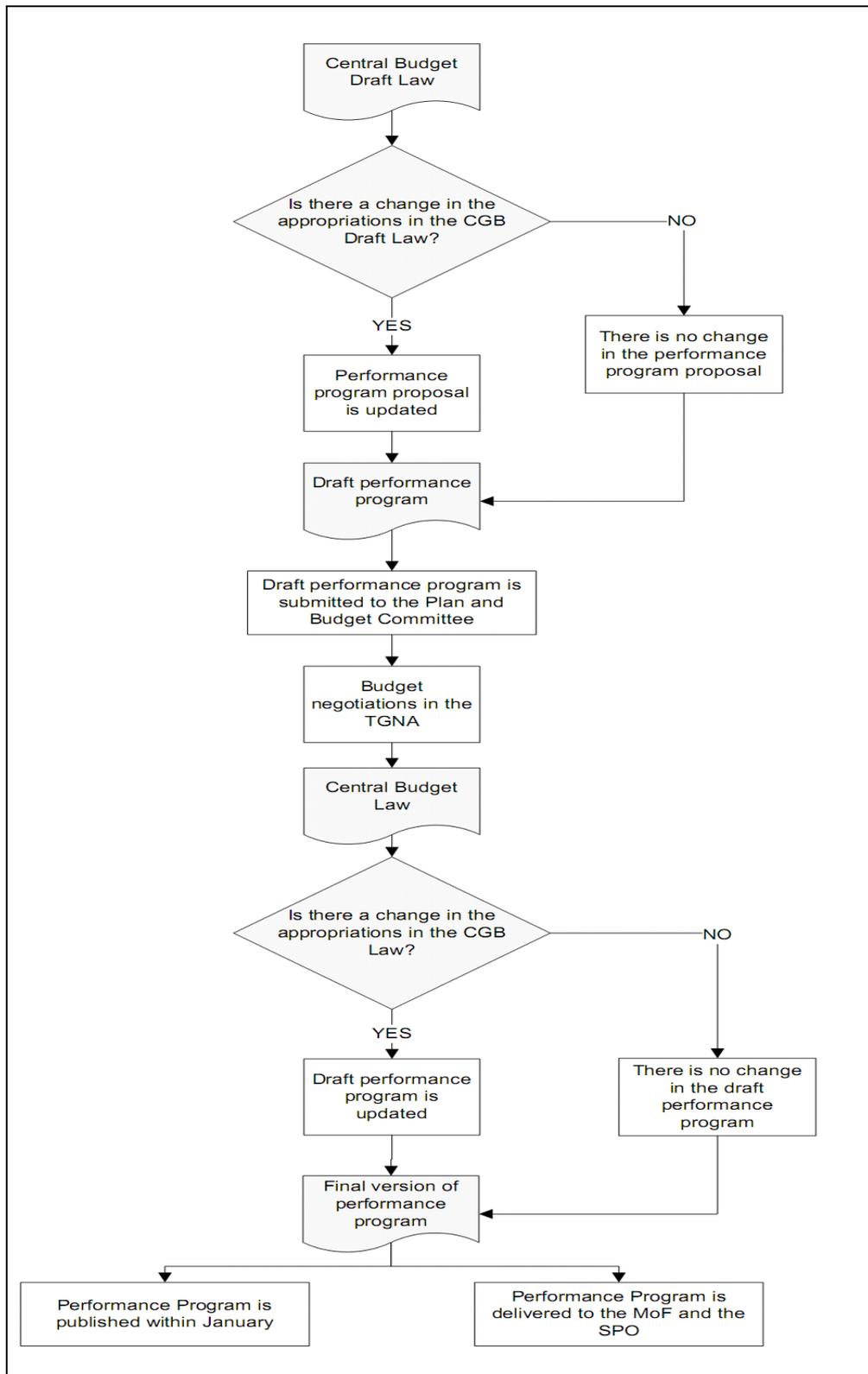
Appropriations are prepared in the detail of the fourth level of economical code; yet they are legalized in the detail of the second level. Therefore, public administrations and spending units have some flexibility on spending.

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<sup>13</sup> The general budget revenue proposal is prepared by the MoF, and the revenue proposals of other budgets are prepared by the administrations concerned.

<sup>14</sup> The head of public administration, as defined in PFMC Law (Article 11) is the undersecretary in ministries, the highest administrator in other public administrations, the governor in special provincial administrations and the mayor in municipalities. However, the Minister is the head of public administration in the Ministry of National Defense.

<sup>15</sup> Accountability reports of the local governments are sent to the Ministry of Interior and to the Court of Accounts.



\*The change in the performance programming process is discussed in Chapter 8.

**Figure 3: Update of performance programs**

Moreover, the administrations within central budget have authorization to transfer from one budget item in the second level of economic classification to another one, provided that the total budget transferred to an item does not exceed 20% of the budget of that item<sup>16</sup>. In addition, appropriations can be transferred from one administration within the central government to another only by law. Unused appropriations can not be carried over from one year to the following and they are cancelled at the end of the year.

#### **5.2.6. Detailed Expenditure Programs**

After the approval of the CGB Law, the administrations under the general budget prepare their detailed expenditure programs (DEPs), which are on monthly-basis.<sup>17</sup> They are then approved by the MoF on quarterly basis and for the second level of economic classification.<sup>18</sup> The appropriations of the administrations are released quarterly by the MoF based on the approved DEPs. In case of insufficient appropriations, it is possible to revise quarterly determined appropriations. Public administrations are not allowed to spend in excess of their appropriations (Article 20 of the PFMC Law)<sup>19</sup>.

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<sup>16</sup> The limit for the transfers is 5%, unless a different ratio is defined in the budget law of related year. This ratio is defined as 20% in the CGB Law of year 2009. Transfers can not be made from personnel expenditure items, from items to which transfers were made, and from items to which transfers were made from contingency appropriations.

<sup>17</sup> DEPs may be based on the second or the fourth level of economic classification. Special budget agencies and social security institutions also prepare their financing programs.

<sup>18</sup> Special budget agencies and social security institutions prepare their detailed expenditure programs on the basis of the quarterly release rates determined by the MoF.

<sup>19</sup> “The authorizing officials who have delivered spending instructions which are against the budgets, the detailed expenditure programs or release rates or which are in excess of appropriation amounts stated in appropriation dispatch documents, without causing public loss, shall be subject to a fine amounting up to two times of the net monthly payment they earn including all kinds of salary, allowance, increase and compensation.” (Article 70 of the PFMC Law).

### **5.2.7. Internal Control and External Audit**

Internal control, which is in the responsibility of the Strategy Development Units, is a complementary tool for performance budgeting. Internal audit is an important part of internal control, which is performed by a separate Internal Audit Unit in administrations.

External audit, which is also a complementary tool, is an ex-post audit performed by the Turkish Court of Accounts within the framework of the accountability of administrations under general government.

### **5.2.8. Review of Performance Budgeting in Turkey**

Performance budgeting approach used in Turkey is either presentational or performance-informed budgeting for accountability purposes. Moreover, both planned and actual performances are used; the former is stated in the performance programs and the latter is reported in the accountability reports.

In terms of budgeting types, budget system of Turkey fits to the incremental budgeting classification. Moreover; from the perspective of budgeting structures, it can be stated that line-item budgeting is used in Turkey. The expenditure proposals of the administrations are prepared in line with the analytical budget classification. Therefore, it is proper to state that functional budgeting is also utilized. Although, use of program-project based structure is stated in the PFMC Law, program classification is not utilized.

Medium term program constructs the “medium-term expenditure framework” (Schic 2002); that is, forecasts for the annual expenditure budget in terms of aggregate limits are made for each of the next three years. It is revised annually. Moreover, top-down budget formulation is executed and money is partitioned to public administrations, which determines the administrative expenditure limits. This facilitates, when properly done, reallocations in accordance with the strategic priorities of governments (Schic 2002).

Furthermore; among the performance budgeting models, a model based on additional performance documents, more specifically, based on strategic plans is used in Turkey. Formal approach, for which “the MoF requires ministries to present performance plans and/or performance results along with their spending proposals” (OECD 2007), is also utilized. Moreover, performance programs and accountability reports are the elements informing the budget process.

Accounting is in accrual basis in Turkey; on the other hand, budgeting is on cash bases; causing a dual system for budgeting and accounting.

Budgeting process in Turkey is defined as “simultaneously centralized and fragmented” by Kraan, Bergvall and Hawkesworth (2007) where the former refers to a strong top-down steering process from the center and the latter refers to the existence of more than one budget authorities responsible for expenditures in the budget.

Current and capital expenditures are separated; the former is in the responsibility of the MoF and the latter is in the responsibility of the SPO.

## CHAPTER 6

### FRAMEWORK OF THE STUDY

#### 6.1. The Scope and the Aim of the Study

By the enactment of the Public Financial Management and Control Law in 2003, performance budgeting approach was adopted for public budgeting. Performance budgeting system was completed on July 2008 in terms of its components. The aim of the study is to assess the current situation of the system, to determine problems and to propose improvement proposals for the weak areas.

The hypothesis that the performance budgeting system is not running properly in Turkey is questioned in this study. It is aimed to systematically analyze the problems faced by the public administrations under general budget related to the performance budgeting system in Turkey and to propose solutions so as to identify a proper system.

Another aim is to handle the ambiguity in updating performance programs, which is the need for a revision in the allocation of budget to activities whenever there is a change in budget amounts and which is among the problems identified. Use of multi-criteria and multi-objective decision making techniques is suggested for this problem. The proposed model was also implemented in a spending unit.

The administrations that are not under general budget are out of the scope of the study. The reasons of choosing the public administrations under general budget are that they are the most restricted administrations in terms of budget and that the proposed system with some relaxation will most probably fit to the other administrations having additional fiscal resources. Another reason, from the perspective of public fiscal management and control, is that total budget of the public

administrations under general budget constitutes approximately 93.3% of the total central government budget<sup>20</sup>.

## **6.2. Examples of Similar Studies**

The country practices hold an important part in the literature for performance budgeting. Major portion of them are investigated and reported by the OECD. In addition, Robinson (2002) discussed best practices in performance budgeting in his paper. Many researchers also handled different cases and practices in their studies (Friedman 2008, Schic 2008, Diamond 2001).

There are also studies related to performance budgeting system and its implementation in Turkey. Those formerly done were interested in the conceptual framework of the system and its implementation in some countries together with a discussion on its applicability in Turkey (Akkaş 2008, Yardımcıoğlu 2006, Oral 2005). Özen (2008) analyzed the critical control points in selection of budget system and factors affecting the effectiveness of the system as well. The recent studies, in addition to the conceptual framework and country practices, discussed the implementation of performance budgeting system in Turkey up to some extent (Uludüz 2008, Şahin 2007, Tüzün 2007).

## **6.3. The Method of the Study**

The study was constructed based on the systems thinking approach<sup>21</sup>; the current situation of the system was analyzed and problem determination was done. Then proposals were put forward for the improvement of the current performance budgeting system.

### **6.3.1 Analysis of the System**

Performance budgeting system in Turkey was analyzed and figured out; flows charts and influence diagrams were constructed. Afterwards, questionnaires were

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<sup>20</sup> Based on the initial appropriations represented in the Appendix Report of the General Conformity Report of Year 2008 prepared by the Turkish Court of Accounts.

<sup>21</sup> “Systems thinking is an approach for developing models to promote our understanding of events, patterns of behavior resulting in the events, and even more importantly, the underlying structure responsible for the patterns of behavior.”  
(<http://www.systems-thinking.org/index.htm>)

developed and implemented, the regulatory documents related to performance budgeting were examined in detail and practices of general-budget administrations were investigated, details of which are stated below. In addition, a set of interviews was conducted. Furthermore, legislation and related regulatory and administrative documents were investigated. Using these various qualitative data collection methods and sources ‘provides stronger substantiation of constructs and hypotheses’ (Eisenhardt 1989, quoted in Andrews 2006). Data gathered by abovementioned tools are then subjected to analysis.

#### Questionnaire:

In order to systematically analyze the problems that the administrations face with in the performance budgeting system, a questionnaire was formed based on the interrelations between the components of the system and the influence diagrams, focusing especially on the possible problematic areas<sup>22</sup>.

The questionnaire was designed for the main instruments of performance budgeting system; namely, strategic planning, performance programming, budgeting and accountability reporting. In addition, its design includes questions related to descriptive information for administrations and four main components of the system; namely, legislation, methodology, implementation practices, factors and general comments<sup>23</sup>.

The research questions that make the base for the questionnaire were whether the regulation for the performance budgeting system is adequate for administrations, whether the performance budgeting methodology is appropriate, whether administrations faced with difficulty in performance budgeting processes and the factors affecting the processes. In addition, general comments about the system and possible suggestions for improvement of the system were also questioned.

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<sup>22</sup> In the development of the questionnaire, other surveys done in the performance budgeting or related areas (2008 Local Administrations Performance Based Budgeting Questionnaire, administered by the MoF; OECD Budget Practices and Procedures Survey 2007; Questionnaire Administered as part of SDU Support Project coordinated by the Prime Ministry) were also investigated.

<sup>23</sup> The questionnaire has 174 items/sub-questions classified under 20 questions. In addition, a question is set apart for administrations to express additional comments, if any.

There are 50 administrations under the general budget, 44 of which are subject to the performance budgeting legislation. Among them, the target audience of the questionnaire was 40 administrations, 29 of which performed strategic planning and performance programming processes, and 11 of which performed/were performing strategic planning only. The same questionnaire was presented to all administrations with the relaxation of allowing invalid questions to be left blank.

The full version of the questionnaire is presented in Appendix D, including the answer codes in brackets. It was first piloted by three personnel, who were working for the strategy development unit of an administration, yet would not be respondent of the questionnaire. The questionnaires were then administered in the same form as in the Appendix in Turkish to the strategy development units of the administrations in a paper version in the period of 08/05/2009 – 28/09/2009. The respondents were given as much time as necessary to complete the questionnaires. The questionnaires were filled by the heads of the SDUs and their personnel working on performance budgeting systems. Still, only one set of responses was received from each administration. Therefore, the number of the respondents is equal to the number of administrations under survey. Among 40 questionnaires, 37 were answered by the administrations. That is, the response rate is 92.5%.

#### Analysis of the Questionnaire:

The responses given to the questionnaire were systematically analyzed by using Statistical Package for the Social Sciences (SPSS) 15.0. The details of the analysis are explained in Chapter 7. The analysis was used as the main determining factor of the current situation of the performance budgeting system, which is explained in Chapter 8.

#### Interviews:

A set of semi-structured face-to-face interviews (I #1) was conducted with experts involved in the performance budgeting process in the Strategy Development Units of seven administrations. The questionnaire mentioned above was the base for interviews and the content was about the problems faced with in the performance budgeting system. The opinions obtained were handled as if they were answers to open-ended questions and patterns and trends were revealed.

Moreover, a structured interview (I #2) was made in order to reveal the reasons why the administrations did not or could not developed their strategic plans. The questions used are presented in Appendix D. The target audience of the interview was the 4 administrations under the general budget which did or could not develop strategic plans yet. However, interviews could be conducted with only two of them. The answers obtained could not be subjected to statistical analysis. Instead, if both administrations responded in the same or similar way, responses were considered as meaningful and used as supplementary information in the current situation analysis. In addition, the opinions stated in addition to the base questions were handled as open-ended ones and subjected to analysis to examine patterns and trends.

Furthermore, a meeting was held with the experts of the Directorate General of Economical Models and Strategic Research<sup>24</sup> of the SPO in order to obtain data for the regulatory side of strategic planning. In addition, another meeting was held with the experts of the Directorate General of Budget and Fiscal Control of the MoF related to the regulatory side of performance programming and budgeting. They were designed as structured face-to-face interviews where the bases were the questions presented as I#3 and I#4 in Appendix D, respectively. The responses were used as complementary information in the current situation analysis.

#### Analysis of Legislation:

The By-Laws and guidebooks of the performance budgeting system of Turkey were investigated in detail and compared with the suggestions found in the literature and international best practices in the performance budgeting system. The aim was to determine the deficiencies of the documents that may insufficiently or improperly direct the administrations and generate some causes of the problems in the performance budgeting system in Turkey.

#### Investigation of Administrative Properties and Practices:

Due to the fact that strategic plans are the basis of the performance budgeting system in Turkey, published strategic plans of 29 administrations were investigated from the strategic management perspective<sup>25</sup>. The aim was to find out whether the

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<sup>24</sup> Strategic Planning Department of the Directorate General of Economical Models and Strategic Research is the regulatory department in public strategic planning.

administrations could follow the principles of strategic management and determine the elements of strategic plans properly.

In addition, activity reports of six administrations that are to be report achieved performance compared to targeted performance were also examined in order to reveal whether proper reporting can be accomplished<sup>26</sup>.

Furthermore, some administrative properties were gathered. The findings of the investigation were either put into the questionnaire as new variables, which are the strategic planning group that the administration belongs to, whether it is an affiliated organization or not, personnel size of the administration and budget size of the administration, or used as complementary information in the current situation analysis. Added variables are explained in Appendix E in detail.

### **6.3.2 System Proposal**

Proposals were developed for the problem areas determined by the findings of the analysis of the system, considering the dependencies and correlations of the components of the system. Moreover, applications found in the literature were investigated and inspired. Concurrently with the steps mentioned above, performance budgeting systems and experiences of Denmark, Sweden, the Netherlands, the United Kingdom and the United States were investigated. Based on the opinion that a practice worked well in a country may not meet the needs of and fit to another one, the findings of this investigation were questioned if they can also be implemented in Turkey. Therefore, a proper system was aimed to be designed. The proposals are presented in Chapter 9.

In addition, use of the analytic network process and multi-objective linear model for resource allocation was proposed for the ambiguity in updating performance programs, which is the need for a revision in the allocation of budget to activities whenever there is a change in budget amounts. The proposed model was implemented in the Strategy Development Department of the Undersecretariat of Treasury. The model is presented in Chapter 10.

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<sup>25</sup> Strategic plans of 29 administrations have been published, as of 08.12.2009.

<sup>26</sup> Six administrations had performance programs for the year 2009, according to the strategic planning calendar. Therefore, only accountability reports of those were investigated.

## CHAPTER 7

### ANALYSIS OF THE QUESTIONNAIRE

The full version of the questionnaire is presented in Appendix D. It includes 20 main questions and related 174 sub-questions, some of which have nominal data and most of which have ordinal data. Some sub-questions were aggregated under a different variable to obtain more meaningful interpretations<sup>27</sup>. In addition, three variables were added based on the findings of the investigation of administrative properties and reports<sup>28</sup>.

The questionnaire, with added those new variables, is analyzed using Statistical Package for the Social Sciences (SPSS) 15.0.

Missing values were neither calculated nor substituted during the analysis. Before analysis, data preprocessing was applied to check whether data needs to be corrected.

First, descriptive statistics for all questions were obtained. Then, crosstabs procedure was implemented to analyze the dependencies between the sub-questions that were thought to be related.

Afterwards, 13 question groups were formed from 140 sub-questions in the form of ordinal data, by means of the similar grouping used in the questionnaire form. Kendall's Tau-b correlation coefficients were calculated between sub-question pairs within each question group. Correlations greater than or equal to 0.5 were considered as meaningful. Thereby, 27 sub-questions were eliminated from further analysis.

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<sup>27</sup> The variables obtained via aggregation are the personnel size of the administration, the level of participation in its strategic planning team and the level of ownership by the top management in the team. Details of the variables are explained in Appendix E.

<sup>28</sup> Variables included in the analysis are the strategic planning group that the administration belongs to, whether it is an affiliated organization or not and its budget size. Details of the variables are explained in Appendix E.

Then, responses to sub-questions were standardized and an average score was obtained for each administration in each of 13 question groups. As the next step, the hypothesis that there is a relation between the average scores of administrations was questioned. Subsequently, the relation between some properties of administrations and their average scores were examined.

Then, according to their average scores in each question group, administrations were ranked and split into three groups of equal quantity, considering the breaking points in the scores. That is; three groups, which will be referred as administration groups, were formed for each question group<sup>29</sup>.

They were then used to question the hypotheses that administrations groups are related with each other and that there is a relation between administrations groups and administrative factors affecting strategic planning and performance programming processes.

Finally, the probable common properties within administration groups were investigated. In order to do so, correlation of some properties of administrations were calculated separately for each administration group and each question group. Highly correlated properties or factors were observed and related interpretations were made.

In addition, the responses to the last question in the questionnaire, which is an open-ended one, were subjected to analysis to examine patterns and trends.

The interpretations and the results obtained are stated in the following sections.

### **7.1. Relation between Sub-Questions**

The associations between two individual variables (sub-questions) having nominal or ordinal data were analyzed. To do so; (i) cross-tabulations were constructed in order to illustrate whether there is a relationship between variables, and (ii) the null hypothesis that there is no association between two nominal variables was tested with the chi-square test for association.

Variable combinations were investigated considering the rule that “every cell should have at least five expected respondents” in the cross-tabulation (Nardi 2006a). That is why the responses to some sub-questions were aggregated considering the

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<sup>29</sup> That is, one third of the administrations having the lowest scores were put into the first group; the next one third were put into the second group and the next one third having the highest scores were put into the third group.

potential that comparisons may have a relatively small number of responses. For the effects of the factors on strategic planning and performance programming processes (Sub-questions under question groups 8 and 10); the responses for very positive and positive were put into the “enabling” label and the responses for negative and very negative were put into the “disabling” label. Similarly, for the assessment of regulations and opinions (Sub-questions under question groups 6, 19 and 20); the responses for strongly agree and agree were put into the “proponent” label and disagree and strongly disagree were put into the “opponent” label.

However, even in those cases, the number of cells having expected count less than 5 is high since the sample size is small. Many results were not interpreted, since the validity of the results may not be trusted, if more than 20% of the cells have the expected frequencies of less than 5 (Green et al. 2000). Even so, an adjusted value of the chi-square statistics, which is referred as Yates corrected chi-square, is used for 2x2 tables. Yet, the null hypothesis can not be rejected; implying that one can not talk about an association between the investigated variables. Nonetheless, some subjective interpretation can be represented. The expectations for the investigation and the findings are expressed below<sup>30</sup>.

It was expected that whether the top management of an administration participated in the strategic planning team, which is also referred as the level of ownership in the team, and the effect of the support of the top management to the process are related; which refers to analyze the association between questions 24 and 8.A.1. Among 13 administrations that have no ownership in their teams, 11 found the effect of the support of the top management enabling. Among 13 administrations that have excellent ownership, 13 found that effect enabling. Therefore, it was concluded that in order to the effect to be enabling, the top management does not necessary be a member of the team.

It was expected that the level of participation in the strategic planning teams and the effect of the participation of the personnel on the process are related; which refers to analyze the association between questions 23 and 8.A.6. No obvious relationship could be observed; yet, as the participation level improves, the effect tends to become more on the enabling side. Only one of 5 administrations that have average participation found the effect of the participation of the personnel enabling;

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<sup>30</sup> The crosstabulations for the sub-question pairs are presented in Tables 53-69 in Appendix F.

whereas it is enabling for 7 of 11 administrations that have good participation. Among 19 administrations that have excellent participation, 17 evaluated the effect as enabling.

It was also expected that whether consulting firms or outside consultants participated in the strategic planning of an administration and the effect of the consultancy support are related; which refers to analyze the association between questions 4.9 and 8.C.11. Although 14 administrations do not have any consultants in their strategic planning teams, 5 of them evaluated the effect of the consultancy support enabling. For 9 administrations among 11 that have consultants in their teams, the effect is an enabling one. Therefore, it can be concluded that the consultancy support does not necessarily be in the form of participation in the team. On the other hand, if they are participated in the teams, the effect is generally enabling.

It was expected that whether how strategic plans will be linked to the development plans and programs is clear for the administration and the effect of these documents are related; which refers to analyze the association between questions 6.A.7 and 8.C.1, 6.A.7 and 8.C.2, and 6.A.7 and 8.C.3. No obvious relationship could be observed; yet, for the proponents of the openness of the subject, the effects tend to become more on the enabling side. Among 16 administrations that found how strategic plans will be linked to the development plans and programs unclear, almost half of them evaluated the effect of these documents as enabling. Among 18 administrations that found constructing the link clear, development plan and medium term program have an enabling effect for 16; whereas medium term fiscal plan has an enabling effect for 14.

Similarly, it was expected that whether how inter-administration relationships will be considered in strategic planning is clear for the administration and the effect of these relationships are related; which refers to analyze the association between questions 6.A.8 and 8.C.4. However, no obvious relationship could be observed. Among 23 administrations that found how inter-administration relationships will be considered in strategic planning unclear, 14 found the effect of these relationships enabling. On the other hand, among 10 administrations that found it clear, 6 evaluated the effect enabling.

It was expected that the status related to the update of performance programs are more or less same after the negotiations with the MoF and the SPO and after the

negotiations held in the Parliament; which refers to analyze the association between questions 15 and 16. There was only one administration that used different methods.

It was expected that whether data entry to the e-bütçe system is easy and the difficulty level of recording data related to strategic plan and performance program to the system are related; which refers to analyze the association between questions 19.3 and 7.15, and 19.3 and 9.15. However, no obvious relationship could be observed. Among 6 administrations that found data entry uneasy, 4 performed the entry of strategic planning data and 2 performed the entry of performance programming data to the system easily. Among 7 administrations that found data entry easy, 5 entered strategic planning data and 2 entered performance programming data easily.

It was expected that whether methods that can be used in costing of activities is adequate and the difficulty level of activity costing are related; which refers to analyze the association between questions 6.B.5 and 9.10. Among 25 administrations that found the methods inadequate; 2 performed activity costing easily, 12 did with a bit difficulty, 8 did with much difficulty and 3 did not performed. Among 4 administrations that found them adequate, 1 did activity costing easily and 3 did with a bit difficulty. Although proponents of 6.B.5 have relatively low difficulty, no obvious relationship could be observed.

Similarly, it was expected that whether how costs of activities will be expressed according to analytical budget classification is clear and the difficulty level of expressing as such are related; which refers to analyze the association between questions 6.B.6 and 9.11. Among 7 administrations that found it clear, 3 expressed the costs according to the classification easily, 3 did with a bit difficulty and 1 did not do at all. Among 20 administrations that found it unclear; 3 did easily, 6 did with a bit difficulty, 8 did with much difficulty and 3 did not do at all. Although proponents of 6.B.6 have relatively low difficulty, no obvious relationship could be observed.

It was expected that whether how performance programs will be updated is clear and the way of update are related; which refers to analyze the association between questions 6.B.7 and 15<sup>31</sup>. However, no obvious relationship could be observed. Among 14 administrations that found it unclear and that were required to update their performance programs; 4 updated both resource requirements and targets,

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<sup>31</sup> The relationship between sub-questions 6.B.7 and 16 can also be investigated. Yet, it was not needed since sub-questions 15 and 16 have similar patterns.

4 updated only resource requirements and 1 did not update any data. Among 9 administrations that found it clear and that were required to update their performance programs; 1 updated both resource requirements and targets, whereas 3 updated only resource requirements.

It was expected that the difficulty level of expressing costs of activities according to analytical budget classification and the opinion that the classification should be changed are related, which refers to analyze the association between sub-question 9.11 and 20.11. Among 5 administrations that expressed the costs easily, 2 were the proponents of the opinion. 4 of 7 administrations that did the task with a bit difficulty supported the opinion. Among 9 administrations that found the task very difficult to be performed, 7 acceded to the opinion. Although the ones having relatively much more difficulty tend to be proponents of the change, no obvious relationship could be observed.

It was expected that whether how strategic plans and performance programs are linked is clear and the difficulty level of prioritizing the objectives in the strategic plan are related, which refers to analyze the association between sub-question 6.A.10 and 9.1. Among 13 administrations that found it unclear; 2 did prioritization easily, 5 did with a bit difficulty and 6 did with much difficulty. Among 15 administrations that found it clear; 6 did prioritization easily, 8 did with a bit difficulty and 1 did with much difficulty. Although the ones found it clear tend to have relatively low difficulty, no obvious relationship could be observed.

It was expected that whether the information given in the Guidebook for Strategic Planning is adequate for an administration and the effect of the Guidebook on the process are related, which refers to analyze the association between sub-question 6.A.4 and 8.C.6. However, no obvious relationship could be observed. Among 23 administrations that found it adequate, 21 found its effect enabling. On the other hand, among 13 administrations that found it inadequate, 9 evaluated the effect enabling.

## **7.2. Question Groups Constructed from Individual Sub-Questions**

In order to obtain general evaluation for subject headings based on administrations, 13 question groups were formed from 140 sub-questions having ordinal data. These question groups are also the ones used in the questionnaire form and related to regulation for strategic planning, performance programming and

accountability reporting (questions 6.A, 6.B, 6.C); difficulty level of strategic planning and performance programming processes (questions 7, 9); administrative, SDU-related and external factors affecting the processes (questions 8.A, 8.B, 8.C, 10.A, 10.B, 10.C); degree of consideration of performance budgeting documents in budget negotiations (question 14) and e-bütçe system (question 19)<sup>32</sup>.

### 7.3. Relation between Ordinal Sub-Questions under a Question Group

In order to measure the strength of association between sub-questions that have ordinal data, Kendall's Tau-b correlation coefficient was selected to be used.

Correlation coefficients are calculated between sub-question pairs within each question group. That is, 13 correlation matrices were constructed. Correlation coefficients greater than or equal to 0.7 were evaluated as meaningful.<sup>33</sup> Significant correlation coefficients and related interpretations are shown in Table 2.

In order to prevent bias that can be caused by strong correlations within the question groups, it was decided to use only one of the highly correlated sub-questions and hence, 27 sub-questions were eliminated from further analysis.

### 7.4. Average Scores for Question Groups

First of all, response of each administration for each remaining sub-question is standardized via the following formula:

$$StdR_{i,j} = \frac{R_{i,j} - Mean_j}{StdDev_j} \quad \forall i,j \quad (7.1)$$

where  $StdR_{i,j}$  is the standardized response of administration  $i$  in sub-question  $j$ ,  $R_{i,j}$  is the response of administration  $i$  in sub-question  $j$ ,  $Mean_j$  is the average of all responses given to sub-question  $j$  and  $StdDev_j$  is the standard deviation of sub-question  $j$ .

Afterwards, a score is calculated for each administration and each question group. In doing so, the weight of the sub-questions within a question group is assumed to be equal, since their relative importance can not be estimated.

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<sup>32</sup> The sub-questions under question 20 were not grouped, since they include general assessment in almost all aspects of the performance budgeting system.

<sup>33</sup> Since it is not proper to use the square of the Kendall's Tau-b correlation coefficient, values of correlation coefficients are interpreted.

**Table 2: Significant correlations between sub-questions within a question group**

Sub-Question <sub>1</sub>	Sub-Question <sub>2</sub>	Correlation Coefficient	Common Subject of Sub-Questions	Interpretation	Sub-Question(s) Eliminated from Further Analysis
7.4	7.5	0.762	Determining the characteristics of organizational performing	Difficulty levels of determining the mission and the core values tend to increase/decrease together.	7.5
7.6	7.7	0.724	Determining medium level elements of strategic plan	Difficulty levels of determining the strategic priorities, goals and objectives tend to increase/decrease together.	7.6, 7.8
7.6	7.8	0.746			
7.7	7.8	0.947			
7.2	7.14	0.762	Making an extended SWOT analysis and evaluation	Difficulty levels of performing SWOT analysis and risk assessment tend to increase/decrease together.	7.14
8.C.2	8.C.3	0.752	Factor: Medium term national documents	The effects of the medium term program and the medium term fiscal plan on strategic planning process tend to move together.	8.C.2
8.C.5	8.C.6	0.761	Factor : Regulation for strategic planning	The effects of the By-Law and the Guidebook on strategic planning process tend to move together.	8.C.5
8.C.12	8.C.13	0.838	Factor : Investigation of foreign strategic planning examples	The effects of the international strategic planning best practices and strategic plans of foreign equivalent administrations tend to move together.	8.C.13
9.2	9.3	0.832	Determining items of performance program at administrative level	Difficulty levels of determining the administrative performance targets and performance indicators tend to increase/decrease together.	9.3
9.5	9.6	0.812	Determining items of performance program at departmental level	Difficulty levels of determining the departmental performance targets and performance indicators tend to increase/decrease together.	9.6
9.10	9.11	0.844	Costing of activities using analytical budget classification	Difficulty levels of costing of activities and representing them according to the analytical budget classification tend to increase/decrease together.	9.10

**Table 2 (continued)**

Sub-Question 1	Sub-Question 2	Correlation Coefficient	Common Subject of Sub-Questions	Interpretation	Sub-Question(s) Eliminated from Further Analysis
9.12	9.13	1000	Costing of performance targets	Difficulty levels of costing of administrative and departmental performance targets tend to increase/decrease together.	9.12
10.A.1	10.A.2	0.777	Factor : Top management	The effects of the support and the qualifications of top management on performance programming process tend to move together.	10.A.2
10.A.3	10.A.4	0.876	Factor : Characteristic of the performance programming study team	The effects of the knowledge of the performance programming study team related to the process and its qualifications on the process tend to move together.	10.A.4
10.C.4	10.C.5	0.905	Factor : Regulation for performance programming	The effects of the By-Law and the Guidebook on performance programming process tend to move together.	10.C.4
10.C.10	10.C.11	0.928	Factor : Investigation of foreign performance programming examples	The effects of the international performance programming best practices and performance programs of foreign equivalent administrations tend to move together.	10.C.11
10.C.15	10.C.16	0.745	Factor : The impact of the MoF and the SPO on the budget of organizations	The effects of the impacts of the MoF and the SPO on the budget of organizations tend to move together.	10.C.16
14.1	14.2	0.778	The degree of the consideration of strategic plans in determining the draft budget	The degree of the consideration of strategic plans in budget negotiations held with the MoF and the SPO tend to move together.	14.2
14.4	14.5	0.852	The degree of the consideration of performance programs in determining the draft budget	The degree of the consideration of performance programs in budget negotiations held with the MoF and the SPO tend to move together.	14.5

**Table 2 (continued)**

Sub-Question 1	Sub-Question 2	Correlation Coefficient	Common Subject of Sub-Questions	Interpretation	Sub-Question(s) Eliminated from Further Analysis
14.7	14.8	0.836	The degree of the consideration of accountability reports in budget negotiations	The degree of the consideration of accountability reports in budget negotiations held with the MoF and the SPO, and in the Parliament tend to move together.	14.8, 14.9
14.7	14.9	0.726			
14.8	14.9	0.922			
19.2	19.3	0.748	Whether the use of e-bütçe system for performance budgeting is adequate or not	The opinions related to whether data flow is performed easily between the performance budget module and other modules, whether data entry and follow can be easily made, and whether reporting process meets the need of the administration tend to move together.	19.2, 19.3, 19.4
19.2	19.4	0.774			
19.2	19.5	0.750	Whether the flexibility to transfer budget appropriations prevents realistic preparation of budget appropriation proposals or not	The opinions related to whether the flexibility to transfer budget appropriations prevents realistic preparation of budget appropriation proposals of spending units and administrations tend to move together.	20.13
19.3	19.4	0.964			
19.3	19.5	0.837			
19.4	19.5	0.867			
20.12	20.13	0.715			

That is, it is calculated by averaging the standardized responses of the administration in the sub-questions of the question group.

$$S_{i,m} = \sum_j StdR_{i,j} \div n \quad \forall i,m \quad (7.2)$$

where  $S_{i,m}$  is the score of administration  $i$  in question group  $m$ , and  $n$  is the number of sub-questions in the question group  $m$ .

### 7.5. Relation between Average Scores in Question Groups

The hypothesis that average scores of administrations are related with each other was questioned. Since the data is continuous and normally distributed, the Pearson correlation coefficient was used. The correlation matrix is shown in Table 70 in Appendix F.

There is 0.792 correlation between the scores on the effects of factors related to Strategy Development Units on strategic planning process (Score 8.B) and those on performance programming process (Score 10.B). It can be stated that those factors affect strategic planning and performance programming processes in a similar way.

Similarly, there is 0.706 correlation between the scores on the effects of external factors on strategic planning process (Score 8.C) and those on performance programming process (Score 10.C). It can be stated that external factors affect strategic planning and performance programming in a more or less similar way.

No other significant association was observed.

### 7.6. Relation between Administrative Properties and Average Scores in Question Groups

The hypothesis that some properties of administrations and their average scores in question groups are related was questioned. The properties considered were the strategic planning period of administrations, whether it is an affiliated administration or not, whether it has a provincial organization or not, the number of its personnel, the amount of its budget, the level of participation and ownership provided in its strategic planning team and whether consultants or consulting firms participated in its strategic planning team. However, no evidence was found about that any factor is dissimilar among scores of administrations (Table 3). For that reason, no statistical test was applied.

**Table 3: Relation between scores and some properties of administrations**

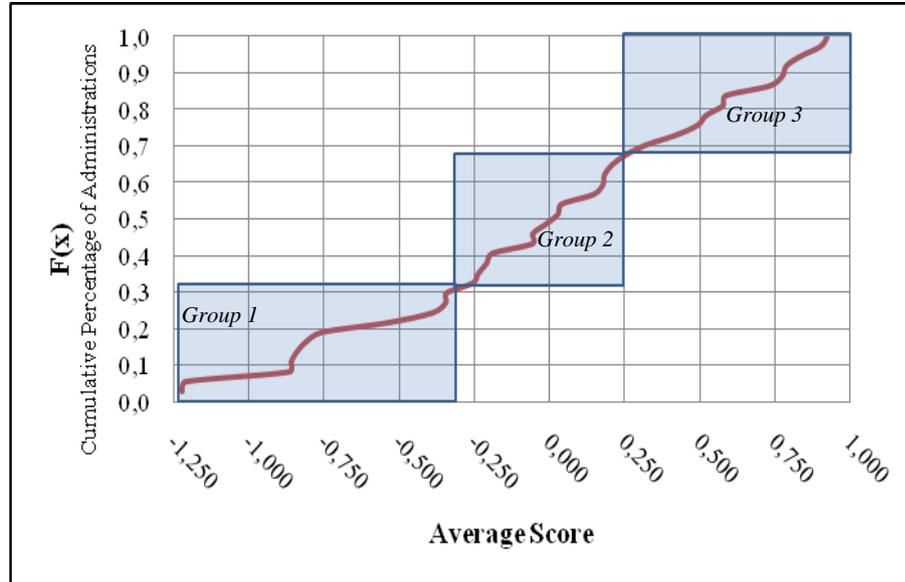
Administrative Properties	Score of administrations in question group ...																		
	6A	6B	6C	7	8A	8B	8C	9	10A	10B	10C	14	19						
Level of participation in the sp teams	0.014	-0.013	0.006	-0.047	0.382	0.273	0.074	-0.317	0.392	0.463	0.225	0.158	0.404						
Level of ownership by the top management in sp teams	-0.238	-0.045	0.127	-0.095	0.043	0.126	0.028	0.011	-0.273	-0.130	-0.040	-0.032	0.002						
Participation by top mng in sp team	-0.170	0.043	0.018	-0.193	0.097	0.145	0.009	0.010	-0.264	-0.140	-0.035	0.115	0.002						
The group of the administration	0.115	-0.044	0.003	-0.048	0.098	0.131	-0.016	0.342	-0.012	0.045	0.014	0.064	0.286						
Affiliated Administration or not	-0.092	0.094	0.146	-0.075	0.144	0.061	0.084	-0.285	0.356	0.185	-0.069	-0.277	-0.264						
Budget of the administration	0.090	0.063	-0.184	0.131	-0.026	0.263	-0.032	0.227	-0.109	0.091	-0.014	0.223	0.017						
Participation of the personnel of the provincial organization in sp process	0.042	-0.230	0.013	-0.569	0.393	0.122	0.145	-0.115	0.467	0.234	-0.058	-0.257	-0.191						
Number of personnel of the administration	0.114	0.010	-0.154	0.002	0.098	0.180	-0.025	0.103	0.372	0.372	0.116	0.261	0.054						
Participation of consultants/ consulting firms in the sp team	0.196	0.194	-0.039	-0.061	0.187	0.171	0.207	-0.024	-0.111	-0.097	0.138	0.077	0.195						

Therefore, it was concluded that the abovementioned properties of administrations do not affect the level of adequacy of regulations assessed by administrations, the level of difficulty in processes and the factors affecting processes; that is, they are not dependent on those administrative factors. Therefore, administrations could not be grouped based on some administrative properties.

Instead, they are grouped according to their average scores in each question group. Administrations were ranked and split into three groups, which will be referred as administration groups. In doing so, the cut-off points in the scores were considered and it was tried to put almost equal quantity of administrations into each group.

Thereby, almost one third of the administrations having the lowest scores were put into group 1; the next one third, approximately, were put into group 2 and the last one third, approximately, having the highest scores were put into group 3. Grouping for question group 6.A is shown in Figure 4 as an example.

The properties of the groups are shown in Table 4. The status of administrations with respect to question groups is illustrated in Table 5.



**Figure 4: An example for administrative groups**

**Table 4: Properties of the administration groups**

Question Group	Administration Group	Number of Administrations in the Group	Interpretation (Administrations in this group ...)
6A	1	11	... find strategic planning regulation relatively inadequate.
	2	14	... find strategic planning regulation average.
	3	12	... find strategic planning regulation relatively adequate.
6B	1	14	... find performance programming regulation relatively inadequate.
	2	10	... find performance programming regulation average.
	3	12	... find performance programming regulation relatively adequate.
6C	1	10	... find accountability reporting regulation relatively inadequate.
	2	10	... find accountability reporting regulation average.
	3	16	... find accountability reporting regulation relatively adequate.
7	1	12	... find strategic planning process relatively easy.
	2	11	... find strategic planning process slightly hard.
	3	13	... find strategic planning process relatively hard.
8A	1	12	... find administrative factors relatively disabling for strategic planning process.
	2	12	... find administrative factors in-between disabling and enabling for strategic planning process.
	3	13	... find administrative factors relatively enabling for strategic planning process.
8B	1	12	... find SDU-related factors relatively disabling for strategic planning process.
	2	10	... find SDU-related factors in-between disabling and enabling for strategic planning process.
	3	15	... find SDU-related factors relatively enabling for strategic planning process.
8C	1	13	... find external factors relatively disabling for strategic planning process.
	2	11	... find external factors in-between disabling and enabling for strategic planning process.
	3	12	... find external factors relatively enabling for strategic planning process.
9	1	10	... find performance programming process relatively easy.
	2	8	... find performance programming process slightly hard.
	3	11	... find performance programming process relatively hard.
10A	1	9	... find administrative factors relatively disabling for performance programming process.
	2	10	... find administrative factors in-between disabling and enabling for performance programming process.
	3	10	... find administrative factors relatively enabling for performance programming process.

**Table 4 (Continued)**

Question Group	Administration Group	Number of Administrations in the Group	Interpretation (Administrations in this group ...)
10B	1	9	... find SDU-related factors relatively disabling for performance programming process.
	2	11	... find SDU-related factors in-between disabling and enabling for performance programming process.
	3	9	... find SDU-related factors relatively enabling for performance programming process.
10C	1	9	... find external factors relatively disabling for performance programming process.
	2	10	... find external factors in-between disabling and enabling for performance programming process.
	3	10	... find external factors relatively enabling for performance programming process.
14	1	13	... think that their performance budgeting documents have relatively no effect in budget negotiations.
	2	6	... think that their performance budgeting documents have a little effect in budget negotiations.
	3	7	... think that their performance budgeting documents have an important effect in budget negotiations.
19	1	8	... find e-bütçe system relatively inadequate.
	2	8	... find e-bütçe system average.
	3	7	... find e-bütçe system relatively adequate.

### 7.7. Response Pattern within Administrative Groups

It was hypothesized that administrations in the same group of a question group would have similar scores in another question group. The correlation matrix is presented in Table 71 in Appendix F. However, only significant correlation was observed between administration groups of question group 8.B and those of 10.B, which is 0.75. Hence, it can be stated that the effect of SDU-related factors are similar for strategic planning and performance programming processes. Other correlations between administration groups were so low that they revealed no significant relationship.

**Table 5: Status of the administrations with respect to question groups**

Administration Code	Question Group												
	6.A	6.B	6.C	7	8.A	8.B	8.C	9	10.A	10.B	10.C	14	19
1	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
2	Grey	Grey	Red	Grey	Green	Green	Grey	.	.	.	.	.	.
3	Grey	Green	Green	Red	Grey	Grey	Red	Green	Grey	Grey	Grey	Green	Green
4	Green	Green	Grey	Red	Grey	Green	Grey	Green	Grey	Grey	Green	Green	Green
5	Grey	.	.	Green	Grey	Red	Green	.	.	.	.	.	.
6	Green	Green	Grey	Red	Red	Red	Red	Red	Red	Grey	Grey	Green	Green
7	Grey	Red	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
8	Grey	Red	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
9	Grey	Green	Green	Green	Green	Green	Green	Red	Red	Red	Grey	.	Grey
10	Red	Red	Grey	Grey	Grey	Green	Grey	Red	Grey	Green	Green	.	Grey
11	Green	Red	Green	Green	Grey	Grey	Green	.	.	.	.	.	Grey
12	Grey	Grey	Red	Red	Red	Red	Red	Red	Red	Grey	Red	Grey	Red
13	Red	Green	Green	.	Green	Grey	.	.	Red	Grey	Green	.	.
14	Green	Green	Green	Green	Green	Green	Green	.	.	.	.	Green	Green
15	Red	Grey	Grey	Green	Green	Red	Red	Grey	Green	Green	Red	Red	Grey
16	Grey	Red	Grey	Green	Green	Red	Red	Green	Grey	Red	Red	Green	Red
17	Green	Grey	Green	Green	Green	Green	Green	.	.	.	.	.	.
18	Green	Green	Green	Red	Red	Grey	Red	Grey	Green	Red	Red	Red	Grey
19	Red	Red	Red	Red	Grey	Grey	Grey	.	.	.	.	Red	.
20	Green	Green	Green	Green	Green	Green	Green	Green	Green	Grey	Green	Red	Green
21	Grey	Grey	Green	Green	Grey	Red	Grey	Green	Grey	Grey	Green	Red	Red
22	Red	Red	Grey	Green	Green	Red	Red	Red	Grey	Red	Red	Red	Grey
23	Red	Grey	Red	Green	Green	Green	Green	Green	Green	Green	Green	Red	Red
24	Red	Red	Red	Green	Green	Red	Red	Grey	Grey	Red	Grey	Red	Red
25	Green	Grey	Red	Grey	Green	Green	Green	Green	Green	Green	Grey	Grey	.
26	Green	Green	Grey	Green	Green	Green	Green	Green	Green	Green	Green	Red	Grey
27	Grey	Red	Red	Red	Green	Grey	Green	Grey	Green	Grey	Green	Grey	Grey
28	Red	Red	Red	Red	Green	Red	Red	Grey	.	.	.	.	.
29	Green	Green	Green	Red	Red	Red	Red	Red	Red	Red	Red	Grey	.
30	Grey	Red	Red	Red	Green	Green	Red	Red	Green	Green	Grey	Green	Green
31	Red	Red	Red	Grey	Red	Green	Grey	Grey	Green	Green	Grey	Grey	Red
32	Green	Green	Green	Grey	Green	Green	Green	Green	Green	Green	Green	.	.
33	Red	Red	Green	Red	Red	Red	Grey	Red	Red	Grey	Red	Red	.
34	Grey	Grey	Grey	Red	Red	Red	Green	Green	Grey	Red	Red	.	.
35	Grey	Green	Red	Red	Red	Green	Red	Green	Grey	Green	Grey	Red	.
36	Grey	Red	Red	Grey	Grey	Grey	Grey	Red	.	.	.	.	.
37	Red	Red	Red	Grey	Red	Red	Red	Red	Red	Red	Red	Red	.

\* The administrations having red cells are in group 3 with respect to questions 7 and 9, and in group 1 with respect to other questions. The ones having grey cells are in group 2 with respect to all questions. The ones having green cells are in group 1 with respect to questions 7 and 9, and in group 3 with respect to other questions. The dots imply that the score and consequently the group of the administration could not be determined due to missing responses.

### 7.8. Relation between Administration Groups and Administrative Properties

The association between the administrations groups and administrative factors affecting strategic planning and performance programming processes, was questioned. More specifically, relationship of administrations groups 6.A, 7 and 19 with sub-questions under 8.A and 8.B, and relationship of administrations groups 6.B, 9 and 19 with sub-questions under 10.A and 10.B were investigated. Yet, no meaningful relationship could be obtained from analysis summarized in Tables 6 and 7, respectively.

**Table 6: Relationship of administrations groups 6.A, 7 and 19 with sub-questions under 8.A and 8.B**

Sub-question	Administration Group in Question Group ...		
	6A	7	19
Q8.A.1	0.017	-0.077	0.311
Q8.A.2	0.120	-0.110	0.014
Q8.A.3	0.012	-0.187	0.349
Q8.A.4	0.010	-0.218	0.258
Q8.A.5	0.091	-0.267	0.268
Q8.A.6	0.077	-0.342	0.393
Q8.A.7	0.069	-0.500	0.212
Q8.A.8	0.098	-0.437	0.000
Q8.A.9	0.218	-0.464	0.088
Q8.A.10	0.218	-0.450	-0.116
Q8.B.1	0.155	0.010	0.374
Q8.B.2	0.184	-0.068	0.149
Q8.B.3	0.078	-0.026	0.254
Q8.B.4	0.377	-0.171	0.272

**Table 7: Relationship of administrations groups 6.B, 9 and 19 with sub-questions under 10.A and 10.B**

Sub-question	Administration Group in Question Group ...		
	6B	9	19
Q10.A.1	0.107	-0.391	0.305
Q10.A.2	-0.102	-0.207	-0.281
Q10.A.3	-0.094	-0.205	0.214
Q10.A.4	-0.122	-0.194	0.098

**Table 7 (continued)**

Sub-question	Administration Group in Question Group ...		
	6B	9	19
Q10.A.5	0.152	0.132	0.318
Q10.A.6	0.138	-0.310	0.484
Q10.A.7	-0.033	-0.270	0.240
Q10.A.8	-0.026	-0.092	0.338
Q10.A.9	0.069	-0.450	-0.038
Q10.A.10	0.288	-0.394	0.096
Q10.A.11	0.321	-0.022	-0.027
Q10.B.1	0.130	-0.160	0.105
Q10.B.2	0.186	-0.074	0.177
Q10.B.3	0.022	-0.025	0.000
Q10.B.4	0.163	-0.087	0.402

### **7.9. Correlation of Administrative Properties within Question Groups**

The probable common properties within administration groups were investigated. In order to do so, correlation of some properties of administrations were calculated separately for each administration group and each question group. Considering that some comparisons may possibly have a relatively small number of answers, aggregated responses to the sub-questions were used to perform the analysis, the findings of which are explained in the following sections<sup>34</sup>. The significant correlations are presented in Table 8.

#### **Administration Group 1 of Question Group 6.A:**

The administrations in the group 1 in 6.A, the ones find strategic planning regulation relatively inadequate, have some significant properties.

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<sup>34</sup> For the effects of the factors on strategic planning and performance programming processes (Sub-questions under question groups 8 and 10); the responses for very positive and positive were put into the “enabling” label and the responses for negative and very negative were put into the “disabling” label. Similarly, for the assessment of regulations and opinions (Sub-questions under question groups 6, 19 and 20); the responses for strongly agree and agree were put into the “proponent” label and disagree and strongly disagree were put into the “opponent” label.

**Table 8: Significant correlations between factors within administration groups**

Question Group	Administration Group	Sub-Question 1	Sub-Question 2	Value of Correlation Coefficient	Interpretation
6.A	Group 1	8.A.3	8.A.5	0.728	The effects of the knowledge of the strategic planning team related to strategic planning process and the number of the personnel in the team tend to move together
		8.B.2	8.B.4	0.934	The effects of the number of personnel and organizational structure of the SDU tend to move together
	Group 2	8.C.1	8.C.3	1.000	The effects of development plan and medium term fiscal plan on strategic planning process tend to move together
		8.C.8	8.C.10	0.801	The effects of events organized by and consultancy received from the SPO tend to move together
		20.8	20.9	0.791	The opinions whether the evaluation done by the SPO and the MoF is sufficient for determining the quality of the strategic plan and performance program of the administration, respectively, tend to move together.
		8.A.3	8.A.6	0.722	The effects of the knowledge of the strategic planning team related to strategic planning process and participation of the personnel of the organization to the process tend to move together
	Group 3	8.A.1	8.A.2	1.000	The effects of support and qualifications of top management on strategic planning process tend to move together
		23	8.A.6	0.722	Participation level in the strategic planning team and participation of the personnel of the organization to the process are related
		20.8	20.9	0.756	The opinions whether evaluation done by the SPO and the MoF is sufficient for determining quality of strategic plan and performance program of the administration, respectively, tend to move together.
		10.C.1	10.C.2	0.802	The effects of development plan and the medium term program on performance programming process tend to move together
Group 1	10.C.6	10.C.7	0.904	The effects of the events organized and feedback given by the MoF tend to move together	
	10.C.2	20.17	0.764	The effects of the medium term program on performance programming process and the opinion related to whether there are repetitive practices in the budget process are related	
	10.A.7	10.C.5	0.868	The effects of the quality of the strategic plan of the organization and the Guidebook for Preparation of Performance Programs tend to move together	
	10.C.6	10.C.7	0.775		
6.B	Group 2	10.C.6	10.C.8	0.870	The effects of the events organized, feedback related to the performance program given by the MoF and consultancy support received from the MoF tend to move together
		10.C.7	10.C.8	0.870	
		20.8	20.9	0.745	The opinions whether the evaluation done by the SPO and the MoF is sufficient for determining the quality of the strategic plan and performance program of the administration, respectively, tend to move together.
		25	10.A.3	0.868	Whether the administration is an affiliated organization and the effect of the knowledge of the performance programming study team of the organization related to the process are related
	25	10.A.9	0.808	Whether the administration is an affiliated organization and whether the infrastructure required for obtaining performance data exist in the administration are related	

**Table 8 (continued)**

Question Group	Administration Group	Sub-Question 1	Sub-Question 2	Value of Correlation Coefficient	Interpretation
6.B	Group 3	10.C.5	10.C.6	0.856	The effect of the Guidebook for Preparation of Performance Programs, the events organized by the MoF and the feedback given by the MoF related to the performance program tend to move together
		10.C.5	10.C.7	0.913	
		10.C.6	10.C.7	0.921	
7	Group 1	8.A.6	8.A.7	1.000	The effect of the participation of the personnel of the organization to the strategic planning process and appropriateness of the corporate culture for strategic planning tend to move together
		6.A.4	8.C.9	0.807	
		8.C.11	26	0.745	
		20.8	20.9	1.000	
	Group 2	6.A.3	6.A.5	1.000	Whether the information on the Strategic Planning Guidebook is enough to meet the information need of the administration and the effect of the feedback given by the SPO related to the strategic plan are related
		8.A.1	8.A.5	0.725	
		8.A.1	8.C.7	0.725	
Group 3	8.C.8	8.C.10	0.828	The opinions whether the evaluation done by the SPO and the MoF is sufficient for determining the quality of the strategic plan and performance program of the administration, respectively, tend to move together	
	23	8.A.6	0.766		

**Table 8 (continued)**

Question Group	Administration Group	Sub-Question 1	Sub-Question 2	Value of Correlation Coefficient	Interpretation
9		10.A.3	10.A.4	1.000	The effects of the qualifications and the knowledge of the study team of the organization related to performance programming process tend to move together
		10.A.10	10.C.13	0.926	The effects of whether cost accounting is done in the organization and that the analytical budget classification does not have a classification for programs tend to move together
	Group 1	10.C.5	10.C.6	0.867	The effect of the Guidebook for Preparation of Performance Programs, the events organized by the MoF and the feedback given by the MoF related to the performance program tend to move together
		10.C.5	10.C.7	0.868	
		10.C.6	10.C.7	1.000	
		10.C.7	10.C.8	0.870	
		20.8	20.9	1.000	
	Group 2	10.C.2	10.C.3	1.000	The effects of the feedback given by the MoF related to the performance program and counseling support received from the MoF tend to move together
		10.C.6	10.C.7	0.802	The opinions whether the evaluation done by the SPO and the MoF is sufficient for determining the quality of the strategic plan and performance program of the administration, respectively, tend to move together
		10.C.6	10.C.8	1.000	The effects of the medium term program and medium term fiscal plan on performance programming process tend to move together
		10.C.7	10.C.8	0.870	The effect of the events organized by the MoF, the feedback given by the MoF related to the performance program and the counseling support received from the MoF tend to move together
		10.A.3	10.A.4	1.000	The effects of the qualifications and the knowledge of the study team of the organization related to performance programming process tend to move together
	Group 3	10.C.1	10.C.2	1.000	The effects of the development plan and the medium term program on performance programming process tend to move together
20.8		20.9	1.000	The opinions whether the evaluation done by the SPO and the MoF is sufficient for determining the quality of the strategic plan and performance program of the administration, respectively, tend to move together	

For almost all the administrations in the group (for 80%), the knowledge of the strategic planning team related to strategic planning process and the number of personnel in the team both have enabling effects.

For 50% of those administrations, the number of the personnel and organizational structure of the SDU on strategic planning process both are disabling factors; whereas for 30% of them, they are both enabling ones.

Another common property is that the effects of the development plan and the medium term fiscal plan on strategic planning process are the same; that is both are enabling (for 50%), both are disabling (12.5%) or both are ineffective (37.5%).

#### Administration Group 2 of Question Group 6.A:

The administrations in the group 2 in 6.A, the ones find strategic planning regulation relatively average in terms of adequacy, have the following significant property: For 50% of those administrations, the evaluations done by SPO and the MoF are both not sufficient for determining the quality of their strategic plan and performance program, respectively; whereas for 30%, they are both sufficient.

#### Administration Group 3 of Question Group 6.A:

The administrations in the group 3 in 6.A, the ones find strategic planning regulation relatively adequate, have the following significant properties.

For approximately 85% the administrations in the group, the knowledge of the strategic planning team related to strategic planning process and participation of the personnel of the organization to the process both have enabling effects. Similarly, more than 92% of them find the effects of both the support and the qualifications of top management on strategic planning process enabling.

In addition, participation level in the strategic planning team and participation of the personnel of the organization to the process are strongly related. For almost all administrations provided good or excellent participation in strategic planning teams, the mentioned factor has an enabling effect. On the other hand, the ones having poor or average participation in the teams could not talk about an enabling effect. Therefore, it can be stated that participation of the personnel of the organization to the process is almost always provided by their involvement in strategic planning teams in this group.

For approximately 67% of those administrations, the evaluations done by SPO and the MoF are both not sufficient for determining the quality of their strategic plan and performance program, respectively.

Administration Group 1 of Question Group 6.B:

The administrations in the group 1 in 6.A, the ones find performance programming regulation relatively inadequate, have the following significant property: For 60% of the administrations in the group, the effects of the development plan and the medium term program on performance programming process are both enabling; whereas they are disabling for 30%.

Administration Group 2 of Question Group 6.A:

The administrations in the group 2 in 6.A, the ones find performance programming regulation relatively average in terms of adequacy, have the following significant property: For 62.5% of those administrations, the evaluations done by SPO and the MoF are both not sufficient for determining the quality of their strategic plan and performance program, respectively; whereas for 25%, they are both sufficient.

Administration Group 3 of Question Group 6.B:

The administrations in the group 3 in 6.A, the ones find performance programming regulation relatively adequate, have no common significant property.

Administration Group 1 of Question Group 7:

The administrations in the group 1 in 7, the ones find strategic planning process relatively easy, have the following significant properties. For almost all of them, the effects of the participation of the personnel of the organization to the strategic planning process and appropriateness of the corporate culture for strategic planning are both enabling. In addition, more than half of them found the evaluation done by SPO and the MoF sufficient for determining the quality of their strategic plan and performance program.

Administration Group 2 of Question Group 7:

The administrations in the group 2 in 7, the ones find strategic planning process relatively slightly difficult, have the following significant properties.

For approximately 82% of them, both preparation process for strategic planning is comprehensive enough to ensure the success of their strategic planning studies and strategic planning process is appropriate.

Similarly, the effects of the support of top management and the number of personnel in their strategic planning team are both enabling for strategic planning process of 82% of them. The same is true for the effects of the support of top management and political ownership.

#### Administration Group 3 of Question Group 7:

The administrations in the group 3 in 7, the ones find strategic planning process relatively harder, have the following significant property: Participation level in the strategic planning team and participation of the personnel of the organization to the process are both enabling factors for 50% of them.

#### Administration Group 1 of Question Group 9:

The administrations in the group 1 in 9, the ones find performance programming process relatively easy, have the following significant properties.

For 80% of them, the effects of the qualifications and the knowledge of the study team of the organization related to performance programming process are both enabling. On the other hand, for more than half of them, the effects of (the absence of) cost accounting and the absence of a classification for programs in the analytical budget classification are both disabling.

For half of them, the effects of the Guidebook for Preparation of Performance Programs, the events organized by the MoF and the feedback given by the MoF related to the performance program are all enabling.

On the other hand, 67% of them found the evaluation done by SPO and the MoF insufficient for determining the quality of their strategic plan and performance program.

#### Administration Group 2 of Question Group 9:

The administrations in the group 2 in 9, the ones find performance programming process relatively hard, have the following significant properties.

For half of them, the effects of the medium term program and medium term fiscal plan on performance programming process are both enabling; whereas they are disabling factors for 37.5%.

On the other hand, the effects of the events organized by the MoF, the feedback given by the MoF related to the performance program and counseling support received from the MoF tend to move together and to be equally distributed between alternatives. That is, they are both enabling for 33.3% of them, both disabling for other 33.3% and both are ineffective in the rest.

#### Administration Group 3 of Question Group 9:

The administrations in the group 3 in 9, the ones that find performance programming process relatively harder, have the following significant properties.

For 62.5% of them, the effects of the qualifications and the knowledge of the study team of the organization related to performance programming process are enabling.

For almost all of them, the effects of the development plan and the medium term program on performance programming process are both enabling.

On the other hand, the evaluations done by SPO and the MoF are both insufficient for determining the quality of strategic plan and performance program of almost all of them.

#### **7.10. Analysis of Open-Ended Questions**

Question 21 in the questionnaire is set apart for administrations to express additional comments, if any. In addition, information obtained via interviews conducted with seven Strategy Development Units and with two administrations having incomplete strategic plans is also included in this analysis. In total, 23 administrations denoted their opinions, which were subjected to analysis to examine patterns and trends<sup>35</sup>.

The most frequently stated comments are that consultancy and guidance provided by the SPO and the MoF are inadequate (by 8 and 10 administrations, respectively). Approximately one-fourth of the respondents spoke about the fact that performance programs do not direct budgets; instead budgets determine performance

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<sup>35</sup> More than one-third of respondents explained how they filled the questionnaire or why they did not answer some.

programs; which implies unrealistic programming and budgeting. That the support of top management of administrations is important in performance budgeting is also often expressed. Moreover, the ambiguity in methodology related to some steps of performance programming, the weakness of the coordination between the SPO and the MoF, and the difficulty in alignment of spending units to the process are also stated by some participants. A few respondents commented on the weakly mentioned link between strategic plans and performance programs in regulations, the importance of human resources management for performance budgeting, the need for organizational change in SDUs, for sanctions in the system and for an updated Law on TCA, the inappropriate timeliness of DEPs and the insufficiency in technological infrastructure.

## CHAPTER 8

### ANALYSIS OF THE PERFORMANCE BUDGETING SYSTEM IN TURKEY

Current situation of the performance budgeting system in Turkey is analyzed in this part. It is designed in such a way that the theoretical background is explained in the first part of each section following by the related regulations in Turkey, where available. Afterwards, situation is described based on the analysis of the questionnaires, investigation of the regulatory documents related to the performance budgeting system and investigation of administrative practices.<sup>36</sup>

Current situation of the performance budgeting system in Turkey can be investigated and described under the following areas: (i) legislation, (ii) methodology, (iii) coordination, (iv) consultancy, (v) ownership, (vi) implementation and (vii) administrative factors. Another area classification can be made in terms of the tools used in the performance budgeting system; namely, (i) strategic plans, (ii) performance programs, (iii) budgets, (iv) activity reports and (v) other tools. Hence, the situation is presented under cross-classifications, if possible.

The chapter is concluded by a problem definition for the performance budgeting system.

#### 8.1. General Assessment

Andrews (2006) made an assessment of progress in performance based reform in some countries and some US states by means of “dimensions reflecting those used by the Government Performance Project in assessing ‘Managing for Results’ capacities in US states (Maxwell, 2003)”. Dimensions he used are (i) existence of performance-based plans, (ii) existence of performance informed budgets, (iii) evidence of performance monitoring and reporting and (iv) evidence that performance

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<sup>36</sup> The references to the questionnaire and interviews are stated in parenthesis, where necessary.

information is used to make allocation and managerial decisions and for budgetary oversight. He made evaluations using a 3-level scale consisting of high progress (H), modest progress (M) or low progress (L).

Similar assessment was made in this study for the progress in performance based reform in Turkey. Since the reform is relatively new and some administrations are at the very beginning of the process, the assessment was made considering the administrations that are fully integrated into the process. Moreover, the findings of the questionnaire and interview I#3 and ‘Public Financial Management Performance Benchmarking Study’ (World Bank 2009) were used, when necessary. Level of progress for each dimension and explanations are shown in Table 9. Therefore, it can be stated that the level of progress is, at best, modest in Turkey.

## **8.2. Legislation**

Analysis for the legislation on performance budgeting in Turkey essentially includes assessment of the By-Laws on the performance budgeting tools. In addition, the Law on Civil Servants and the Law on the Turkish Court of Accounts were also studied considering their complementary role in the system.

### **8.2.1. Legislation Related to Strategic Plans**

The By-Law on the Procedures and Bases for Strategic Planning is assessed in this part.

#### Description of Strategic Planning:

The description of strategic planning given in the By-Law is clear and understandable for 86.5% of the respondents of the questionnaire (Question 6.A.1)<sup>37</sup>, which implies a good starting point for the process.

#### Strategic Planning Calendar:

Strategic planning calendar for administrations that specifies the due date for the publication of strategic plans were prepared based on the information obtained by the Strategic Management Survey<sup>38</sup> (Question 7 of I#3).

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<sup>37</sup> Respondents of the questionnaire will be referred as “participants” or “administrations” in this chapter. In addition, the references given in paranthesis is, by default, for the questionnaire. If they are for the questions used in the interviews, it is explicitly stated.

**Table 9: Assessment of performance-based reform progress in Turkey**

Dimension	Progress in Dimension	Explanations	
		Regulated Case	Actual Case
Existence of performance-based plans	M	23 general budget administrations are required to publish performance programs.*	23 administrations have performance programs (performance-based plans) that are linked to budgets. Yet, there are difficulties making performance programs results-based and there are differences in the quality of programs.
		The other administrations are required to submit their proposals and drafts together with budgets.	Not all of the administrations submitted their performance program proposals to the MoF together with their budgets.
Evidence of performance monitoring and reporting	M	Administrations are required to monitor performance against goals and targets specified in their performance programs and report on it in their accountability reports.	Accountability reports related to the first performance programs could only be prepared by 6 administrations.**
		Performance audits should be performed by the TCA.	Performance information is successfully included in these reports. Performance of administrations can not be audited by TCA yet.
Existence of performance informed budgets	M**	Accountability reports should be submitted to the MoF, the SPO and the TGNA for budget negotiations.	Accountability reports are submitted to the related administrations; yet, they are not considered in budget negotiations.
Evidence that performance information is used to make allocation and managerial decisions and for budgetary oversight	L	Performance programs should be considered in the budget negotiations held in the MoF and the SPO. Accountability reports should be considered by the commissions of the TGNA.	Performance information is not used for budget allocations. There is no evidence whether it is used for managerial decisions.

\* As of December 2009, according to the strategic planning calendar specified in the By-Law on the Procedures and Bases for Strategic Planning.

\*\* The reason is that performance programs of other 17 administrations are for the year 2009 and accountability reports for 2009 are not published yet.

\*\*\* It may not be right to assess the progress in this dimension since it is relatively new. Yet, if it is assessed, the progress should be denoted as 'modest'.

<sup>38</sup> Strategic Management Survey, which was done in 2006 by the SPO, is available in the web site: <http://www.sp.gov.tr/belgeler.html>

Start date to strategic planning; that is the calendar, is appropriate for 91.9% of participants (Question 6.A.2). Besides, approximately 50% of administrations sent their strategic plan to the SPO in time (Question 1 of I#3). However, both administrations under I#2 interview expressed the inappropriateness of the calendar as one of the strongest negative factors for strategic planning (Question 6.C.3 of I#2). Nonetheless, it can be stated that classification of administrations for incremental implementation of strategic planning is proper and well-designed.

#### Strategic Planning Basics:

Preparation process for strategic planning described in the By-Law is comprehensive enough to ensure the success of strategic planning studies of 86.5% of participants (Question 6.A.3). However, both administrations under I#2 interview did not endorse this statement (Question 6.C.4 of I#2).

Strategic planning process described has some deficiencies compared to the generally accepted principles and approaches in the literature, which may disable the proper preparation of strategic plans.

It is stated in the By-Law that strategic plans of administrations are prepared consistent with the development plan, medium term program and other related national, regional and sector-specific plan and programs. That is, top-down planning approach is envisaged. However, it is thought by 50% of the participants that how the strategic plans will be linked to the development plan and programs has not been clearly stated in the By-Law (Question 6.A.7), which is relatively high. This shortage includes the risk of the development of plans that are disconnected to higher level policies and programs.

Moreover, it is stated that interaction of administrations should be considered in the preparation of strategic plans. However, it is not clearly stated that the administrations should investigate the strategic plans or further planning documents of other administrations, especially the ones having the similar activities and responsibilities. Indeed, 69.4% of the participants think that how inter-administrative interactions will be considered in the preparation of strategic plans has not been clearly stated in the By-Law (Question 6.A.8), which is unexpectedly high. This deficiency includes the risk of the development of almost same plans as well as coincident and even adverse ones.

In addition, there is no common thought that relation of strategic plans to performance programs has been clearly stated in the By-Law (Question 6.A.10). This may disable administrations to consider performance programming element of the system while developing strategic plans.

#### Evaluation of Strategic Plans:

It is stated in the By-Law that the strategic plans are evaluated by the SPO in terms of (i) the conformance to the development plans, program and other related documents, (ii) the conformance to the procedures and bases stated in the related regulations, especially in the By-Law, (iii) conceptual consistency within the components of the strategic plans; namely, mission, vision, objectives and targets, and (iv) the consistency with the strategic plans of the other administrations. In this context, a set of questions were prepared by the SPO for the evaluation of strategic plans, details of which will be handled in the part for “Methodology Related to Strategic Plans”. However, 50% of the participants think that the points related to how strategic plans will be assessed by the SPO are not clear (Question 6.A.6), which can be seen as a problem from the perspective of transparency.

Despite the abovementioned evaluations of the By-Law, it should be stated that it is evaluated as an enabling factor for strategic planning process by 82.8% of participants (Question 8.C.5). However, the By-Law had no effect on the strategic planning process carried out by 14.3% and a negative effect on that of 2.9% (Question 8.C.5), which are important indicators for the regulation quality of the By-Law. In addition, both administrations under I#2 interview stated the inadequacy of the By-Law as an important reason for incomplete plans (Question 6.C.1 of I#2).

#### **8.2.2. Legislation Related to Performance Programs**

The By-Law on the Preparation of Performance Programs of Public Administrations is assessed in this part.

#### Revision of the By-Law on the Preparation of Performance Programs:

The By-Law on the Preparation of Performance Programs of Public Administrations (first version) was published in the Official Gazette in July 2008. However, it was revised only after a year by the related amendment By-Law, which was published in the Official Gazette in July 2009 and the second version is obtained.

Main differences between the first and the second versions of the By-Law are summarized in Table 10.<sup>39</sup>

**Table 10: Main differences between the first and the second versions of the By-Law on the Preparation of Performance Programs of Public Administrations**

Area considered	Statement / regulation in the first version of the By-Law	Statement / regulation in the second version of the By-Law
Program period	Budget year and the following two years	Budget year (one year)
Departmental performance programs (D-PP)	D-PPs are prepared by each spending unit	There is no statement related to D-PPs. That is, spending units are not liable to prepare D-PPs.
Definitions	Includes activity and project differentiation	There is a definition for only 'activity'
Submission date of performance programs to the MoF and the SPO	The 15 <sup>th</sup> of February	The 15 <sup>th</sup> of March

From the perspective of performance based budgeting tried to be implemented in Turkey, budgets should be prepared in line with performance programs. In the new system, since performance programs are prepared covering one year, only the resource requirement and appropriations of the budget year can be determined according to performance programs, if possible. The budgets of the remaining two years are to be forecasted by other methods and most probably ignoring the relation to performance programs. That is, the medium-term approach may apply neither to financial aspect of budget preparation nor to a performance aspect. Therefore, the regulation that makes performance programs cover only the budget year can be said to be abhorrent to the multi-year budgeting approach. Furthermore, 78.6% of administrations can or do not already make realistic estimates for their administrative budget appropriations for the next 2 years in the framework of the multi-year budgeting approach (Question 20.18). Hence, the second version can not enable the situation to be better.

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<sup>39</sup> Both the first and the second versions of the By-Law have similar regulations in many aspects. Therefore, the questions covered in the questionnaire and their interpretations are still valid. On the other hand, revised regulations are also evaluated from the perspective of whether they provide solutions to the problems or not.

#### Description of Performance Programming:

The description of performance program given in the By-Law is clear and understandable to 66.7% of participants (Question 6.B.1). Yet; that the definition is unclear for one-third should not be disregarded.

#### Performance Programming Basics:

Only 52.8% of participants think that how strategic plans and performance programs will be linked has been clearly stated in the By-Law (Question 6.B.2). This includes the possibility of the development of programs that are not properly and perfectly connected to strategic plans.

Moreover, appropriations are allocated quarterly by the MoF. However, there is neither a suggestion nor arrangement to take this practice into consideration in the performance planning process or vice versa.

#### Evaluation of Performance Programs:

It is stated in the By-Law that performance programs are evaluated by the MoF in terms of the standards as well as procedures and the bases. In this context, the MoF developed an evaluation list. However, dissimilar to the evaluation process for strategic plans, the questions for assessment of performance programs are not published<sup>40</sup>. Yet; lack of transparency in this context may imply a lack of a possible guidance for administrations in performance programming process.

Additionally, it is stated in the same regulation that performance programs are evaluated in the budget negotiations held with the MoF and the SPO. However, the level of consideration is not expressed explicitly, which may prevent performance budgeting system being fully anticipated by administrations.

Another important point is that the By-Law is evaluated as a positive factor for performance programming process only by 48.2% of participants. It had no effect on the process carried out by 24.1% and a negative effect on that of 27.7%, which are significant indicators for the regulation quality of the By-Law (Question 10.C.4)<sup>41</sup>.

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<sup>40</sup> The list could not be obtained from the MoF either. Therefore, no related question could be put in the questionnaire.

<sup>41</sup> In fact, based on the correlations it can be stated that the effects of the By-Law and the Guidebook on performance programming process tend to move together.

### **8.2.3. Legislation Related to Budgets**

The public budgeting process, more definitely the preparation and approval process of central government budget law, is defined in the PFMC Law. The assessment of the whole budgeting process is beyond the scope of this study. However, general evaluations are presented considering the relationship between budgets and performance programs.

#### Budget Calendar:

According to the budget schedule specified in the PFMC Law, administrations are given a month of period July 1 – July 31 to prepare their budget proposals (provided that the budget documents are published on time). However, publication dates of budget documents, shown in Table 11, reveal that there are deviations in some parts of the formal budget calendar. Year 2009 may be considered as an exception. Nonetheless, administrations generally have a limited time, less than a month, to prepare proposals.

In this context, it is important to specify publication dates of the By-Law on the Preparation of Performance Programs of Public Administrations and the Guidebook for Preparation of Performance Programs. As can be seen in Table 11, in 2008, the By-Law was presented after the publication of Medium Term Fiscal Plan and Budget Call. It is even after the formal submission date of budget proposals and during the actual administrative budget preparation process. On the other hand, the Guidebook was made public before the By-Law. Yet, it can be posited that there was limited time for administrations to investigate and understand the regulation and to put it into practice. However, the effect of this case on the performance programming process of administrations is not apparent.

#### Budget Preparation Process:

Budget proposals of administrations are prepared and sent to the MoF. Investment budgets, on the other hand, are prepared separately from the other budget items and also sent to the SPO for revision. This twofold structure disables well-organized resource allocation since “it does not encourage line ministries to make trade-offs between recurrent spending and investment and to review the recurrent costs of investment projects” (SIGMA 2008).

**Table 11: Publication dates of some budget documents**

Budget Document	Budget Calendar *	Publication Date in the Official Gazette			
		2006	2007	2008	2009
Medium Term Program	End May	13.06.2006	21.06.2007	28.06.2008	16.09.2009
Medium Term Fiscal Plan	June 15	15.07.2006	03.07.2007	08.07.2008	18.09.2009
Budget Call and Budget Preparation Guide	End June	15.07.2006	03.07.2007	08.07.2008	18.09.2009
Investment Call and Investment Program Preparation Guide	End June	20.07.2006	05.07.2007	16.07.2008	18.09.2009 **
By-Law on the Preparation of Performance Programs of Public Administrations	-	-	-	05.08.2008	15.07.2009 ***
Guidebook for Preparation of Performance Programs	-	-	-	17.07.2008	21.05.2009 ****

\* Refers to the specified date in the annual budget schedule in the PFMC Law.

\*\* Investment proposals of administrations were demanded by an official correspondence on 30.07.2009. On 15.07.2009, a circular was published in the Official Gazette to demand revised investment proposals according to Medium Term Program, Medium Term Fiscal Plan and Investment Program Preparation Guide.

\*\*\* Refers to the publication date of the amendment By-Law for performance programs.

\*\*\*\* Refers to the publication date of the draft form of the Guidebook for Preparation of Performance Programs.

Source: <http://rega.basbakanlik.gov.tr>

It also leads to inefficiencies in budgeting, which may be justified by the fact that 76.7% of administrations believe that there are repeated processes leading to loss of time in the budgeting process from the preparation of the Medium Term Program to the publication of the Budget Law in the Official Gazette (Question 20.17).

#### Budget Approval Process:

According to the best practices for budget transparency (OECD 2002); draft budget should be submitted to Parliament at the latest three months prior to the start of the fiscal year so as to allow Parliament reasonable period of time to review it properly. In Turkey, however, the Parliament has formally 75 days to review and approve the budget, the first 55 days of which is for the Plan and Budget Committee to review and revise budget proposals and the remaining 20 days of which is for the Assembly to deliberate the text of CGB Draft Law. That is to say, budget approval

period is less than the accepted best practice, which may disable the Parliament to investigate all budget and budget-related documents; namely, strategic plans, performance programs and accountability reports, properly. In addition to limited time, the workload of the Committee may also disable proper analysis of performance budgeting documents (Öner 2008).

From the perspective of budget amounts, the change in budget appropriations during the negotiations held in the Parliament may differ. In fact, among 30 administrations within the target audience of the questionnaire, budgets for year 2009 of 18 were approved without any change, those of 10 were decreased and those of 2 were increased (Question 5). Therefore, it can be stated that the authorization of the Plan and Budget Committee and the Parliament on budgets is actively used.

#### Analytical Budget Classification:

Analytical budget classification is compatible with ESA'95 (European System of Integrated Economic Accounts)<sup>42</sup>. Functional classification is consistent with United Nations-Classification of the Functions of Government (COFOG) and economical classification is consistent with 2001 Government Finance Statistics Manual (GFSM)<sup>43</sup>. Budgets are produced according to this classification. However, programs can not be specified separately in the classification.

That program classification is not utilized in the analytical budget classification system is also a problem for administrations, and has a negative effect of performance programming process of 54.2% (Question 10.C.13).

One result of this situation is that cost of any program, project or activity can not be specified under a single item in the budget; instead, it is split as salaries, training, etc. The other, even more serious, problem is that it is not possible to specify program, project or activity that the expenditures belong to. It does not allow administrations to relate their planned or actual expenditures and programs within the analytical budget classification. Actually, 22.2% of administrations can not link their expenditures to their performance targets at all, whereas 48.2% can partially link and 29.6% can totally link (Question 18). Besides, 61.5% of the administrations think that

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<sup>42</sup> <http://ebutce.bumko.gov.tr/proje/ABS/absgiris.htm>

<sup>43</sup> The manual can be accessed via <http://www.imf.org/external/pubs/ft/gfs/manual/index.htm>

analytical budget classification needs to be changed to enable the appropriate expression of the cost of the activities (Question 20.11).

From the perspective of public information, the MoF informs public about where taxes are spent on in the website of General Directorate of Budget and Fiscal Control<sup>44</sup>. The expenditures are presented according to the first-level economic and functional codes of analytical budget classification. However, it gives limited information. For instance, one can see what percent of the budget was spent on education; yet, she/he can not see directly what were achieved in education sector using the budget. This is due to the lack of the ability to specify outcomes or programs in analytical budget classification. Moreover, the abovementioned imperfection may also disable the Turkish Court of Accounts to determine and audit the expenditures according to programs.

#### Budget Transfers:

The opportunity for budget transfers and its effect of realistic preparation of budgets are also important issues to consider. The flexibility to transfer budget appropriations prevents realistic preparation of budget appropriation proposals of spending units of 55.6% of participants and total administrative budget appropriation proposals of 44.4% (Questions 20.12 and 20.13)<sup>45</sup>. Although, such flexibility is crucial for possible changes in the needs within the execution year, the abovementioned shortcoming should not be disregarded.

#### Detailed Expenditure Programs:

From the execution side of budgets; detailed expenditure programs, according to which appropriations can be used, should reflect the portions of performance programs. However, the publish time of DEPs, shown in Table 12, disables full implementation of programs. Besides, 78.6% of participants favor finalization of DEPs before the beginning of the fiscal year (Question 20.14).

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<sup>44</sup> The website can be accessed via <http://www.bumko.gov.tr/TR/Genel/BelgeGoster.aspx?F6E10F8892433CFFA79D6F5E6C1B43FF9BCFDA0A07D3F364>

<sup>45</sup> Indeed, based on the correlations shown in Table 3 in Chapter 7, it can be stated that the opinions related to whether the flexibility to transfer budget appropriations prevents realistic preparation of budget appropriation proposals of spending units and administrations tend to move together.

**Table 12: Publication dates of the "Communiqué of Budget Execution" related to detailed expenditure programs**

Year	Publication Date of the "Communiqué of Budget Execution" in the Official Gazette	
	Call for Preparation of DEPs	Announcement of Approved DEPs
2009	08.01.2009	07.02.2009
2008	11.01.2008	21.02.2008
2007	24.01.2007	01.03.2007
2006	07.02.2006	26.02.2006

Source: <http://rega.basbakanlik.gov.tr>

Separation of Performance Programs and Budgets:

Performance programs and budgets are prepared and submitted to the related administrations as separate documents. Therefore, appropriations are expressed via two different classifications. On one hand, appropriations are presented under cost of activities, appropriations to be transferred to other administrations and general management expenditures in performance programs. On the other hand, analytical budget classification via which line items are expressed is used in budget proposals.

This separation, however, implies a conflict. Regulation for performance budgeting requires administrations to identify goals, targets, programs, activities and costs of those via unit costs of activities, whereas analytical budget classification does not enable allocation of appropriations to individual programs, which made it difficult to calculate program costs or relate appropriations directly to programs or targets. That is, performance program structure is aligned around result-based perspective, while budgets could not harmonize with this structure.

In fact, 90% of participants think that performance program and budget should be prepared as a single document (Question 20.10).

**8.2.4. Legislation Related to Accountability Reports**

The By-Law on the Preparation of Accountability Reports of Public Administrations is assessed in this part.

Accountability Reporting Basics:

The By-Law on the Preparation of Accountability Reports of Public Administrations is strong in the sense that it gives (i) a clear and understandable

definition of accountability report (Question 6.C.1) and (ii) comprehensive reporting principles related to accountability reporting (Question 6.C.3).

Link between Performance Programming and Accountability Reporting:

That the legislation for the accountability reports does not include any information about how the performance results should be reported may be seen as an absence. Although the Guidebook for Performance Programs includes directive tables for presenting data, there is no table template in the Law on the Preparation of Accountability Reports for reporting performance data. In fact, only 55.6% of the participants think that how performance programs and accountability reports will be linked has been clearly stated in the By-Law (Question 6.C.2), which is an unacceptably low ratio. This includes the risk of the development of reports that are not properly and completely connected to performance programs, which may also imply a lack of accountability.

In practice, five of six administrations, which are liable to report on achieved performance as compared to their performance programs, successfully represented required information, which is a satisfactory level. However, there is no common format for performance reporting parts of the reports, which makes finding core information slightly difficult.

Possible reason for this situation is that the By-Law on the Preparation of Accountability Reports of Public Administrations was published before the By-Law on the Preparation of Performance Programs of Public Administrations, which resulted in an inconsistency between the two regulations.

For example; the definition of performance program is different in the two By-Laws. Moreover, although the performance programs that are prepared according to the first versions of the By-Law and the Guidebook cover the three-year period, the accountability reports, in which the commitments of performance programs are reported, are prepared yearly and include the information of the previous year only. This inconsistency seems to be solved by the second versions of the mentioned regulations according to which performance programs are prepared covering the budget year only. However, as mentioned before, this regulation is abhorrent to the multi-year perspective for budgeting.

### **8.2.5. Other Legislation**

Development plan, medium term program and medium term fiscal plan have a positive effect on strategic planning and performance programming processes of administrations. Nonetheless, it does not imply that administrations can successfully link their performance budgeting documents to these national level policies. Other regulations related to performance budgeting are discussed below.

#### Personnel Regime:

Performance budgeting system should be supported by the complementary regulations, especially the ones about the personnel regime. This is because the performance budgeting system ideally includes the management of the personnel performance. Indeed, 70% of participants think that individual performance evaluation system should be created on the basis of performance programs (Question 20.15).

The legislation for personnel or human resources management for public sector in Turkey is the Law on Civil Servants No 657. However, the regulations are not sufficient to complete each other and to enable reaching the ideal system. From the budgeting perspective, personnel expenditures and expenditures to social security institutions constitute 22.46% of the total general budget<sup>46</sup>. However, administrations can have little, if any, flexibility and saving on these expenditures; which is a result of the personnel regime. In fact, some administrations under survey also mentioned the importance of and need for a human resources management for performance budgeting system.

#### Audit Mechanism:

Audit mechanism is a complementary tool for performance budgeting system. It includes external audits performed by the Turkish Court of Accounts (TCA) and internal audits performed by internal auditors of the administrations.

TCA is responsible for performing three types of audits; namely, financial audit, compliance audit and performance audits<sup>47</sup>. Performance audit task of the TCA is also mentioned in the Article 41 of the PFMC Law, named accountability reports.

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<sup>46</sup> Based on the initial appropriations represented in the Appendix Report of the General Conformity Report of Year 2008 prepared by the Turkish Court of Accounts.

<sup>47</sup> Performance audits became a legal mandate of the TCA in 1996. It was regulated as an additional article named “efficiency and effectiveness assessment” in the Law on TCA.

According to this article, accountability reports of administrations are sent to the TCA, which then submits them to the Parliament together with opinions formed based on external audits.

63% of participants think that audits done by the TCA will contribute to performance improvement of their administration (Question 20.6). In addition, both administrations under I#2 interview shared this view (Question 7.3 of I#2). However, there are some deficiencies in the Law on the TCA. For instance, performance audits are not stated in the Law as an audit process, but as an assessment, implying that it may not be a periodic procedure. Due to some problems including the mentioned one, a new law on external audit was prepared in order to improve the legislation and submitted to the Presidency of the TGNA in February 2005<sup>48</sup>. However, it has not yet been adopted by the Parliament. Moreover, there is no legal arrangement related to how the problems and findings in the reports of the Turkish Court of Accounts are dealt with and how they are binding.

Although internal control mechanism is relatively new in Turkey, 88.5% of the participants think that it will contribute to increasing the performance of their administration (Question 20.7), which is a good indicator. In addition, both administrations under I#2 interview shared this view (Question 7.4 of I#2).

### **8.3. Methodology**

Analysis for the performance budgeting methodology fundamentally includes assessment of the Strategic Planning Guidebook and the Guidebook for Preparation of Performance Programs. In addition, budgeting and accountability reporting methodology is assessed considering the related documents and the practices.

#### **8.3.1. Methodology Related to Strategic Plans**

##### Effectiveness of the Guidebook:

The Strategic Planning Guidebook is the main source to be used in the public strategic planning process.

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<sup>48</sup> The Law Proposal on TCA defines (i) audits of the TCA as regularity and performance audits, (ii) performance audits as assessment of economic and efficient use of resources and effectiveness of activities in achieving administrative objectives, considering good governance principles of public administrations, within the responsibility of accountability.

It has a positive effect on the development of strategic plans of 83.3% of administrations (Question 8.C.6)<sup>49</sup>.

Nonetheless, information on the Guidebook is sufficient to meet the information need of only 62.2% of administrations (Question 6.A.4), despite the fact that strategic planning process described in the Guidebook is appropriate for 86.5% of administrations (Question 6.A.5). In addition, information on the Guidebook is not enough to meet the information need of one administration under I#2 interview (Question 6.C.2 of I#2) and both found strategic planning process described in the Guidebook inappropriate (Question 6.C.5 of I#2).

The process is explained in terms of the steps and order in the Guidebook. However, there are some deficiencies where some important points are ignored compared to the generally accepted principles, which are stated below.

#### Link between Strategic Plans and Higher -Level Policy Documents:

The Guidebook does not provide any information about how strategic plans will be linked to the development plan and programs or how inter-administrative interactions will be considered in the preparation of strategic plans. Therefore, the mentioned issues are unclear for 50% and 69.4% of administrations, respectively. As stated before, there is a risk of the development of plans that are disconnected to higher level policies and programs. In practice, in their strategic plans, 13 administrations emphasized the relation of it with the ninth development plan<sup>50</sup>.

#### Properties of the Items of Strategic Plans:

It is stated in the Guidebook that administrations should determine at least one goal and at least one objective related to each goal. However, there is no guidance about the limit of the number of the objectives, targets and performance indicators, which may be a potential cause for administrations to produce too many items to manage. That is, “if there are too many targets, information overload is the result, thereby making it impossible to prioritize targets and blurring the focus” (Ginnerup et al. 2007). On the other hand, the ideal number of indicators for an outcome is the

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<sup>49</sup> In addition, based on the correlations presented in Table 3 in Chapter 7, the effects of the By-Law and the Guidebook on strategic planning process tend to move together.

<sup>50</sup> As of 08.12.2009, among 29 administrations, strategic plans of which were published.

minimum number that reveals whether the outcome has been achieved (Kusek and Rist 2004). Some quantitative data for the core items of strategic plans of administrations are presented in Table 13. Although the average number of goals determined by administrations is about eight, which can be an acceptable number, the range reveals that there are administrations that have tens of goals. At this point, it is important to note that number of goals in the strategic plan was a facilitator for the process of administrations under survey, if it is less than or equal to ten. Number of objectives and indicators, on the other hand, are relatively high and may cause some complications in performance programming process.

**Table 13: Quantitative data for elements of strategic plans**

	Theme	Goal	Objective	Indicator
Number of Administrations that Determined the Element *	11	29	28	25
Range for the Number of Element Determined by Administrations *	3 - 10	2 - 32	2 - 131	2 - 227
Average Number for Element Determined by Administrations *	4.78	7.72	34.89	71.96

\* As of 08.12.2009, among 29 administrations, strategic plans of which were published.

On the other hand, since progress needs to be monitored at all levels of the system to obtain feedback on success areas and improvement needs, indicators should be determined for inputs, activities, outputs, outcomes, and goals (Kusek and Rist 2004). However, it is stated in the Guidebook that indicators are developed for objectives when objectives are themselves immeasurable. In the Guidebook for Preparation of Performance Programs, on the other hand, there is no additional information or guidance on this issue. Therefore, administrations are not informed for the requirement of determining indicators for the remaining elements, especially for the goals and outcomes. Due to this misguidance, 16 administrations specified indicators only for objectives in their strategic plans, whereas 3 did only for goals, 4 did only for activities or strategies<sup>51</sup>. Indicators were determined for goals and objectives by only one administration. Similarly only one administration determined

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<sup>51</sup> As of 08.12.2009, among 29 administrations, strategic plans of which were published.

indicators for all elements its strategic plan. There is no evidence that any other administration did so.

Another point to be considered is the core properties of indicators. Performance indicators should be SMART; that is, specific, measurable, attainable, result-oriented and time bounded (Noman 2008). Besides, they should also be CREAM; that is, clear, relevant, economic, adequate, and monitorable (Kusek and Rist 2004). Furthermore, Arnold (2008) specified additional properties to be satisfied that are, controllability, meaningfulness, and consistency and repeatability of measurements. The SMART rule is stated in the Guidebook; yet, the others are not. This situation may imply that complete guidance may not be provided for this area.

The risk assessment and evaluation should be executed and included so as to complete the strategic planning process. However, it is not stated in the Guidebook.

Furthermore, main parts of strategic plans are stated in the Guidebook as (i) brief situation analysis, (ii) explanation related to how participation is accomplished, (iii) mission, vision, core values, (iv) at least one goal, (v) at least one objective related to each goal, (vi) measurement criteria if objectives are not measurable, (vii) strategies, and (viii) five-year estimated cost table including all goals and objectives. The problem here is that the contents are the minimum requirements and there is no limit for additional information, which may cause administrations to put unnecessary and non-strategic items into the plans, and to produce thick plans. Indeed, it is pointed out by the MoF-Directorate General of Budget and Fiscal Control that strategic plans of administrations are so detailed that there remain almost nothing to put into performance programs and hence, preparing performance programs according to the plans become meaningless (Question 4 of I#4).

#### Link between the Elements of Strategic Plans:

It is stated that the SWOT analysis<sup>52</sup> can be used in the development of strategies and possible cases were given, which provides a sufficient guidance.

It is important to note that completing all of the activities and outputs does not necessarily mean the desired outcomes are achieved (Kusek and Rist 2004). In more broad terms, achieving a set of elements may or may not provide accomplishment of higher level elements. Therefore, some crosschecks should be made in order to

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<sup>52</sup> SWOT analysis includes the analysis of strengths and the weaknesses of an administration as well as the opportunities and threats that it can face with.

provide that (i) objectives are collectively sufficient to reach to the related goals, (ii) targets are together sufficient to reach to the related objectives, (iii) targets are achieved when the related activities are completed, and (iv) the indicators sufficiently represent the improvement in the related element. However, only the third crosscheck is stated in the Guidebook. The risk resulted from this deficiency is that strategic plans that are incomplete and imperfect, and more seriously, inadequate to achieve what the administration plans to achieve may be produced.

Link between Strategic Planning and Performance Programming:

Although 62.2% of participants think that costs of the activities should be determined in the preparation process of strategic plans (Question 6.A.9), it would be better to be done in performance programming process following the determination of the activities. Otherwise, there would not be any specific progress remaining for performance programming. This point was also supported by the Directorate General of Budget and Fiscal Control (Question 4 of I#4).

In addition, there is no common thought whether relation of strategic plans to performance programs has been clearly stated in the Guidebook (Question 6.A.10).

**8.3.2. Methodology Related to Performance Programs**

The general outline for the preparation of performance programs is constructed in the Guidebook for Preparation of Performance Programs.

Revision of the Guidebook for Preparation of Performance Programs:

Correlated to the By-Law, the Guidebook for Preparation of Performance Programs was revised and the second version was published in July 2009. Main differences between the first and the second versions are summarized in Table 14. Both the first and the second versions of the Guidebook have similar regulations in many aspects. Therefore, the questions covered in the questionnaire and their interpretations are still valid. On the other hand, revised regulations are also evaluated from the perspective of whether they provide solutions to the problems or not.

**Table 14: Main differences between the first and the second versions of the Guidebook for the Preparation of Performance Programs**

<b>Area considered</b>	<b>Statement / regulation in the first version of the Guidebook</b>	<b>Statement / regulation in the second version of the Guidebook</b>
Cost of activities and analytical budget classification	Costs of activities are determined in terms of the fourth level of economical classification. *	Costs of activities are determined in terms of the first level of economical classification.
Classification of appropriations	Appropriations are classified as (direct) cost of activities, fixed costs (expenditures to be distributed to performance targets on administrative level) and appropriations to be transferred.	Appropriations are classified as cost of activities, general administrative expenditures and appropriations to be transferred.

\* Although, table for cost of the activities presented in the Guidebook is in terms of the first level, table filled in the e-bütçe system was in terms of the fourth level.

Effectiveness of the Guidebook:

Information on the Guidebook is enough to meet the information need of only 25% of participants (Question 6.B.4). In addition, the Guidebook has no effect on the performance programming process of 13.8% of administrations, whereas it affects the process positively for only 55.2% of administrations, and negatively for 31% (Question 10.C.5). Therefore, it can be stated that effectiveness of the Guidebook is poor.

Moreover, performance programming process described in the first version of the Guidebook is not appropriate for 52.8% of administrations (Question 6.B.3). The process is simplified by the second version due to the removal of departmental performance programs, which may possibly lead the abovementioned percentage to be slightly higher for the evaluation of the second version.

Link between Strategic Plans and Performance Programs:

There exists a methodological ambiguity about how strategic plans are converted into performance programs. The Guidebook includes the answers for what is to be done, but not for how it can be done. The most important absence is that the method that can be used for prioritizing the objectives of strategic plans to determine the ones to be performed within performance programs. Indeed, only 52.8% of participants think that how strategic plans and performance programs will be linked has been clearly stated in the Guidebook (Question 6.B.2). It can be stated that,

originated from strategic plans, performance programs produced under the given condition will possibly not include a proper logic.

Performance Programming Process:

A single target value is expected for each indicator. However, a target is not required to be a single numerical value and can be defined as a range in some cases (Kusek and Rist 2004), which could be an enabling factor especially for the preparation of first performance programs.

What is more, feasibility analysis should be used for the determination and selection of activities. Yet, it is not mentioned in the Guidebook, which most probably causes administrations not to perform the analysis. In practice; among 24 administrations, 11 did not perform feasibility analysis in performance programming process (Question 9.9).

It is stated in the Guidebook that the costing of the activities should be in the basis of the analytical budget classification. However, statement about how costs will be classified according to the analytical budget classification is not clear for 71.4% of participants (Question 6.B.6). Nevertheless, the requirement that costs be expressed according to the analytical budget classification is a positive factor for the performance programming process of 64.3% of administrations; whereas it is a negative factor for 21.4% and an unbiased one for 14.3% (Question 10.C.12). Therefore, it can be stated that analytical budget classification may disable some administrations to link performance programs to budget allocations.

It is stated in the second version of the Guidebook that appropriations can be presented under cost of activities, appropriations to be transferred to other administrations and general administrative expenditures in performance programs. This methodology is more alike to flexible budgeting, by which budget is based on fixed and variable costs (Finney 1993). In this context, it is denoted that the expenditures that serve to more than one activity and/or to administrative needs, yet can not be included in the cost of any activity can be handled as general management expenditures. This flexibility may discourage calculation of real costs of activities. What is worse, it disables making proper comparisons between activity alternatives, such as the one between use of internal resources and outsourcing.

#### Update of Performance Programs:

Performance programs have to be revised if a change occurs in the budget appropriations during the budgeting process. However, the methodology that can be used in these steps is left to the administrations. 61.8% of participants stated that how performance programs will be updated has not been clearly stated in the Guidebook (Question 6.B.7). In practice; among 15 administrations that faced with a budget change after the budget negotiations done with the MoF and the SPO, 5 updated both budget appropriations and the targets and their resource requirements in performance program, 8 updated only the budget appropriations without changing targets and their resource requirements, and 2 did not revise their performance program (Question 15). Among 15 administrations whose budget was changed after the budget negotiations done in the TGNA, the numbers for the abovementioned update types are 1, 7 and 2, respectively (Question 16).

#### **8.3.3. Methodology Related to Budgets**

Both the regulatory documents related to budgets and the practices of the MoF and the SPO are assessed in this part.

#### Budget Ceilings:

Budget ceilings for the administrations are represented in the Medium Term Fiscal Plan. These ceiling are strict in the sense that administrations can not exceed these in their budget proposals. Nevertheless, they can propose additional budget needs in a separate form. That is, budget ceilings have a binding role in the determination of the real (approved) budget.

These ceilings are generally determined based on the appropriations enclosed in the Budget Law of the previous year and the ceilings enclosed in the Medium Term Fiscal Plan of the previous year. The problem in this procedure is that strategic plans or performance programs of the administrations and their resource requirements have a slightly little effect; whereas performances of administrations in previous years are not considered at all. (Question 7 of I#4) These are important indicators that the system in Turkey is, at least for now, presentational performance budgeting.

Besides, 66.7% of administrations stated the way of determination of the budget appropriation ceilings of their organization as a negative factor for

performance programming process, whereas only 18.5% evaluated it positive (Question 10.C.14).

#### The Link between Strategic Plans, Performance Programs and Budgets:

The link between strategic plans, performance programs and budgets has a vital importance. Finney (1993) stated that “the budget must be prepared in the proper strategic context, firmly within the framework of the objectives, strategies, and plans of the company” as one of the requirements for effective budgeting and adds that a summary strategy statement should be included in budgets.

According to the related regulation in Turkey, budgets should include a form where the legal responsibilities, the administrative goals and objectives under the responsibility of the unit and the activities to be carried on in the budget year are stated. Therefore, it can be stated that the infrastructure is ready for implementation.

The link in practice has two sides, namely, the consideration of strategic plans and performance programs by the administration in determining their budget proposals and by the regulatory and authorized bodies in budget negotiations. However, how these linkages can be provided is clear neither in the Guidebooks nor in the Budget Call.

In the first side of the relation, only 30.8% of administrations determined and prepared the budget proposals of the spending units of their organization considering their strategic plan and performance program; yet based on experience. 23.1% determined them in line with the overall resource requirements of the performance targets and the activities of the departments. In total, strategic plans and performance programs are used by 53.9% of administrations for budgeting. On the other hand, 23.1% multiplied appropriation amounts of the previous year by a certain growth rate to obtain the proposals for the current year. Alternatively, 19.2% determined the amounts considering the expenditures of the previous year. One administration, on the other hand, used the ceilings in the Medium Term Fiscal Plan (Question 12).

Put it another way, the method of determining and preparing budget proposals of organizations also varies. Only 11.5% of administrations determined proposals in line with the overall resource requirement of the performance targets of their performance program. The majority, 76.9%, determined it based on the budget ceilings specified in the Medium Term Fiscal Plan. One administration stated that they proposed appropriations more than the actual need considering the possible cut in the

budget negotiations. Alternatively, proposals of 7.7% (2 administrations) were the multiplied appropriation amounts of the previous year by a certain growth rate (Question 13).

Therefore, there is no common budgeting methodology used by the administrations. Furthermore, approximately one-third of the respondents of the questionnaire spoke about the fact that performance programs do not direct budgets; instead budgets determine performance programs; which implies unrealistic or undervalued programming (Question 21).

The other side of the link, the consideration of strategic plans and performance programs by the regulatory and authorized bodies in budget negotiations, is assessed in the next part.

#### Budget Negotiations:

In Turkey, approval by the MoF is required for budget appropriations to be presented in the CGB Draft Law. That is, the MoF has an authorization to make changes on budget proposals. The SPO, on the other hand, is authorized for investment appropriations.

Some sort of an administrative expertise system is utilized in the MoF. Public Budget Experts are charged with a duty of conducting budget-related functions of an administration. In other words, each administration has assigned with a Budget Expert. As performance budgeting system was put into practice, Budget Experts become also responsible for performance programming functions of administrations. The expertise system is beneficial in the sense that serious expertise can be achieved on administrative bases. However, expertise could not be obtained for performance programming yet.

Moreover, there are no written rules or procedures to guide the budget negotiations between the administrations and the MoF and/or the SPO. Moreover, the reasons of budget cuts are not clear. As an extreme case, the MoF has an authorization to change and did change amounts allocated by an administration to budget items of fourth-level economic code without changing the total amount of the second-level economic code item so much (Question 21). This practice, however, most probably belies the actual need or plan of administrations. Consequently, such changes in actual budget allocations may weaken the willingness and ability of administrations to produce and execute realistic budgets.

Furthermore, strategic plans and performance programs of the administrations have little, if any, effect in the determination of the budgets in the budget negotiations held in the MoF, SPO or TGNA (Questions 14.1-14.6)<sup>53</sup>.

Consequently, the impact of the MoF on the administrative budgets is a negative factor for performance programming process for 55.2% of administrations, and a positive factor for only 27.6% (Question 10.C.15). Similarly, the impact of the SPO on the administrative budgets is a negative factor for 48.3% of administrations, and a positive factor for 31% (Question 10.C.16)<sup>54</sup>. That is, the changes in budget amounts of administrations made by the MoF and the SPO disable most of the performance programming processes.

#### Detailed Expenditure Programs:

Performance programs should be considered in the preparation of the detailed expenditure programs (DEPs), since they are monthly plans for expenditure. However, 24% partially, 16% mostly and only 4% of administrations (1 administration) completely considered performance program in the preparation of DEP. That is, in total, 44% of administrations took performance programs into account while preparing DEPs, whereas 56% did not (Question 17).

On the other hand, each month, administrations submit their expenditure forecasts for the following three months to the Treasury, Directorate General of Public Finance. Such use of these forecasts having a three-month rolling horizon property is for cash management. There is no confirmation that the MoF is informed about these forecasts. Based on the assumption that as the period gets closer, forecasts become more proper and accurate; it would be beneficial for the MoF to use the updated forecasts.

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<sup>53</sup> Based on the correlations shown in Table 3 in Chapter 7, it can be stated that the degree of the consideration of strategic plans in budget negotiations held with the MoF and the SPO tends to move together. Similarly, that of performance programs in budget negotiations held with the MoF and the SPO tends to move together. Likewise, that of accountability reports in all budget negotiations tends to move together.

<sup>54</sup> Based on the correlations shown in Table 3 in Chapter 7, it can be stated that the effects of the impacts of the MoF and the SPO on the budget of organizations tend to move together.

#### **8.3.4. Methodology Related to Accountability Reports**

There is not a guidebook for preparation of accountability reports. Therefore, the contents are described in the related By-law. However, detailed information is not provided in the By-Law. Besides, there are some methodological ambiguities.

##### Performance Reporting:

The expenditures can not be systematically linked to the activities, objectives or goals due to the lack of program classification in the analytical budget classification. Therefore, it is not possible to report the financial side of the activities in a proper and organized way. In practice, only one among six administrations, which are liable to report on achieved performance as compared to performance programs, represented financial data based on its activities and targets.

Moreover, there is no regulation related to how achieved performance should be presented in what detail in the reports, which may be assessed as a lack of guidance. In practice, both detailed quarterly performance and shallow information can be found in the reports.

##### Readability of the Reports:

Without any guidance, there may be overloads of activities, objectives and performance indicators as well as other information related to administrations in the accountability reports, which will possibly reduce the readability of them and make finding strategic information difficult.

##### Evaluation of the Reports:

Accountability reports are not evaluated by any of the concerned administrations (Questions 14.7-14.9), which imply a lack of supervision that may cause the presentation of unnecessary information as well as the absence of the required information. It may also lead to a decrease in or loss of commitment to the necessity and benefit of reports. It is also possible to state that accountability reports are not used to serve for the purpose of accountability.

### 8.3.5. Methodology for Information Systems

System related to performing, tracking, reporting and evaluating the performance programming process automatically refers to the “e-bütçe” system<sup>55</sup>. Budget and performance program proposals of the administrations are prepared via this system. It is used by all of the administrations under survey; yet, explanations and directions related to the tables to be prepared satisfy the information need of only 61.9% (Question 19.1).

Moreover, data entry can be easily made by 47.4% (Question 19.3). It became simpler in the updated version of the module, which implies that the percentage may currently be higher. Similarly, data can easily be followed by only 41.2% (Question 19.4). For instance, the data is kept under seven stages of budgeting process<sup>56</sup>. However, the track of the data can not be kept within a stage, especially in the preparation of proposals, in the system since a new entrance replaces the current one. Therefore, administrations have to construct their system if such a need exists. On the other hand, information can be copied from one step to another in the new performance programming module, which simplifies the process.

Since budgeting and performance programming are the processes that should go hand in hand, the related modules of the “e-bütçe” system should be talking to each other. However, 72.2% of participants think that data flow is not performed easily between the performance budget module and other modules (Question 19.2). Besides, data can still not be transferred between performance budgeting module and others.

In addition, there are no alerts, except the ones related to authorization, in the system. For instance, there is no mechanism to prevent administrations from demanding in excess of appropriations ceilings. Moreover, reporting process that can

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<sup>55</sup> Correlated to the revision of the By-Law on the Preparation of Performance Programs of Public Administrations, performance budgeting module of the e-bütçe system was updated. Nonetheless, both the first and the second versions of the module have similar properties in many aspects. Therefore, the questions covered in the questionnaire and their interpretations are still valid. On the other hand, revised regulations are also evaluated from the perspective of whether they provide solutions to the problems or not.

<sup>56</sup> Budget stages are (i) initial appropriations, (ii) proposal of administrations, (iii) expert opinion, (iv) draft, (v) the Planning and Budgeting Committee, (vi) Law, and (vii) net initial appropriations.

be performed by the “e-bütçe” system meets the need of 35.3% of administrations (Question 19.5), which is relatively low<sup>57</sup>.

Moreover, two thirds of the administrations that are liable to report on achieved performance as compared to performance programs mentioned the absence of and the need for a performance information system in order to properly track performance-related data in their accountability reports.

Consequently, it can be concluded that the “e-bütçe” system is not adequate as a management information system (MIS) in performance budgeting<sup>58</sup>.

#### **8.4. Coordination**

Coordination between the regulatory bodies, the MoF and the SPO, is investigated in this part. The inconsistency between the By-Laws related to performance budgeting mentioned in the previous sections is a sign of the fact that there is a lack of coordination between the regulatory bodies. Moreover, weakness of the coordination between the SPO and the MoF are also stated by some participants of the questionnaire (Question 21). Besides, 93.3% of the administrations think that possible lack of coordination between the MoF and the SPO may adversely affect the effectiveness of the performance budgeting system (Question 20.16).

#### **8.5. Guidance**

Guidance for the development of strategic planning, performance programming, budgeting and the accountability reporting is investigated in this part.

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<sup>57</sup> Indeed, based on the correlations shown in Table 3 in Chapter 7, it can be stated that the opinions related to whether data flow is performed easily between the performance budget module and other modules, whether data entry and follow can be easily made, and whether reporting process meets the need of the administration tend to move together.

<sup>58</sup> Recently, a new MIS, which is called SGB.Net and developed initially in the SDU of the MoF, was begun to be used by administrations. However, the effectiveness of the system could not be assessed.

### **8.5.1. Guidance Related to Strategic Planning**

Guidance related to strategic planning is essentially provided by the SPO, in the form of consultancy, training or evaluation. Still, administrations may need and receive guidance from consultancy organizations, advisors or outside consultants.

#### Guidance by the SPO:

In practice, 23% of the participants stated that they did not receive consultancy support from the SPO (Question 8.C.10). The administrations that demanded support from the SPO needed it especially in the form of (i) training for the strategic planning method to be followed, and (ii) medium-term consultancy where an expert from the SPO is assisting them during the process (Question 4 of I#3). Yet, almost none of the demands could be met by the SPO. Among the administrations who received support in other areas than the abovementioned ones, only 25.9% evaluated it as a positive effect on their strategic planning process, whereas 48.2% sees it as a factor of no-effect. What is worse is that consultancy support received negatively affected strategic planning process of 25.9%. (Question 8.C.10) In addition, the inadequacy of the consultancy support is one of the strongest reasons for incomplete strategic plans (Question 6.C.7 of I#2). Therefore, it can be concluded that the consultancy support given by the SPO was not sufficient to meet the needs and to strengthen the strategic planning process of administrations under survey.

Events organized by the SPO can also be considered within the guidance concept. Yet; it can be stated that training, workshops, seminars, etc. arranged for strategic planning did not help administrations much. They have a negative effect on strategic planning process for 32.4% of administrations, no effect for 50% and a positive effect for only 17.6% (Question 8.C.8). In addition, the inadequacy of the events is one of the strongest reasons for incomplete strategic plans (Question 6.C.6 of I#2). Therefore, it can be stated that the quality of the events is poor to guide administrations.

Related to the evaluation of strategic plans; a set of questions were prepared by the SPO, which are presented in Table 15. The questions are also ordered of precedence by the SPO in some way during the evaluations; yet, there is no systematic prioritization (Question 5.2 of I#3). Moreover, the evaluation list developed by the SPO to assess strategic plans does not include all relevant items so as to provide the quality of the plans.

**Table 15: Set of questions for evaluation of strategic plans**

<b>Evaluation Area</b>	<b>Questions *</b>
Consistency with National Programs	Is the plan consistent with legal priorities and topics?
Current Situation Analysis	Does the administration follow up / monitor external factors?
	Are activities minimizing or improving potential effects of external factors defined?
	Does the administration follow up / monitor internal factors?
	Which of the internal factors can affect the success of strategic goals? Does corporate culture need to be changed?
Stakeholder Analysis	Which organizations or who are the essential stakeholders, why? Were the opinions of them taken and reflected to the plan?
	Among the personnel of the administration, who were participated in the development of the plan?
	Do all heads of departments participated?
	What type of communication strategy with the personnel and managers for related to priorities and decisions will the administration employ?
Mission, Vision, Goals and Objectives	Is the mission result-oriented? Does it serve for a public need?
	Are there any activities of the administrations not defined/covered in the plan?
	How the mission of the administration was differentiated from similar missions?
	Do the goals include main functions and activities of the administration?
	Do the goal logically related to the mission?
	Are the goals result-oriented or output-oriented?
(Internal) Consistency	If the objectives could not be defined as numerical or measurable, were they defined to enable evaluating whether they are achieved or not?
	Does the plan have a logical integrity?
	Do the components of the plan consistent with each other?
	Does the plan reflect the coordination with other implementing organizations?
Other	Do the plans of other organizations aim to achieve similar strategic goals or include similar functions and activities?
	Does the plan include time-dimensional, reliable, useful and consistent fiscal information?
	Is there a calendar for evaluation? What is the scope and methodology of evaluation?

\* Questions used by the SPO for evaluation of strategic plans are presented in Turkish in the web site: <http://www.sp.gov.tr/degerlendirme.html>.

In fact, 64.3% of the administrations think that the evaluation done by the SPO is not sufficient for determining the quality of the strategic plan of their administration (Question 20.8), whereas both administrations under I#2 interview think the opposite (Question 7.5 of I#2). Nonetheless, transparency in this context may be seen as a helpful guidance for administrations in strategic planning process.

The procedure of the evaluations begins with the review of the plan by the related sector experts of the SPO. Afterwards, it is investigated by a junior SPO expert and an SPO expert working in the Directorate General of Economic Models and Strategic Research. Results of the assessments are then reported to all administrations (Question 2 of I#3). That is, administrations are informed about how well they performed, which is praiseworthy.

Moreover, whether the feedback given is taken into account by the administrations is also followed by the SPO. A specific result about the status of an administration is obtained based on its level of consideration of the feedback. It can be one of the followings: (i) green, when all feedback was considered and reflected to the plan, (ii) yellow, when some points stressed by the SPO were considered in the update of the plan, and (iii) red, when none of the criticism was considered by the administration.

However, feedback given by the SPO related to strategic plans based on the abovementioned evaluations has a positive effect on strategic planning process of only 59.4% of administrations, a negative effect on 21.9%, and no effect on 18.75% (Question 8.C.9). This implies that the value of contents of feedback is not appreciated much by administrations although the way of providing it is proper.

In addition, one of the most frequently stated comments by administrations is that consultancy and guidance provided by the SPO is inadequate (Question 21).

#### Guidance by the Consulting Firms or Outside Consultants:

Strategic planning teams of 12 administrations include consulting firms or outside consultants (Question 4.9). 25 administrations denoted that support was received from consulting firms or consultants, 11 of which received full consultancy by including them in strategic planning teams. Consultancy support affected strategic planning process positively for 56% and negatively for only 8%, whereas it has no effect for 36% (Question 8.C.11). In addition, consultancy support has no significant effect on incomplete plans (Question 6.C.8 of I#2). Therefore, it can be concluded that the quality of guidance and its effect varies.

#### **8.5.2. Guidance Related to Performance Programming**

Guidance related to performance programming is essentially provided by the MoF, in the form of consultancy, training or evaluation. Still, administrations may

need and receive guidance from consultancy organizations, advisors or outside consultants.

#### Guidance by the MoF:

In practice, 24% of participants stated that they did not receive consultancy support from the MoF. Among the ones who received support, 40.9% evaluated it as a positive factor on their performance programming process, whereas 31.8% saw it as a factor of no-effect. Moreover, consultancy support received negatively affected the process of 27.3%. Therefore, it can be concluded that the consultancy support given by the MoF was not sufficient to meet the needs and strengthen the performance programming process of administrations. (Question 10.C.8)

Events organized by the MoF can also be considered within the guidance for performance programming. Yet; it can be stated that the level of assistance provided by training, workshops, seminars, etc. is not sufficient. They are disabling on performance programming process for 33.3% of administrations, no effect for 22.2% and a positive effect for 44.4% (Question 10.C.6).

Similar to the evaluation list for strategic plans, an evaluation list was developed by the MoF for performance programs<sup>59</sup>. Budget expertise system utilized by the MoF under the absence of a coordination unit implies a decentralized structure. Hence, performance budgeting practices may be different for different experts and hence for different administrations. Consequently, it is not guaranteed that evaluation list is systematically used. In fact, 70.4% of participants think that the evaluation done by the MoF is not sufficient for determining the quality of the performance program of their administration (Question 20.9).

Additionally, feedback given by the MoF related to performance programs based on the mentioned evaluations has a disabling effect on performance programming process of 40.9% of administrations, a positive effect on only 27.2%, and no effect on 31.8% (Question 10.C.7). This implies that the value of contents of feedback is not sufficient to guide administrations.

In addition, one of the most frequently stated comments is that consultancy and guidance provided by the MoF is inadequate (Question 21).

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<sup>59</sup> The list could not be obtained from the MoF either. Therefore, no related comment could be put forward.

#### Guidance by the Consulting Firms or Outside Consultants:

17 administrations denoted that support was received from consulting firms or outside consultants. Consultancy support affected performance programming process positively for 41.2% and negatively for 29.4%, whereas it has no effect for 29.4% (Question 10.C.9). Therefore, it can be concluded that the effectiveness of consultancy support varies.

#### **8.5.3. Guidance Related to Budgets and Accountability Reports**

Since budgeting is a technical process in a sense without integration of performance program, less guidance may be needed. Besides, budget expertise system utilized by the MoF enables dealing with administrations one by one.

On the other hand, there is not a systematic way to report performance on accountability reports yet. Hence, neither training programs are organized nor reports are evaluated by the MoF. Therefore, guidance related to them can not be assessed.

#### **8.6. Ownership**

The essential factor establishing ownership is the commitment to the performance budgeting system believing its benefits. 70.4% of participants think that performance-based budgeting system will contribute to performance improvement of their organization (Question 20.5), which is a satisfactory proportion. In addition, one administration under I#2 interview shared this view (Question 7.2 of I#2). It is beneficial to assess ownership concept for the parts of the system as well.

#### **8.6.1. Ownership Related to Strategic Planning**

The level of participation in strategic planning process is closely linked to the level of ownership. Kusek and Rist (2004) specified the necessity as follows:

Setting goals in isolation leads to a lack of ownership on the part of the main internal and external stakeholders. Likewise, when choosing outcomes, it is crucial to build a participatory and consultative process involving the stakeholders. The participatory process should start with the development of goals and continue with setting outcomes and building an indicator system.

Involving key stakeholders in process in a participatory manner enables providing commitment for the achievement of the desired outcomes (Kusek and Rist 2004), whereas lack of ownership especially by internal stakeholders most probably disables the implementation of plans and programs.

Particularly the head of the administration should be involved in the strategic planning process and even should be the head of the strategic planning team or committee (Özçam 2007). That the support of top management of administrations is important in performance budgeting is often expressed by respondents of the questionnaire (Question 21).

A structure for enabling ownership and support of ministers and heads of administrations for strategic planning exists in the legislation. The points in the By-Law on the Procedures and Bases for Strategic Planning relating to the ownership are as follows: (i) the heads of the administrations are responsible to the concerned ministers for preparation and implementation of strategic plans, (ii) ministers are responsible for preparation and implementation of the concerned strategic plans in accordance with the development plans and programs, and (iii) strategic plan of an administration is approved by the concerned minister before it is sent to the SOP and the MoF. These seem to be also effective in implementation.

When the role of the ministers in strategic planning process is investigated, it can be seen that their supervision could only be obtained in 4 administrations, where the minister is a member of strategic planning team (Question 4.1). In addition to these 4 administrations, political ownership was provided in other 30 administrations. Among those 34 administrations; 58.9% evaluated political ownership as a positive factor, 17.6% as a negative factor and 23.5% as a factor of no-effect for strategic planning process (Question 8.C.7).

Level of participation by the top management in strategic planning teams interpreted as the ownership by top management and classified according to the structure of teams as no ownership, average ownership, good ownership and excellent ownership, properties of which are presented in Table 45 in Appendix E. According to the logic formed; 36.1% had no ownership by the top management, whereas, 19.4% had average, 2.8% (1 administration) had good and 41.7% had excellent ownership (Question 4). Moreover, support of top management has a positive effect on strategic planning process for 83.8% of administrations (Question 8.A.1). Bivariate analysis, shown in Appendix F, reveals that 85% of administrations having no ownership also evaluated support of top management as a positive factor, which implies that support should not necessary be in the form of a membership in the strategic planning team. On the other hand, participation by top management in strategic planning teams almost always provides a positive effect.

It is also important to note that two of the factors stated among the strong reasons for incomplete plans are that strategic planning is not assessed as beneficial by the top management of administrations and that the support of top management for strategic planning process is insufficient (Questions 6.A.1 and 6.A.2).

What is also important for the proper implementation of strategic plans is to provide the ownership of the personnel of administrations. The need of a participatory approach is stated in the PFMC Law as "... public administrations shall prepare strategic plans in a cooperative manner". It is also mentioned in the Strategic Planning Guidebook. Level of participation in the strategic planning team can be classified according to the structure of teams as no participation, poor participation, average participation, good participation and excellent participation, properties of which are presented in Table 46 in Appendix E.

According to the logic constructed, all administrations achieved at least poor participation. More specifically; 2.8% of administrations (1 administration) had poor, 13.9% had average, 30.6% had good and 52.8% had excellent participation (Question 4). In addition, among 24 administrations that have a provincial organization, 13 provided the participation of their personnel in the strategic planning process (Question 3). That is; ownership of personnel seems to be obtained in the proper sense. Moreover, participation of the personnel to the strategic planning practice has an enabling effect on the process in 70.3% of administrations (Question 8.A.6). Bivariate analysis, shown in Appendix F, reveals that as the participation level in strategic planning team improves, its effect on the process tends to get more positive. Nonetheless, it is important to note that participation of personnel may be obtained in the form of seeking their views via meetings, questionnaires, workshops, etc.

Moreover; according to the PFMC Law, strategic plans shall be taken into consideration in the budget negotiations in the Parliament. Although, this statement enables political ownership and strategic plans to be effective in performance budgeting system, it is not the case in practice. 75% of participants stated that their strategic plans are not taken into consideration at all in the budget negotiations held in the Parliament (Question 14.3).

### **8.6.2. Ownership Related to Performance Programs**

Ownership is also a crucial factor in performance programming<sup>60</sup>. From the perspective of political ownership, performance programs of 77.3% of administrations are not considered at all in the budget negotiations held in the TGNA or in the Planning and Budget Committee (Question 14.6).

On the other hand, support of top management is an enabling factor for the development of performance programs of 67.9% of administrations (Question 10.A.1). Moreover, participation of the personnel to the performance programming practice has an enabling effect on the process in only 51.8% of administrations and no effect in 18.5% (Question 10.A.6). Therefore, it can be concluded that ownership could be properly obtained in performance programming process for some organizations.

### **8.6.3. Ownership Related to Activity Reports**

Political ownership for activity reports is also important in the sense that it provides supervision and control over the performance budgeting system. However, activity reports of 75% of administrations are not taken into consideration at all in the budget negotiations held in the TGNA (Question 14.9). That is, accountability reports are not audited or discussed by the TGNA.

## **8.7. Execution of Performance Budgeting Steps**

The fact that some administrations are unable to complete the performance budgeting documents in due time is a sign of problematic situation. For instance, among 17 administrations, strategic plans of which should cover period of 2010-2014 and should be made public latest in January 2009, only 6 published their plans<sup>61</sup>. Besides, approximately 50% of administrations sent their strategic plans to the SPO in time (Question 1 of I#3). Moreover, the degree of difficulty faced in the development of strategic plans and performance programs and whether administrations performed required steps are also important indicators for the quality of implementation of performance budgeting system.

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<sup>60</sup> Since forming a team is not mentioned in the related By-Law or Guidebook, the structure of such a team was not questioned in the survey. Despite the absence of such information, the effect of performance programming work teams was investigated.

<sup>61</sup> As of 30.12.2009.

### 8.7.1. Development of Strategic Plans

The difficulty experienced by the administrations in the steps of the development of strategic plans varies. Determining stakeholders, vision, mission and core values of the organizations are evaluated as easy steps for more than half of the participants (Questions 7.1, 7.3, 7.4 and 7.5). However, doing SWOT analysis (Question 7.2), determining strategic priorities, goals and objectives (Questions 7.6, 7.7 and 7.8)<sup>62</sup>, linking goals and objectives (Question 7.9) and forming the strategies (Question 7.11) are the steps which are slightly hard for the administrations. On the other hand, determining performance indicators (Question 7.10) is a very hard step, in fact the hardest step to perform.

There are some steps that are or can not be performed by majority of the administrations. 50% of administrations performed feasibility analysis (Question 7.12), and only 33.3% did risk assessment (Question 7.14) with a high degree of difficulty. These can be evaluated as inadequate ratios. Similarly, recording the information on strategic plans to e-bütçe system is performed by only 45% of administrations, yet with almost no difficulty (Question 7.15). Moreover, 68.5% of administrations determined the costs of their objectives, and faced an average degree of difficulty (Question 7.13).

It is also important to note that 83% of administrations investigated international best practices, more than half of which found it beneficial (Question 8.C.12). In addition, 81% of them also investigated strategic plans of equivalent foreign organizations and more than half of them benefited from it (Question 8.C.13)<sup>63</sup>. These values imply intensive efforts. On the other hand, one administration under I#2 interview found the lack of such investigation as a negative factor for its strategic planning process (Questions 6.C.9 and 6.C.10 of I#2).

As mentioned before, strategic plans are evaluated by the SPO. The main topics criticized by the SPO, by order of frequency of occurrence, are (i) current situation analysis, (ii) objectives, (iii) costing of activities, (iv) strategies, (v)

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<sup>62</sup> Based on the correlations shown in Table 3 in Chapter 7, it can be stated that difficulty levels of determining the strategic priorities, goals and objectives tend to increase/decrease together.

<sup>63</sup> In addition, based on the correlations shown in Table 3 in Chapter 7, it can be stated that the effects of the international strategic planning best practices and strategic plans of foreign equivalent administrations tend to move together.

performance indicators, (vi) mission and vision, and (vii) the link of strategic plans to the development plan (Question 3 of I#3). Moreover, strategic plans are also criticized by the MoF as they include so many and detailed items that they cross the frontier of performance programs (Question 4 of I#4).

Therefore, it can be concluded that necessary steps for strategic planning process could not be performed by administrations properly. Inadequate performance in these steps, unfortunately and most probably, disables production of performance programs of high quality.

### **8.7.2. Development of Performance Programs**

All stages of performance programming process are slightly or very difficult for administrations. Almost half of the administrations found determining the objectives that will be given priority in the program period among the ones in the strategic plan slightly hard to perform (Question 9.1).

Similarly, administrative performance targets are determined slightly hardly (Question 9.2), whereas administrative performance indicators are determined more hardly (Question 9.3)<sup>64</sup>. Administrations found determining the spending units related to the administrative performance targets slightly hard to perform (Question 9.4).

On the other hand, departmental performance targets and indicators are determined with more than average degree of difficulty (Question 9.5 and 9.6)<sup>65</sup>.

Administrations found determining the activities slightly hard to perform (Question 9.7). Besides, one administration did not determine activities or projects in the context of performance program (Question 11). Moreover, only 54% of administrations performed feasibility analysis and faced with high degree of difficulty (Question 9.9).

Administrations evaluated determining the costs of the activities as a hard task (Question 9.10)<sup>66</sup>. Besides, the technique used in this stage varies. 11.5% of

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<sup>64</sup> In addition, based on the correlations shown in Table 3 in Chapter 7, it can be stated that difficulty levels of determining the administrative performance targets and performance indicators tend to increase/decrease together.

<sup>65</sup> In addition, based on the correlations shown in Table 3 in Chapter 7, it can be stated that difficulty levels of determining the departmental performance targets and performance indicators tend to increase/decrease together.

administrations determined the cost of all activities by activity-based costing technique, whereas 38.5% used it for some activities (Question 11)<sup>67</sup>. 34.6%, on the other hand, distributed appropriations to the activities by rule of thumb, 11.5% did not determine the costs and 1 administration did not determine activities at all.

As part of efforts to costing process, expressing the costs of the activities according to the analytical budget classification (Question 9.11), and determining the costs of the departmental and administrative performance targets (Question 9.12 and 9.13) are relatively hard stages for the administrations. Nevertheless, determining the costs of the administrative goals is evaluated as easy, slightly hard or very hard by almost equal number of administrations (Question 9.14).

93% of administrations prioritized their activities in the performance program. Yet, it aroused as one of the hardest stages of the performance programming process (Question 9.8). Only 55.6% of administrations recorded the information on their performance program to the “e-bütçe” system, which is evaluated as a slightly hard process (Question 9.15).

It is also important to note that 75% of administrations investigated international best practices, more than half of which evaluated it as a factor of no effect and only 24% found it beneficial (Question 10.C.10). In addition, 74% of them also investigated performance programs of equivalent foreign organizations and only 25% of them benefited from it (Question 10.C.11)<sup>68</sup>. These values imply intensive efforts; yet they do not have expected effects on the process.

As mentioned before, performance programs are evaluated by the MoF. The main topics criticized by the MoF are (i) link between strategic plans and performance programs, (ii) performance targets, (iii) performance indicators, (iv) activities, (v) costing and (vi) conformance of the contents to the Guidebook (Question 4 of I#4).

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<sup>66</sup> In addition, based on the correlations shown in Table 3 in Chapter 7, it can be stated that difficulty levels of costing of activities and representing them according to the analytical budget classification tend to increase/decrease together.

<sup>67</sup> Activity based costing is a cost management technique by which all costs can be directly related to the products or services and all activities can be related to outputs (Finney 1993).

<sup>68</sup> In addition, based on the correlations shown in Table 3 in Chapter 7, it can be stated that the effects of the international performance programming best practices and performance programs of foreign equivalent administrations tend to move together.

Therefore, it can be concluded that these are the steps that could not be performed by administrations appropriately. Inadequate performance in these steps, unfortunately and most probably, disables production of performance based budgets of high quality and may misdirect the proper performance reporting.

## **8.8. Factors Affecting Performance Budgeting Process**

The effects of some administrative factors on the implementation of performance budgeting system are investigated in this part.

### **8.8.1. Administrative Factors Affecting Development of Strategic Plans**

The level of concept of benefits of strategic plans printed in the mind of administrations is high. 93.8% of the participants (Question 20.1) and both participants of I#2 interview evaluated preparation of strategic plan as useful for their administrations.

However, corporate culture was appropriate for and had a helpful effect on strategic planning process of only 56.7% of administrations (Question 8.A.7). Moreover, one of the factors stated among the strong reasons for incomplete plans is the inappropriateness of corporate culture for strategic planning (Question 6.A.3 of I#2). Therefore, it can be concluded that cultural change required for strategic management and performance budgeting has not yet been achieved by more than half of the administrations.

It is also important to emphasize that the inappropriateness of authorization, duties and responsibilities of administrations for strategic planning is a serious reason for unfinished plans (Question 6.A.4 of I#2).

Some enabling factors are the support of top management for 83.8% of administrations (Question 8.A.1), the qualifications of top management for 91.2% (Question 8.A.2) and participation of personnel to the process for 70.3% (Question 8.A.6). However, one of the serious reasons for incomplete plans is that participation of the personnel to strategic planning process is insufficient (Questions 6.A.9 of I#2).

Strategic planning team of organizations plays a vital role in the process. One of the factors affecting development of strategic plans is the qualifications and capacity of the team. Although strategic planning is relatively new concept in Turkey, knowledge of strategic planning team of 89.2% of administrations related to the strategic planning has a positive effect on the process (Question 8.A.3). Similarly,

qualifications of the strategic planning team positively affected the process in 91.7% of administrations (Question 8.A.4). The size of strategic planning team is another indicator that should be assessed with their qualifications. Number of personnel in strategic planning teams positively affected the process of 83.8% (Question 8.A.5). Therefore, it can be stated that administrations under survey formed their strategic planning teams appropriately.

On the other hand, both administrations under I#2 interview stated the insufficient knowledge of strategic planning team related to the process as a strong disabling factor (Question 6.A.5 of I#2). In addition, one stated the insufficiency of the qualifications of its team as another factor (Question 6.A.6 of I#2). Yet, number of personnel participated in their teams was not significant factors (Questions 6.A.7 and 6.A.8 of I#2). Consequently, there are some problems related to strategic planning teams of administrations under I#2 interview, negatively affecting the process.

Having the coordination duty of the process, strategy development units (SDUs) has a crucial importance. Qualifications of the personnel of the departments positively affected the process in 91.43% (Question 8.B.1). On the other hand, number of the personnel of the departments had an enabling effect only for 56.7%, and no effect for 16.2% (Question 8.B.2). Routine business of the departments negatively affected the process in 54.1% (Question 8.B.3). The effect of organizational structure of the departments is positive for 58.3%, negative for 25%, and neutral for 16.7% (Question 8.B.4). For administrations under I#2 survey, the most important reason for incomplete plans is the insufficient number of personnel of SDUs; whereas the qualifications of the personnel and routine business of the SDUs are insignificant factors (Questions 6.B.1-4 of I#2). Therefore, it can be stated that there are some organizational problems related to SDUs that disables the success of the process.

Moreover, 86.5% of administrations have technological opportunities that enabled their strategic planning practice (Question 8.A.8). Fiscal resources, on the other hand, had a positive effect in fewer (67.5% of) administrations (Question 8.A.9). Data capacity is also an important factor for administrations and had a positive effect in 70.3% (Question 8.A.10). Moreover, in one administration under I#2 survey, technological opportunities and data capacity are insufficient for strategic planning (Questions 6.A.10 and 6.A.12 of I#2). On the other hand, inadequacy of fiscal resources is insignificant for both (Question 6.A.11 of I#2). Therefore, it can be

concluded that such opportunities exist in most administrations; yet they may be enhanced.

### **8.8.2. Administrative Factors Affecting Development of Performance Programs**

The level of concept of the benefits of performance programs printed in the mind of administrations is also high. Percentage of participants evaluating the preparation of performance program useful for them is 85.2% (Questions 20.2). It can be stated that performance programs are not fully assimilated and accredited as much as strategic plans yet.

Study team of the organizations worked in performance programming process has a fundamental role in the process. One of the factors affecting development of performance programs is the qualifications and capacity of the team. Knowledge of teams of 71.4% of administrations related to the performance programming has an enabling effect on the process (Question 10.A.3). Similarly, qualifications of the team positively affected the process in 71.4% of administrations (Question 10.A.4). Number of personnel in teams also positively affected the process of 60.7% (Question 10.A.5). Therefore, it can be stated that some administrations formed their teams properly.

Having the coordination duty, strategy development units (SDUs) are also important in performance programming process. Qualifications of the personnel of the departments positively affected the process in 82.1% (Question 10.B.1). On the other hand, number of the personnel of the departments had a positive effect only for 55.1%, and a negative effect for 37.9% (Question 10.B.2). Routine business of the departments negatively affected the process in 60.7% of administrations (Question 10.B.3). The effect of organizational structure of the departments is positive for 46.4% and negative for 42.9% (Question 10.B.4)<sup>69</sup>. Therefore, it can be expressed that there are some organizational problems related to SDUs that disables the success of the process.

Some other enabling factors for performance programming are the support and the qualifications of top management for 67.9% and 88% of administrations,

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<sup>69</sup> In addition, based on the correlations shown in Table 3 in Chapter 7, it can be stated that the effects of the knowledge of the performance programming study team related to the process and its qualifications tend to move together.

respectively (Question 10.A.1 and 10.A.2)<sup>70</sup>. Participation of personnel to the process, however, is a positive factor for only 52% (Question 10.A.6).

Forming the base for performance programs, strategic plans are essential factors for performance programming process. Participants stated that the quality of their strategic plan positively affected the process (Question 10.A.7). Additionally, if number of goals in the strategic plan is less than or equal to ten, it was a facilitator for the process; which is the case in 64.3% of administrations (Question 10.A.8).

Furthermore, activity based costing has a crucial importance in the performance programming process. However, it is not and can not be utilized by 50% of administrations, which is a negative factor on performance programming process (Question 11).

Moreover, 82.7% of administrations have technological opportunities that enabled their performance programming practice (Question 10.A.11).

However, the capacity of the administrations is not sufficient for the development, track and evaluation of performance. Required infrastructure to obtain performance data is not available in 41.4% of administrations (Question 10.A.9). This not only complicates obtaining reliable data, but also negatively affects the quality of the performance programming process.

Cost accounting, which allows the estimation of the full costs of activities and should be a tool used in performance programming, can also not be utilized in 70.8% of administrations (Question 10.A.10). This absence is also a negative factor affecting the process.

### **8.8.3. Properties Affecting Development of Activity Reports**

The level of concept of the benefits of accountability reports printed in the mind of administrations is high. Percentage of administrations evaluating the preparation of accountability report useful for them is 93.6% (Questions 20.3). That accountability reports was being prepared before administrations have a strategic plan or performance program as well may be a contributing factor for this high ratio<sup>71</sup>.

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<sup>70</sup> In addition, based on the correlations shown in Table 3 in Chapter 7, it can be stated that the effects of the support and the qualifications of top management on performance programming process tend to move together.

#### **8.8.4. Review**

Based on the correlations shown in Table 3 in Chapter 7, the following statements can be put forward.

Effects of factors related to Strategy Development Units on strategic planning and performance programming processes are highly correlated. Therefore, it can be stated that they affect strategic planning and performance programming processes in a similar way.

Likewise, effects of external factors on strategic planning and performance programming processes are highly correlated. Therefore, it can be stated that they also affect strategic planning and performance programming processes in a similar way.

##### The Effect of Administrative Properties:

The properties of an administration, such as the strategic planning period, whether it is an affiliated administration or not, whether it has a provincial organization or not, the number of its personnel, the amount of its budget, the level of participation and ownership provided in its strategic planning team, whether consultants or consulting firms participated in its strategic planning team and the adequacy of guidance it received from the SPO and the MoF, do not affect the level of adequacy of regulations assessed by administrations, the level of difficulty in the processes or the factors affecting the processes. That is, they are not dependent on those administrative factors.

##### Difficulty in Strategic Planning Process and Effective Factors:

For almost all of the administrations that found strategic planning process relatively easy, the effects of the participation of the personnel of the organization to the strategic planning process and appropriateness of the corporate culture for strategic planning are both enabling.

On the other hand, for approximately 82% of the ones that found strategic planning process relatively hard, the effects of the support of top management and the number of personnel in their strategic planning team are both enabling for strategic planning process. The same is true for the effects of the support of top management and political ownership pair.

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<sup>71</sup> Since accountability reports are not fully linked to performance programs, factors affecting accountability reporting were not questioned.

For the ones that found strategic planning process relatively harder, the only significant relationship is as follows: participation level in the strategic planning team and participation of the personnel of the organization to the process are both enabling factors for 50% of them.

#### Difficulty in Performance Programming Process and Effective Factors:

For 80% of the administrations that found performance programming process relatively easy, the effects of the qualifications and the knowledge of the study team of the organization related to performance programming process are both enabling. For half of them, the effects of the Guidebook for Preparation of Performance Programs, the events organized by the MoF and the feedback given by the MoF related to the performance program are all enabling. On the other hand, for more than half of them, the effects of the absence of cost accounting and a classification for programs in the analytical budget classification are both disabling.

For half of the administrations that found performance programming process relatively hard, the effects of the medium term program and medium term fiscal plan on performance programming process are both enabling.

For almost all of the administrations that found performance programming process relatively harder, the effects of the development plan and the medium term program on performance programming process are both enabling. In addition, for 62.5% of them, the effects of the qualifications and the knowledge of the study team of the organization related to performance programming process are enabling.

### **8.9. Problem Definition for the Performance Budgeting System**

The problems of the performance budgeting system can be summarized as inadequate and incomplete legislation, incomplete and unclear methodology, weak coordination and guidance, improper and ineffective implementation and disabling administrative and external factors. The problems are illustrated in a fishbone diagram in Figure 5. Therefore, it can be stated that performance budgeting system is not properly running and that the level of progress is lower than modest in Turkey.



## CHAPTER 9

### PROPOSED PERFORMANCE BUDGETING SYSTEM FOR PUBLIC SECTOR IN TURKEY

Based on the arguments presented in Chapter 8, it was concluded that performance budgeting system is not properly, effectively and efficiently running in Turkey. Therefore, efforts should be employed to strengthen and to improve the system.

In this chapter, proposals both in the strategic level to improve the effectiveness and in the operational level to improve efficiency of the system are presented. The reason for the former is that without proper rooting, performance budgeting system moves away from its use and benefits. The reason for the latter, on the other hand, may be specified by the following statements of Blöndal et al (2003):

“... emphasis also needs to be placed on the mechanical detail of performance and performance budgeting: obtaining the true cost of delivering services, selecting and adhering to appropriate measures, creating confidence in the measures, using performance as an aid for decision-making and using performance in the regular administrative process.”

The core elements of the proposed system can be summarized as follows: (i) strengthened national level policy documents in terms of contents and timeliness so as to provide improved guidance for administrations in the performance budgeting processes, (ii) restructured and improved performance budgeting documents (tools) in terms of period of coverage and contents, (iii) strengthened performance budgeting methodology, (iv) improved and assured quality of performance budgeting documents, (v) strengthened and clarified relationship between results and resources, (vi) clarified consequences of met and unmet commitments, (vii) strengthened coordination between the regulatory administrations and performance budgeting consultancy given to administrations by them, (viii) strengthened strategy development units, (ix) strengthened ownership and supervision by the Parliament, (x) established management information system, (xi) revised way of determination of expenditure

ceilings, (xii) revised preparation process of performance budgets, (xiii) revised budget calendar, (xiv) strengthened performance budgeting legislation so as to enable the previous proposals, and (xv) strengthened complementary legislation for performance budgeting.

### **9.1. Strengthening National Level Policy Documents**

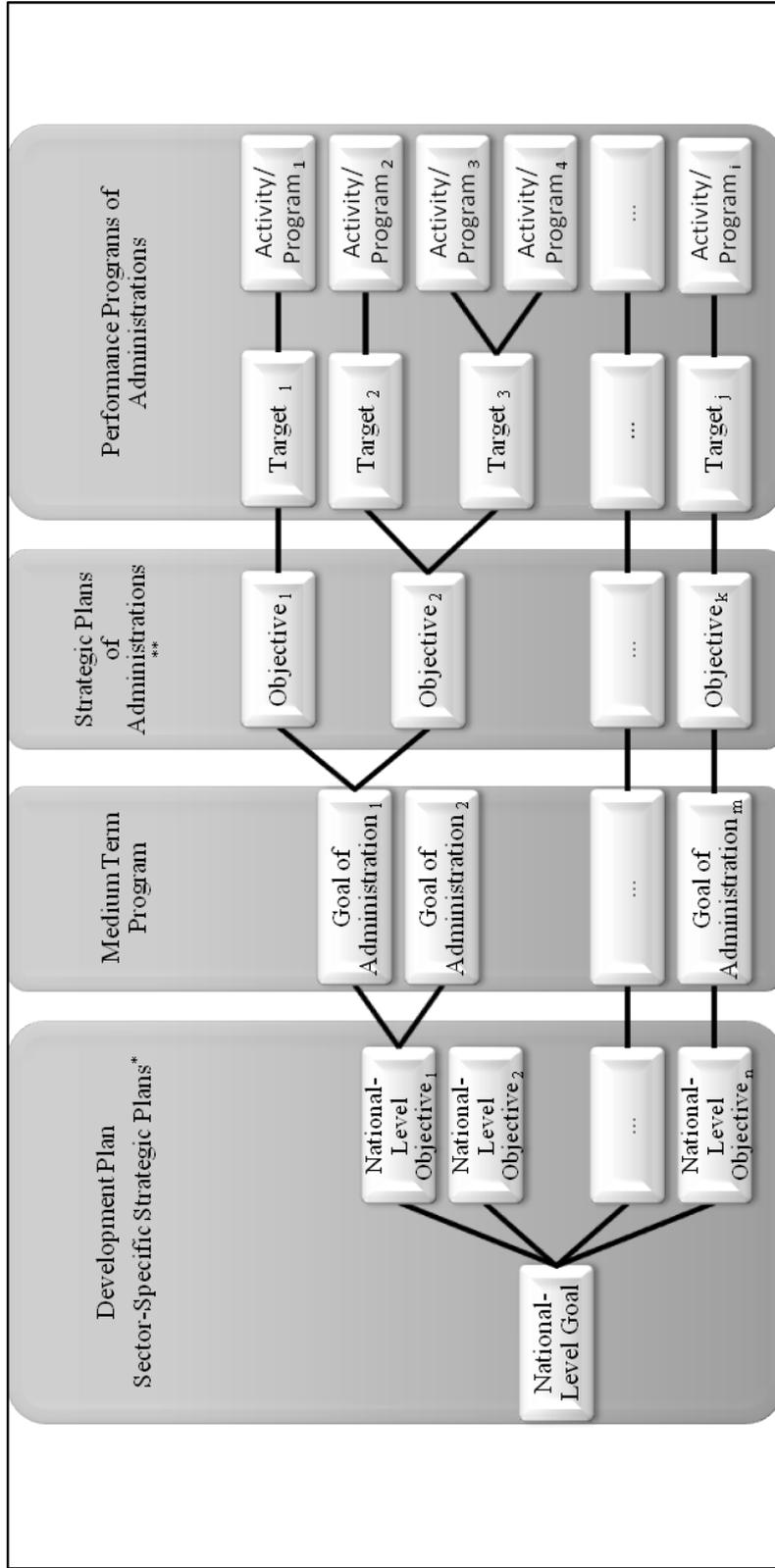
Main national level policy documents are development programs, medium term programs, medium term fiscal plans and sector-specific strategy documents. They should be organized in such a way that administrations will be able to find their responsibilities within the documents immediately. This can be achieved if national-level goals and objectives are clearly and properly stated in the documents. Moreover, some national-level indicators should be determined and published. Even a more structured system may be formed by specifying the administrations responsible for achieving goals, targets and indicators in the national level documents. Proposed system can be illustrated as in Figure 6.

By doing so, administrations will be able to see their highest level goals, which then enable them to prepare their strategic plans accordingly. Therefore, alignment of strategic plans to national policy documents can easily be obtained. In addition, if inter-administrative interactions can easily be seen in national level documents, it will also be useful for administrations.

In addition, medium-term program prepared by the SPO and medium-term fiscal plan prepared by the MoF should be combined in and published as a single document, instead of separate documents. This new document should be prepared by joint efforts of both organizations.

### **9.2. Improving Timeliness of Guidance Policy Documents**

It is crucial that Medium Term Program, Medium Term Fiscal Plan, Budget Call and Budget Preparation Guide, Investment Call and Investment Program Preparation Guide are published in time. The factors causing delays in publish of the documents should be determined and their effects should be minimized or eliminated so as to enable timely production of both these national and the administrative documents.



\* The sector-specific goals are also within the first block.

\*\* Strategic plans of administrations should also include their goals. The reason for showing administrative goals under medium term program is the recommendation that they should be determined in that step.

\*\*\* The numbers of the elements shown in the figure are illustrative.

**Figure 6: Illustration of proposed conceptual programming chain for performance budgeting**

In addition, the publish time of the higher level policy documents, especially sector specific ones, should be before the preparation of the related administrative strategic plans. This can not be achieved in the first plans. Yet, the guidance may be provided if the required sector-specific strategic plans will be ready before the preparation of the second strategic plans of administrations.

### **9.3. Restructuring Performance Budgeting Documents**

Performance budgeting documents; namely strategic plans, performance programs, budgets and accountability reports should be restructured considering their period of coverage and contents.

#### **9.3.1. Restructuring the Period of Coverage of Performance Budgeting Documents**

Performance programming process should be redesigned to cover three-year periods, which will serve for multi-year planning and budgeting approach and provide alignment with budget preparation process.

Besides, similar to a single document proposal for medium term national documents; performance programs and budgets of administrations should be prepared and published as a single document; namely, performance based budgets. Thereby, the power of the link between performance programs and budgeting can be maximized. Indeed, this suggestion was also supported by 90% of the participants of the questionnaire.

Furthermore, accountability reports should be redesigned to enable coverage of the previous years' performance. One way of doing it is to make reports cover three years. However, it causes repeated representation of performance. Instead, a section, where results achieved in the previous three years are reported comparatively, may be added to the reports. Reporting may be dated back to the beginning of the programs, targets or objectives, if needed. Thus, strategic performance information can be encapsulated.

#### **9.3.2. Restructuring the Contents of Performance Budgeting Documents**

Contents of strategic plans and performance programs should be redefined to make their boundaries clearer. It should be stated explicitly that goals, objectives, performance indicators and core strategies, which are the conceptual elements, should

form strategic plans. Targets, activities and sub-indicators, if any, on the other hand, should be determined in performance programming process and presented in performance programs. In other words, strategic plans should answer “what results administrations aim to achieve?” and “how they will measure their performance?” questions. They should deal with high level and strategic items. Performance programs, on the other hand, should respond “what administrations will do to achieve what they undertook in strategic plans?” and deal with quantitative items.

Strategic plans should be prepared considering possible revenues of the administrations in future years. However; since they serve to set priorities and to make resource allocation accordingly, they should not include detailed cost information. Therefore, costing of activities should be a task within performance programming process.

Contents of performance programs or performance-related parts of budgets should be enriched and well-expressed. First of all, the description and the aim of performance program should be made clearer for administrations.

In the communiqué related to preparation of detailed expenditure programs, stating that they should be prepared according to the activities and programs determined in performance programs will be beneficial to provide the completeness of top-down planning approach.

#### **9.4. Strengthening Performance Budgeting Methodology**

Written guidance documents for performance budgeting are guidebooks published for this purpose. In order to strengthen the guidance power, they should be enriched and updated considering the topics stated in detail below.

##### **9.4.1. Strengthening Strategic Planning and Performance Programming**

###### **Methodology**

Since there are common proposals for strategic planning and performance programming methodology, they are combined under a single topic. Proposals that are specific to one methodology are also stated at the end of this part.

###### Top-Down Planning Approach:

Top-down planning approach should be followed and stressed in the documents. For instance, in the Strategic Planning Guidebook, administrations should

be informed how they can cascade from national-level objectives. It should also be stressed in the performance programming methodology. Administrations should be guided how they can cascade from administrative goals to activities and task and how they can ensure the completeness by checking from bottom to up.

Administrations should also be informed about the use of balanced scorecard approach as a strategic management system to link strategic objectives to actions<sup>72</sup>.

#### Prioritization:

Once the hierarchy from goals to activities is established, the next step is the prioritization of elements of the hierarchy. At this point, information related to methods that can be used in prioritization of the goals and objectives in the strategic plans should be conveyed to administrations. Since there is generally more than one objective that needs to be satisfied, the methods that can be used in this process are within the multi-criteria decision making methods, some of which are Analytic Hierarchy Process, Analytic Network Process, ELECTRE, TOPSIS and PROMETHEE<sup>73</sup>.

#### Strategic Goals and Objectives:

Administrations should be informed about alternative methods to determine their strategic issues, goals and objectives; such as the direct approach, goals approach, vision of success approach, indirect approach, oval mapping approach, issue tension approach and systems analysis<sup>74</sup>. Thereby, administrations will be free to choose the best method for them.

Administrations should also be informed about the use of gap analysis, which reveals gaps by comparing desired goals with expected results under status quo, as a proper tool for strategic planning.

In addition, there should be a notification about the fact that as the number of goals and objectives in strategic plans increases, the workload faced with in the

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<sup>72</sup> Information about the balanced scorecard is provided in Appendix G.

<sup>73</sup> Detailed information related to Analytic Hierarchy Process and Analytic Network Process is provided in Chapter 19 and that related to other methods is provided in Appendix G.

<sup>74</sup> Information about the approaches, which are proposed by Bryson (2004), is provided in Appendix H.

performance programming process also increases. This can be thought of as a multi-level pyramid, at the top of which lies the vision and mission of an administration. If its lower level, which is allocated for goals, is placed with a large angle, it will possibly continue in the next levels; implying that the administration will eventually have a wide base consisting of numerous activities and tasks. A notification should also be placed for indicators.

Moreover, it may be stated that combining elements in smaller set of items should be considered. In addition, there may be some manuals including quick tips or decision trees to guide administrations about deciding whether an item has properties of goals, objectives or activities.

#### Performance Indicators:

Administrations should be informed about all essential properties of performance measures.

They should also be informed that progress should be monitored at all levels of the top-down planning approach, implying that performance indicators may and should be determined for all levels. It is also important to note that the high-level indicators; those for goals and objectives that need to be tracked by public, should be presented in strategic plans. In addition, those for targets and programs should be placed performance programs, whereas others, such as those for activities or tasks, may only be reported in other in-service administrative documents.

In addition, administrations should be required to determine the values for indicators related to goals and objective for the end of the period of their strategic plans. Yet, they should not be forced to determine the intermediate values, which should be in practice the task within the concept of performance programming.

Furthermore, there should be an opportunity to define target values for indicators as a range, if it is not possible or not desired to determine a single ratio. Yet, administrations should still be warned about the importance and necessity to determine realistic and challenging targets.

In brief, performance indicators should be properly designed. They should also be well-communicated with stakeholders of administrations.

### Risk Assessment and Evaluation in Strategic Planning:

That risk assessment and evaluation are executed and included in strategic plans should also be stated in the related regulation.

### Costing of Activities in Performance Programming:

Costing activities is the core of the budgeting process held within the concept of performance programming. In many cases, costs can not be directly calculated, since it involved uncertainty, and predictions need to be used.

Yet, it is preferred if full costs can be determined. In order to enable determining real and full costs of activities, activity based costing (ABC) should be utilized by administrations. In order to fully and properly implement ABC, budget reporting should be restructured as activity-based. If full implementation of ABC can not be done immediately, there may be pilot years where it is partially implemented.

If the current costing structure and methodology of the performance programming is kept using, there should be some revisions to enable proper costing. In this context, separation of all general and administrative (G&E) expenses<sup>75</sup> from cost of activities, as in the current methodology, may disable the full costing of activities. Therefore, the portion of such expenses that are related to activities should be included in their costs. To facilitate it, G&E expenses should be analyzed in order to determine the “assignable” costs, which are directly related to and vary with products or services, and “true” costs, which are independent of products or services (Finney 1993). Thereby, assignable costs can be included in the costs of related activities.

### Feasibility Analysis in Performance Programming:

That feasibility analysis is needed for determining and selecting activities to be performed within the context of performance programming should also be stated in the related regulation.

### Scenario Planning in Performance Programming:

Possible scenarios under possible budgets should be prepared by administrations for some reasons. For instance, there are usually changes in the

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<sup>75</sup> The term used in the Guidebook for Performance Programs is “general administrative expenses”. The term used in the literature, on the other hand, is “general and administrative expenses” (Finney 1993).

appropriation amounts during the budget process. In addition, costs of activities are predicted for an uncertain future. That is, realized cost may be different; which implies that administrations should be prepared for situations caused by possible deviations from predictions.

#### Update of Performance Programs:

Possible methodologies that can be used for update of performance programs should be determined by the MoF, academicians or practitioners and well-communicated with administrations. One alternative method is to prioritize elements of performance programs and make budget allocation accordingly, provided that true cost of elements can be obtained. The method proposed for this purpose in this study is expressed in detail in the next chapter.

### **9.4.2. Strengthening Budgeting Methodology**

#### Budget Ceilings and Allocation of Funds:

Budget ceiling determined in the Medium Term Fiscal Plan are based on the first level economic code of analytical budget classification and on administrative basis. Therefore, administrations formally have authorization to distribute their budget to their spending units. Administrations should be informed about this flexibility emphasizing the allocation of funds may be based on planned or achieved performance of spending units. Thereby, they will be able to make administrative allocation efficiency.

#### The Link between Strategic Plans, Performance Programs and Budgets:

The link between strategic plans, performance programs and budgets should be strengthened by joint efforts of regulatory and implementing administrations. In determination of budget proposals, administrations should take their strategic plans and especially performance programs as the base. Suggestions about a single document structure for performance programs and budgets will most probably strengthen this link.

In addition, strategic plans and especially performance programs should be considered, even be among the determining factors for in budget determination, if the system tried to be implemented in Turkey is more than performance-informed budgeting.

The alignment of strategic plans and budgets has a vital importance in implementation side as well. Administrations should be informed about the use of cascade performance budgeting, which is a proper way for the calculation of the costs of objectives and enables the integration of strategic plans and budgets<sup>76</sup>.

#### Budget Negotiations:

There should be written rules and procedures to guide budget negotiations between the administrations and the MoF and the SPO. From the perspective of objectivity, the factors considered in budget cuts or increases, their effects and possible flexibilities in implementation should be properly determined. From the perspective of transparency, they should be made public and well-communicated with administrations.

#### **9.4.3. Strengthening Accountability Reporting Methodology**

The format of the accountability reports should be aligned with that of performance programs. Achievement levels of performance indicators of targets and programs should be placed in accountability reports, whereas those of others, such as for activities or tasks, may only be reported in in-service administration reports. They should also include some snapshots of core performance data. It is important that reports should display both good and bad performance and they should be clear and understandable for readers.

Based on the opinion that each country has its own requirements and needs, doing a survey related to the contents and format of accountability reports may be beneficial. The target audience of the survey should include the Parliament and especially, the Plan and Budget Committee, the Turkish Court of Accounts, the MoF and the SPO. In addition, it may be useful to take the views of administrations related to the availability of information to be presented in accountability reports. The results of the survey should be used to determine the contents and format of reports. Thereby, both the quality of information reported and readability of documents can be increased.

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<sup>76</sup> The method, which is developed by John Mercer (2003), is explained briefly in Appendix H.

## **9.5. Improving and Assuring the Quality of Performance Budgeting Documents**

The quality of information presented in the strategic plans, performance programs and accountability reports is crucial for the success of performance budgeting. Parameters that will be used for the assessment of the documents as well as the assessment methodology; that is, how the parameters will be interpreted, should be clearly defined and well-communicated with administrations. There should be a proper assessment structure that is responsible for providing quality assurance of performance budgeting documents.

### **9.5.1. Improving and Assuring the Quality of Strategic Plans**

Conceptual consistency and completeness of top-down planning approach in strategic plans should be assured by the SPO. Conformance of strategic plans to the development plans, programs and other related documents should be controlled. Moreover, all strategic plans should be evaluated together as well considering administrative interactions so as to identify whether national-level objectives can be achieved when related administrative goals are achieved. If there occurs a problem, revisions should be made in strategic plans.

Conceptual consistency within the components of strategic plans of administrations; namely, mission, vision, goals and objectives, should also be assured both by the SPO and the administrations. Therefore, it is recommended that evaluation of strategic plans be done by the related SPO expert and the strategic planning team or the strategy development unit of the administration together.

The properness of strategic plans should be assessed by using an enriched and a standard check list. Some questions that are recommended to be added to the current check list are shown in Table 16.

### **9.5.2. Improving and Assuring the Quality of Performance Programs**

Performance programs, their relation to strategic plans and administrative interactions should be carefully followed and controlled by the MoF.

The properness of performance programs should be assessed by using a standard check list. Some questions that are recommended to be used in the list are shown in Table 17.

**Table 16: Proposed check list for evaluation of strategic plans**

<b>Evaluation Area</b>	<b>Questions *</b>
Consistency with national-level policy documents	Do administrative goals provide accomplishment of related national-level objectives?
Current Situation Analysis	Did administration performed risk assessment and evaluation?
Mission, Vision, Goals and Objectives	What is the number of goals? Is it too much to manage?
	What is the number of objectives? Is it too much to manage?
	Is there at least one objective for each goal?
Indicators	Are there indicators for all objectives?
	Are indicators adequate to sufficiently represent and to track the improvement in elements?
	Are indicators SMART, CREAM, consistent, repeatable, controllable and meaningful?
(Internal) Consistency	Are administrative objectives together sufficient to reach to the related administrative goals?

\* Only questions that are not currently in the list used by the SPO for evaluation of strategic plans are presented.

**Table 17: Proposed check list for evaluation of performance programs**

<b>Evaluation Area</b>	<b>Questions *</b>
Consistency with strategic plan of the administration	Do targets provide accomplishment of related administrative objectives/goals?
Indicators	Are there indicators for all objectives?
	Are indicators adequate to sufficiently represent and to track the improvement in elements?
	Are indicators SMART, CREAM, consistent, repeatable, controllable and meaningful?
	Are the annual targets for all indicators?
Internal Consistency	Are activities together sufficient to reach to the related targets?
	Are targets collectively sufficient to achieve the related objectives?
Objectives, Targets and Activities	What is the number of objectives/targets? Is it too much to manage?
	What is the number of activities? Is it too much to manage?
	Is there at least one activity for each objective/target?
Resource Requirement	Is the total resource requirement stated in the performance program aligned with the one in the budget proposal/draft/law?
Conformance to the Guidebook	Do the contents of performance program meet the areas stated in the Guidebook?
	Are all necessary tables presented in the performance program?

\* Questions that are currently in the list of the MoF for evaluation of performance programs are not obtained. Therefore, all recommended questions are presented in the table.

### 9.5.3. Improving and Assuring the Quality of Accountability Reports

Accountability reports should be assessed by the MoF, considering their relation to performance programs and the purpose of accountability. The appropriateness of accountability reports should also be assessed by using a standard check list. Some questions that are recommended to be used in the list, from the perspective of performance budgeting, are shown in Table 18.

**Table 18: Proposed check list for evaluation of accountability reports**

<b>Evaluation Area</b>	<b>Questions</b>
Consistency with performance program of the administration	Does the report provide comparison of planned and achieved status for all performance indicators?
	Are the planned levels/targets of performance indicators presented in the report the same as the ones in the performance program of the administration?
	Does the report provide explanations for all unmet targets?
	Is there a summary part for performance of the previous three years?
	Is the available budget amount of the administrations stated in the report aligned with the Budget Law of the year?
Contents	Do the strengths, weaknesses, opportunities and threats (SWOTs) represented?
	Is there an assessment for determined SWOTs?
	Is there an assessment related to the performance information system?

### 9.6. Strengthening and Clarifying the Relationship between Results and Resources

The link between budget proposals and potential performances or results planned to be achieved can be defined as an ex-ante link. The link between results achieved and resources given, on the other hand, is an ex-post relation.

Effective communication of corporate strategy should be in place to strengthen the ex-ante link between results and resources. If personnel responsible for budgeting do not know strategy and plans well, they can not be able to prepare budgets accordingly; which makes well-communicated strategy and plans as the most important prerequisite for the link. In this context, participatory manner taken in preparation of strategic plans and performance programs most probably provides some personnel to be aware of the administrative level priorities. In addition, some informative seminars may be organized, via which personnel are informed about the strategic plan and performance program of the administration. Furthermore,

establishment of work groups in spending units is important to obtain a well-communicated strategy. Those groups, that may be called mini-SDUs, should be responsible for the whole functions related to strategic management and performance budgeting and be in close connection with the SDUs. Therefore, potential lack of connections between performance budgeting documents, especially between performance programs and budgets, may be prevented.

Analytical budget classification system should be restructured to obtain ex-ante relation and to provide data for ex-post relation. It should be designed in such a way that specification of goals, objectives, targets, programs and even activities should be enabled. Utilization of program classification in the current classification system is recommended for this purpose<sup>77</sup>.

There are alternative ways for reorganization of analytical budget classification. Program classification may be added to analytical budget classification as a separate part. There should be at least five levels in order national-level goals and objectives, and administrative goals, objectives and activities/programs to be specified properly. Administrative topics should be specified separately for each administration. In addition, administrations themselves should be responsible for and authorized to revise the topics in order to enable flexibility and to reduce bureaucracy. The sixth level may be added for indicating tasks; yet it may be used optionally. Such a classification enables ex-ante linking of appropriations to outputs, outcomes and results properly.

Alternatively, functional classification part of it can be used for this purpose, since its first level is already used for services provided by government and second level is for programs. Yet, it is currently used for specifying type or name of the services; not their purpose. In addition, there is currently no guidance or directive for its utilization for presenting aim.

It is important to note at this point that national-level goals will most probably be related to the services of government, which are already determined in the functional classification. Therefore, it will be more beneficial if functional and

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<sup>77</sup> Indeed, Robinson (2002) urged the use of results-based expenditure categories, such as programs or output groups, as a crucial part of any best practice model of performance budgeting. In fact, “[a] programmatic classification is considered to be more supportive of the allocative (priority-setting) function of the budget than a classification which is largely based on inputs” (Kraan 2007).

program classifications are linked. This may be obtained by enhancing the functional classification with an addition of levels. New structure may be designed as shown in Figure 7.

• Services	• National-level goals	• National-level objectives	• Administrative goals	• Administrative objectives	• Administrative targets	• Activities/ Programs	• End tasks (optional)
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**Figure 7: The structure of the proposed functional classification**

### 9.7. Clarifying Consequences of Met and Unmet Commitments

It is important to define the consequences of met and unmet commitments, such as goals and performance targets. There may be some sort of reward mechanism for met and over met commitments. Conversely, some penalty or sanction mechanisms may be utilized for unmet commitments. There may also be hybrid systems where both rewards and sanctions are employed. The choice related to the best method may depend on the corporate culture and therefore may change from one administration to another.

No matter which method will be used, control mechanism should be in place to assure the proper assessment. Thereby, personnel of the administrations recognize that actions will have consequences, which may make easy to provide their motivation and ownership.

### 9.8. Strengthening Coordination and Consultancy

The twofold regulatory bodies in the performance budgeting system, the MoF and the SPO, needs to be restructured. Establishment of a single unit that will be responsible for the whole system is proposed. There may still be separate sub-units responsible for sub-functions, such as performance programming, budgeting, accountability reporting, etc. The benefit of such a single unit is that powerful coordination required for proper running of the system can be obtained. Since

functions related to budgeting, performance programming and accountability reporting are already among the responsibilities of the MoF, the duty for strategic planning functions may also be charged to this administration. Moreover, in such a case, the tasks related to investment budgets should also be assigned to the MoF.

An administrative expertise structure utilized in the MoF should be strengthened to enable expertise in the whole performance budgeting system. The structure should be constructed in such a way that an expert, who may be called 'Public Performance Budgeting Expert', will be responsible for all functions of an administration related to performance budgeting; namely, strategic planning, performance programming, budgeting and accountability reporting. Furthermore, it will be beneficial if experts work with administrations one to one as part-time consultants. Thereby, effective communication and coordination between the regulation unit and administrations can be achieved.

If the 'single authorization unit' proposal is considered; the assessments expressed in the "Improving and Assuring the Quality of Performance Budgeting Documents" part should be in the responsibility of that unit.

In addition, establishment of a coordination division that is responsible for tracking, controlling and improving the overall effectiveness and efficiency of the system will also be beneficial. It should be organized within the proposed single unit and be in close connection with implementing administrations in order to receive their problems, opinions and comments. Thereby, continuous improvement of performance budgeting system can be achieved.

The quality of the events organized by the regulatory unit related to performance budgeting processes should be of high quality to meet the needs of administrations. They may be organized by the coordination division based on the feedback received from administrations and Public Performance Budgeting Experts.

Initially, the events should focus on the problematic areas that are hardly done by administrations and criticized in the evaluations frequently. Those related to strategic plans are link of strategic plans to the development plan, current situation analysis, properties of mission, vision, objectives, performance indicators and strategies, determining performance indicators and targets, performing risk assessment and evaluation. Those related to performance programs are link of performance programs to the strategic plans, determining performance indicators, determination,

and prioritization of activities, activity based costing and performing feasibility analysis.

### **9.9. Strengthening the Strategy Development Units**

Number of the personnel working for the strategy development units should be increased in the administrations that evaluated the current number as a non-positive effect on performance budgeting processes. An important point to be considered in this suggestion is that the qualifications of the personnel to be hired should be as high as those of the available personnel. In other words, the qualifications of the current status of the SDUs should be maintained. Therefore, selection or personnel for SDUs should be carefully done concerning the vital qualification, such as ability to analytical thinking, organize and coordinate others, being good at team work, strategic management and project management.

Moreover, routine businesses of the SDUs, such as budget execution practices and ex-ante control of expenditures, should be organized in such a way that they should not disable proper implementation of strategic management and performance budgeting functions. One way of decreasing the work load caused by budget execution-related tasks may be to inform other departments of administrations about budgeting concepts to make them capable of solving some of their problems on their own. Alternatively, an online mechanism may be established where some sort of an a-z index of concepts and frequently asked questions and answers may be represented. In order to reduce the work load for ex-ante control of expenditures; the minimum limit, above which expenditures to be controlled may be re-determined. The new bottom line should be agreed on considering the findings of risk assessment to be done for the current expenditure documents. That is, it should be found out that expenditure of above which level involves intolerable risk and to be carefully followed.

Organizational structures of the SDUs should also be redesigned to enable proper functioning of departments. Duties of the departments should be clarified first and only then organizational structure may be redesigned accordingly. It is important in doing so to assign strategic planning, performance programming, budgeting and accountability reporting functions into a single partition. Within that partition, an expertise system, like the one utilized in the MoF, may be established for spending units, according to which each spending unit is in the responsibility of an expert. Therefore, the whole performance budgeting functions of spending units can be

coordinated, guided and controlled centrally. Other functions of the SDUs; such as budget execution including ex-ante control of expenditures, internal control, and management information systems may be assigned to separate divisions.

Since the role of the SDUs in budgeting is to coordinate and guide the departments and to perform performance budgeting functions at administrative level appropriately, employing some personnel as budget analysts may be beneficial.

Since performance budgeting functions is in fact the responsibility of spending units, establishment of work groups in spending units is also important in this context as well. Thereby, potential lack of connections between performance budgeting documents, and between departments and SDUs may be prevented. In addition, standardization of studies and documents may be obtained.

#### **9.10. Strengthening Ownership of and Supervision by the Parliament**

Establishment of budget sub-committee and final accounts sub-committee under the Plan and Budget Committee is envisaged in the draft text related to the Parliamentary Law<sup>78</sup>. Thereby, the former one will be responsible for investigation of budget-related documents, whereas the latter for General Conformity Statement, reports prepared by Turkish Court of Accounts, final accounts and accountability reports. In addition, permanent specialized committees are also intended to be integrated into the process via enabling them to investigate and report on budgets, final accounts and accountability reports of administrations<sup>79</sup>.

The structure intended to be established is found as beneficial for providing improvement of efficiency of the negotiations. However, performance programs of administrations are not stated in the proposed regulation. It is recommended that they be also investigated by the permanent specialized committees and the budget sub-committee.

In addition, it would be beneficial if strategic plans, performance programs, budgets and accountability reports of administrations can be investigated by a unit and presented to the Committee in the form of encapsulated information<sup>80</sup>.

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<sup>78</sup> The regulation is stated in the Article 40 of the draft text.

<sup>79</sup> The regulation is stated in the Article 39 of the draft text.

### **9.11. Establishing a Management Information System**

Systematic management of performance information should be obtained properly. Therefore, there should be a performance information system utilized by administrations. Besides, it should enable gathering, processing and reporting of data.

In fact, such a system should involve all items related to performance budgeting. Therefore, it should have data from national-level goals to administrative tasks. For this reason, it should be an integrated system that can be used for all administrations and managed centrally. There should be a module for national-level items, a module for strategic management logic of each administration, which should also include sub-modules for strategic plans, performance programs, budgets –or performance based budgets, and accountability reports. Data flow should easily and accurately be made between the modules in order to prevent performing any transaction more than once. In addition, past data should be kept in the system to provide incremental track of operations.

Thereby, the conceptual logic from national-level goals to activities of administrations can be constructed properly. Moreover, full cost of elements can be calculated from its lower level elements, provided that true costs are determined and entered to the system correctly.

Moreover, programs or projects that are carried by more than one administration can also be easily followed and managed, since the system involves all administrations and their performance budgeting-related works.

The system should also enable quick reporting at any level. Besides, it will be beneficial if there are both predetermined reports to provide standard reporting by all administrations and specific reports to meet administrative-specific reporting needs.

In addition, some control points may be added for questioning the links between the elements of the top-down planning approach for the purpose of providing consistency and completeness. It may also make it easier for authorized administrations to evaluate performance budgeting documents, to report results, to provide feedback and to compare administrative practices. Some other control points that prevent administrations from demanding in excess of appropriation ceilings may be put into practice.

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<sup>80</sup> Yet, comments about the structure, properties or functions of the unit are beyond the scope of this study.

Such a system may be enriched by addition of some programs that may work within the infrastructure. For instance, there may be some modeling programs serving as a decision support tool for prioritization among elements, such as goals, objectives, programs, and optimal allocation of funds to administrations and spending units. It should be fed by data about total budget available, administrative elements and budgets, etc. Integration of the model proposed in the next chapter to such a system will be beneficial.

Moreover, the system should enable following tasks on personnel level and have an integrated module for follow-up work and personnel performance management system.

The authorization of a management information system should be similar to that of the e-bütçe system, in which each administration is authorized for its own conceptual structure, while regulatory administration(s) can follow and supervise all others.

#### **9.12. Revising the Way of Determination of Expenditure Ceilings**

Administrations should have a role in determination of their expenditure or appropriation ceilings since they guide the preparation of their budget. Strategic plans and performance programs should also be integrated into this practice.

In this discussion, appropriation ceilings refer to the limits for the appropriation proposals of administrations determined based on the first-level economic code of analytical budget classification. Therefore, the overall restriction on total government expenditure and the way of its determination is not treated. The concern is the allocation of the total expenditure limit to administrations.

One way of doing this is to call administrations for determining the real budget need at the very beginning of the top-down budget preparation process. At this step, administrations should be obliged to justify their needs based on their strategic plans and performance programs. Doing so will enable the MoF and the SPO reveal the overall budget requirement. Moreover, once the goals and outcomes planned to be achieved via requested appropriations are known, they can be prioritized by authorized bodies (for instance, Council of Ministers or Plan and Budget Committee). Afterwards, budget ceilings can be determined based on prioritization. Consequently, participation of administrations and integration of their budget-related documents into the process can be obtained.

### **9.13. Revising the Preparation Process of Performance Budgets**

As mentioned above, in order performance programs or performance based budgets of administrations to be considered in determination of expenditure ceilings, administrations should be liable to prepare them in advance. Proposals at this step may be called as the first version. After the expenditure ceilings are determined, administrations should be liable to update their proposals accordingly. Proposals at this step may be called as the second version. Briefly, administrations become responsible to prepare an additional version of performance program proposal.

In addition, in order detailed expenditure programs to be published before the beginning of the fiscal year, they should also be prepared by administrations in advance. A proper timing for preparation of DEPs may be the draft budget law step.

### **9.14. Revising the Budget Calendar**

The calendar for the preparation and approval of the Central Government Budget Law should be altered to consider performance programs or performance based budgets of administrations in determination of expenditure ceilings and to allow administrations a reasonable period of time to prepare their first and second budget proposals appropriately. In addition, the Parliament should be given a reasonable period of time to investigate all budget documents, including detailed expenditure programs, to enable the budget being approved before the start of the fiscal year.

Another point needs to be considered at this step is that more time and attention should be given to the discussion of accountability reports in the Parliament. Separation of their discussion from the budget discussions via change in the period can be handled as an alternative. Even, it may be argued that accountability reports should be investigated before the publication of Medium Term Fiscal Plan, where appropriation ceilings of administrations are determined.

The constraint in this revision is that the Parliament closes down a vacation on July the 1<sup>st</sup> and that the legislative period begins on October the 1<sup>st</sup>, according to the Parliamentary Law.

Based on the abovementioned proposals, the budget calendar may be revised as shown in Figure 8.

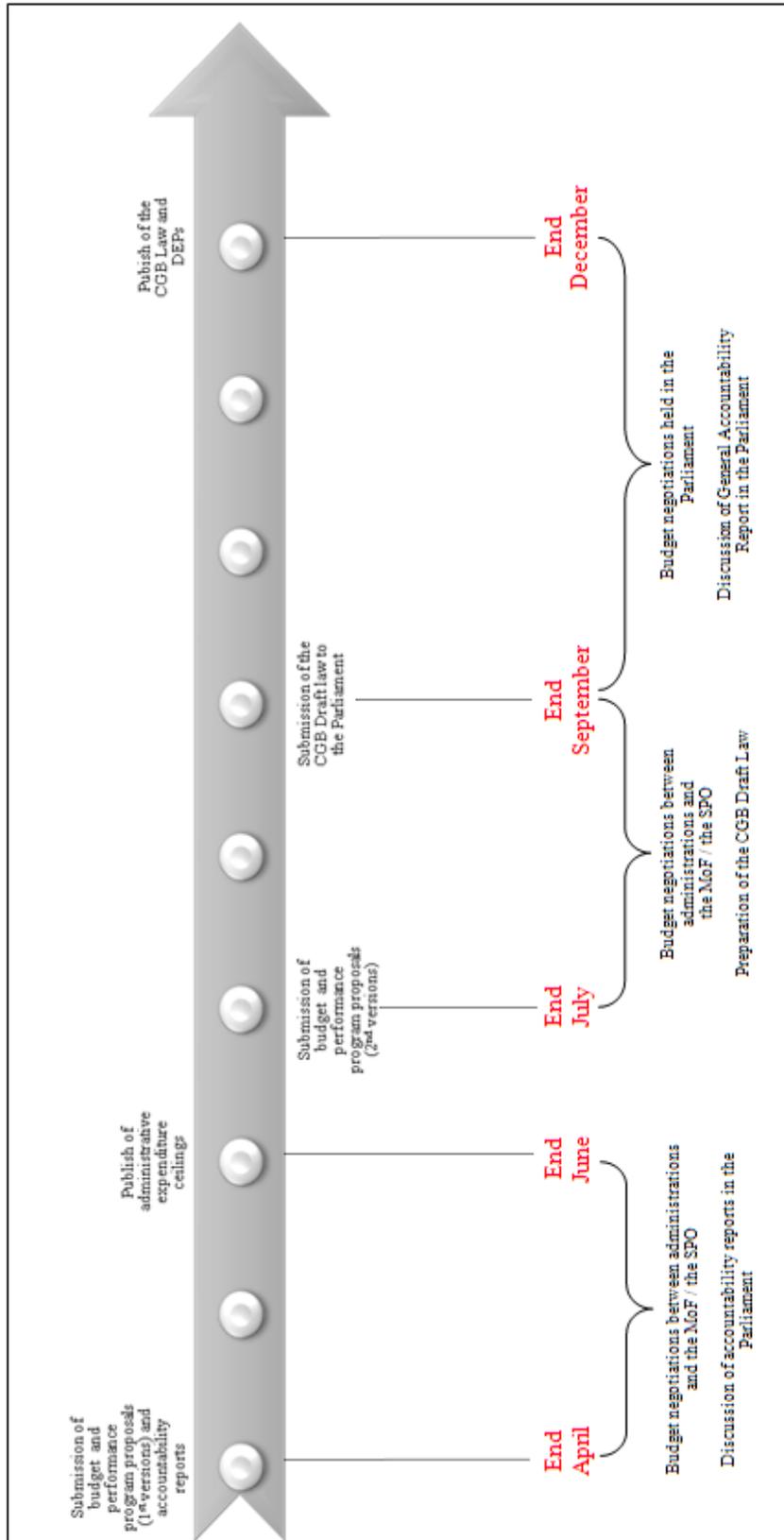


Figure 8: Proposed budget calendar

### **9.15. Strengthening Performance Budgeting Legislation**

The Public Financial Management and Control Law needs to be revised to reflect the changes stated in the previous parts. Secondary and tertiary legislation should also be updated accordingly.

The cornerstones of the budget calendar are defined in the PFMC Law. The revised dates for the budgeting procedure should be reflected to the Law.

The By-Law on the Procedures and Bases for Strategic Planning, the By-Law on the Preparation of Performance Programs of Public Administrations and the By-Law on the Preparation of Accountability Reports of Public Administrations should be revised to reflect methodological changes to legislation and to make documents aligned with each other.

The By-Law on the Procedures and Bases for Strategic Planning should include clear and understandable information about how strategic plans are prepared according to national level policies and how inter-administrative interactions, which will already be found in national level documents, are reflected to the plans.

Moreover, the method of the evaluation of strategic plans by the SPO should be mentioned in detail as well as the binding effect of the evaluation results.

The By-Law on the Preparation of Performance Programs of Public Administrations should be revised to make performance programs cover medium term period; that is, three years. The level of consideration of performance programs in the budget negotiations held with the MoF and the SPO should be clearly stated as well as their effects in budget allocations.

In addition, in documents related to budgeting; such as Budget and Investment Calls, the link between performance programs and budgets should be stressed including some guidance for methodology.

If a performance budget structure is intended to be implemented, related By-Laws and regulations should also be restructured accordingly.

Moreover, there should be a statement about the fact that detailed expenditure programs should be prepared based on performance programs of administrations.

### **9.16. Strengthening Complementary Legislation for Performance Budgeting**

In order to strengthen the human resources management, to align it with performance budgeting system and to provide ownership and participation in higher levels, the Law on Civil Servants, which regulates public personnel regime, should be

revised. Moreover, the revised regulation should be designed in such a way to enable utilization of a professional performance evaluation and management system for civil servants after proper implementation of performance budgeting system is achieved. In fact, this proposal was supported by most of the participants of the questionnaire. It will be beneficial from the perspective of ownership and responsibility if there is a mechanism that links some portion of the salary of the top management of the administrations and the heads of the spending units to the achieved performance.

Furthermore, the Law on the Turkish Court of Accounts should immediately be discussed and revised to enable the TCA to make performance audits more suitably. Moreover, how the problems and findings in the reports of the TCA are dealt with and how they are binding should be made clear.

Some additional detailed proposals may be put forward related to the personnel regime and external audit system. But, it is out of the scope of this study.

## CHAPTER 10

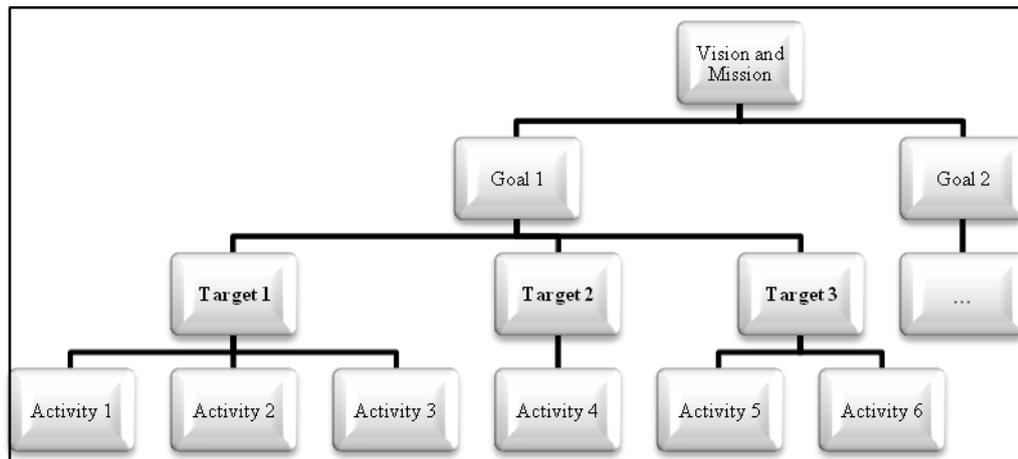
### PROPOSED METHOD FOR UPDATE OF PERFORMANCE PROGRAMS

Administrations face some challenges in performance programming process. First of all, administrations determine their goals and objectives that serve to them in strategic planning process. Then, there arises a need for administrations to prioritize their objectives in the strategic plan in order to determine the ones to be performed in the performance program year. At this point, it becomes necessary to objectively specify the importance of goals for the vision and mission of the administration and those of objectives for the goals. (*Challenge 1*)

Afterwards, they determine the targets and activities so as to achieve their objectives; which is followed by costing of activities. The process up to this point is related to construction of the logical chain from goals to activities. The sample hierarchical structure shown in Figure 9 is more or same for strategic plans and performance programs of many administrations.

After comes a resource allocation process that includes a decision point in the corporate level about how much money should be allocated to which targets, activities and tasks. That is; there is again a prioritization procedure, by which the importance of performance targets for the objectives and the importance or contribution of activities for targets should be determined by administrations. (*Challenge 2*)

The following process is to prepare budget proposals needed to accomplish the activities so as to achieve desired levels. This step also corresponds to preparation of performance program proposals. Administrations, at this point, may choose to demand all amount of funds required to complete all activities so as to aim at full performance level. In this case, there is no need to work with modeling.



\* Objectives and targets may constitute separate levels for some administrations. In addition, there may be sub-activities or tasks in the lowest levels.

**Figure 9: A sample hierarchical structure for strategic plans and performance programs**

They may simply demand calculated activity costs together with general and administrative expenditures of spending units and appropriations to be transferred to other organizations. On the other hand, if they choose to stay within the expenditure ceilings or a proper multiple of it, yet under the real budget requirement of performance programs, they have a resource allocation problem. Decision makers should have some alternatives for budget proposals and achievable performance levels corresponding to them in order to decide on amounts to be demanded. (*Challenge 3*)

In addition, performance programs have to be revised if a change occurs in the budget appropriations during the budgeting process. This should be done in the spending unit level and then aggregated to the administration, since the budgets are negotiated, drafted and approved based on spending units in budget draft and budget law stages. In these steps, budget allocated to activities should be revised and aligned with the available budget of the unit considering the target performance levels. (*Challenge 4*)

In short, there are challenging processes in prioritizing elements of plans and programs, and preparing and updating performance programs. However, as stated in Chapter 7, the methodologies that can be used in these steps are leaved to the administrations. Since the issues are not clear, there is no common methodology used by administrations.

In this chapter, a model is proposed for the update of performance programs, which is the challenge 4. Other challenges are discussed in the next chapter as future studies.

## **10.1. Framework of the Proposed Solution**

The relative importance or weights of the elements and criteria have crucial importance in the proposed solution. The other vital element of the proposal is the resource allocation process. Information about the processes is given below.

### **10.1.1. Prioritization Stage**

#### One Criterion Case:

In prioritization processes, the elements can be assessed considering their contribution to or the importance for the related higher level element in a hierarchical structure, which becomes the only criterion to be used. In such cases, the weights of elements can be determined simply by pair-wise comparing them based on their contribution to the higher level element. This method is used for determination of the importance of the targets for the goal in this study.

#### Multiple Criteria Case:

If there is more than one criterion to be used in prioritization, possible techniques that can be used in this process are within the concept of “multiple criteria decision making”<sup>81</sup>.

In determining the criteria that can be used for evaluating goals and objectives in strategic plans or activities in performance programs, one may be inspired by the balanced scorecard approach developed by Kaplan and Norton (1992), which is a multi-criteria framework to articulate strategies of an organization and to carry out performance evaluation (Leung et al. 2006)<sup>82</sup>. The evaluation measures used in this method are financial, customer, internal business process, and learning and growth perspectives. Sub-criteria can also be determined and used.

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<sup>81</sup> The properties and uses of some multi-criteria decision making methods are expressed briefly in Appendix G. Their applications related to the topic of this study found in the literature are also summarized in the Appendix.

<sup>82</sup> Information about this approach is given in Appendix G.

In a multiple criteria case, there is also a need to determine the relative importance of them. The criteria that can be used in the models are generally qualitative; hence judgmental and difficult to measure directly. The common evaluation techniques of criteria are ranking, rating and scoring. That is, criteria can be directly assigned by importance or weight values. Yet, if it is not so easy to do so, a more structured technique may possibly be needed.

The analytic hierarchy process (AHP) or the analytic network process (ANP) can be used in prioritization of the criteria and the elements of performance programs, since they are the suitable ones for the structure of the problem. These are multi-criteria decision making techniques that were first proposed by Saaty (1980). Since they are highly related, it is worth to explain first the AHP briefly and then the ANP.

AHP constructs relative ratio scales associated with the priorities for the various items compared (Altuzarra et al. 2007, Saaty 1990) and decomposes a complex problem into a system of hierarchies (Triantaphyllou 2000). In this process, firstly, the decision problem is represented as a hierarchic structure, the element at the top of which is the main goal of the problem, the bottom ones of which are the actions and in-between ones of which are the criteria (Altuzarra et al. 2007, Vincke 1992, Saaty 1990). Then, at each level of the hierarchy, a pair-wise comparison of the elements is done in terms of preference or importance ratios on a fundamental numerical scale proposed by Saaty (Altuzarra et al. 2007, Vincke 1992), which is shown in Table 19. In calculating the overall contribution of alternatives to the main objective, AHP uses the weighted sum method of the relative values of alternatives (Triantaphyllou 2000).

**Table 19: Scale of relative importance used in the AHP and the ANP**

Importance value	Definition	Interpretation
1	Equal importance	Two alternatives have equal importance.
3	Moderate importance	One alternative is slightly favorable over / more important than the other.
5	Essential or strong	One alternative is strongly favorable over / more important than the other.
7	Importance demonstrated	One alternative is strongly dominates / much more important than the other.
9	Extreme (Absolute)	One alternative has absolute dominance over the other.
2, 4, 6, 8	Intermediate values	When compromise is needed.

The analytic network process, on the other hand, “provides a general framework to deal with decisions without making assumptions about the independence of higher level elements from lower level elements and about the independence of the elements within a level” (Saaty 1999). It uses a network structure considering influences, instead of specifying levels as a hierarchy; thus it goes beyond the AHP (Saaty 1999).

The ANP has two parts that are “a control hierarchy or network of criteria and sub criteria that control the interactions” and “a network of influences among the elements and clusters” (Saaty 1999).

The steps of the process can be summarized as follows (Saaty 1999): (i) control hierarchies including their criteria for comparing the components of the system and their sub-criteria for comparing the elements of the system are determined, (ii) the clusters of the system with their elements are determined for each control criterion or sub criterion, (iii) the approach to be followed in the analysis is determined considering that a cluster or element is influencing or being influenced by other clusters and elements with respect to a criterion, (iv) pair-wise comparisons are performed on the clusters for influences, with respect to each criterion, (v) pair-wise comparisons are performed on the elements within the clusters themselves considering the influences with respect to a criterion or sub criterion of the control hierarchy, (vi) a super matrix is constructed for each control criterion by laying out the clusters and all the elements in each cluster and entering the priorities obtained from the pair-wise comparisons in the appropriate position as sub columns of the corresponding column of the super matrix<sup>83</sup>, (vii) the limiting priorities of each super matrix is computed according to whether it is irreducible or reducible and whether the system is cyclic or not, (viii) the limiting priorities are synthesized for each control hierarchy by weighting each limiting super matrix by the weight of its control criterion and adding the resulting super matrices, (ix) the results from the control hierarchies are synthesized and the highest priority alternative or the desired mix of alternatives is read off.

The scale used for pair-wise comparisons in the ANP is the one that is also used in the AHP and shown in Table 19.

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<sup>83</sup> Relative weights obtained from pair-wise comparisons are put in a matrix, which is called unweighted super matrix. Then, weighted super matrix is obtained by multiplying the elements of unweighted super matrix by related cluster weights of criteria.

It should be noted that if there is a hierarchical structure between objectives, criteria and activities, AHP may be utilized. On the other hand; whenever there are dependencies between activities, between objectives, between criteria or sub-criteria, ANP should be utilized to handle the relationships.

Since there are relations between the criteria in this study, ANP is used, in which the balanced scorecard perspectives are used as criteria. The activities become alternatives in the processes to be evaluated using the criteria.

### **10.1.2. Resource Allocation Stage**

In this stage, available budget of a spending unit should be allocated to its tasks of activities considering the target performance levels. Since there is generally more than one target to be attained, multiple-objective linear programming approach is suggested for this stage. Priorities or importance values of activities and targets are among the inputs of the model, the aim of which is to minimize the weighted sum of the deviations from the performance targets without exceeding the total amount of budget available.

In brief, a method involving two stages, namely determining priorities via single criterion or multi-criteria decision making techniques and use of multiple-objective linear programming with integrated priorities, is proposed for update of performance programs.

## **10.2. Resource Allocation Model for Update of Performance Programs**

The model is constructed for update of performance program data of spending units. It gives the amount of budget allocated to the tasks that are serving to the activities of the unit. The method is consistent with the logic behind zero-based budgeting, since it assumes that there are no resources allocated to tasks originally and makes allocation to them according to their contribution to the activities and performance. It can be used in both budget increases and decreases.

The solution obtained via the model can be used together with the general and administrative expenditures of the unit and appropriations to be transferred from the unit to other organizations to obtain the amounts in the budget draft or law.

### **10.2.1. Assumptions of the Model**

The current structure and methodology is taken as the base for the model. The model is constructed for spending units and for one year, which is the performance program period and the budget year. As in practice, at draft budget or budget law step of the process, total budget of an administrations have already been divided into sub-budgets for spending units in the model.

#### Assumption 1:

The budget of the spending unit is taken as fixed in terms of the second level economical code of analytical budget classification, as in practice. What is more, general and administrative expenditures of the unit and appropriations to be transferred to other organizations are determined before the process. Therefore, they are excluded from the total demandable budget and the rest is used as the available budget parameter of the model. For this reason, by default, codes for personnel expenditures and expenditures to social security institution are not included in the model. In addition, the code for interest expenditures is also excluded, since it is valid only for the General Directorate of Public Finance of the Undersecretariat of Treasury.

#### Assumption 2:

It is possible to make transfers from one budget item of the second level economic code to another. The maximum amount of budget that can be transferred to an item is determined as a percentage of the available budget in that item. In addition, transfer can not be made from a budget item into which a transfer has already been made, as in practice.

#### Assumption 3:

Full cost of all activities are determined and known in terms of the second level economical code, which will be referred as tasks. Tasks are defined so specific that they are either completed or not depending on whether the amount of budget allocated to them; that is partial completion is not possible. Additionally, there may be dependencies between the completion statuses of tasks.

The effects of the completion status of the tasks on the completion level and effectiveness of the related activity are predetermined by the decision makers. Completion and effect of an activity, therefore, depends on the completion status of its tasks.

Assumption 4:

According to the structure shown in Figure 9, activities serve to achieve desired levels of performance targets. Each activity is related to only one performance target. On the other hand, there may be more than one activities serving to a performance target. Additionally, there are no dependencies between the completion levels of activities.

The importance or contribution of activities to targets are determined and normalized by the user/users of the model in advance using the techniques explained in the “10.1.1. Prioritization Stage” part.

Assumption 5:

The importance or weight of performance targets for the total performance are determined and normalized by the user/users of the model in advance using the techniques explained in the “10.1.1. Prioritization Stage” part.

Desired target levels are also predetermined by the decision makers. Moreover, positive and negative deviations from the desired levels of targets are consistent with their importance. Total desired performance level in a year is equal to the weighted sum of the deviations.

**10.2.2. Notations of the Model**

Notations used in the model are presented in Table 20.

**Table 20: Notations of the proposed model**

Notation	Label	Values
i	Activity	$i=1, \dots, I$
g	Task	$g=1, \dots, G$
n	Second level economic code	$n=031,032, \dots, 051, \dots, 061, \dots, 071, \dots, 081, \dots, N^*$
j	Performance target	$j=1, \dots, J$

\* The codes of economical classification are used.

**10.2.3. Parameters of the Model**

The parameters of the model are stated in Table 21.

**Table 21: Parameters of the proposed model**

Parameter	Label
$C_{n,i,g}$	Total cost of task $g$ of activity $i$ in terms of the second level economic code of $n$
$R_n$	Total available budget in terms of the second level economic code of $n$
$IM_{i,g}$	Impact of task $g$ on completion level of activity $i$ (defined as a percentage <sup>*</sup> )
$PW_{i,g}$	Impact of task $g$ on effectiveness of activity $i$ (defined as a percentage <sup>*</sup> )
$W_{i,j}$	Importance of activity $i$ for performance target $j$
$K_j$	Importance of performance target $j$ on total performance
$PGT_j$	Desired level (aspiration level) of performance target $j$
$TA_n$	Maximum allowable budget to be transferred to a second level economic code $n$ as a percentage of the available budget in that code
$AC_i$	Desired completion level of activity $i$ (defined as a percentage <sup>*</sup> )

<sup>\*</sup>0% refers to the no completion or impact, 100% refers to full completion or impact.

It is important to note that the following equations should be met in order to work with the structure of the model that takes 100% as full performance. Therefore, normalization of weight values should have been done in advance.

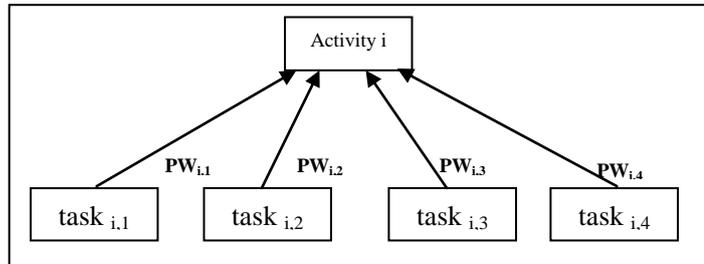
$$\sum_i W_{i,j} = 1 \quad \forall j \quad (10.1)$$

$$\sum_j K_j = 1 \quad (10.2)$$

$$\sum_g IM_{i,g} = 1 \quad \forall i \quad (10.3)$$

$$\sum_g PW_{i,g} = 1 \quad \forall i \quad (10.4)$$

A sample relationship between an activity and its budget items is illustrated in Figure 10.



**Figure 10: A sample relationship between an activity and its tasks**



$$SC_{i,g} \leq X_{n,i,g} \div C_{n,i,g} \quad \forall i,g \text{ and } C_{m,n,i} \neq 0 \quad (10.10)$$

$$SC_{i,g} \leq SC_{i,\{1,\dots,g-1,g+1,\dots,G\}} \quad (10.11)$$

$$A_i = \sum_g (SC_{i,g} \times IM_{i,g}) \quad \forall i \quad (10.12)$$

$$A_i \geq AC_i \quad \forall i \quad (10.13)$$

$$HW_i = \sum_g (W_{i,g} \times SC_{i,g}) \quad \forall i \quad (10.14)$$

$$PG_j = \sum_i (V_{i,j} \times HW_i) \quad \forall j \quad (10.15)$$

$$PG_j - S_j + E_j = PGT_j \quad \forall j \quad (10.16)$$

$$X_{n,i,g} \geq 0 \quad \forall n,i,g \quad (10.17)$$

$$BT_{\{03.1,\dots,n-1,n+1,\dots,N\},n} \geq 0 \quad \forall n \quad (10.18)$$

$$S_j \geq 0 \quad \forall j \quad (10.19)$$

$$E_j \geq 0 \quad \forall j \quad (10.20)$$

$$SC_{i,g} = 0 \text{ or } 1 \quad \forall i,g \quad (10.21)$$

$$BTS_{\{03.1,\dots,n-1,n+1,\dots,N\},n} = 0 \text{ or } 1 \quad \forall n \quad (10.22)$$

Since there are binary variables, it is a mixed integer model. The interpretation of the constraints is as follows: Constraint (10.5) provides that the total amount of budget transferred to an economic code does not exceed the transfer limit. Constraint (10.6) provides that transfers can not be made unless the related binary variable takes a value of one. Constraint (10.7) provides that transfers can not be made from budget item into which a transfer has already been made. Constraint (10.8) is to ensure that sum of budget allocated to the tasks of activities is equal to the total amount of budget available with added or subtracted transfers. It is valid for each second level economic code. Constraint (10.9) provides that budget allocated to each task is smaller than or equal to the total budget requirement of that task. Constraint (10.10) determines whether the task is completed or not. Constraint (10.11) provides that a task of an activity should be completed only when some other task of that activity is also completed. This constraint is added for all dependent tasks. Constraint (10.12) calculates the completion level of each activity. Constraint (10.13) provides that

completion level of an activity is greater than or equal to its desired completion level. Constraint (10.14) calculates the impact of the completion level of an activity. Constraint (10.15) calculates the value of a performance target. Constraint (10.16) provides that calculated value of a performance target plus positive or negative deviation is equal to its desired value. Other constraints define whether a variable is a positive or a binary one.

#### **10.2.6. Non-Itemized Budget Alternative**

In order to see the effect of the budget restriction in terms of the second level economic code, the case where there is lump sum and non-itemized budget can be constructed. In this case, budget transfers are eliminated from the model, so the parameters, variables and constraints related to them. In addition, the budget constraint (10.8) is revised as follows:

$$\sum_n \sum_i \sum_g X_{n,i,g} \leq \sum_n R_n \quad (10.23)$$

### **10.3. Application of the Proposed Model for the Strategy Development Unit of the Undersecretariat of Treasury**

The constructed model is applied for the Strategy Development Unit of the Undersecretariat of Treasury. The performance program data of year 2010 is used for the update stage from budget proposal to draft budget. The importance of the activities of the unit for its targets and those of targets for the goal are determined first. Then, the appropriations of the unit are allocated to its tasks. The process is described below.

#### **10.3.1. Structure of the Elements of the Unit**

There are three performance indicators and ten activities. There is at least one task and at most five tasks for each activity. Therefore, J=3, I=10 and G=5.

First four activities serve to the first performance indicator; the fifth one serves to the second and the others serve to the third. The structure is illustrated in Figure 11. The descriptions of the elements are presented in Table 23.

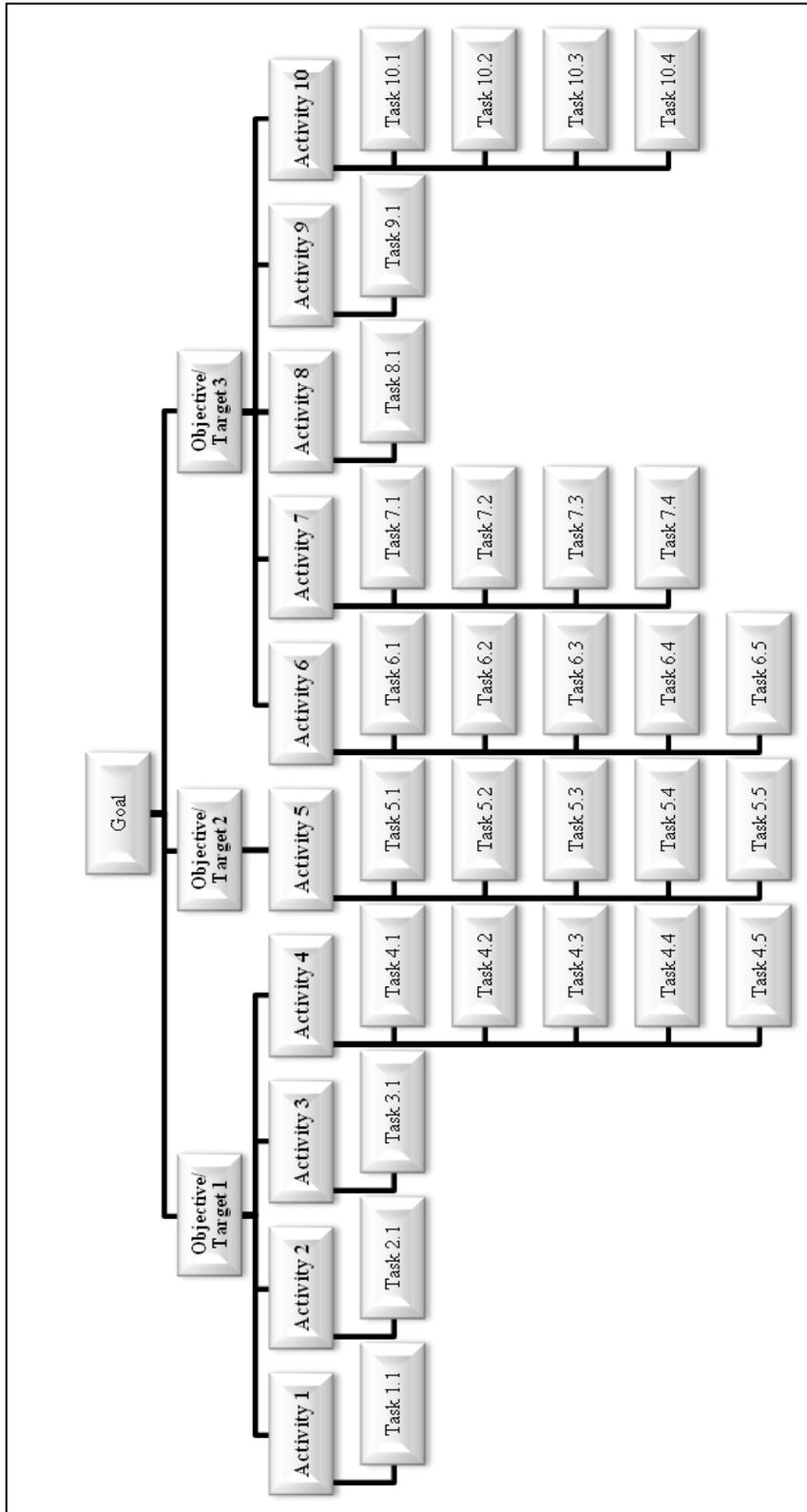


Figure 11: Structure of the performance program elements of the unit

**Table 23: Descriptions of the performance program elements of the unit**

Element	Description
Goal	Organizational and Managerial Excellence
<b>Target 1</b>	<b>Make Research – Development and Innovation an Integral Part of the Organizational Culture</b>
Activity 1	Organization of meetings, seminars, workshops etc. for establishing research-development and innovation environment
<i>Task 1.1</i>	<i>Training expense</i>
Activity 2	Establishment of mechanisms to encourage research-development and innovation projects
<i>Task 2.1</i>	<i>Training expense</i>
Activity 3	Automation of core business processes
<i>Task 3.1</i>	<i>Purchase of consultancy service</i>
Activity 4	Making academic studies and researches related to change management, quality management and process management
<i>Task 4.1</i>	<i>Travelling expense for “quality management” seminars</i>
<i>Task 4.2</i>	<i>Travelling expense for OECD meetings for corporate governance</i>
<i>Task 4.3</i>	<i>Training expense for “process management”</i>
<i>Task 4.4</i>	<i>Training expense for “quality management”</i>
<i>Task 4.5</i>	<i>Purchase of a process management software</i>
<b>Target 2</b>	<b>Manage Human Resources Effectively</b>
Activity 5	Increase in the training, seminar, workshop etc. opportunities served to the personnel
<i>Task 5.1</i>	<i>Travelling expense for an OECD meeting</i>
<i>Task 5.2</i>	<i>Travelling expense for an OECD meeting</i>
<i>Task 5.3</i>	<i>Travelling expense for Association of Fiscal Services Experts</i>
<i>Task 5.4</i>	<i>Training expense for English course</i>
<i>Task 5.5</i>	<i>Training expense for an IMF course</i>
<b>Target 3</b>	<b>Develop a Culture of Continuous Improvement</b>
Activity 6	Participating to the twinning project of “Strengthening the Public Fiscal Management and Control System” and establishment of an internal control system in the standards of COSO and INTOSAI
<i>Task 6.1</i>	<i>Travelling expense of the 1st personnel for study tour</i>
<i>Task 6.2</i>	<i>Travelling expense of the 2nd personnel for study tour</i>
<i>Task 6.3</i>	<i>Travelling expense of the 1st personnel for practical training</i>
<i>Task 6.4</i>	<i>Travelling expense of the 2nd personnel for practical training</i>
<i>Task 6.5</i>	<i>Purchase of consultancy service</i>
Activity 7	Obtaining a certificate of ISO 9001:2000 and implementation of total quality management system
<i>Task 7.1</i>	<i>Training expense for “ISO 9001:2000 quality management system”</i>
<i>Task 7.2</i>	<i>Training expense for “ISO 9001:2000 quality management system documentation”</i>
<i>Task 7.3</i>	<i>Purchase of consultancy service</i>
<i>Task 7.4</i>	<i>Training expense for “training of trainers”</i>
Activity 8	Obtaining a certificate of ISO 14001
<i>Task 8.1</i>	<i>Training expense for “ISO 14001”</i>
Activity 9	Obtaining a certificate of OHSAS 18001
<i>Task 9.1</i>	<i>Training expense for “OHSAS 18001”</i>

**Table 23 (continued)**

Element	Description
Activity 10	Participating to the twinning project of “Decision Making and Performance Improvement in Public Sector”
<i>Task 10.1</i>	<i>Travelling expense of the 1st personnel for study tour</i>
<i>Task 10.2</i>	<i>Travelling expense of the 2nd personnel for study tour</i>
<i>Task 10.3</i>	<i>Travelling expense of the 1st personnel for practical training</i>
<i>Task 10.4</i>	<i>Travelling expense of the 2nd personnel for practical training</i>

### **10.3.2. Importance of the Activities of the Unit**

To find the importance of activities for targets, criteria to be used were determined. Since there are dependencies between them, the analytic network process (ANP) was selected to handle the relationships.

The process is performed using Super Decisions Software version 2.0.8, which is used for decision-making with dependence and feedback and implements the ANP<sup>84</sup>. The details of the process are described below.

Since the aim is to determine the importance of the activities 1, 2, 3 and 4 for target 1 and those of the activities 6, 7, 8, 9 and 10 for target 3, not for the goal; two separate ANP was performed<sup>85</sup>. Since the decision makers, the criteria and the logic are the same for the processes, they are expressed below for both; and then the rest of the processes are presented separately for each.

#### Decision Makers:

In order to reflect the qualifications and expertise of the employees of the unit for the process, two decision makers were selected. The evaluations were done via negotiations and one assessment was obtained for each pair-wise comparison.

#### Criteria:

Perspectives of the balanced scorecard approach, which are financial, customer, learning and growth, and internal processes, were used as the criteria in

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<sup>84</sup> [http://www.superdecisions.com/index\\_tables.php3](http://www.superdecisions.com/index_tables.php3)

<sup>85</sup> Since there is nonly one activity serving to the second target, there is no need to work on it at this stage. In addition, a single process could also be performed in the process. Yet; two separate processes were used to clarify the procedures.

determining the importance of activities. Since the unit is a part of a public administration, the second perspective was modified as external stakeholder. They were divided into sub-perspectives, which are used as sub-criteria in the process<sup>86</sup>. The criteria and sub-criteria are explained in Table 24.

**Table 24: Criteria and sub-criteria used in the ANP**

Criteria Code *	Criteria	Sub-Criteria Code *	Sub-Criteria
P1	Financial	P1.1	Cost Savings
P2	External Stakeholder	P2.1	Service Availability
		P2.2	Service Quality
		P2.3	External Stakeholder Satisfaction
P3	Learning and Growth	P3.1	Employee Satisfaction
		P3.2	Research and Development - Innovation
		P3.3	Management Expertise, Know-How
		P3.4	Employee Competency
P4	Internal Processes	P4.1	Corporate Certificates
		P4.2	Agility ( <i>Openness to change</i> )
		P4.3	Internal Control
		P4.4	Corporate Culture
		P4.5	Human Resources Management
		P4.6	Information Technology

\*The codes used in the ANP performed using Super Decisions Software

Analytic Network Process Related to the First Target:

Activities were the alternatives in the process. Therefore, they are grouped as a cluster, which is expressed in Table 25.

**Table 25: Alternatives used in the ANP for the first target**

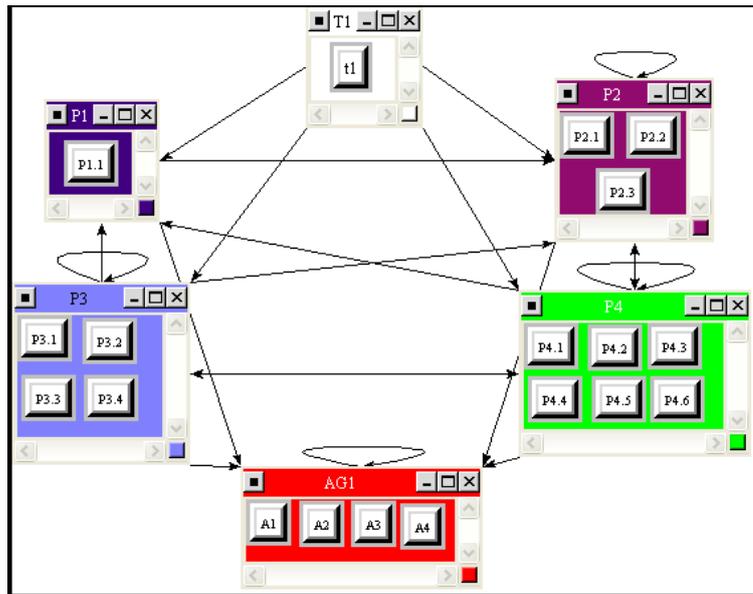
Group Code	Group Name	Explanation	Alternative Code	Alternative Name
AG1	Activity Group 1	Group of activities that serve to the first target	A1	Activity 1
			A2	Activity 2
			A3	Activity 3
			A4	Activity 4

<sup>86</sup> The studies of Tjader et al. (2009), Niven (2002), Kaplan and Norton (1992) were benefited in forming sub-criteria. Some sub-criteria are also added.

The relationships between the criteria, the alternatives and the target are determined as summarized in Table 26. Based on the relationships identified, the network structure shown in Figure 12 is constructed. Required pair-wise comparisons in the networks were identified and matrices were formed by each relationship.

**Table 26: Relationships of the elements related to the first target**

Element is influenced by...	Element	Element influences...
A2	<b>A1</b>	P1.1, P2.1, P2.2, P2.3, P3.1, P3.2, P3.3, P3.4, P4.1, P4.2, P4.3, P4.4, P4.5, P4.6
-	<b>A2</b>	P1.1, P2.1, P2.2, P2.3, P3.1, P3.2, P3.3, P3.4, P4.1, P4.2, P4.3, P4.4, P4.5, P4.6, A1
-	<b>A3</b>	P1.1, P2.1, P2.2, P2.3, P3.1, P3.2, P3.3, P3.4, P4.1, P4.2, P4.3, P4.4, P4.5, P4.6
-	<b>A4</b>	P1.1, P2.1, P2.2, P2.3, P3.1, P3.2, P3.3, P3.4, P4.1, P4.2, P4.3, P4.4, P4.5, P4.6
A1, A2, A3, A4, P2.2	<b>P1.1</b>	P3.2, P3.3, P4.3, T1
A1, A2, A3, A4, P2.3	<b>P2.1</b>	P2.3, P3.2, P3.3, P4.3, T1
A1, A2, A3, A4, P2.3, P4.1	<b>P2.2</b>	P1.1, P2.3, P3.2, P3.3, P4.3, T1
A1, A2, A3, A4, P2.1, P2.2	<b>P2.3</b>	P2.1, P2.2, T1
A1, A2, A3, A4, P3.4, P4.4, P4.5	<b>P3.1</b>	P3.3, T1
A1, A2, A3, A4, P1.1, P2.1, P2.2, P3.3, P3.4, P4.1, P4.2, P4.6	<b>P3.2</b>	P3.4, P4.2, T1
A1, A2, A3, A4, P1.1, P2.1, P2.2, P3.1, P3.4, P4.1, P4.3, P4.5	<b>P3.3</b>	P3.2, P3.4, P4.1, P4.5, T1
A1, A2, A3, A4, P2.2, P3.1, P3.2, P3.3, P4.3, P4.5	<b>P3.4</b>	P3.2, P3.3, P4.1, P4.3, P4.5, T1
A1, A2, A3, A4, P2.2, P3.3, P3.4	<b>P4.1</b>	P2.2, P3.2, P3.3, P4.2, P4.3, P4.5, T1
A1, A2, A3, A4, P3.1, P3.2, P4.1, P4.3, P4.4, P4.5	<b>P4.2</b>	P3.2, P4.4, P4.5, T1
A1, A2, A3, A4, P1.1, P2.1, P2.2, P3.4, P4.1, P4.6	<b>P4.3</b>	P3.3, P3.4, P4.5, T1
A1, A2, A3, A4, P4.2, P4.5	<b>P4.4</b>	P3.1, P4.2, P4.5, T1
A1, A2, A3, A4, P3.3, P4.1, P4.2, P4.3, P4.4	<b>P4.5</b>	P3.1, P3.3, P3.4, P4.2, P4.4, T1
A1, A2, A3, A4	<b>P4.6</b>	P3.2, P4.3, T1
P1.1, P2.1, P2.2, P2.3, P3.1, P3.2, P3.3, P3.4, P4.1, P4.2, P4.3, P4.4, P4.5, P4.6	<b>T1</b>	-



**Figure 12: Network structure used for the first target**

Cluster matrix for the network is shown in Figure 26 in Appendix I. Using the results of pair-wise evaluations; unweighted and weighted super matrices and the limit matrix were formed using the software. The matrices for the network 1 are shown in Tables 73-75 in Appendix I. As can be seen in Figure 13, the priorities of activities 1, 2, 3 and 4 for the first target are found as 0.112, 0.292, 0.366 and 0.230, respectively.

Name	Normalized by Cluster	Limiting
A1	0.11159	0.050104
A2	0.29208	0.131145
A3	0.36654	0.164577
A4	0.22979	0.103179

**Figure 13: Priorities of the activities related to the first target**

Analytic Network Process Related to the Third Target:

Activities are grouped as a cluster as shown in Table 27. The relationships between the criteria, the alternatives and the target are stated in Table 28.

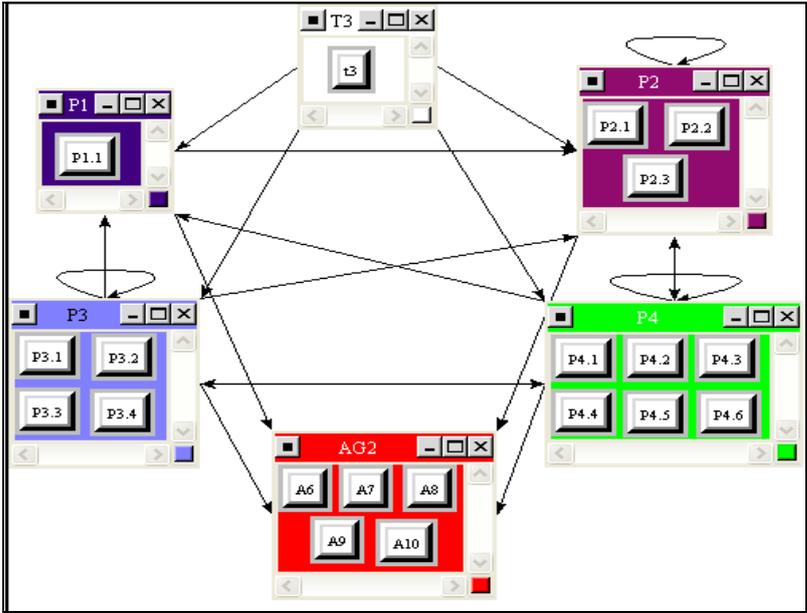
**Table 27: Alternatives used in the ANP for the third target**

Group Code	Group Name	Explanation	Alternative Code	Alternative Name
AG2	Activity Group 2	Group of activities that serve to the third target	A6	Activity 6
			A7	Activity 7
			A8	Activity 8
			A9	Activity 9
			A10	Activity 10

**Table 28: Relationships of the elements related to the third target**

Element is influenced by...	Element	Element influences...
-	<b>A6</b>	P1.1, P2.1, P2.2, P2.3, P3.1, P3.2, P3.3, P3.4, P4.1, P4.2, P4.3, P4.4, P4.5, P4.6
-	<b>A7</b>	P1.1, P2.1, P2.2, P2.3, P3.1, P3.2, P3.3, P3.4, P4.1, P4.2, P4.3, P4.4, P4.5, P4.6
-	<b>A8</b>	P1.1, P2.1, P2.2, P2.3, P3.1, P3.2, P3.3, P3.4, P4.1, P4.2, P4.3, P4.4, P4.5, P4.6
-	<b>A9</b>	P1.1, P2.1, P2.2, P2.3, P3.1, P3.2, P3.3, P3.4, P4.1, P4.2, P4.3, P4.4, P4.5, P4.6
-	<b>A10</b>	P1.1, P2.1, P2.2, P2.3, P3.1, P3.2, P3.3, P3.4, P4.1, P4.2, P4.3, P4.4, P4.5, P4.6
A6, A7, A8, A9, A10, P2.2	<b>P1.1</b>	P3.2, P3.3, P4.3, T3
A6, A7, A8, A9, A10, P2.3	<b>P2.1</b>	P2.3, P3.2, P3.3, P4.3, T3
A6, A7, A8, A9, A10, P2.3, P4.1	<b>P2.2</b>	P1.1, P2.3, P3.2, P3.3, P4.3, T3
A6, A7, A8, A9, A10, P2.1, P2.2	<b>P2.3</b>	P2.1, P2.2, T3
A6, A7, A8, A9, A10, P3.4, P4.4, P4.5	<b>P3.1</b>	P3.3, T3
A6, A7, A8, A9, A10, P1.1, P2.1, P2.2, P3.3, P3.4, P4.1, P4.2, P4.6	<b>P3.2</b>	P3.4, P4.2, T3
A6, A7, A8, A9, A10, P1.1, P2.1, P2.2, P3.1, P3.4, P4.1, P4.3, P4.5	<b>P3.3</b>	P3.2, P3.4, P4.1, P4.5, T3
A6, A7, A8, A9, A10, P2.2, P3.1, P3.2, P3.3, P4.3, P4.5	<b>P3.4</b>	P3.2, P3.3, P4.1, P4.3, P4.5, T3
A6, A7, A8, A9, A10, P2.2, P3.3, P3.4	<b>P4.1</b>	P2.2, P3.2, P3.3, P4.2, P4.3, P4.5, T3
A6, A7, A8, A9, A10, P3.1, P3.2, P4.1, P4.3, P4.4, P4.5	<b>P4.2</b>	P3.2, P4.4, P4.5, T3
A6, A7, A8, A9, A10, P1.1, P2.1, P2.2, P3.4, P4.1, P4.6	<b>P4.3</b>	P3.3, P3.4, P4.5, T3
A6, A7, A8, A9, A10, P4.2, P4.5	<b>P4.4</b>	P3.1, P4.2, P4.5, T3
A6, A7, A8, A9, A10, P3.3, P4.1, P4.2, P4.3, P4.4	<b>P4.5</b>	P3.1, P3.3, P3.4, P4.2, P4.4, T3
A6, A7, A8, A9, A10	<b>P4.6</b>	P3.2, P4.3, T3
P1.1, P2.1, P2.2, P2.3, P3.1, P3.2, P3.3, P3.4, P4.1, P4.2, P4.3, P4.4, P4.5, P4.6	<b>T3</b>	-

Based on the relationships identified, the network structure shown in Figure 14 is constructed. Required pair-wise comparisons in the networks were identified and matrices were formed by each relationship.



**Figure 14: Network structure used for the third target**

Cluster matrix for the network is shown in Figure 27 in Appendix I. Using the results of pair-wise evaluations; unweighted and weighted super matrices and the limit matrix were formed using the software.

Name	Normalized by Cluster	Limiting
A6	0.36194	0.202659
A7	0.35730	0.200063
A8	0.15177	0.084983
A9	0.07257	0.040635
A10	0.05642	0.031592

**Figure 15: Priorities of the activities related to the third target**

The matrices for the network 2 are shown in Tables 76-78 in Appendix I. As can be seen in Figure 15, the priorities of activities 7, 8, 9 and 10 for the third target are found as 0.362, 0.357, 0.152, 0.073 and 0.056, respectively.

### 10.3.3. Importance of the Targets of the Unit

The relative importances of targets are determined by pair-wise comparing them. Only decision criterion used in comparisons was their contribution to the achievement of the goal. Since there are not various decision criteria, there was not a step for determining the weights of criteria at this stage.

In order to reflect the qualifications and expertise of the employees of the unit for the process, two decision makers were selected for the processes. The evaluations were done via negotiations and one assessment was obtained for each comparison.

The original and normalized pair-wise comparison matrices are shown in Tables 29 and 30. Importances of targets for the goal are found as 0.064, 0.290 and 0.646, respectively.

**Table 29: Pair-wise comparison matrices for targets**

Target No	1	2	3
1	1	1/6	1/8
2	6	1	1/3
3	8	3	1

**Table 30: Normalized pair-wise comparison matrix for targets**

Target No	1	2	3	Weight of Target
1	0.067	0.040	0.086	<b>0.064</b>
2	0.400	0.240	0.229	<b>0.290</b>
3	0.533	0.720	0.686	<b>0.646</b>

### 10.3.4. Resource Allocation Model

The unit has appropriations only under one category of the first level economic code, which is expenditures for goods and services. Costs of tasks are expressed under three sub-categories; which are travelling expenses stated in code of 033, purchase of services in code of 035 and expenditures for purchase of movable

goods and intangible rights, maintenance and repair in code of 037. Total available budgets are shown in Table 31. Costs of the tasks and their impact on activities are given in Table 32.

**Table 31: Total available budget used in the sample model**

	Budget Code ( <i>n</i> )			Total
	033	035	037	
<b>Total Available Budget (TL)</b>	36,000	180,000	15,000	<b>231,000</b>

Importance of activities for performance indicators, which are denoted by  $W_{ij}$  and determined by ANP, are as follows:

$$W_{1,1}=0.112, W_{2,1}=0.292, W_{3,1}=0.366, W_{4,1}=0.230$$

$$W_{5,1}=W_{6,1}=W_{7,1}=W_{8,1}=W_{9,1}=W_{10,1}=0 \quad (\text{by default})$$

$$W_{5,2}=1$$

$$W_{1,2}=W_{2,2}=W_{3,2}=W_{4,2}=0, W_{6,2}=W_{7,2}=W_{8,2}=W_{9,2}=W_{10,2}=0 \quad (\text{by default})$$

$$W_{6,3}=0.362, W_{7,3}=0.357, W_{8,3}=0.152, W_{9,3}=0.073, W_{10,3}=0.056$$

$$W_{1,3}=W_{2,3}=W_{3,3}=W_{4,3}=W_{5,3}=0 \quad (\text{by default})$$

Desired levels of targets, which are denoted by  $PGT_j$ , are 100; which imply full performance. Targets both serve to the total performance of the goal. Importances of targets on goal, which are denoted by  $K_j$  and determined by pair-wise comparison, are as follows:  $K_1=0.064$ ,  $K_2=0.290$  and  $K_3=0.646$ .

In addition, activity 1 should be completed in the budget year. Moreover, (i) task 1 of activity 6 should be completed before task 2 of that activity, (ii) task 3 of activity 6 should be completed before task 4 of that activity, (iii) tasks 1 and 2 of activity 7 should be completed before task 3 of the activity, (iv) task 1 of activity 10 should be completed before task 2 of that activity, and (v) task 3 of activity 10 should be completed before task 4 of that activity.

**Table 32: Input values of the tasks used in the sample model**

Activity (i)	Task (i,g)	Cost of the Task (TL) (C <sub>n,i,g</sub> )			Impact of the Task on the Completion of the Activity (IM <sub>i,g</sub> )	Impact of the Task on the Effect of the Activity (PW <sub>i,g</sub> )
		033	035	037		
Activity 1	Task 1,1		500		100%	100%
<b>Total Cost of Activity 1</b>		<b>500</b>				
Activity 2	Task 2,1		500		100%	100%
<b>Total Cost of Activity 2</b>		<b>500</b>				
Activity 3	Task 3,1		15,400		100%	100%
<b>Total Cost of Activity 3</b>		<b>15,400</b>				
Activity 4	Task 4,1	2,200			25%	15%
	Task 4,2	7,800			10%	15%
	Task 4,3		3,800		30%	15%
	Task 4,4		2,000		10%	25%
	Task 4,5			15,000	25%	30%
<b>Total Cost of Activity 4</b>		<b>10,400</b>	<b>5,800</b>	<b>15,000</b>		
Activity 5	Task 5,1	4,000			15%	10%
	Task 5,2	4,000			15%	10%
	Task 5,3	13,100			15%	20%
	Task 5,4		6,000		30%	40%
	Task 5,5		10,800		25%	20%
<b>Total Cost of Activity 5</b>		<b>21,800</b>	<b>16,100</b>			
Activity 6	Task 6,1	4,700			10%	10%
	Task 6,2	4,700			5%	5%
	Task 6,3	8,400			15%	5%
	Task 6,4	8,400			10%	15%
	Task 6,5		150,000		60%	65%
<b>Total Cost of Activity 6</b>		<b>26,200</b>	<b>150,000</b>			
Activity 7	Task 7,1		1,800		20%	10%
	Task 7,2		1,800		20%	10%
	Task 7,3		50,000		45%	70%
	Task 7,4		1,800		15%	10%
<b>Total Cost of Activity 7</b>		<b>55,400</b>				
Activity 8	Task 8,1		1,500		100%	100%
<b>Total Cost of Activity 8</b>		<b>1,500</b>				
Activity 9	Task 9,1		1,500		100%	100%
<b>Total Cost of Activity 9</b>		<b>1,500</b>				
Activity 10	Task 10,1	4,800			25%	25%
	Task 10,2	4,800			25%	15%
	Task 10,3	8,750			25%	35%
	Task 10,4	8,750			25%	25%
<b>Total Cost of Activity 10</b>		<b>27,100</b>				

### 10.3.5. The Actual Case

The actual case was based on the practices of the unit. The priorities of the activities and targets were not determined. Therefore, resource allocation was done by the unit by rule of thumb, as shown in Table 33.

**Table 33: Funds allocated to tasks in the actual case**

Activity/ Task No	Budget Code ( <i>n</i> )			(TL)
	033	035	037	Total
<b>Activity 1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Task1,1	0	0	0	0
<b>Activity 2</b>	<b>0</b>	<b>500</b>	<b>0</b>	<b>500</b>
Task2,1	0	500	0	500
<b>Activity 3</b>	<b>0</b>	<b>3,900</b>	<b>0</b>	<b>3,900</b>
Task3,1	0	3,900	0	3,900
<b>Activity 4</b>	<b>6,450</b>	<b>5,800</b>	<b>15,000</b>	<b>27,250</b>
Task4,1	2,200			2,200
Task4,2	4,250			4,250
Task4,3		3,800		3,800
Task4,4		2,000		2,000
Task 4,5			15,000	15,000
<b>Activity 5</b>	<b>4,000</b>	<b>16,800</b>	<b>0</b>	<b>20,800</b>
Task 5,1	4,000			4,000
Task 5,2				0
Task 5,3				0
Task 5,4		6,000		6,000
Task 5,5		10,800		10,800
<b>Activity 6</b>	<b>16,800</b>	<b>96,400</b>	<b>0</b>	<b>113,200</b>
Task 6,1				0
Task 6,2				0
Task 6,3	8,400			8,400
Task 6,4	8,400			8,400
Task 6,5		96,400		96,400
<b>Activity 7</b>	<b>0</b>	<b>53,600</b>	<b>0</b>	<b>53,600</b>
Task 7,1		1,800		1,800
Task 7,2		1,800		1,800
Task 7,3		50,000		50,000
Task 7,4				0
<b>Activity 8</b>	<b>0</b>	<b>1,500</b>	<b>0</b>	<b>1,500</b>
Task 8,1	0	1,500	0	1,500
<b>Activity 9</b>	<b>0</b>	<b>1,500</b>	<b>0</b>	<b>1,500</b>
Task 9,1	0	1,500	0	1,500
<b>Activity 10</b>	<b>8,750</b>	<b>0</b>	<b>0</b>	<b>8,750</b>
Task 10,1				0
Task 10,2				0
Task 10,3	8,750			8,750
Task 10,4				0
<b>Total</b>	<b>36,000</b>	<b>180,000</b>	<b>15,000</b>	<b>213,000</b>

Nonetheless, it is worth to calculate the values of the variables using the actual data to compare it with the proposed solutions. Completion levels of activities are calculated as shown in Table 34, based on the information in Table 32.

**Table 34: Completion levels of activities and their impacts in the actual case**

Activity No	$A_i^*$	$HW_i^{**}$
1	0	0
2	100	100
3	0	0
4	90	85
5	70	70
6	25	20
7	85	90
8	100	100
9	100	100
10	25	35

\*  $A_i$  denotes the completion level of activity  $i$

\*\*  $HW_i$  denotes the impact of the completion level of activity  $i$

Therefore, the values of the first, the second and the third performance indicator are actually as follows:  $PG_1=48.75$ ,  $PG_2=70$  and  $PG_3=63.83$ . The decrease in the overall performance is therefore 35.35, which means that by the given budget amount the unit targeted 64.65% of performance that it desires to reach.

### 10.3.6. Proposed Model Solution

The model is constructed and solved using GAMS IDE. The code of the model is shown in Figure 28 in Appendix I.

The amount of 6,600 TL is transferred from the item 035 to 033. Amount of budget allocated to each task is shown in Table 35.

Correlated to the amount of budget allocated to the tasks, completion levels of activities are determined. Consequently, their effects on performance indicators are determined, which are then used for calculation of total performance. Completion levels of activities and their effect on performance indicators are shown in Table 36.

**Table 35: Funds allocated to tasks in the proposed model**

Activity/ Task No	Budget Code ( <i>n</i> )			(TL)
	033	035	037	Total
<b>Activity 1</b>	<b>0</b>	<b>500</b>	<b>0</b>	<b>500</b>
Task 1,1	0	500	0	500
<b>Activity 2</b>	<b>0</b>	<b>500</b>	<b>0</b>	<b>500</b>
Task 2,1	0	500	0	500
<b>Activity 3</b>	<b>0</b>	<b>15,400</b>	<b>0</b>	<b>15,400</b>
Task 3,1	0	15,400	0	15,400
<b>Activity 4</b>	<b>0</b>	<b>5,800</b>	<b>15,000</b>	<b>18,800</b>
Task 4,1	0			0
Task 4,2	0			0
Task 4,3		3,800		3,800
Task 4,4		2,000		0
Task 4,5			15,000	15,000
<b>Activity 5</b>	<b>21,100</b>	<b>16,800</b>	<b>0</b>	<b>37,900</b>
Task 5,1	4,000			4,000
Task 5,2	4,000			4,000
Task 5,3	13,100			13,100
Task 5,4		6,000		6,000
Task 5,5		10,800		10,800
<b>Activity 6</b>	<b>21,500</b>	<b>0</b>	<b>0</b>	<b>21,500</b>
Task 6,1	4,700			4,700
Task 6,2	0			0
Task 6,3	8,400			8,400
Task 6,4	8,400			8,400
Task 6,5		0		0
<b>Activity 7</b>	<b>0</b>	<b>55,400</b>	<b>0</b>	<b>55,400</b>
Task 7,1		1,800		1,800
Task 7,2		1,800		1,800
Task 7,3		50,000		50,000
Task 7,4		1,800		1,800
<b>Activity 8</b>	<b>0</b>	<b>1,500</b>	<b>0</b>	<b>1,500</b>
Task 8,1	0	1,500	0	1,500
<b>Activity 9</b>	<b>0</b>	<b>1,500</b>	<b>0</b>	<b>1,500</b>
Task 9,1	0	1,500	0	1,500
<b>Activity 10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Task 10,1	0			0
Task 10,2	0			0
Task 10,3				0
Task 10,4				0
<b>Total</b>	<b>42,600</b>	<b>97,400</b>	<b>15,000</b>	<b>155,000</b>

The values of  $E_1$ ,  $E_2$ , and  $E_3$  are found as 6.9, 0 and 30.94, respectively. Therefore, the values of the first, the second and the third performance indicator are as follows:  $PG_1=93.1$ ,  $PG_2=100$  and  $PG_3=69.06$ .

**Table 36: Completion levels of activities and their impacts in the proposed model**

Activity No	$A_i^*$	$HW_i^{**}$
1	100	100
2	100	100
3	100	100
4	65	70
5	100	100
6	35	30
7	100	100
8	100	100
9	100	100
10	0	0

\*  $A_i$  denotes the completion level of activity  $i$

\*\*  $HW_i$  denotes the impact of the completion level of activity  $i$

Finally, decrease in the overall performance is calculated as 20.429, which means that by the given budget amount the unit can achieve about 79.57% of performance that it desires to reach.<sup>87</sup>

### 10.3.7. Non-Itemized Budget Alternative

The flexibility related to the budget is added to the model in order to see the effect of restrictions in the budget. In this case, the budget is taken as fixed and non-itemized. The revised code of the model is shown in Figure 29 in Appendix I.

In this case, the model uses the budget amount of 49,500 TL in 035 item as it is in the 033. Thereby, the budget allocated to the tasks changed, so the other related variables. Amount of budget allocated to each task is shown in Table 37. Correlated to the allocated amounts, completion levels of activities and their effects on performance indicators are as shown in Table 38.

The values of  $E_1$ ,  $E_2$ , and  $E_3$  are found as 0, 0 and 23.53, respectively. Therefore, the values of the first, the second and the third performance indicator are as follows:  $PG_1=100$ ,  $PG_2=100$  and  $PG_3=76.47$ . Finally, decrease in the overall performance is calculated as 15.2, which means that by the given budget amount the unit can achieve 84.8% of performance that it desires to reach.

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<sup>87</sup> Sensitivity analysis done related to the cost of the task 5 of the activity 6 is presented in Appendix I.

**Table 37: Funds allocated to tasks in the non-itemized budget alternative**

Activity/ Task No	Budget Code (n)			(TL)
	033	035	033	Total
<b>Activity 1</b>	<b>0</b>	<b>500</b>	<b>0</b>	<b>500</b>
Task 1,1	0	500	0	500
<b>Activity 2</b>	<b>0</b>	<b>500</b>	<b>0</b>	<b>500</b>
Task 2,1	0	500	0	500
<b>Activity 3</b>	<b>0</b>	<b>15,400</b>	<b>0</b>	<b>15,400</b>
Task 3,1	0	15,400	0	15,400
<b>Activity 4</b>	<b>10,000</b>	<b>5,800</b>	<b>15,000</b>	<b>30,800</b>
Task 4,1	2,200			2,200
Task 4,2	7,800			7,800
Task 4,3		3,800		3,800
Task 4,4		2,000		2,000
Task 4,5			15,000	15,000
<b>Activity 5</b>	<b>21,100</b>	<b>16,800</b>	<b>0</b>	<b>37,900</b>
Task5,1	4,000			4,000
Task5,2	4,000			4,000
Task5,3	13,100			13,100
Task5,4		6,000		6,000
Task5,5		10,800		10,800
<b>Activity 6</b>	<b>26,200</b>	<b>0</b>	<b>0</b>	<b>26,200</b>
Task6,1	4,700			4,700
Task6,2	4,700			4,700
Task6,3	8,400			8,400
Task6,4	8,400			8,400
Task6,5		0		0
<b>Activity 7</b>	<b>0</b>	<b>55,400</b>	<b>0</b>	<b>55,400</b>
Task7,1		1,800		1,800
Task7,2		1,800		1,800
Task7,3		50,000		50,000
Task7,4		1,800		1,800
<b>Activity 8</b>	<b>0</b>	<b>1,500</b>	<b>0</b>	<b>1,500</b>
Task8,1	0	1,500	0	1,500
<b>Activity 9</b>	<b>0</b>	<b>1,500</b>	<b>0</b>	<b>1,500</b>
Task9,1	0	1,500	0	1,500
<b>Activity 10</b>	<b>27,100</b>	<b>0</b>	<b>0</b>	<b>27,100</b>
Task10,1	4,800			4,800
Task10,2	4,800			4,800
Task10,3	8,750			8,750
Task10,4	8,750			8,750
<b>Total</b>	<b>84,400</b>	<b>97,400</b>	<b>15,000</b>	<b>196,800</b>

**Table 38: Completion levels of activities and their impacts in the non-itemized budget alternative**

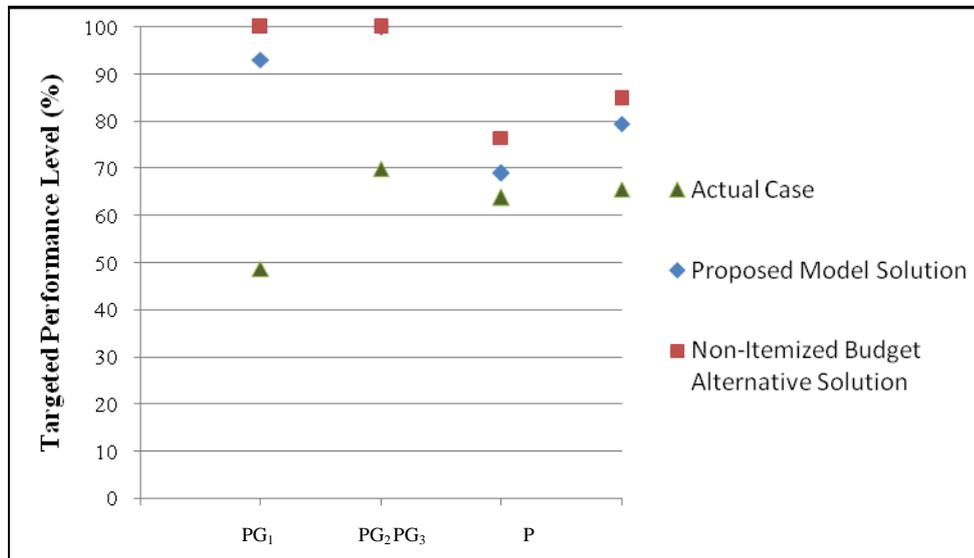
Activity No	$A_i^*$	$HW_i^{**}$
1	100	100
2	100	100
3	100	100
4	100	100
5	100	100
6	40	35
7	100	100
8	100	100
9	100	100
10	100	100

\*  $A_i$  denotes the completion level of activity  $i$

\*\*  $HW_i$  denotes the impact of the completion level of activity  $i$

### 10.3.8. Comparison of the Solutions

The values of the performance indicators,  $PG_1$ ,  $PG_2$  and  $PG_3$ , and the overall performance level, denoted by  $P$ , achieved in the actual case, in the proposed model solution and in the non-itemized budget alternative solution are compared in Figure 16 and Table 39.



**Figure 16: Comparison of alternatives and performance levels**

**Table 39: Comparison of alternatives and performance levels**

	PG <sub>1</sub>	PG <sub>2</sub>	PG <sub>3</sub>	z	P
Actual Case	48.75	70.00	63.83	35.35	64.65
Proposed Model Solution	93.10	100.00	69.06	20.43	79.57
Non-Itemized Budget Alternative Solution	100.00	100.00	76.47	15.20	84.80

Proposed model solution gives absolutely a better solution than the actual case. More specifically, by the use of the proposed model, the unit can increase its targeted performance from 64.65% to 79.57% by means of optimum allocation of its budget to the tasks.

Furthermore, non-itemized budget alternative solution gives the best result if the decision maker aims to minimize the weighted sum of deviations from target performance level. Even if the decision maker considers the values of the performance indicators separately, this alternative dominates the other solutions. Therefore, it can be concluded that if the unit is given a fixed non-itemized amount of budget, it can allocate its resources more efficiently and increase its targeted performance level.

## CHAPTER 11

### CONCLUSION AND FUTURE RESEARCH DIRECTIONS

#### 11.1. Findings of the Study

This study was designed to present a detailed description and analysis of the performance budgeting system in Turkey, without losing the big picture.

The elements of the performance budgeting system; namely, strategic plans, performance programs, budgets, activity reports and possible other tools constituted the sub-areas of the system analysis.

Based on the findings of the system analysis the following problems were identified: (i) Inadequate and incomplete legislation caused by deficiencies and ambiguity in strategic planning, performance programming, budgeting and accountability reporting regulation; preparation of investment and operational budgets as separate documents; preparation of performance programs and budgets as separate documents; short coverage period of performance programs; short budget approval period by the Parliament and unaligned complementary legislation, (ii) incomplete and unclear performance budgeting methodology caused by ambiguity in performance budgeting approach; lack of systematic approach for strategic planning; deficiencies and ambiguity in performance programming methodology; ambiguity in linking strategic plans to higher level policy documents, performance programs to strategic plans, budgets, accountability reports and detailed expenditure programs to performance programs; lack of program classification; ineffective performance budgeting documents in determination of budget ceilings and appropriations of administrations and ambiguity in rules and procedures of budget negotiations, (iii) weak coordination and guidance caused by two regulatory administrations in the performance budgeting system; inadequacy of the assessment of the strategic plans and performance programs; insufficient guidance for strategic planning and performance programming processes; disconnected performance budgeting legislation

and disconnected budget negotiations, (iv) improper and ineffective implementation caused by delays in budget calendar and lack of activity based costing, feasibility analysis, risk assessment and cost accounting, and (v) disabling administrative and external factors that are organizational problems of the strategy development units; insufficient political ownership and supervision; lack of infrastructure to obtain track and evaluate performance data, and inadequacy of the “e-bütçe” system. Consequently, it was concluded that performance budgeting system is not properly, effectively and efficiently running in Turkey.

Based on the problems, proposal for a properly running performance budgeting system for the public sector were put forward. The main proposals are as follows: (i) strengthened national level policy documents, (ii) restructured and improved performance budgeting documents, (iii) strengthened performance budgeting methodology, (iv) improved and assured quality of performance budgeting documents, (v) strengthened and clarified relationship between results and resources, (vi) clarified consequences of met and unmet commitments, (vii) strengthened coordination and consultancy, (viii) strengthened strategy development units, (ix) strengthened ownership and supervision by the Parliament, (x) established management information system, (xi) revised way of determination of expenditure ceilings, (xii) revised preparation process of performance budgets, (xiii) revised budget calendar, (xiv) strengthened performance budgeting legislation, and (xv) strengthened complementary legislation for performance budgeting.

In addition, the use of the analytic hierarchy process and utilization of a resource allocation model was put forward for the update of performance program data of spending units. An application of the proposed model was done for the Strategy Development Unit of the Undersecretariat of Treasury. It was found that by the use of the proposed model, the unit can increase its targeted performance from 65.65% to 79.57% by means of optimum allocation of its budget to the activities. Moreover, a non-itemized budget alternative is questioned. It was concluded that if the unit is given a fixed non-itemized amount of budget, it can allocate its resources more efficiently and increase its targeted performance level.

## **11.2. Contribution of the Study**

The study is the first in the sense that it presents a detailed analysis and proposals for the entire performance budgeting system. The contribution of the study

is in three areas. The information presented in the first part of the study serves as a background document for the public administrations in Turkey since it includes (i) a detailed literature survey, which constructs the theoretical background of the system, and (ii) a comprehensive expression of the performance budgeting system in Turkey.

Another contribution is that the analysis done in this study not only displays the specific problems related to the performance budgeting system in Turkey, but also forms the base for improvement areas and significant suggestions. It also produces and displays the findings to the contrary of hypothetical questions.

Finally, it includes possible conceptual solutions for the identified problems without unbalancing the performing of the system, which may be used by the decision makers and the implementers. In addition, it proposes a mathematical modeling for update of performance program data of spending units.

This study addresses the administrations within the general budget by its proposals in Chapter 9. Along with some modifications, the system designed in this study may serve serves for 185 administrations within the central budget, 2 social security institutions and all local administrations. Therefore, it serves to establish a more properly running performance budgeting system for the entire public sector.

### **11.3. Future Research Directions for the Survey**

Survey done in this study can be enhanced by applying the analysis for the entire central government. Doing so also enables revealing the effect of budget on the system since private budget administrations have their own revenues.

It may also be applied for local administrations. Thereby, the perspectives of different groups of administrations can be obtained as well.

Survey done in this study can be repeated periodically so as to reveal the changes and progress in the performance budgeting system in Turkey. Under static environment, the part related to strategic planning can be done once every five years whereas the parts related to performance programming and accountability reporting can be done annually. Besides, it will be beneficial to done the survey whenever there is a significant change in the system.

Finally, this study can be a source for new studies about performance budgeting; new researchers especially the ones who are interested in improvement of the performance budgeting system in Turkey can benefit from the questionnaires, identified problems and suggestions.

## **11.4. Future Research Directions for the Proposed Model for Update of Performance Programs**

### **11.4.1. Adaptation to Different Circumstances**

Some possible situations where the assumptions of the proposed model do not hold are discussed below.

#### Ambiguity in the Costs of Tasks:

It is assumed in the models that exact costs of tasks are known or are properly estimated. However, this may not be the case in practice. They may be estimated within an interval. Alternatively, they may be estimated accurately, but may arise differently. Briefly, there may be uncertainties about costs. In such situations, administrations may run the proposed model under different cost values of tasks.

#### Continuous Nature of Targets:

It is assumed in the models that targets are continuous valued variables. However, they may take only discrete values, which force them to be integer valued. In such cases, the model may be extended as integer programming.

#### Uncertainty in the Aspiration Levels of Targets:

It is assumed in the models that aspiration (desired) levels of targets are known or determined with certainty. However, there may be cases where the levels are not precise or a range of aspiration levels is desired, instead of single values. These cases should make use of intervals for aspiration levels. In such cases, the model may be extended to handle the ranges and the objective function can be defined as minimization of the weighted sum of deviations from the ranges. Therefore, the constraints making the sum of achieved levels and deviations equal to the aspiration levels should be doubled; enabling the upper and lower levels of the intervals to be used in the right hand sides.

#### Linear Nature of Functions:

It is assumed the models have linear functions; yet, it may not be the case and some or all may need to be expressed as nonlinear functions. In such cases, the model becomes a nonlinear one.

#### **11.4.2. Extension to the Corporate and National Level**

The proposed model can be implemented in the corporate level in the preparation of performance program proposals. In that model, administrations will have a determined aggregate expenditure ceiling for each first level economic code that should be partitioned into sub-budgets for spending units.

The proposed model can also be enhanced to be used in national level decision making for strategic resource allocation to the central government administrations. It may also be used in determination of expenditure ceilings.

#### **11.4.3. Extension for the Multi-Year Perspective**

The proposed model can be constructed for three years considering multi-year planning and budgeting perspective. This extension can be applied for resource allocation and planning to be used by both administrations and spending units. Appropriations of the budget year together with budget forecasts for the following years may be used in the model for budget constraints.

#### **11.4.4. Effect of Achieved Performance**

It may be questioned that performance of administrations in the part years may be added to the model.

In the proposed model for update of performance programs with an annual scope, achieved performance has no impact. The reason is that the available budget is assumed to be predetermined based on various criteria.

In the extended models for multi-year planning, on the other hand, performance in the first year may have an effect on the budget amounts or ceilings of the next year. However, in order to do so, that affect should be known in advance. Besides, it is the achieved performance that may have an effect on budgets, not the planned one. Achieved performance, in addition, should be compared to the planned one if it will have an effect on the budget. In that case, it is meaningless to add a performance impact to models, since they are designed to deal with the planned performance before the beginning on the budget year.

Achieved performance can be added to the models only when it is estimated by the users of the models.

#### **11.4.5. Extension for the Within-Year Planning**

The proposed model for update of performance programs can be enhanced by including time dimension of months. Thereby, more accurate planning may be done on monthly basis, which may also enable proper determination of detailed expenditure programs.

#### **11.4.6. Use of the Model with Management Information Systems**

The proposed model and the extended ones can be integrated to management information systems as a infrastructure model for performance programming, which will serve as a decision support tool.

## REFERENCES

- Altuzarra, Alfredo, Moreno-Jiménez, José Maria and Salvador, Manuel. 2007. A Bayesian Prioritization Procedure for AHP-Group Decision Making. *European Journal of Operational Research* V.182: 367–382.
- Akkaş, Harun. 2008. *Performans Esaslı Bütçeleme: Dünya Uygulamaları ve Türkiye’de Uygulanabilirliği*. Ankara: Hazine Müsteşarlığı, Uzmanlık Tezi.
- Andrews, Matthew. 2006. Beyond ‘Best Practice’ and ‘Basics First’ in Adopting Performance Budgeting Reform. *Public Administration and Development* Vol. 26: 147–161. <http://www3.interscience.wiley.com/journal/112589151/abstract> (accessed November 19, 2009)
- Anshen, Melvin. 1969. The Federal Budget as an Instrument for Management and Analysis. In *Program Budgeting*, edited by David Novick, 3-23
- Arnold, William G. 2008. *Performance Budgeting: What Works, What Doesn't*. United States of America: Management Concepts, Inc.
- Batirel, Ö. Faruk. 1996. Kamu Bütçesi. İstanbul: Marmara Üniversitesi Nihad Sayar Eğitim Vakfı Yayınları No:513/747.
- Behn, Robert D. 1985. Cutback Budgeting. *Journal of Policy Analysis and Management* 4: 177-77. Quoted in Kelly, Janet M. and Rivenbark, William C. 2003. *Performance Budgeting for State and Local Government*. M.E. Sharpe Inc.
- Blöndal, Jón R. 2003. Accrual Accounting and Budgeting: Key Issues and Recent Developments. *OECD Journal on Budgeting* Vol.3.1: 43-60.
- Blöndal, Jón R. 2004. Issues in Accrual Budgeting. *OECD Journal on Budgeting* Vol.4.1: 103-120.
- Blöndal, Jón R., Kraan, Dirk-Jan and Ruffner, Michael. 2003. Budgeting in the United States. *OECD Journal on Budgeting* Vol.3.2: 7-53.

- Bryson, John M. 2004. *Strategic Planning for Public and Nonprofit Organizations: A guide to Strengthening and Sustaining Organizational Achievement*. 3rd Edition. United States of America: John Wiley and Sons, Inc.
- Burkhead, Jesse. 1956. *Government Budgeting*. New York: John Wiley and Sons, Inc.
- Cutt, James. 1974. *A Planning, Programming, and Budgeting Manual. Resource Allocation in Public Sector Economics*. U.S.A.: Praeger Publishers, Inc.
- Debets, Raphael. 2007. Performance Budgeting in the Netherlands. *OECD Journal on Budgeting* Vol.7.4: 103-122.
- Demir, İclal and Öner Mukadder. 1991. Bütçe Başlangıç Ödenekleri ve Gelir Tahminleri (1930-1991). *Maliye Bakanlığı ve Gümrük Bakanlığı Araştırma Planlama ve Koordinasyon Kurulu Başkanlığı Yayınları*, 320: 8-18.
- Dropkin, Murray, Halpin Jim and La Touche Bill. 2007. *The Budget Building Book For Nonprofits - A Step-By-Step Guide For Managers and Boards*. John Wiley and Sons Ltd (United States).
- Eisenhardt, Kathleen M. 1989. Building Theories from Case Study Research. *Academy of Management Review* Vol.14.4: 532-550. Quoted in Andrews, Matthew. 2006. Beyond 'Best Practice' and 'Basics First' in Adopting Performance Budgeting Reform. *Public Administration and Development* Vol. 26: 147-161.
- Ellis, Kevin and Mitchell, Stephen. 2002. Outcome-focused Management in the United Kingdom. *OECD Journal on Budgeting* Vol.4.1: 111-128.
- Ertüz, Ertan. 2005. Yeni Mali Yönetim Yapısında Performans Esaslı Bütçeleme. 20. *Türkiye Maliye Sempozyumu* 61-74.
- Finney, Robert G. 1993. *Powerful Budgeting for Better Planning and Management*. United States of America: A Sue Katz and Associates Book.
- Fishel, Walter L. 1971. *Resource Allocation in Agricultural Research*.

- Fölscher, Alta. 2007. Budget Methods and Practices. In *Budgeting and Budgetary Institutions*, edited by Anwar Shah, 109-136.
- Ginnerup Rikke, Jørgensen Thomas Broeng, Jacobsen Anders Møller and Refslund Niels. 2007. Performance Budgeting in the Denmark. *OECD Journal on Budgeting* Vol.7.4: 67-90.
- Government of Turkey. 2003. *Public Financial Management and Control Law*. Ankara (also published in the Official Gazette No. 25326).
- Government of Turkey. 2006. *By-Law on the Preparation of Accountability Reports of Public Administrations*. Ankara: Ministry of Finance. (also published in the Official Gazette No. 26111).
- Government of Turkey. 2006. *By-Law on the Procedures and Bases for Strategic Planning*. Ankara: Undersecretariat of the State Planning Organization (also published in the Official Gazette No. 26197).
- Government of Turkey. 2006. *By-Law on the Working Procedures and Principles of Strategy Development Units*. Ankara: Undersecretariat of the State Planning Organization (also published in the Official Gazette No. 26084).
- Government of Turkey. 2008. *By-Law on the Preparation of Performance Programs of Public Administrations*. Ankara: Ministry of Finance. (also published in the Official Gazette No. 26927).
- Government of Turkey. 2009. *By-Law on the Amandement of the By-Law on the Preparation of Performance Programs of Public Administrations*. Ankara: Ministry of Finance. (also published in the Official Gazette No. 27289).
- Grifel, Stuart S. 1993. Performance Measurement and Budgetary Decision Making. *Public Productivity & Management Review* Vol. 16:4: 403-407.
- Green, Samuel B., Salkino Neil J., Akey, Theresa M. 2000. *Using SPSS for Windows-Analyzing and Understanding Data*. New Jersey: Prentice-Hall, Inc.
- Groszyk, Walter. 2002. Outcome-focused Management in the United States. *OECD Journal on Budgeting* Vol.1.4: 129-150.

- Hager, Greg, Hobson Alice and Wilson, Ginny. 2001. *Performance-Based Budgeting: Concepts and Examples*. Legislative Research Commission, Program Review and Investigations Committee. Research Report: 302
- Hughes, Richard. 2008. *Performance Budgeting in the UK: 10 Lessons from a Decade*. [http://siteresources.worldbank.org/INTMEXICO/Resources/R.Hughes\\_Paper.pdf](http://siteresources.worldbank.org/INTMEXICO/Resources/R.Hughes_Paper.pdf) (accessed July 7, 2009).
- Ignizio, James P. 1976. *Goal Programming and Extensions*. United States of America: D.C. Health and Company.
- Ignizio, James P. 1982. *Linear Programming in Single- & Multiple-Objective Systems*. United States of America: Prentice-Hall, Inc.
- Joiner, Carl and Chapman J. Brad. 1981. Budgeting strategy: a meaningful mean. *Society for Advancement of Management Journal*, 46 (3): 4-11.
- Joyce, P.G. 1999. *Performance-Based Budgeting*. In R. T. Meyers (Ed.), *Handbook of government budgeting*. San Francisco, CA: Jossey-Bass Publishers.
- Kaplan, Robert S. and Norton, David P. 1992. The Balanced Scorecard-Measures that Drive Performance. *Harvard Business Review*. January-February, 1992: 71-79.
- Kaplan, Robert S. and Norton, David P. 1996. Using the Balanced Scorecard as a Strategic Management System. *Harvard Business Review*. January-February, 1996: 75-85.
- Kelly, Janet M. and Rivenbark, William C. 2003. *Performance Budgeting for State and Local Government*. M.E. Sharpe Inc.
- Kızıldaş, Emine. 2005. Türkiye’de Bütçenin Tarihsel Gelişimi ve Ekonomik Yapı ile İlişkisi. *Bütçe Dünyası* 23:4-13.
- Kinnear, Paul R. and Gray, Colin D. 2008. *SPSS 15 Made Simple*. New York: Psychology Press.
- Kraan, Dirk-Jan, Bergvall Daniel and Hawkesworth Ian. 2007. Budgeting in Turkey. *OECD Journal on Budgeting* Vol.7.2: 7-58.

- Kusek, Jody Zall and Rist, Ray C. 2004. *Ten Steps to a Results-Based Monitoring and Evaluation System*. The World Bank
- Küchen Thomas and Nordman Pertti. 2008. Performance Budgeting in Sweden. *OECD Journal on Budgeting* Vol.8.1: 49-59
- Lee, Sang M. 1972. *Goal Programming for Decision Analysis*. United Kingdom: Auerbach Publishers Inc.
- Leung, L.C. Lam, K.C. and Cao, D. 2006. Implementing the Balanced Scorecard Using the Analytic Hierarchy Process & the Analytic Network Process. *Journal of the Operational Research Society*. V.57: 682–691
- Mercer, John. 2002. *Performance Budgeting for Federal Agencies. A Framework*. AMS
- Mercer, John. 2003. *Cascade Performance Budgeting*. <http://www.john-mercerc.com/cascade.htm>. (accessed January 4, 2010).
- Moreno-Jiménez, José Maria, Joven, Juan Aguaron, Pirla, Agustin Raluy and Lanuza, Alberto Turon. 2005. A Spreadsheet Module for Consistent Consensus Building in AHP-Group Decision Making. *Group Decision and Negotiation* V.14: 89–108.
- Morgan, George A., Leech, Nancy L., Gloeckner, Gene W., Barrett, Karen C. 2004. *SPSS for Introductory Statistics: Use and Interpretation*. New Jersey: Lawrence Erlbaum Associates, Inc.
- Nardi, Peter M. 2006a. *Doing Survey Research. A Guide to Quantitative Measures*. United States of America: Pearson Education, Inc.
- Nardi, Peter M. 2006b. *Interpreting Data: A Guide to Understanding Research*. United States of America: Pearson Education, Inc.
- Niven, Paul R. 2002. *Balanced Scorecard Step-by-Step: Maximizing Performance and Maintaining Results*. United States of America: John Wiley & Sons, Inc., New York.
- Noman, Zafar. 2008. Performance Budgeting in the United Kingdom. *OECD Journal on Budgeting* Vol.8.1: 75-90.

OECD. 2002. Best Practices for Budget Transparency. *OECD Journal on Budgeting* Vol.1.3: 7-14.

OECD. 2005. *Modernising Government: The Way Forward*. Paris: OECD Publishing.

OECD. 2007. *Performance Budgeting in OECD Countries*. OECD Publishing.

OECD. 2008. Performance Budgeting: A Users' Guide. *The OECD Policy Brief* March. <http://www.oecd.org/publications/Policybriefs/> (accessed December 20, 2008).

Oral, Esin. 2005. *Bazı OECD Ülkelerinde Performans Esaslı Bütçeleme Uygulamaları, Gelişimi ve Türk Mali Sistemi Açısından Bir Değerlendirme*. Devlet Bütçe Uzmanlığı Araştırma Raporu.

Öner, Erdoğan. 2001. Mali Olaylar ve Düzenlemeler Işığında Osmanlı İmparatorluğu ve Cumhuriyet Döneminde Mali İdare. *Maliye Bakanlığı Araştırma, Planlama ve Koordinasyon Kurulu Yayınları* 359.

Öner, Erdoğan. 2008. Bütçe Uygulama Aşamasında Parlamentonun İzleme/Gözetim Fonksiyonu: Komisyonların Rolü ve Bütçe Analiz Kapasitesi. *Uluslararası Sempozyum: Bütçe Sürecinde Parlamentonun Değişen Rolü. Afyonkarahisar 8-9 Ekim 2008. Bildiri ve Makaleler*.

Özçam, Evren. 2007. *Büyük İşletmelerde Stratejik Planlama ve Konuya İlişkin Bir Araştırma*.

Özen, Ahmet. 2008. *Performans Esaslı Bütçeleme Sistemi ve Türkiye'de Uygulanabilirliği*. Maliye Bakanlığı Strateji Geliştirme Başkanlığı.

Rao, R. Venkata. 2007. *Decision Making in the Manufacturing Environment: Using Graph Theory and Fuzzy Multiple Attribute Decision Making Methods*. London: Springer-Verlag London Limited.

Raykov, Tenko and Marcoulides, George A. 2008. *An Introduction to Applied Multivariate Analysis*. United States of America: Taylor and Francis Group, LLC.

Robinson, Marc. 2002. *Best Practice in Performance Budgeting*. Discussion Paper No. 124. <http://ideas.repec.org/p/qut/dpaper/124.html> (accessed November 15, 2009)

- Robinson, Marc and Brumby, Jim. 2005. Does Performance Budgeting Work? An Analytical Review of the Empirical Literature. *IMF Working Paper*.
- Rose, Aidan. 2003. *Results-Orientated Budget Practice in OECD Countries*. London, Overseas Development Institute (ODI). (Working Paper 209).
- Rubin, Irene. 2007. Budget Formats: Choices and Implications. In *Local Budgeting*, edited by Anwar Shah, 131-149.
- Saaty, Thomas L. 1980. *Multicriteria Decision Making: The Analytic Hierarchy Process*. New York: McGraw-Hill.
- Saaty, Thomas L. 1990. How to Make a Decision: The Analytic Hierarchy Process. *European Journal of Operational Research*. V48: 9-26.
- Saaty, Thomas L. 1999. *Fundamentals of the Analytic Network Process*. Presented in ISAHP 1999, Kobe, Japan, August 12-14.
- Schiavo-Camp, Salvator. 2007. The Budget and Its Coverage. In *Budgeting and Budgetary Institutions*, edited by Anwar Shah, 53-88.
- Schic, Allen. 1972:a. The Road to PPB: The Stages of Budget Reform. In *Planning Programming Budgeting. A Systems Approach to Management*, edited by Fremont J. Lyden and Ernest G. Miller, 15-40.
- Schic, Allen. 1972:b. Systems Politics and Systems Budgeting. In *Planning Programming Budgeting. A Systems Approach to Management*, edited by Fremont J. Lyden and Ernest G. Miller, 78-101.
- Schic, Allen. 2002. Does Budgeting Have a Future? *OECD Journal on Budgeting* Vol.2.2: 7-48.
- Schic, Allen. 2007. Performance Budgeting and Accrual Budgeting: Decision Rules or Analytic Tools?. *OECD Journal on Budgeting* Vol.7.2: 109-138.
- Shah, Anwar. 2007:a. *Budgeting and Budgetary Institutions*. World Bank Publications.
- Shah, Anwar. 2007:b. *Local Budgeting*. World Bank Publications.

- Shah, Anwar and Shen, Chunli. 2007:a. A Primer on Performance Budgeting. In *Budgeting and Budgetary Institutions*, edited by Anwar Shah, 137-178.
- Shah, Anwar and Shen, Chunli. 2007:b. Citizen-Centric Performance Budgeting at Local Level. In *Local Budgeting*, edited by Anwar Shah, 151-178.
- Shea, Robert J. 2008. Performance Budgeting in the United States. *OECD Journal on Budgeting* Vol.8.1: 61-73.
- Shim, Jae K. and Siegel Joel G. 1994. *Budgeting Basics & Beyond: A Complete Step-by-step Guide for Nonfinancial Managers*. Prentice Hall.
- SIGMA. 2008. *Turkey Public Expenditure Management System Assessment May 2008*. <http://www.sigmaxweb.org/dataoecd/37/52/41638823.pdf>. (accessed January 4, 2010)
- SIGMA. 2009. *Turkey Public Expenditure Management System Assessment May 2009*. [www.sigmaxweb.org/dataoecd/32/31/43913323.pdf](http://www.sigmaxweb.org/dataoecd/32/31/43913323.pdf). (accessed January 4, 2010)
- Sterck and Bouckaert. 2006. *The Impact of Performance Budgeting on the Role of Parliament: a Four-Country Study*. Paper presented at the 2nd Transatlantic Dialogue, Workshop 1: The performance of performance budgeting, Leuven, June 1-3, 2006.
- Sweeny, H.W. Allen and Rachlin, Robert. 1987. *Handbook of Budgeting*. New York: John Wiley & Sons.
- Tarschys, Daniel. 2002. Time Horizons in Budgeting. *OECD Journal on Budgeting* Vol.2.2: 77-104.
- The Undersecretariat of State Planning Organization. 2008. *The Strategic Planning Guidebook for Public Administrations*. Ankara. <http://www.sp.gov.tr/belgeler.html> (accessed January 2, 2009)
- The World Bank PremNotes. 2003. *Performance-Based Budgeting: Beyond Rhetoric*. The World Bank PremNotes, 78.

- Thorn, Kristian and Lyndrup, Mads. 2002. *The Quality of Public Expenditure-Challenges and Solutions in Results Focussed Management in the Public Sector*. OECD. <http://www.oecd.org/dataoecd/30/24/2079003.pdf> (accessed May 14, 2009)
- Timm, Neil H. 2002. *Applied Multivariate Analysis*. United States of America: Springer-Verlag New York, Inc.
- Tjader, Youxu, Shang, Jennifer, Vargas, Luis and May, Jerry. 2009. Integrating the Analytic Network Process and the Balanced Scorecard for Strategic IT Outsourcing Decision Making.
- Triantaphyllou, Evangelos. 2000. *Multi-Criteria Decision Making Methods: A Comparative Study*. The Netherlands: Kluwer Academic Publishers.
- U.S. Department of Education. National Center for Education Statistics. 2003. *Financial Accounting for Local and State School Systems*. Institute of Education Sciences.
- U.S. General Accounting Office. 1999. *Performance Budgeting: Initial Experiences Under the Results Act in Linking Plans with Budgets*. GAO/AIMD/GGD-99-67.
- Vaske, Jerry J. 2008. *Survey Research and Analysis. Applications in Parks, Recreation and Human Dimensions*. State College, Pennsylvania: Venture Publishing, Inc.
- Vincke, Philippe. 1992. *Multicriteria Decision Aid*. Chichester: John Wiley.
- Wagner, William E. 2007. *Using SPSS for Social Statistics and Research Methods*. United States of America: SAGE Publications, Inc.
- World Bank. 2006. *Turkey Public Expenditure Review*.
- Yardımcıoğlu, Fatih. 2006. *Performans Esaslı Bütçeleme Sistemi ve Türkiye’de Uygulanabilirliği*. Sakarya: Sakarya Üniversitesi Sosyal Bilimler Enstitüsü, Yüksek Lisans Tezi
- Yılmaz, Sibel. 2007. Performans Esaslı Bütçelemenin Gelişimi ve Uygulanması. *Bütçe Dünyası* 27:35-43.

## **APPENDIX A**

### **CHARACTERISTICS OF PERFORMANCE BUDGETING SYSTEM OF THE SELECTED OECD COUNTRIES**

Characteristics of performance budgeting system of the Netherlands, United Kingdom, United States, Denmark and Sweden are shown in Tables 40-44.

**Table 40: Performance budgeting system in the Netherlands**

Items / Tools	Properties
<b>Performance budgeting system</b>	Performance informed budgeting
<b>Key actor(s) in the system</b>	<ul style="list-style-type: none"> <li>* The Ministry of Finance (MoF) is responsible for macro control of the budget, the account and the report.</li> <li>* The Central Planning Bureau is an independent authority that publishes economical forecasts before elections for the following four years, which form the basis for and plays a critical role in formation of budget policy and programs.</li> </ul>
<b>Performance agreements</b>	<ul style="list-style-type: none"> <li>* Performance agreements are signed between the ministries and the agencies; yet doing so is not mandatory.</li> <li>* Two types of agreements: (i) for outcomes and (ii) for processes</li> </ul>
<b>Performance management system</b>	<ul style="list-style-type: none"> <li>* Performance budgeting and performance management are implemented hand-in-hand.</li> <li>* Performance pay system is not implemented.</li> </ul>
<b>Budget system</b>	<ul style="list-style-type: none"> <li>* There are no sanctions for underachievement of targets specified in performance agreements</li> </ul>
General characteristics	<ul style="list-style-type: none"> <li>* Administrations generally receive a total amount of budget.</li> </ul>
Expenditure ceilings	<ul style="list-style-type: none"> <li>* There are flexibilities for administrations to distribute and redistribute their appropriations.</li> <li>* Annual ceilings are determined or net expenditures for three sectors: (i) core sector (central government), (ii) health and care sector and (iii) social security and labor market sector.</li> </ul>
<b>Carry-over appropriations</b>	1% of the unspent appropriations at the end of the year can be carried to the following year.
<b>Accountability</b>	The spending/line ministry is responsible for its own budget and report.
<b>Performance reports</b>	<ul style="list-style-type: none"> <li>* The Parliament is informed once every three months about budget execution.</li> <li>* Annual reports are published; the ones of the ministries are submitted to the Parliament, the ones of the agencies are not.</li> </ul>
<b>Additional characteristics</b>	<ul style="list-style-type: none"> <li>* Includes achievement of performance targets and activities specified in performance agreements, and financial accounts</li> </ul>
Program-based structure	Program-based structure is utilized in the performance budgeting system.
Multi-year budget approach	<ul style="list-style-type: none"> <li>* Covers 4 years</li> <li>* Multi-year estimates are made for line items by the spending departments.</li> </ul>

Source: Akkas 2008, OECD 2007, Sterek and Bouckaert 2006, Oral 2005

**Table 41: Performance budgeting system in the United Kingdom**

Items / Tools	Properties
<b>Performance budgeting system</b>	
Performance informed budgeting	<ul style="list-style-type: none"> <li>* General approach</li> <li>* Performance information is used for accountability purposes</li> <li>* Performance information is discussed as part of spending review negotiations between the Treasury and departments</li> </ul>
Direct performance budgeting	Utilized in health and labor/employment sectors
<b>Key actor in the system</b>	HM Treasury directs the public service agreements performance framework
<b>Performance agreements</b>	
Public service agreements (PSAs)	<ul style="list-style-type: none"> <li>* Include aims, objectives, targets, efficiency savings/targets and a value for money target for and the resources of government departments, and responsible unit/department for the delivery of the targets</li> <li>* Developed by ministry departments consulted by HM Treasury: An initial indicative list is agreed at ministerial level and details are worked by departments</li> <li>* All departments are required to report on performance and delivery to HM Treasury; i.e. develop a PSA and commit to it. Agencies are required to align their priorities and targets with those of ministry departments</li> <li>* Cover the next three-year period</li> </ul>
Cross-departmental public service agreements	<ul style="list-style-type: none"> <li>* Aim is to provide coordination between departments, and interdepartmental and inter-agency work</li> <li>* All the departmental targets relevant to delivery of the government's objectives in the specific cross-cutting policy area are put together in a single cross-departmental PSA</li> <li>* Cover the next three-year period</li> </ul>
Service delivery agreements (SDAs)	<ul style="list-style-type: none"> <li>* Include (i) statements relating to how the targets will be achieved, (ii) any key output or process targets necessary to deliver the outcome target set in the PSA, and (iii) external factors that are outside the control of the department and may affect the delivery of the outcome specified in the PSA</li> <li>* Include the activities planned to be done over the next three years to improve the efficiency and performance of departments</li> <li>* Small departments for which PSAs are not prepared, SDAs include key performance targets and how they will be achieved</li> <li>* Cover the next three-year period</li> </ul>

**Table 41 (continued)**

<b>Items / Tools</b>	<b>Properties</b>
<b>Performance management system</b>	<ul style="list-style-type: none"> <li>* No formal or legal sanctions for ministers and departments when PSAs are not achieved</li> <li>* The chief executive's performance bonus is partially determined by the success of agency in achieving its performance targets</li> <li>* Departments are free to find the most effective means of delivering the national objectives and to determine their personnel regime and pay system</li> </ul>
<b>Budget system</b>	
General characteristics	<ul style="list-style-type: none"> <li>* Zero-based reviews are done for baseline expenditure of each department with the aim of reflecting changing priorities</li> <li>* Covers the next three-year period</li> </ul>
Spending reviews	<ul style="list-style-type: none"> <li>* Aims are to reallocate funding to key priorities, to improve efficiency and delivery of public services, to reduce waste and to help departments plan ahead</li> <li>* Bottom-up examination of each department's budgetary requirements for the coming three-year period</li> </ul>
Expenditure ceilings	<ul style="list-style-type: none"> <li>* There are global expenditure amounts for total current and capital expenditures</li> <li>* Total public expenditure is classified into two planning categories: (i) Annually managed expenditures with no nominal limits: includes debt interest, social security and a number of smaller items. (ii) Departmental expenditures with three-year nominal expenditure ceilings: split into current and capital expenditures, and cover conventional public services such as health, education, transport, policing and defense</li> </ul>
<b>Carry-over appropriations</b>	Unused appropriations can be carried over to the following year
<b>Accountability</b>	<ul style="list-style-type: none"> <li>* Each minister is accountable for their delivery of the targets set in the related PSAs and use of public funds in delivering them</li> <li>* Departments have accounted annually in departmental reports and also for the reliability of their performance information</li> </ul>

**Table 41 (continued)**

Items / Tools	Properties
<b>Departmental (performance) reports</b>	<ul style="list-style-type: none"> <li>* Includes expenditure plans, resources and objectives, and latest performance based on the PSAs of departments</li> <li>* Published twice a year and take place in a single web portal designed for maintaining all departmental performance documents</li> </ul>
<b>Additional characteristics</b> Medium-term expenditure framework	Includes spending reviews and PSAs prepared by each department
Technical note	* Prepared by departments to support PSAs and published
	* Includes how the targets will be measured, the source of data, the baseline, definitions of any ambiguous terms and details of validation arrangements for the data

Source: Noman 2008, OECD 2007, Ellis and Mitchell 2002.

**Table 42: Performance budgeting system in United States**

Items / Tools	Properties
<b>Performance budgeting system</b>	Performance informed budgeting
<b>Key actor in the system</b>	Office of Management and Budget (OMB), the central budget office in the US, has core budgeting functions
<b>Performance plans</b>  Agency (departmental) performance plans (APPs)	<p>* Include performance goals and target levels for the next fiscal year</p> <p>* Cover all programs and functions of agencies</p> <p>* Prepared annually</p> <p>* At least two versions of performance plans are to be prepared by the agencies: (i) Mandatory first versions include target levels for the performance goals in correspondence to the funding requests of agencies, are sent to OMB with the budget request of agencies and used in budget request reviews (ii) Mandatory second versions are the final performance plans that include revised target levels (to reflect changes in the funding levels as a result of the President's decisions), sent to Congress with the Congressional Justification of agencies and made public (iii) Optional third versions are revised final performance plans or operating plans that include revised target levels to reflect congressional action on the agency budget request</p>
Government-wide performance plans	<p>* Include key performance goals selected from APPs</p> <p>* Prepared annually</p>
<b>Performance management system</b>	<p>* Program Assessment Rating Tool (PART) is used to evaluate performance and success of programs. It includes approximately 30 questions under the following four parts: (i) program design and purpose, (ii) strategic planning and performance measurement, (iii) program management, and (iv) program results. According to the assessment, the rating of a program is stated as effective, moderately effective, adequately effective, ineffective or results not demonstrated.</p> <p>* PART results are used in budget decisions</p> <p>* Human Resources Rating System and Performance Pay System are utilized</p>

**Table 42 (continued)**

<b>Items / Tools</b>	<b>Properties</b>
<b>Budget system</b>	<ul style="list-style-type: none"> <li>* Multi-year budgeting covering expenditure forecasts for the next five years.</li> <li>* Budget requests of federal agencies contains (i) the President's annual budget, which include including detailed resource and financing tables for all of the government's budget accounts and (ii) individual agency budget requests (Congressional Justifications), which must be consistent with the President's budget and include greater detail for the agency's budget accounts</li> </ul>
General characteristics	<ul style="list-style-type: none"> <li>* There are 13 appropriations sub-committees in both the House and the Senate that prepare 13 separate appropriations acts</li> <li>* Congress appropriates funds by account; not by performance goal</li> </ul>
Expenditure ceilings	<ul style="list-style-type: none"> <li>* General funding levels for each department is specified in the planning guidance prepared by the OMB</li> <li>* Congress sets out aggregate levels of funding for annually determined appropriations which are set out in law several years in advance</li> </ul>
<b>Carry-over appropriations</b>	Unspent funds are returned to the Treasury
<b>Accountability</b>	Agency officials are accountable for achieving the goals in the performance plans
<b>Performance reports</b>	<ul style="list-style-type: none"> <li>* Include (i) comparisons for the planned performance set in performance plans and achieved performance levels of the previous three to seven years, (ii) explanations for unmet goals and describes the schedule and steps that will be taken to meet the goals in the future, (iii) a summary of the findings and recommendations of any program evaluation completed during the fiscal year</li> <li>* Descriptions related to data quality and actions needed to be taken to improve data quality are also included</li> <li>* Prepared by agencies annually, presented to the director of the OMB, the President and the Congress, and made public</li> <li>* There is no requirement to prepare government-wide performance reports</li> </ul>
<b>Additional characteristics</b>	
Government Performance and Results Act of 1993 (GPRA)	<ul style="list-style-type: none"> <li>* Covers executive branch of government; i.e. departments and agencies</li> <li>* The legislative branch (Congress) and the judicial branch (the courts) are not subject to this law</li> </ul>

Source: Özen 2008, OECD 2007, Orat 2005, Groszyk 2002.

**Table 43: Performance budgeting system in Denmark**

Items / Tools	Properties
<b>Performance budgeting system</b>	
Performance informed budgeting	General approach
Direct performance budgeting	<ul style="list-style-type: none"> <li>* Utilized in education and health sectors</li> <li>* Taximeter model utilized in the education sector uses a simple output criterion to determine the level of funding for tertiary institutions and can be described as an average price budget model</li> <li>* Another model is used in the health sector, the future of which can be described as a marginal budget model</li> </ul>
<b>Key actor in the system</b>	The Ministry of Finance (MoF) develops initiatives and provides guidelines for performance management and budgeting
<b>Performance-based contract system</b>	<ul style="list-style-type: none"> <li>* Not legally binding</li> <li>* Defined in guidelines issued by the MoF, not in law</li> </ul>
Performance contracts	<ul style="list-style-type: none"> <li>* Written agreements between departments and agencies</li> <li>* Targets and required results are defined for a given period of time, especially for four years</li> <li>* May be revised yearly</li> </ul>
Chief executive contracts	<ul style="list-style-type: none"> <li>* One-year agreement between the permanent secretary in a department and the director general of a subordinate agency</li> <li>* Targets and required results set on the basis of the performance contract are defined</li> <li>* A letter from the MoF specifying the prioritized objectives in the following year is included</li> <li>* Fulfillment of targets makes the director general receive a bonus</li> </ul>
Internal performance contracts	<ul style="list-style-type: none"> <li>* An agreement between the director general and the head of each section</li> <li>* Specific requirements of aggregate performance targets are defined</li> </ul>
<b>Performance management system</b>	There is a performance pay system, which is an incentive for the achievement of targets

**Table 43 (continued)**

Items / Tools	Properties
<b>Budget system</b>	
General characteristics	<ul style="list-style-type: none"> <li>* Budget Priorities Memorandum is prepared by the MoF and presented to the Cabinet Economic Committee</li> <li>* Total level of expenditure for each minister (expenditure ceiling) is determined in the Budget Priorities Memorandum</li> <li>* In-year adjustments to the budget are quite frequent</li> <li>* The expenditure ceilings are presented for the next year's budget and the following three years</li> <li>* The expenditure ceiling for each ministry is divided into two parts: a maximum for operating expenditures and a maximum for transfer (non-mandatory) expenditures</li> <li>* Shifting money from transfers to operating expenditures is not permitted</li> <li>* Sub-ceiling is also set for the expense on salaries within the operating expenditures ceiling</li> <li>* Capital expenditures are not included in expenditure ceilings</li> <li>* Each ministry has the responsibility for final reallocations of funds within its portfolio</li> </ul>
Expenditure ceilings	<ul style="list-style-type: none"> <li>Unspent appropriations at the end of the year are divided into two parts as "free surplus" that can be used for any activity and "earmarked residual" that is reserved for a specific project.</li> </ul>
<b>Carry-over appropriations</b>	Each minister is personally accountable to the Parliament for any activity within the ministry
<b>Accountability</b>	* Prepared annually
<b>Performance reports</b>	* Published and submitted to the Danish Parliament
<b>Additional characteristics</b>	* Includes achievement of performance targets and financial accounts
Efficiency strategies	All departments are obliged (by a government decision) to publish an efficiency strategy focusing on improving effectiveness and efficiency
Evaluation	<ul style="list-style-type: none"> <li>* An increased focus on evaluation</li> <li>* No formal linkage between budgets and evaluations</li> </ul>
Danish Quality Award	Aim is to promote the use of the EFQM (European Foundation for Quality Management) model and improve quality in the public sector

Source: Ginnerup et al. 2007, OECD 2007, Thorn and Lyndrup 2002.

**Table 44: Performance budgeting system in Sweden**

Items / Tools	Properties
<b>Performance budgeting system</b>	
Performance informed budgeting	General approach
Direct performance budgeting	Utilized in education and trade/industry sectors
<b>Key actor in the system</b>	The Ministry of Finance
<b>A letter of appropriation</b>	<p>* Sent to each agency by the relevant ministry</p> <p>* The goals to be achieved by the agency during the coming year and the feedback and performance information that must be provided to the ministry are stated.</p> <p>* Goals for the policy areas are proposed by the government in theory; but by the officials in the ministry and the agencies in practice, and decided by the Parliament.</p> <p>* Not legally binding</p>
<b>Performance management system</b>	<p>* The performance information is normally not used as a basis for negotiations or decisions on future resources</p> <p>* Performance management is strongly linked to the budget process. It is used by the government to follow up the agencies' activities, and partly to report performance to Parliament.</p>
<b>Budget system</b>	
General characteristics	<p>* A three-step top-down budgetary process is utilized: 1- Ministry of Finance updates the multiyear (three years) framework containing forecasts for the current budget year and calculations of key macroeconomic figures related to the trend development of GDP for the two next years. 2- The macro-level revenue forecasts and nominal expenditure ceilings are laid down at a cabinet meeting. Expenditure ceiling for year t+3 and indicative levels of expenditures for 27 different expenditure areas are also set. 3- The allocation between appropriations within each expenditure area is carried out by relevant ministers within the limits set for the expenditure area.</p> <p>* A medium-term target for general government's surplus is set</p> <p>* The multi-year budget framework is legally binding</p>
Expenditure ceilings	Nominal three-year rolling expenditure ceilings are set for the central government. The ceilings for the years t+1 and t+2 are already laid down in decisions of earlier years

**Table 44 (continued)**

Items / Tools	Properties
<b>Carry-over appropriations</b>	<ul style="list-style-type: none"> <li>* Unspent appropriations at the end of the year can be carried to the following year.</li> <li>* Appropriations of the future years can be used as a credit</li> </ul>
<b>Performance reports</b>	<ul style="list-style-type: none"> <li>* Agencies present annual reports including a statement of operations accomplished during the year and performance is presented in terms of goals set by the government and operational costs.</li> <li>* Annual reports are submitted to the government and to Parliament's expert committees</li> </ul>
<b>Additional characteristics</b>	
Budget Bills	<ul style="list-style-type: none"> <li>* The Spring Fiscal Policy Bill presents macroeconomic assessment of the government and the development of public finances. It outlines fiscal policy and budget policy in the medium to long term</li> <li>* The Budget Bill proposes (i) an expenditure ceiling for the third additional fiscal year, (ii) an allocation of expenditure to expenditure areas, and (iii) a division between appropriations for the upcoming fiscal year, (iv) a detailed description of objectives and expected results for programs and agencies and (v) financial commitments that stretch beyond the year for which the budget is proposed.</li> </ul>
Program structure	<ul style="list-style-type: none"> <li>* There is a three-level program structure: policy areas, activity areas and branches</li> <li>* Each branch is unique; that is, it can only belong to one activity area</li> </ul>

Source: Kitchen and Nordman 2008, OECD 2007, Yardımcıoğlu 2006, Blöndal 2001.

## APPENDIX B

### CHARACTERISTICS OF ANALYTICAL BUDGET CLASSIFICATION

Budgets are prepared according to the analytical budget classification. The classification of expenditure budgets is based on four categories as institutional, functional, financing, and economical classification.

Institutional classification has four levels, the details of which are shown in Figure 17, and each level has two digits.

— —	— —	— —	— —
•Ministries and regulatory and supervisory agencies	•Divisions that directly report to the first level	•Operating units under the second level	•Support and logistics units, and certain executive units

**Figure 17: The structure of the institutional classification**

The functional classification follows the international Classification of Functions of Government (Kraan, Bergvall and Hawkesworth 2007). Functional classification has four levels, the details of which are shown in Figure 18. The first level is for the classification of government expenditures in terms of 10 services, which are general public services, defense services, public order and security services, economical acts and services, environmental protection services, services for housing and prosperity of people, health services, services for rest, culture and religion, education services, and services for social security and social aid.

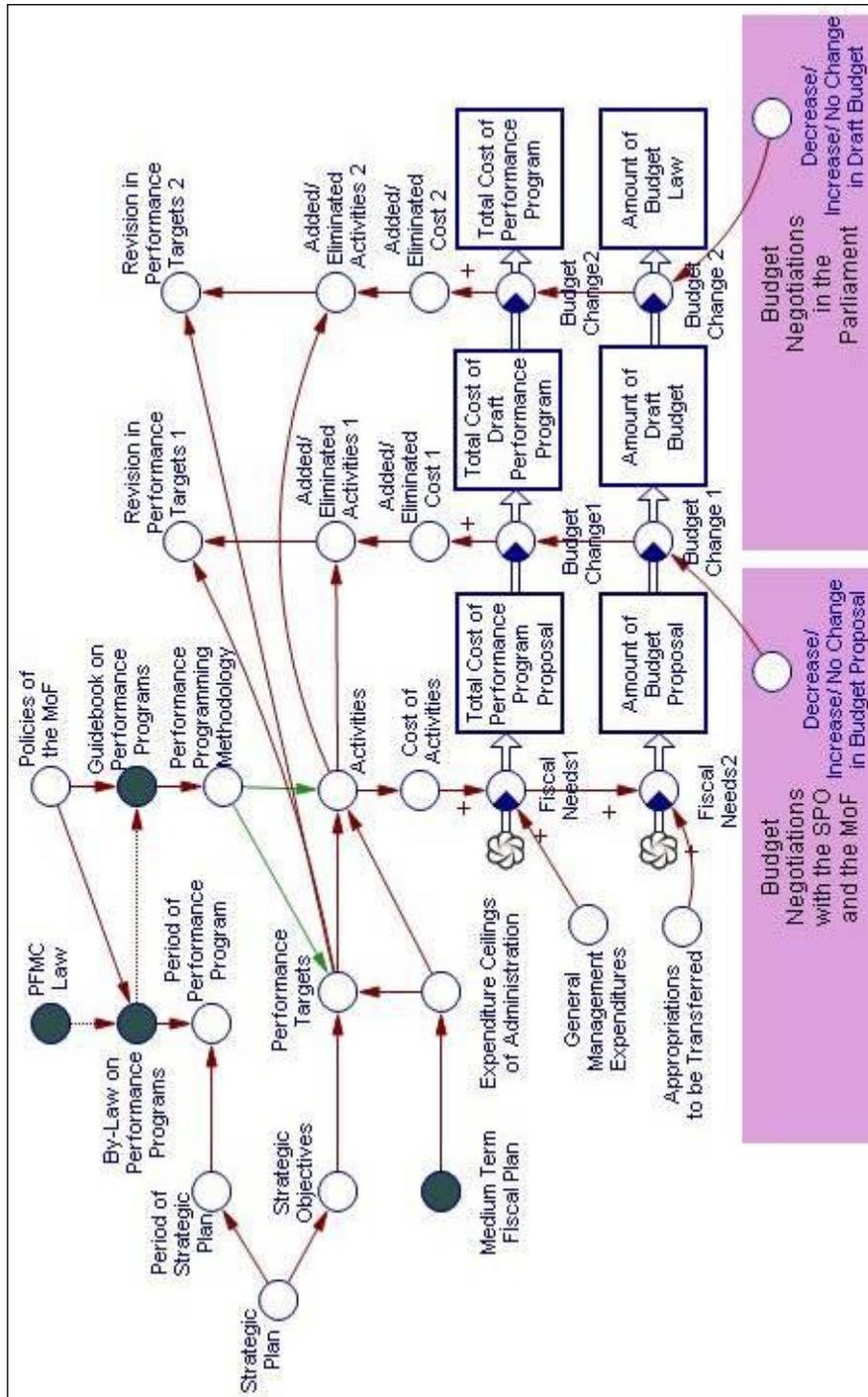


## **APPENDIX C**

### **DIAGRAMS FOR PERFORMANCE BUDGETING SYSTEM**

Diagrams are constructed for the performance budgeting system using Simtegra MapSys v.3.0., which are presented in Figures 20 and 21.





\* Legal documents are shown by the items filled with grey color; legal requirements are shown by dotted lines.

**Figure 21: Influence diagram for performance programming and budgeting system**

## APPENDIX D

### QUESTIONNAIRE AND INTERVIEW FORMS

Questionnaire and interviews #2, #3 and #4 are shown in Figures 22, 23, 24 and 25, respectively.

**SURVEY OF DETERMINATION OF PROBLEMS FACED WITH  
IN THE PERFORMANCE BUDGETING SYSTEM IN TURKEY**

**QUESTIONNAIRE FORM**

**EXPLANATION:**

This study is done for the purpose of assessing the attitudes, opinions and experiences of the heads of the strategy development units of the public administrations under general budget. The findings and results of the study will be handled to determine the problems faced with by the administrations related to the performance budgeting system and to make suggestions for improvement of the system.

The findings of the study will be analyzed collectively without revealing the participants' identification. Information related to participants and administrations, and the responses will definitely be kept confidential and will not be used for any other purpose.

Participation in the study is based entirely on a voluntary basis. Before starting to fill the questionnaire, please read the statements carefully. Thank you in advance for your participation and faithfully given responses.

Best regards

**Figure 22: Questionnaire form**

Administration:

Date:

1. What is the approximate total number of personnel in the central organization of your administration?

.....

2. What is the total number of personnel in the strategic planning team of your administration?

(Strategic planning team includes the employees who actively participate(d) in the preparation of your administration's strategic plan.)

[ ] 1-10 [ ] 11-30 [ ] 31-50 [ ] 50-100 [ ] more than 100

3. *If your administration has a provincial organization, please answer the question; otherwise move on to question 4.*

**Did the personnel of the provincial organization participate in the strategic planning process?**

[ 1 ] Yes [ 0 ] No

4. Mark the personnel participated in the strategic planning team of your administration. [1, if checked; 0, otherwise]

4.1. [ ] Minister

4.2. [ ] Undersecretary / Chairman

4.3. [ ] Deputy Undersecretary / Deputy Chairman

4.4. [ ] All department managers

4.5. [ ] Some department managers

4.6. [ ] Representatives of all spending units

4.7. [ ] Representatives of some spending units

4.8. [ ] Personnel of the Strategy Development Unit

4.9. [ ] Consulting firms or consultants

5. Fill the following table relating the budget amount of your administration of year 2009.

	Budget Proposal (TL)	Draft Budget (TL)	Budget Law (TL)
(03) Expenditures for purchase of goods and services			
(05) Current transfers			
(06) Capital expenditures			
(07) Capital transfers			
TOTAL			

Figure 22 (continued)

**6. Indicate how strongly you agree or disagree with the following statements related to the laws and regulations about performance budgeting.**

		Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion
<b>A. The By-Law on the Procedures and Bases for Strategic Planning and Strategic Planning Guidebook</b>						
6. A. 1	The definition of strategic planning is clear and understandable.	4	3	2	1	99
6. A. 2	Transition date through strategic planning is appropriate for our administration.	4	3	2	1	99
6. A. 3	Preparation process for strategic planning is comprehensive enough to ensure the success of strategic planning studies.	4	3	2	1	99
6. A. 4	Information on the Strategic Planning Guideline is enough to meet the information need of our administration.	4	3	2	1	99
6. A. 5	Strategic planning process is appropriate for our administration.	4	3	2	1	99
6. A. 6	The points related to how the strategic plans will be assessed by the SPO are clear.	4	3	2	1	99
6. A. 7	How the strategic plans will be linked to the development plan and programs has been clearly stated.	4	3	2	1	99
6. A. 8	How inter-administrative interactions will be considered in the preparation of strategic plans has been clearly stated.	4	3	2	1	99
6. A. 9	Costs of the activities should be determined in the preparation process of strategic plans.	4	3	2	1	99
6. A. 10	Relation of strategic plan to performance programs has been clearly stated.	4	3	2	1	99
<b>B. The By-Law on the Preparation of Performance Programs of Public Administrations and the Guidebook for Preparation of Performance Programs</b>						
6. B. 1	The definition of performance program is clear and understandable.	4	3	2	1	99
6. B. 2	How strategic plans and performance programs will be linked has been clearly stated.	4	3	2	1	99
6. B. 3	Performance programming process is appropriate for our administration.	4	3	2	1	99
6. B. 4	Information on the Guidebook for Preparation of Performance Programs is enough to meet the information need of our administration.	4	3	2	1	99
6. B. 5	Information related to the methods used for determining the cost of activities is adequate.	4	3	2	1	99
6. B. 6	How costs will be classified according to the analytical budget classification has been clearly stated.	4	3	2	1	99
6. B. 7	How performance programs will be updated has been clearly stated.	4	3	2	1	99

**Figure 22 (continued)**

		Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion
<b>C. The By-Law on the Preparation of Accountability Reports of Public Administrations</b>						
6. C. 1	The definition of accountability report is clear and understandable.	4	3	2	1	99
6. C. 2	How performance programs and accountability reports will be linked has been clearly stated.	4	3	2	1	99
6. C. 3	Reporting principles related to accountability reporting are comprehensive.	4	3	2	1	99
<b>7. Indicate the degree of difficulty of the following stages for the preparation process of the strategic plan of your administration.</b>						
		Easy to be Performed	A Bit Difficult to be Performed	Very Difficult to be Performed	Not Performed	No Opinion
7. 1	Determining the stakeholders of your organization	1	2	3	0	99
7. 2	Doing strengths, weaknesses, opportunities and threats (SWOT) analysis	1	2	3	0	99
7. 3	Determining the vision of your organization	1	2	3	0	99
7. 4	Determining the mission of your organization	1	2	3	0	99
7. 5	Determining the core values of your organization	1	2	3	0	99
7. 6	Determining the strategic priorities of your organization	1	2	3	0	99
7. 7	Determining the goals of your organization	1	2	3	0	99
7. 8	Determining the objectives of your organization	1	2	3	0	99
7. 9	Linking the goals and the objectives of your organization	1	2	3	0	99
7. 10	Determining the performance indicators of your organization	1	2	3	0	99
7. 11	Forming the strategies of your organization	1	2	3	0	99
7. 12	Performing feasibility analysis	1	2	3	0	99
7. 13	Determining the costs of the objectives of your organization	1	2	3	0	99
7. 14	Doing risk assessment	1	2	3	0	99
7. 15	Recording the information on strategic plan to e-bütçe system	1	2	3	0	99

**Figure 22 (continued)**

**8. Indicate the effect of the following factors to the preparation process of the strategic plan of your organization.**

		Very Positive	Positive	Ineffective	Negative	Very Negative	Not Applicable
<b>A. Administrative Factors</b>							
8. A. 1	The support of top management of your organization	5	4	3	2	1	99
8. A. 2	Qualifications of top management of your organization	5	4	3	2	1	99
8. A. 3	Knowledge of the strategic planning team of your organization related to the process	5	4	3	2	1	99
8. A. 4	The qualifications of the strategic planning team of your organization	5	4	3	2	1	99
8. A. 5	Number of personnel in the strategic planning team of your organization	5	4	3	2	1	99
8. A. 6	Participation of the personnel of your organization to the process	5	4	3	2	1	99
8. A. 7	Appropriateness of your corporate culture for strategic planning	5	4	3	2	1	99
8. A. 8	Technological opportunities of your organization	5	4	3	2	1	99
8. A. 9	Fiscal resources of your organization	5	4	3	2	1	99
8. A. 10	Data capacity of your organization	5	4	3	2	1	99
<b>B. Factors Related to the Strategy Development Unit (SDU)</b>							
8. B. 1	Qualifications of the personnel of the SDU	5	4	3	2	1	99
8. B. 2	Number of the personnel of the SDU	5	4	3	2	1	99
8. B. 3	Share of the routine business in the total business volume of the SDU	5	4	3	2	1	99
8. B. 4	Organizational structure of the SDU	5	4	3	2	1	99
<b>C. External Factors</b>							
8. C. 1	9. Development Plan (2007-2013)	5	4	3	2	1	99
8. C. 2	Medium Term Program	5	4	3	2	1	99
8. C. 3	Medium Term Fiscal Plan	5	4	3	2	1	99
8. C. 4	Inter-administrative interactions (Collaborated works with other administrations)	5	4	3	2	1	99
8. C. 5	The By-Law on the Procedures and Bases for Strategic Planning	5	4	3	2	1	99
8. C. 6	Strategic Planning Guidebook	5	4	3	2	1	99
8. C. 7	Political ownership	5	4	3	2	1	99
8. C. 8	Events organized by the Undersecretariat of SPO (training, workshops, seminars, etc.)	5	4	3	2	1	99

**Figure 22 (continued)**

		Very Positive	Positive	Ineffective	Negative	Very Negative	Not Applicable
<b>C. External Factors (cont'd)</b>							
8. C. 9	Feedback given by the Undersecretariat of SPO related to your strategic plan	5	4	3	2	1	99
8. C. 10	Consultancy support received from the Undersecretariat of SPO	5	4	3	2	1	99
8. C. 11	Consultancy support received from the consulting firms or consultants	5	4	3	2	1	99
8. C. 12	International best practices	5	4	3	2	1	99
8. C. 13	Strategic plans of the equivalent institutions in other countries	5	4	3	2	1	99
8. C. 14	Other: .....	5	4	3	2	1	99
<b>9. Indicate the degree of difficulty of the following stages for the preparation process of the performance program of your administration.</b>							
		Easy to be Performed	A Bit Difficult to be Performed	Very Difficult to be Performed	Not Performed	No Opinion	
9. 1	Determining the objectives that will be given priority in the program period among the ones in the strategic plan	1	2	3	0	99	
9. 2	Determining the administrative performance targets	1	2	3	0	99	
9. 3	Determining the administrative performance indicators	1	2	3	0	99	
9. 4	Determining the spending units related to the administrative performance targets	1	2	3	0	99	
9. 5	Determining the departmental performance targets	1	2	3	0	99	
9. 6	Determining the departmental performance indicators	1	2	3	0	99	
9. 7	Determining the activities	1	2	3	0	99	
9. 8	Prioritizing the activities	1	2	3	0	99	
9. 9	Performing feasibility analysis	1	2	3	0	99	
9. 10	Determining the costs of the activities	1	2	3	0	99	
9. 11	Expressing the costs of the activities according to the analytical budget classification	1	2	3	0	99	
9. 12	Determining the costs of the departmental performance targets	1	2	3	0	99	
9. 13	Determining the costs of the administrative performance targets	1	2	3	0	99	
9. 14	Determining the costs of the administrative goals	1	2	3	0	99	
9. 15	Recording the information on the performance program of your administration to e-bütçe system	1	2	3	0	99	

Figure 22 (continued)

**10. Indicate the effect of the following factors to the preparation process of the performance program of your organization.**

		Very Positive	Positive	Ineffective	Negative	Very Negative	Not Applicable
<b>A. Administrative Factors</b>							
10. A. 1	The support of top management of your organization	5	4	3	2	1	99
10. A. 2	Qualifications of top management of your organization	5	4	3	2	1	99
10. A. 3	Knowledge of the study team of your organization related to the process ("Study team" refers to the personnel worked in the process of the development of the performance program of your organization)	5	4	3	2	1	99
10. A. 4	The qualifications of the study team of your organization	5	4	3	2	1	99
10. A. 5	Number of personnel in the study team of your organization	5	4	3	2	1	99
10. A. 6	Participation of the personnel of your organization to the process	5	4	3	2	1	99
10. A. 7	Quality of the strategic plan of your organization	5	4	3	2	1	99
10. A. 8	Number of objectives in the strategic plan of your organization	5	4	3	2	1	99
10. A. 9	Whether the required infrastructure to obtain performance data is available in your organization	5	4	3	2	1	99
10. A. 10	Whether cost accounting is done in your organization	5	4	3	2	1	99
10. A. 11	Technological opportunities of your organization	5	4	3	2	1	99
<b>B. Factors Related to the Strategy Development Unit (SDU)</b>							
10. B. 1	Qualifications of the personnel of the SDU	5	4	3	2	1	99
10. B. 2	Number of the personnel of the SDU	5	4	3	2	1	99
10. B. 3	Share of the routine business in the total business volume of the SDU	5	4	3	2	1	99
10. B. 4	Organizational structure of the SDU	5	4	3	2	1	99
<b>C. External Factors</b>							
10. C. 1	9. Development Plan (2007-2013)	5	4	3	2	1	99
10. C. 2	Medium Term Program	5	4	3	2	1	99
10. C. 3	Medium Term Fiscal Plan	5	4	3	2	1	99
10. C. 4	The By-Law on the Preparation of Performance Programs of Public Administrations	5	4	3	2	1	99
10. C. 5	the Guidebook for Preparation of Performance Programs	5	4	3	2	1	99
10. C. 6	Events organized by the Ministry of Finance (training, workshops, seminars, etc.)	5	4	3	2	1	99

**Figure 22 (continued)**

		Very Positive	Positive	Ineffective	Negative	Very Negative	Not Applicable	
<b>C. External Factors (cont'd)</b>								
10.	C. 7	Feedback given by the Ministry of Finance related to your performance program	5	4	3	2	1	99
10.	C. 8	Counseling support received from the Ministry of Finance	5	4	3	2	1	99
10.	C. 9	Counseling support received from the consulting firms or consultants	5	4	3	2	1	99
10.	C. 10	International best practices	5	4	3	2	1	99
10.	C. 11	Performance programs of the equivalent institutions in other countries	5	4	3	2	1	99
10.	C. 12	The requirement that costs be expressed according to the analytical budget classification	5	4	3	2	1	99
10.	C. 13	That the analytical budget classification does not have a classification for programs	5	4	3	2	1	99
10.	C. 14	The way of determination of the budget appropriation ceilings of your organization	5	4	3	2	1	99
10.	C. 15	The impact of the Ministry of Finance on the budget of your organization	5	4	3	2	1	99
10.	C. 16	The impact of the Undersecretariat of SPO on the budget of your organization	5	4	3	2	1	99
10.	C. 17	Other: .....	5	4	3	2	1	99
<p><b>11. Mark the most appropriate option related to the costing of the activities/projects in the performance program of your organization.</b></p> <p><input type="checkbox"/> No activity / project were determined in the context of performance program.</p> <p><input type="checkbox"/> Cost of all activities / projects was determined by activity-based costing technique.</p> <p><input type="checkbox"/> Cost of some activities / projects was determined by activity-based costing technique.</p> <p><input type="checkbox"/> Appropriations of the administration were distributed to the activities / projects by rule of thumb.</p> <p><input type="checkbox"/> Cost of activities / projects was not determined.</p>								

**Figure 22 (continued)**

**12. Mark the most appropriate option related to the determination and preparation of the budget proposals of the spending units of your organization.**

- It was determined considering the strategic plan and the performance program of the administration and based on experience.
- It was determined in line with the overall resource requirements of the performance targets and the activities/projects of the departments.
- It was determined by multiplying appropriation amounts of the previous year by a certain growth rate.
- It was determined considering the expenditures of the previous year.
- Other: .....

**13. Mark the most appropriate option related to the determination and preparation of the budget proposal of your organization.**

- It was determined based on the budget ceilings specified in the Medium Term Fiscal Plan.
- It was determined in line with the overall resource requirement of the performance targets of the performance program of our administration.
- Considering the possible cut in the budget negotiations, appropriations more than the actual need was proposed.
- It was determined by multiplying appropriation amounts of the previous year by a certain growth rate.
- Other: .....

**14. Indicate the degree of consideration of the following documents of your administration in the budget negotiations.**

		Not At All	Partially	Mostly	Completely	No Opinion
14. 1	The degree of the consideration of the strategic plan of your organization in the budget negotiations done with the Ministry of Finance.	0	1	2	3	99
14. 2	The degree of the consideration of the strategic plan of your organization in the budget negotiations done with the Undersecretariat of SPO.	0	1	2	3	99
14. 3	The degree of the consideration of the strategic plan of your organization in the budget negotiations done in the Turkish Grand National Assembly.	0	1	2	3	99

**Figure 22 (continued)**

<b>Q 14 (cont'd)</b>						
		<b>Not At All</b>	<b>Partially</b>	<b>Mostly</b>	<b>Completely</b>	<b>No Opinion</b>
14. 4	The degree of the consideration of the performance program of your organization in the budget negotiations done with the Ministry of Finance.	0	1	2	3	99
14. 5	The degree of the consideration of the performance program of your organization in the budget negotiations done with the Undersecretariat of SPO.	0	1	2	3	99
14. 6	The degree of the consideration of the performance program of your organization in the budget negotiations done in the Turkish Grand National Assembly.	0	1	2	3	99
14. 7	The degree of the consideration of the accountability report of your organization in the budget negotiations done with the Ministry of Finance.	0	1	2	3	99
14. 8	The degree of the consideration of the accountability report of your organization in the budget negotiations done with the Undersecretariat of SPO.	0	1	2	3	99
14. 9	The degree of the consideration of the accountability report of your organization in the budget negotiations done in the Turkish Grand National Assembly.	0	1	2	3	99

**15. If the budget appropriations of your administration were changed after the budget negotiations done with the Ministry of Finance and the Undersecretariat of SPO, mark the appropriate option.**

Budget appropriations were not changed after the budget negotiations done with the Ministry of Finance and the Undersecretariat of SPO.

Targets and their resource requirements in performance program and the budget appropriations of our administration were updated.

Only the budget appropriations of our administration were updated, whereas targets and their resource requirements in performance program were not.

Performance program of our administration were not updated.

**Figure 22 (continued)**

**16. If the budget appropriations of your administration were changed after the budget negotiations done in the Turkish Grand National Assembly, mark the appropriate option.**

- Budget appropriations were not changed after the budget negotiations done in the Turkish Grand National Assembly.
- Targets and their resource requirements in performance program and the budget appropriations of our administration were updated.
- Only the budget appropriations of our administration were updated, whereas targets and their resource requirements in performance program were not.
- Performance program of our administration were not updated.

**17. Indicate the degree of consideration of the performance program of your administration in the preparation of the detailed expenditure program of your organization.**

Not At All	Partially	Mostly	Completely	No Opinion
0	1	2	3	99

**18. Are the expenditures linked to the performance targets of your administration?**

- Yes  Yes, partially  No

**19. Indicate how strongly you agree or disagree with the following statements related to the use of e-bütçe system in performance programming.**

		Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion
19. 1	Explanations and directions related to the tables to be prepared are enough to meet the information need of our administration.	4	3	2	1	99
19. 2	Data flow is performed easily between the performance budget module and other modules.	4	3	2	1	99
19. 3	Data entry can be easily made.	4	3	2	1	99
19. 4	Data can be easily followed.	4	3	2	1	99
19. 5	Reporting process meets the need of our administration.	4	3	2	1	99

**Figure 22 (continued)**

<b>20. Indicate how strongly you agree or disagree with the following statements.</b>						
		<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>	<b>No Opinion</b>
20. 1	The preparation of strategic plan has been useful for our administration.	4	3	2	1	99
20. 2	The preparation of performance program has been useful for our administration.	4	3	2	1	99
20. 3	The preparation of accountability report has been useful for our administration.	4	3	2	1	99
20. 4	The performance of our administration was taken into consideration by the related authorities in the determination of the budget of our administration.	4	3	2	1	99
20. 5	I think that performance-based budgeting system will contribute to performance improvement of our administration.	4	3	2	1	99
20. 6	I think that audits done by the Court of Accounts will contribute to performance improvement of our administration.	4	3	2	1	99
20. 7	I think that internal audit mechanism will contribute to increasing the performance of our administration.	4	3	2	1	99
20. 8	The evaluation done by the Undersecretariat of SPO is sufficient for determining the quality of our strategic plan.	4	3	2	1	99
20. 9	The evaluation done by the Ministry of Finance is sufficient for determining the quality of our performance program.	4	3	2	1	99
20. 10	Performance program and budget should be prepared as a single document.	4	3	2	1	99
20. 11	The analytical budget classification needs to be changed to enable the appropriate expression of the cost of the activities.	4	3	2	1	99
20. 12	The flexibility to transfer budget appropriations prevents realistic preparation of budget appropriation proposals of spending units of our administration.	4	3	2	1	99
20. 13	The flexibility to transfer budget appropriations prevents realistic preparation of total budget appropriation proposal of our administration.	4	3	2	1	99
20. 14	Detailed expenditure programs should be finalized before the beginning of the fiscal year.	4	3	2	1	99
20. 15	Individual performance evaluation system should be created on the basis of performance programs of the departments and the administrations.	4	3	2	1	99
20. 16	Possible lack of coordination between the Ministry of Finance and the Undersecretariat of SPO may adversely affect the effectiveness of the performance-based budgeting system.	4	3	2	1	99
20. 17	There are repeated processes leading to loss of time in the budgeting process from the preparation of the Medium Term Program to the publication of the Budget Law in the Official Gazette.	4	3	2	1	99
20. 18	We make realistic estimates for the budget appropriations of our administration for the next 2 years in the framework of the multi-year budgeting approach.	4	3	2	1	99

**Figure 22 (continued)**



**SURVEY OF DETERMINATION OF PROBLEMS FACED WITH  
IN THE PERFORMANCE BUDGETING SYSTEM IN TURKEY**

**QUESTION FORM**

**EXPLANATION:**

This study is done for the purpose of assessing the attitudes, opinions and experiences of the heads of the strategy development units of the public administrations under general budget. The findings and results of the study will be handled to determine the problems faced with by the administrations related to the performance budgeting system and to make suggestions for improvement of the system.

The findings of the study will be analyzed collectively without revealing the participants' identification. Information related to participants and administrations, and the responses will definitely be kept confidential and will not be used for any other purpose.

Participation in the study is based entirely on a voluntary basis. Before starting to fill the questionnaire, please read the statements carefully. Thank you in advance for your participation and faithfully given responses.

Best regards

**Administration:**

**Date:**

**1. Mark the appropriate option related to the strategic planning process of your administration.**

No process is being carried on related to strategic planning. → *Skip into question 6.*

Strategic planning process keeps going.

**2. What is the approximate total number of personnel in the central organization of your administration?**

.....

**3. What is the total number of personnel in the strategic planning team of your administration?**

(Strategic planning team includes the employees who actively participate(d) in the preparation of your administration's strategic plan.)

1-10     11-30     31-50     50-100     more than 100

**Figure 23: Question form for structured interview I #2**

**4. Did the personnel of the provincial organization participate in the strategic planning process?**

Yes  No

**5. Mark the personnel participated in the strategic planning team of your administration.** [1, if checked; 0, otherwise]

- 5.1.  Minister
- 5.2.  Undersecretary / Chairman
- 5.3.  Deputy Undersecretary / Deputy Chairman
- 5.4.  All department managers
- 5.5.  Some department managers
- 5.6.  Representatives of all spending units
- 5.7.  Representatives of some spending units
- 5.8.  Personnel of the Strategy Development Unit
- 5.9.  Consulting firms or consultants

**6. Indicate the degree of strength of the following reasons related to the fact that the strategic plan of your administration could not be completed in time.**

		Very Strong	Strong	Ineffective	Weak	Very Weak	Not Applicable
<b>A. Administrative Reasons</b>							
6. A. 1	The top management of your administration does not found strategic planning beneficial						
6. A. 2	Support of the top management of your administration to strategic planning process is insufficient						
6. A. 3	Corporate culture of your administration for strategic planning is inappropriate						
6. A. 4	Authorization, duties and responsibilities of your administration for strategic planning is inappropriate						
6. A. 5	Knowledge of the strategic planning team of your organization related to the process is inadequate						
6. A. 6	Qualifications of the strategic planning team of your organization is inadequate						
6. A. 7	Number of personnel in the strategic planning team of your organization is more than enough						
6. A. 8	Number of personnel in the strategic planning team of your organization is insufficient						

**Figure 23 (continued)**

		Very Strong	Strong	Ineffective	Weak	Very Weak	Not Applicable
<b>A. Administrative Reasons (cont'd)</b>							
6. A. 9	Participation of the personnel of your organization to the process is insufficient						
6. A. 10	Technological opportunities of your organization is insufficient						
6. A. 11	Fiscal opportunities of your organization is insufficient						
6. A. 12	Data capacity of your organization is insufficient						
<b>B. Reasons Related to the Strategy Development Unit (SDU)</b>							
6. B. 1	The head of the SDU does not found strategic planning beneficial						
6. B. 2	Qualifications of the personnel of the SDU is inadequate						
6. B. 3	Number of the personnel of the SDU is insufficient						
6. B. 4	Share of the routine business in the total business volume of the SDU is too much						
<b>C. External Reasons</b>							
6. C. 1	The By-Law on the Procedures and Bases for Strategic Planning is inadequate						
6. C. 2	Information on the Strategic Planning Guideline is not enough to meet the information need of your administration						
6. C. 3	Transition date through strategic planning is appropriate for your administration						
6. C. 4	Preparation process for strategic planning is not comprehensive enough to ensure the success of strategic planning studies						
6. C. 5	Strategic planning process is not appropriate for your administration						
6. C. 6	Events organized by the Undersecretariat of SPO (training, workshops, seminars, etc.) are inadequate						
6. C. 7	Consultancy support received from the Undersecretariat of SPO is inadequate						
6. C. 8	Consultancy support received from the consulting firms or consultants is inadequate						
6. C. 9	International best practices were not investigated						

Figure 23 (continued)

		Very Strong	Strong	Ineffective	Weak	Very Weak	Not Applicable
<b>C. External Reasons (cont'd)</b>							
6. C. 10	Strategic plans of the equivalent institutions in other countries were not investigated						
6. C. 11	Other: .....						

**7. Indicate how strongly you agree or disagree with the following statements.**

		Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion
7. 1	I think that the preparation of strategic plan will be useful for our administration.	4	3	2	1	99
7. 2	I think that performance-based budgeting system will contribute to performance improvement of our	4	3	2	1	99
7. 3	I think that audits done by the Court of Accounts will contribute to performance improvement of our	4	3	2	1	99
7. 4	I think that internal audit mechanism will contribute to increasing the performance of our administration.	4	3	2	1	99
7. 5	I think that the evaluation done by the Undersecretariat of SPO will be sufficient for determining the quality of our strategic plan.	4	3	2	1	99

**8. Please specify other opinions and comments.**

.....

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THANK YOU FOR YOUR CONTRIBUTION

Figure 23 (continued)

Please answer the questions considering only the administrations under general budget.

**1. How many administrations sent their strategic plan to the State Planning Office on time?**

.....

**2. To how many administrations were evaluation reports for strategic plans sent?**

.....

**3. Rank the main topics criticized in the evaluation of strategic plans (1 shows the most frequently criticized topic)?**

<input type="checkbox"/> Method of strategic planning process	<input type="checkbox"/> SWOT analysis
<input type="checkbox"/> Conformity of the contents of strategic plan to the Guidebook	<input type="checkbox"/> Vision
<input type="checkbox"/> Presentation format of strategic plan	<input type="checkbox"/> Mission
<input type="checkbox"/> Information related to administration	<input type="checkbox"/> Goals
<input type="checkbox"/> Link between goals and objectives	<input type="checkbox"/> Objectives
<input type="checkbox"/> Strategies	<input type="checkbox"/> Indicators
<input type="checkbox"/> Costs	<input type="checkbox"/> Feasibility analysis
<input type="checkbox"/> Monitoring and evaluation	<input type="checkbox"/> Risk assessment
<input type="checkbox"/> Other: .....	<input type="checkbox"/> Link of strategic plan to the Development Plan

**4. What are the main areas of the support/guidance demanded from the State Planning Office by administrations?**

<input type="checkbox"/> Method of strategic planning process	<input type="checkbox"/> SWOT analysis
<input type="checkbox"/> Conformity of the contents of strategic plan to the Guidebook	<input type="checkbox"/> Vision
<input type="checkbox"/> Presentation format of strategic plan	<input type="checkbox"/> Mission
<input type="checkbox"/> Information related to administration	<input type="checkbox"/> Goals
<input type="checkbox"/> Link between goals and objectives	<input type="checkbox"/> Objectives
<input type="checkbox"/> Strategies	<input type="checkbox"/> Indicators
<input type="checkbox"/> Costs	<input type="checkbox"/> Feasibility analysis
<input type="checkbox"/> Monitoring and evaluation	<input type="checkbox"/> Risk assessment
<input type="checkbox"/> Other: .....	<input type="checkbox"/> Link of strategic plan to the Development Plan

**Figure 24: Question form for structured interview I #3**

**5. Indicate how strongly you agree or disagree with the following statements.**

		Strongly Agree	Agree	Disagree	Strongly Disagree	No Opinion
5. 1	Inter-administration relationships are considered in evaluation of strategic plans.					
5. 2	There is an importance order / a prioritization for the questions used in evaluation of strategic plans.					
5. 3	The evaluation and feedback given by the State Planning Office are considered by administrations.					

**6. Practices of which countries were benefited in the preparation of the By-Law on Strategic Plans to be Prepared by Public Administrations and the Guidebook for Strategic Planning ?**

.....

**7. Which factors were considered in deciding on the strategic planning calendar?**

.....

**8. Do goals represented in strategic plans linked to the elements of the following documents by the State Planning Office?**

	Yes	Yes, Partially	No
8. 1 The Development Plan			
8. 2 Medium Term Program			
8. 3 Annual Program			

**9. Please specify other opinions and comments.**

.....

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**THANK YOU FOR YOUR CONTRIBUTION**

**Figure 24 (continued)**

Please answer the questions considering only the administrations under general budget.

**1. How many administrations sent performance program to the Ministry of Finance on time?**

.....

**2. To how many administrations were evaluation reports for performance programs sent?**

.....

**3. Is there a standard question list/control list used for evaluation of performance programs?**

.....

**4. What are the main topics criticized in the evaluation of performance programs?**

Link between strategic plan and performance program

Performance objectives

Performance indicators

Costing

Tables to be included in performance programs

Appropriateness of the contents of performance program to the Guidebook

Other: .....

**5. Practices of which countries were benefited when performance budgeting system of Turkey was constructed?**

.....

**6. What are the reasons for the By-Law on Performance Programs to be Prepared by Public Administrations to be revised in 2009?**

.....

**Figure 25: Question form for structured interview I #4**

**7. Indicate the degree of consideration of the following factors in determination of expenditure ceilings of administrations in the Medium Term Fiscal Plan.**

	Not At All	Partially	Mostly	Completely	No Opinion
7. 1 Expenditure forecasts done by administrations in the previous years (within the multi-year budgeting perspective)					
7. 2 Expenditures/Budget use ratio of administrations in the previous years					
7. 3 Amount of appropriations in the Budget Law of the previous year					
7. 4 Expenditure ceilings in the Medium Term Fiscal Plan of the previous year					
7. 5 Strategic plans of administrations and related resource requirements					
7. 6 Performance programs of administrations and related resource requirements					
7. 7 Previous years' performance of administrations					
7. 8 Central government revenue forecasts for future years					
7. 9 Other: .....					

**8. Indicate the effect of the following factors in budget negotiations held with administrations in determination of appropriations to take place in the Draft Budget.**

	Very Effective	Effective	Ineffective
8. 1 Expenditure ceilings of administrations in the Medium Term Fiscal Plan			
8. 2 Expenditures/Budget use ratio of administrations in the previous years			
8. 3 Previous years' budgets of administrations			
8. 4 Strategic plans of administrations and related resource requirements			
8. 5 Performance programs of administrations and related resource requirements			
8. 6 Previous years' performance of administrations			
8. 7 Feasibility reports of projects/activities			
8. 8 Other: .....			

**Figure 25 (continued)**

**9. Is the option for redistribution of appropriations to administrations considered in determination of appropriations to take place in the Draft Budget?**

.....

**10. Is the option for redistribution of appropriations between spending units within an administration considered in determination of appropriations to take place in the Draft Budget?**

.....

**11. Is the Ministry of Finance informed about the cash demands sent to the Undersecretariat of Treasury based on the By-Law on Determination of Cash Demands of Public Administrations?**

.....

**12. Please give brief information about setting Detailed Expenditure Programs.**

.....

.....

.....

.....

**13. Please give brief information about plan-program budgeting system implemented in Turkey in the period of 1973-2003.**

.....

.....

.....

.....

.....

**14. Please indicate the reasons for deciding on implementation of performance budgeting system in Turkey.**

.....

.....

.....

.....

.....

**THANK YOU FOR YOUR CONTRIBUTION**

**Figure 25 (continued)**

## APPENDIX E

### ADMINISTRATIVE PROPERTIES AND PRACTICES

The findings obtained via investigation of administrative practices in the context of performance budgeting and some administrative properties were put into the questionnaire as new variables.

First of all, strategic planning calendar that specifies the due date for the publication of strategic plans of administrations was prepared by the SPO. Accordingly, administrations were classified into four groups. A new variable, namely, the group of the administration, was added to the questionnaire under name Q22. The values that the variable can take as well as the labels and explanations are shown in Table 45.

**Table 45: Properties of Q22**

Value	Label	Explanation
1	Group 1	Period of the first strategic plan: 2007-2011
2	Group 2	Period of the first strategic plan: 2008-2012
3	Group 3	Period of the first strategic plan: 2009-2013
4	Group 4	Period of the first strategic plan: 2010-2014

Level of participation in the strategic planning teams of administrations, which is obtained using the logic in Table 46, was also added to the questionnaire. It is important to note that the main determinant of the level is whether the representatives of all spending unit are involved in the team or not. The values that the variable, named Q23, can take and the labels are shown in Table 47.

**Table 46: Levels of participation in the strategic planning team**

Level of Participation	Members of strategic planning team (1: if member, 0: if not)					
	Consultants or consulting firms	Personnel of strategy development unit	Representatives of some spending units	Representatives of all spending units	Some heads of departments	All heads of departments
No participation	1	0	0	0	0	0
Poor participation	0 or 1	1	0	0	0	0
Average participation	0 or 1	1	1	0	0	0
	0 or 1	1	0	0	1	0
	0 or 1	1	0	0	0	1
Good participation	0 or 1	1	1	0	1	0
	0 or 1	1	0	1	0	0
	0 or 1	1	1	0	0	1
Excellent participation	0 or 1	1	0	1	1	0
	0 or 1	1	0	1	0	1

**Table 47: Properties of Q23**

Value	Label
0	No participation
1	Poor participation
2	Average participation
3	Good participation
4	Excellent participation

Another variable that was added in the questionnaire is the level of ownership by the top management in strategic planning teams, which is obtained using the logic

in Table 48. The values that the variable, named Q24, can take and the labels are shown in Table 49.

**Table 48: Levels of ownership by the top management**

Level of Ownership	Members of strategic planning team (1: if member, 0: if not)		
	Deputy Head of Administration	Head of Administration	Minister
No ownership	0	0	0
Average ownership	1	0	0
Good ownership	0	1	0
Excellent ownership	1	1	0
	1	1	1

**Table 49: Properties of Q24**

Value	Label
0	No ownership
1	Average ownership
2	Good ownership
3	Excellent ownership

A variable denoting whether the administration is affiliated to another one or not was also added in the questionnaire. The values that the variable named Q25 can take and the labels are shown in Table 50.

A variable related to the budget size of administrations was also added in the questionnaire. The values that the variable named Q26 can take and the labels are shown in Table 51.

**Table 50: Properties of Q25**

Value	Label
0	Not affiliated
1	Affiliated to a Ministry
2	Affiliated to the Prime Ministry

**Table 51: Properties of Q26**

Value	Label
1	Budget $\leq$ 10,000,000 TL
2	10,000,000 TL < Budget $\leq$ 100,000,000 TL
3	100,000,000 TL < Budget $\leq$ 1,000,000,000 TL
4	1,000,000,000 TL < Budget

A variable related to the personnel size of administrations was also added in the questionnaire. The values that the variable named Q27 can take and the labels are shown in Table 52.

**Table 52: Properties of Q27**

Value	Label
1	Total Number of Personnel $\leq$ 500
2	500 < Total Number of Personnel $\leq$ 1,000
3	1,000 < Total Number of Personnel $\leq$ 2,500
4	2,500 > Total Number of Personnel

## APPENDIX F

### DETAILS OF THE ANALYSIS OF THE QUESTIONNAIRE

Cross tabulations were constructed to investigate the association between two sub-questions.

The cross tabulation constructed for the effect of the support of the top management and the level of ownership by the top management in sp teams, which refers to analyze the association between questions 24 and 8.A.1, is presented below.

**Table 53: Crosstabulation for Sub-Questions 8.A.1 and 24**

		The effect of the support of the top management			Total
		Disabling	No Effect	Enabling	
Level of ownership by the top management in sp teams	No ownership	1	1	11	13
	Average ownership	1	1	5	7
	Good ownership	0	0	1	1
	Excellent ownership	0	2	13	15
	Total	2	4	30	36

The cross tabulation constructed for the level of participation in the strategic planning teams and the effect of the participation of the personnel on the process, which refers to analyze the association between questions 23 and 8.A.6, is presented below.

**Table 54: Crosstabulation for Sub-Questions 8.A.6 and 23**

		The effect of the participation of the personnel to the process			Total
		Disabling	No Effect	Enabling	
Level of participation in the sp teams	Poor participation	1	0	0	1
	Average participation	2	2	1	5
	Good participation	2	2	7	11
	Excellent participation	1	1	17	19
Total		6	5	25	36

The cross tabulation constructed for whether consultants or consulting firms participated in the strategic planning of an administration and the effect of the consultancy support received from them, which refers to analyze the association between questions 4.9 and 8.C.11, is presented below.

**Table 55: Crosstabulation for Sub-Questions 4.9 and 8.C.11**

		The effect of the consultancy support received from consultants or consulting firms			Total
		Disabling	No Effect	Enabling	
Participation of consultants/consulting firms in the sp team	0	1	8	5	14
	1	1	1	9	11
	Total	2	9	14	25

The cross tabulations constructed for whether how strategic plans will be linked to the development plans and programs is open for the administration and the effect of these documents, which refers to analyze the association between questions 6.A.7 and 8.C.1, 6.A.7 and 8.C.2, and 6.A.7 and 8.C.3, are presented below.

**Table 56: Crosstabulation for Sub-Questions 6.A.7 and 8.C.1**

	The effect of the Development Plan			Total
	Disabling	No Effect	Enabling	
Q6.A.7 Opponent	2	5	9	16
Proponent	0	2	16	18
Total	2	7	25	34

**Table 57: Crosstabulation for Sub-Questions 6.A.7 and 8.C.2**

	The effect of the Medium Term Program			Total
	Disabling	No Effect	Enabling	
Q6.A.7 Opponent	3	5	8	16
Proponent	0	2	16	18
Total	3	7	24	34

**Table 58: Crosstabulation for Sub-Questions 6.A.7 and 8.C.3**

	The effect of the Medium Term Fiscal Plan			Total
	Disabling	No Effect	Enabling	
Q6.A.7 Opponent	3	6	7	16
Proponent	2	2	14	18
Total	5	8	21	34

The cross tabulation constructed for whether how inter-administration relationships will be considered in strategic planning is open for the administration and the effect of these relationships, which refers to analyze the association between questions 6.A.8 and 8.C.4, is presented below.

**Table 59: Crosstabulation for Sub-Questions 6.A.8 and 8.C.4**

	The effect of the inter-administration relationships			Total
	Disabling	No Effect	Enabling	
Q6.A.8 Opponent	1	8	14	23
Proponent	3	1	6	10
Total	4	9	20	33

The cross tabulation constructed for the status related to the update of performance programs after the negotiations with the MoF and the SPO and after the negotiations held in the Parliament, which refers to analyze the association between questions 15 and 16, is presented below.

**Table 60: Crosstabulation for Sub-Questions 15 and 16**

		Q16				Total
		A	B	C	D	
Q15	A	10	0	0	0	10
	B	3	1	1	0	5
	C	3	0	5	0	8
	D	0	0	0	2	2
	Total	16	1	6	2	25

The cross tabulations constructed for whether data entry to the e-bütçe system is easy and the difficulty level of recording data related to strategic plan and performance program to the system, which refers to analyze the association between questions 19.3 and 7.15, and 19.3 and 9.15, are presented below.

**Table 61: Crosstabulation for Sub-Questions 19.3 and 7.15**

		difficulty level of recording data related to strategic plan to the system			Total
		Easy to be Performed	A Bit Difficult to be Performed	Very Difficult to be Performed	
Q19.3	Opponent	4	1	1	6
	Proponent	5	2	0	7
Total		9	3	1	13

**Table 62: Crosstabulation for Sub-Questions 19.3 and 9.15**

		difficulty level of recording data related to performance program to the system			Total
		Easy to be Performed	A Bit Difficult to be Performed	Very Difficult to be Performed	
Q19.3	Opponent	2	3	3	8
	Proponent	2	2	1	5
	Total	4	5	4	13

The cross tabulation for whether methods that can be used in costing of activities is adequate and the difficulty level of activity costing, which refers to analyze the association between questions 6.B.5 and 9.10, is presented below.

The cross tabulation constructed for whether how costs of activities will be expressed according to analytical budget classification is clear and the difficulty level of expressing as such, which refers to analyze the association between questions 6.B.6 and 9.11, is presented below.

**Table 63: Crosstabulation for Sub-Questions 6.B.5 and 9.10**

		difficulty level of costing activities				Total
		Easy to be Performed	A Bit Difficult to be Performed	Very Difficult to be Performed	Not Performed	
Q6.B.5	Opponent	2	12	8	3	25
	Proponent	1	3	0	0	4
	Total	3	15	8	3	29

**Table 64: Crosstabulation for Sub-Questions 6.B.6 and 9.11**

		difficulty level of expressing activities according to analytical budget classification				Total
		Easy to be Performed	A Bit Difficult to be Performed	Very Difficult to be Performed	Not Performed	
Q6.B.6	Opponent	3	6	8	3	20
	Proponent	3	3	0	1	7
	Total	6	9	8	4	27

The cross tabulation constructed for whether how performance programs will be updated is clear and the way of update, which refers to analyze the association between questions 6.B.7 and 15 , is presented below.

**Table 65: Crosstabulation for Sub-Questions 6.B.7 and 15**

	Q15				Total
	A	B	C	D	
Q6.B.7 Opponent	5	4	4	1	14
Proponent	5	1	3	0	9
Total	10	5	7	1	23

The cross tabulation constructed for the difficulty level of expressing costs of activities according to analytical budget classification and the opinion that the classification should be changed, which refers to analyze the association between questions 9.11 and 20.11, is presented below.

**Table 66: Crosstabulation for Sub-Questions 9.11 and 20.11**

	Q20.11		Total
	Opponent	Proponent	
Q9.11 Easy to be Performed	3	2	5
A Bit Difficult to be Performed	3	4	7
Very Difficult to be Performed	2	7	9
Not Performed	1	2	3
Total	9	15	24

The cross tabulations constructed for whether how strategic plans and performance programs are clear and the difficulty level of prioritizing the objectives in the strategic plan, which refers to analyze the association between questions 6.A.10 and 9.1, and 6.B.2 and 9.1 are presented below.

**Table 67: Crosstabulation for Sub-Questions 6.A.10 and 9.1**

		Q6.A.10		Total
		Opponent	Proponent	
Q9.1	Easy to be Performed	2	6	8
	A Bit Difficult to be Performed	5	8	13
	Very Difficult to be Performed	6	1	7
	Total	13	15	28

**Table 68: Crosstabulation for Sub-Questions 6.B.2 and 9.1**

		Q6.B.2		Total
		Opponent	Proponent	
Q9.1	Easy to be Performed	2	6	8
	A Bit Difficult to be Performed	6	8	14
	Very Difficult to be Performed	4	3	7
	Total	12	17	29

The cross tabulation constructed for whether the information given in the Guidebook for Strategic Planning is adequate for an administration and the effect of the Guidebook on the process, which refers to analyze the association between questions 6.A.4 and 8.C.6, is presented below.

**Table 69: Crosstabulation for Sub-Questions 6.A.4 and 8.C.6**

		The effect of the Guidebook			Total
		Disabling	No Effect	Enabling	
Q6.A.4	Opponent	2	2	9	13
	Proponent	0	2	21	23
	Total	2	4	30	36

The correlation matrix constructed for average scores of administrations in question groups in shown in Table 70. The correlation matrix constructed to see the response pattern within administration groups is presented in Table 71.

**Table 70: Correlation matrix for the average scores of administrations**

		Administration Group in Question Group ...																
		6A	6B	7	8A	8B	8C	9	10A	10B	10C	14	19					
6A	<b>1.000</b>																	
6B	0.582	<b>1.000</b>																
6C	0.322	0.369	<b>1.000</b>															
7	-0.144	-0.083	-0.111	<b>1.000</b>														
8A	0.228	0.334	0.144	-0.632	<b>1.000</b>													
8B	0.285	0.584	0.049	-0.185	0.540	<b>1.000</b>												
8C	0.198	0.233	0.085	-0.565	0.556	0.443	<b>1.000</b>											
9	-0.138	-0.143	-0.121	0.426	-0.406	-0.217	-0.207	<b>1.000</b>										
10A	0.338	0.401	0.112	-0.410	0.674	0.497	0.187	-0.449	<b>1.000</b>									
10B	0.075	0.477	0.008	-0.300	0.570	<b>0.792</b>	0.381	-0.276	0.741	<b>1.000</b>								
10C	0.175	0.462	0.127	-0.450	0.666	0.657	<b>0.706</b>	-0.320	0.489	0.664	<b>1.000</b>							
14	0.308	0.339	0.375	0.047	0.244	0.203	0.102	-0.280	0.259	0.255	0.349	<b>1.000</b>						
19	0.377	0.480	0.544	0.007	0.434	0.456	0.153	-0.354	0.473	0.379	0.550	0.738	<b>1.000</b>					

**Table 71: Correlation matrix for the administration groups**

		Administration Group in Question Group ...																
		6A	6B	7	8A	8B	8C	9	10A	10B	10C	14	19					
6A	<b>1.000</b>																	
6B	0.476	<b>1.000</b>																
7	-0.072	-0.037	<b>1.000</b>															
8A	0.250	0.144	-0.519	<b>1.000</b>														
8B	0.238	0.262	-0.150	0.411	<b>1.000</b>													
8C	0.218	0.118	-0.404	0.371	0.333	<b>1.000</b>												
9	-0.211	-0.079	0.181	-0.219	-0.087	-0.223	<b>1.000</b>											
10A	0.279	0.094	-0.237	0.487	0.466	0.250	-0.423	<b>1.000</b>										
10B	0.046	0.165	-0.151	0.272	<b>0.751</b>	0.285	-0.091	0.464	<b>1.000</b>									
10C	0.143	0.374	-0.337	0.516	0.473	0.462	-0.145	0.329	0.457	<b>1.000</b>								
14	0.416	0.090	0.263	0.150	0.103	-0.122	-0.142	-0.065	-0.033	-0.060	<b>1.000</b>							
19	0.462	0.490	0.141	0.377	0.402	0.069	-0.130	0.303	0.192	0.276	0.370	<b>1.000</b>						

## APPENDIX G

### MULTIPLE CRITERIA DECISION MAKING METHODS AND BALANCED SCORECARD APPROACH

In this part, multiple criteria decision making methods are explained briefly first. Then, brief information about balanced scorecard approach is represented.

#### **G.1. Multiple Criteria Decision Making Methods**

The aim of multi-criteria decision-aid is to provide some tools to the decision maker to enable him to proceed in solving the decision problem that includes conflicting viewpoints (Vincke 1992). “Multiple criteria decision making [MCDM] refers to making decisions in presence of multiple, usually conflicting criteria” and has the following two categories: (i) multiple objective decision making and (ii) multiple attribute decision making (Rao 2007). The latter one, which involves selecting one among a predetermined set of alternatives (Rao 2007, Triantaphyllou 2000), is handled in this study.

Common aspects of MCDM methods are as follows: (i) alternatives, which are “choices of action available to the decision maker”, (ii) multiple attributes, goals or decision criteria, which are different perspectives to assess alternatives, (iii) conflict among criteria, (iv) incommensurable (different) units of criteria, (v) decision weights or importance of criteria, and (vi) decision matrix (Triantaphyllou 2000). MCDM methods may be stochastic, deterministic and fuzzy in terms of the types of data used, and may involve single or group decision makers (Triantaphyllou 2000).

MCDM methods are the analytic hierarchy process (AHP), the analytic network process (ANP), Technique for Order Preference by Similarity to Ideal Solution (TOPSIS), ELECTRE and Preference Ranking Organization Method for Enactment Evaluations (PROMETHEE). In addition, the common multi-criteria aggregation methods are the weighted sum method, the weighted product method, the

lexicographic method and the sum of ranks method (Triantaphyllou 2000, Vincke 1992).

Since AHP and ANP are mentioned in the main text, multi-criteria aggregation methods are briefly explained first and then information about other multi-criteria decision making methods are presented in this part.

### **G.1.1. Weighted Sum Method**

In the weighted sum method, which is also called as simple additive weighting, the total value of an alternative is equal to the sum of the products of the actual value of that alternative in terms of a criterion and weight of that criterion and the best alternative is the one having the maximum total value (Triantaphyllou 2000). It is important to note that (i) the sum of all weights of criterion should be one and (ii) additive utility assumption should hold in the model; that is all units should be the same, which implies single dimensionality, or all elements should be normalized (Rao 2007, Triantaphyllou 2000)

### **G.1.2. Weighted Product Method**

In the weighted product method, each alternative is compared to the others and the best one is selected as follows: (i) a ratio of the actual value of an alternative in terms of a criterion to that of the other alternative is found, which implies normalization (ii) the obtained ratio is raised to the power equivalent to the weight of corresponding criterion, (iii) product of the ratios calculated for each criterion gives the ratio for a pair-wise comparison of alternatives, and (iv) the best alternatives is the one that is better than or at least equal to all other ones (Triantaphyllou 2000). Since relative values are used in this model, it is appropriate for both single and multi dimensional cases (Triantaphyllou 2000).

### **G.1.3. Lexicographic Method**

In the lexicographic method, “criteria are ranked in the order of their importance and the alternative with the best performance score on the most important criterion is chosen” (Fülöp \_\_\_\_).

#### **G.1.4. ELECTRE Method**

ELECTRE (Elimination and Choice Translating Reality) method deals with outranking relations via pair-wise comparing alternatives based on each criterion (Triantaphyllou 2000).

There are four different version of this method. The ELECTRE I method, the first outranking method in the literature, is used “to obtain a subset N of actions such that any action which is not in N is outranked by at least one action of N” (Vincke 1992). The aim of the ELECTRE II method is to rank the actions from best to worst (Vincke 1992). The ELECTRE III method not only deals with ranking problems, but also takes indifference and preference thresholds into account (Vincke 1992). The ELECTRE IV method also used in ranking problems, but it does not assign any weighing of criteria based on the assumption that no criteria are insignificant with regard to another (Vincke 1992).

Since the method offers a clearer vision for alternatives via removing less favorable ones, it is especially suitable for cases where there are small number of criteria and a large number of alternatives (Rao 2007, Lootsma 1990 quoted in Rao 2007).

#### **G.1.5. TOPSIS**

In the core of TOPSIS (the Technique for Order Preference by Similarity to Ideal Solution) lies the concept that the selected alternative is the one that have the shortest Euclidean distance from the ideal solution as well as the farthest from the negative ideal solution (Rao 2007, Triantaphyllou 2000). The ideal solution is a hypothetical one which is found using the assumption that “each criterion has a tendency of monotonically increasing or decreasing utility” (Rao 2007, Triantaphyllou 2000). Entropy method and standard deviation method can be used for deciding the weights of attributes objectively and AHP can be used for doing so subjectively (Rao 2007). Then, the preference of alternatives is found by series of comparison of relative distances (Triantaphyllou 2000).

#### **G.1.6. PROMETHEE**

PROMETHEE (Preference Ranking Organization Method for Enrichment Evaluations) is used to obtain an outranking relation involving concepts and parameters having some physical or economic interpretation (Vincke 1992).

PROMETHEE methods are outranking methods. Information between criteria, which refers to the weights for relative importance of criteria, and within each criterion, which is obtained via pair-wise comparisons, is required for the methods (Brans and Mareschal 2005). That is; it is assumed that the weights of the criteria have already been determined by an appropriate method and normalized (Fülöp \_\_\_\_ ).

PROMETHEE I is used for partial ranking, whereas II is used for complete ranking of alternatives and they are both appropriate for selecting one alternative (Brans and Mareschal 2005). PROMETHEE V handles the problems where a subset of alternatives needs to be identified, given some constraints (Brans and Mareschal 2005).

### **G.1.7. Group Decision Making**

Moreno-Jiménez et al. (2002) stated the following decision making situations with multiple actors: (i) group decision making, where individuals work together to obtain a common goal, (ii) negotiated decision making, where each decision maker resolves the problem individually and then all of them looks for agreement and disagreement, and (iii) systematic decision making, where each decision maker can act independently and the principle of tolerance is then raised to enable integration of the different points.

There are also two different approaches of for group decision making; namely, to work with (i) individual judgments, where several individuals act as a one and a new judgment matrix for the group is built via consensus, voting or aggregation of judgments, and (ii) individual priorities where priorities of the group are obtained by aggregation of individual priorities (Saaty 1989, Ramanathan and Ganesh 1994, Forman and Peniwati 1998 quoted in Altuzarra et al. 2007). In both approaches, the most common aggregation technique used is the weighted geometric mean (Altuzarra et al. 2007).

### **G.2. Balanced Scorecard Approach**

The Balanced Scorecard (BSC), which was developed by Kaplan and Norton in 1990, is a carefully selected set of measures derived from an organization's strategy (Niven 2002). It enables looking at the business from four perspectives; namely, financial, customer, internal business, learning and growth (Kaplan and Norton 1992).

Some sub-elements or categories are also suggested for the perspectives (Tjader et al. 2009, Niven 2002, Kaplan and Norton 1992), which may be: (i) cash flow, profitability, revenue growth, cost savings, economic value added and industry leader for financial perspective, (ii) availability of products/services, time, quality, performance and service, cost/price stability, customer database and customer satisfaction for customer perspective, (iii) internal control, quality, agility, core focus and certificates for internal business perspective and (iv) employee skills/competency, employee satisfaction, availability of information, technology research and development and management expertise and know-how for learning and growth perspective.

### **G.3. Literature Review**

There are several examples related to the use of the multi-criteria decision making tools and the Balanced Scorecard approach (BSC) in strategic management and performance management areas. For instance; Kadak (2006), Eraslan and Algün (2005) and Albayrak (2004) studied the implementation of the analytic hierarchy process (AHP) for performance measurement. Kocadağlı (2006) used linear goal programming for budgeting of a schoolroom.

There are also various studies related to the combined approached. Jovanovic and Krivokapic (2008) and Leung et al. (2006) used both the AHP and the ANP in the implementation of the balanced scorecard (BSC) concept. In addition, Tjader et al. (2009) integrated the ANP with BSC for information technology outsourcing decision making.

## APPENDIX H

### SUPPLEMENTARY INFORMATION ABOUT THE PROPOSED SYSTEM

#### H.1. Approaches for Determining Strategic Issues

Bryson (2004) specified the step of determining strategic issues, which are essential policy questions or important challenges that have an effect on fundamental structure of the organization, such as mandates, mission and processes, as the core of the strategic planning process. Approaches recommended by him are summarized in Table 72.

**Table 72: Approaches used for determining strategic issues**

Approach	How to Use?	When to Use?
<b>The direct approach</b>	Strategic issues are identified via review of mandates, mission, strengths, weaknesses, opportunities and challenges of the organization.	If one of the followings holds; <ul style="list-style-type: none"> <li>• There is no agreement on goals</li> <li>• Goals are too conceptual</li> <li>• There is not a preexisting vision</li> <li>• There is no opportunity to impose goals to stakeholders</li> <li>• The environment is too unstable</li> </ul>
<b>The goals approach</b>	First goals and objectives are determined or current ones are reviewed and updated, if necessary. Then strategic issues can optionally be addressed to achieve them.	If one of the followings holds; <ul style="list-style-type: none"> <li>• There is a strong agreement on goals and objectives</li> <li>• Goals and objectives are precise and detailed</li> <li>• There are key decision makers or external powers to impose goals to stakeholders</li> <li>• Official and operational goals are not too separate</li> </ul>

\*Adapted from Bryson (2004).

**Table 72 (continued)**

Approach	How to Use?	When to Use?
<b>The direct approach</b>	Strategic issues are identified via review of mandates, mission, strengths, weaknesses, opportunities and challenges of the organization.	If one of the followings holds; <ul style="list-style-type: none"> <li>• There is no agreement on goals</li> <li>• Goals are too conceptual</li> <li>• There is not a preexisting vision</li> <li>• There is no opportunity to impose goals to stakeholders</li> <li>• The environment is too unstable</li> </ul>
<b>The goals approach</b>	First goals and objectives are determined or current ones are reviewed and updated, if necessary. Then strategic issues can optionally be addressed to achieve them.	If one of the followings holds; <ul style="list-style-type: none"> <li>• There is a strong agreement on goals and objectives</li> <li>• Goals and objectives are precise and detailed</li> <li>• There are key decision makers or external powers to impose goals to stakeholders</li> <li>• Official and operational goals are not too separate</li> </ul>
<b>The vision of success approach</b>	An ideal future situation of the organization is described first, and then the way to achieve it is addressed.	If integration across boundaries and functions of the organization is required
<b>The indirect approach</b>	Strategic issues are determined indirectly where current system of ideas are formed and then combined in new ways using their action implications.	If one of the followings holds; <ul style="list-style-type: none"> <li>• There is a need for a major strategic redirection, yet the need have not been realized yet</li> <li>• There is no agreement on goals</li> <li>• Goals are too conceptual</li> <li>• There is not a preexisting vision</li> <li>• There is no opportunity to impose goals to stakeholders</li> <li>• The environment is too unstable</li> </ul>
<b>The oval mapping approach</b>	Possible actions and the ways to handle them are determined via brainstorming and clustered using causal mapping, which are then used to determine strategic issues.	If one of the followings holds; <ul style="list-style-type: none"> <li>• Complex issues can not be understood</li> <li>• Time is short and actions should be focused</li> </ul>
<b>The issue tensions approach</b>	Strategic issues are determined and framed questioning the following tensions surrounding them: human resources, innovation and change, maintenance of tradition, productivity improvement and their possible combinations.	If one of the followings holds; <ul style="list-style-type: none"> <li>• The costs of wrongly framing an issue are high</li> <li>• There is high ambiguity about what an issue essentially is</li> </ul> <p><i>This approach can be used either individually or with other approaches.</i></p>

\* Adapted from Bryson (2004).

**Table 72 (continued)**

Approach	How to Use?	When to Use?
<b>System analysis</b>	System analysis is a process of collecting factual data, understand the processes involved, identifying problems and recommending feasible suggestions for improving the system functioning to aid decision maker(s) in identifying a better course of action and make a better decision. **	If one of the followings holds; <ul style="list-style-type: none"> <li>• An issue can be conceptualized as a system</li> <li>• There are feedback effects need to be modeled</li> </ul>

\* Adapted from Bryson (2004).

\*\* [www.nos.org/cca/ccal.pdf](http://www.nos.org/cca/ccal.pdf)

## **H.2. Cascade Performance Budgeting**

Mercer (2003) defined cascade performance budgeting as a “systematic approach for developing effective performance budgets at government agencies”. What lie in the core of the approach are (i) constructing a clear link between the long-term goals of the agency and day-to-day program activities, and (ii) identifying the full cost as well as the unit cost of the activities (Mercer 2003).

He concatenated the steps in cascade performance budgeting as follows: (i) the structure for budget accounts is aligned with that of the strategic plan of the organization, (ii) it is shown how the structure flows down as a series of interconnected performance budgets, (iii) day-to-day activities are linked to performance budgets, and (iv) the full cost of the activities is shown, which will enable the calculation of the full cost of objectives.

## APPENDIX I

### SUPPLEMENTARY INFORMATION ABOUT THE PROPOSED METHOD FOR UPDATE OF PERFORMANCE PROGRAMS

#### I.1. Supplementary Information for the Analytic Hierarchy Process

Cluster matrices for the first and the third target are given in Figures 26 and 27, respectively. Unweighted super matrix, weighted super matrix and limit matrix for the analytic hierarchy process related to the first target are shown in Tables 73-75, respectively. Matrices related to the third target are shown in Tables 76-78.

Cluster Node Labels	AG1	P1	P2	P3	P4	T1
AG1	1.000000	0.800000	0.244929	0.513367	0.098322	0.000000
P1	0.000000	0.000000	0.000000	0.023423	0.033720	0.042973
P2	0.000000	0.200000	0.090232	0.105975	0.067827	0.110968
P3	0.000000	0.000000	0.000000	0.179017	0.202872	0.608409
P4	0.000000	0.000000	0.664839	0.178219	0.597259	0.237650
T1	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

**Figure 26: Cluster matrix for the first target of the unit**

Cluster Node Labels	AG2	P1	P2	P3	P4	T3
AG2	0.000000	0.800000	0.333069	0.486666	0.362168	0.000000
P1	0.000000	0.000000	0.000000	0.026335	0.048039	0.325665
P2	0.000000	0.200000	0.097390	0.065999	0.030115	0.065457
P3	0.000000	0.000000	0.000000	0.147879	0.087650	0.165892
P4	0.000000	0.000000	0.569541	0.273121	0.472027	0.442986
T3	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

**Figure 27: Cluster matrix for the third target of the unit**

**Table 73: Unweighted super matrix for the ANP related to the first target**

	A1	A2	A3	A4	P1.1	P2.1	P2.2	P2.3	P3.1	P3.2	P3.3	P3.4	P4.1	P4.2	P4.3	P4.4	P4.5	P4.6	t1
A1	0	0	0	0	0.045	0.067	0.059	0.046	0.097	0.283	0.337	0.120	0.052	0.287	0.063	0.593	0.664	0.042	0
A2	1.000	0	0	0	0.117	0.197	0.076	0.069	0.250	0.505	0.276	0.072	0.137	0.544	0.058	0.225	0.058	0.060	0
A3	0	0	0	0	0.559	0.622	0.649	0.690	0.588	0.055	0.067	0.268	0.542	0.048	0.618	0.047	0.167	0.666	0
A4	0	0	0	0	0.280	0.114	0.216	0.196	0.065	0.157	0.320	0.540	0.269	0.120	0.260	0.136	0.112	0.232	0
P1.1	0	0	0	0	0	0	0	0	0	1.000	1.000	0	0	0	1.000	0	0	0	1.000
P2.1	0	0	0	0	0	0	0	0.833	0	0.167	0.250	0	0	0	0.750	0	0	0	0.072
P2.2	0	0	0	0	1.000	0	0	0.167	0	0.833	0.750	1.000	1.000	0	0.250	0	0	0	0.642
P2.3	0	0	0	0	0	1.000	1.000	0	0	0	0	0	0	0	0	0	0	0	0.285
P3.1	0	0	0	0	0	0	0	0	0	0	0.342	0.528	0	0.667	0	0	0	0	0.040
P3.2	0	0	0	0	0	0	0	0	0	0	0.134	0.333	0	0.333	0	0	0	0	0.684
P3.3	0	0	0	0	0	0	0	0	0	0.167	0	0.140	0.250	0	0	0	1.000	0	0.127
P3.4	0	0	0	0	0	0	0	0	1.000	0.833	0.524	0	0.750	0	1.000	0	0	0	0.148
P4.1	0	0	0	0	0	0	1.000	0	0	0.064	0.070	0	0	0.044	0.111	0	0.042	0	0.026
P4.2	0	0	0	0	0	0	0	0	0	0.679	0	0	0	0	0	0.200	0.060	0	0.487
P4.3	0	0	0	0	0	0	0	0	0	0	0.604	0.143	0	0.208	0	0	0.666	0	0.062
P4.4	0	0	0	0	0	0	0	0	0.167	0	0	0	0	0.648	0	0	0.232	0	0.269
P4.5	0	0	0	0	0	0	0	0	0.833	0	0.326	0.857	0	0.099	0	0.800	0	0	0.116
P4.6	0	0	0	0	0	0	0	0	0	0.256	0	0	0	0	0.889	0	0	0	0.040
t1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Table 74: Weighted super matrix for the ANP related to the first target**

	A1	A2	A3	A4	P1.1	P2.1	P2.2	P2.3	P3.1	P3.2	P3.3	P3.4	P4.1	P4.2	P4.3	P4.4	P4.5	P4.6	t1
A1	0	0	0	0	0.036	0.049	0.015	0.034	0.057	0.145	0.173	0.063	0.014	0.031	0.006	0.084	0.073	0.042	0
A2	1.000	0	0	0	0.093	0.144	0.019	0.050	0.147	0.259	0.142	0.038	0.036	0.060	0.006	0.032	0.006	0.060	0
A3	0	0	0	0	0.447	0.455	0.159	0.504	0.347	0.028	0.034	0.141	0.144	0.005	0.061	0.007	0.018	0.666	0
A4	0	0	0	0	0.224	0.083	0.053	0.143	0.039	0.081	0.164	0.284	0.072	0.013	0.026	0.019	0.012	0.232	0
P1.1	0	0	0	0	0	0	0	0	0	0.023	0.023	0	0	0	0.034	0	0	0	0.043
P2.1	0	0	0	0	0	0	0	0.224	0	0.018	0.026	0	0	0	0.051	0	0	0	0.008
P2.2	0	0	0	0	0.200	0	0	0.045	0	0.088	0.079	0.109	0.184	0	0.017	0	0	0	0.071
P2.3	0	0	0	0	0	0.269	0.090	0	0	0	0	0	0	0	0	0	0	0	0.032
P3.1	0	0	0	0	0	0	0	0	0	0	0.061	0.097	0	0.151	0	0	0	0	0.025
P3.2	0	0	0	0	0	0	0	0	0	0	0.024	0.061	0	0.075	0	0	0	0	0.416
P3.3	0	0	0	0	0	0	0	0	0	0.030	0	0.026	0.137	0	0	0	0.226	0	0.078
P3.4	0	0	0	0	0	0	0	0	0.206	0.149	0.094	0	0.412	0	0.203	0	0	0	0.090
P4.1	0	0	0	0	0	0	0.665	0	0	0.011	0.013	0	0	0.030	0.066	0.000	0.028	0	0.006
P4.2	0	0	0	0	0	0	0	0	0	0.121	0	0	0	0	0	0.172	0.040	0	0.116
P4.3	0	0	0	0	0	0	0	0	0	0	0.108	0.026	0	0.138	0	0	0.443	0	0.015
P4.4	0	0	0	0	0	0	0	0	0.034	0	0	0	0	0.431	0	0	0.154	0	0.064
P4.5	0	0	0	0	0	0	0	0	0.171	0	0.058	0.156	0	0.066	0	0.687	0	0	0.028
P4.6	0	0	0	0	0	0	0	0	0	0.046	0	0	0	0	0.531	0	0	0	0.010
t1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 75: Limit matrix for the ANP related to the first target

	A1	A2	A3	A4	P1.1	P2.1	P2.2	P2.3	P3.1	P3.2	P3.3	P3.4	P4.1	P4.2	P4.3	P4.4	P4.5	P4.6	t1	
A1	0	0	0	0	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0	0.050
A2	0	0	0	0	0.131	0.131	0.131	0.131	0.131	0.131	0.131	0.131	0.131	0.131	0.131	0.131	0.131	0.131	0	0.131
A3	0	0	0	0	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0	0.165
A4	0	0	0	0	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0.103	0	0.103
P1.1	0	0	0	0	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0	0.006
P2.1	0	0	0	0	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0	0.013
P2.2	0	0	0	0	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0	0.048
P2.3	0	0	0	0	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0	0.013
P3.1	0	0	0	0	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0	0.022
P3.2	0	0	0	0	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0.012	0	0.012
P3.3	0	0	0	0	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0	0.045
P3.4	0	0	0	0	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0	0.085
P4.1	0	0	0	0	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0	0.066
P4.2	0	0	0	0	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0	0.016
P4.3	0	0	0	0	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0	0.066
P4.4	0	0	0	0	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0	0.030
P4.5	0	0	0	0	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0	0.069
P4.6	0	0	0	0	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0	0.059
t1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 76: Unweighted super matrix for the ANP related to the third target

	A6	A7	A8	A9	A10	PI.1	P2.1	P2.2	P2.3	P3.1	P3.2	P3.3	P3.4	P4.1	P4.2	P4.3	P4.4	P4.5	P4.6	t3
A6	0	0	0	0	0	0.578	0.570	0.081	0.124	0.150	0.504	0.547	0.558	0.060	0.235	0.669	0.231	0.643	0.350	0
A7	0	0	0	0	0	0.199	0.262	0.549	0.479	0.555	0.271	0.256	0.258	0.563	0.486	0.191	0.560	0.201	0.263	0
A8	0	0	0	0	0	0.114	0.066	0.206	0.266	0.158	0.057	0.044	0.056	0.169	0.122	0.041	0.079	0.036	0.328	0
A9	0	0	0	0	0	0.071	0.058	0.095	0.086	0.106	0.055	0.031	0.034	0.169	0.122	0.061	0.051	0.036	0.027	0
A10	0	0	0	0	0	0.038	0.045	0.069	0.046	0.032	0.113	0.123	0.094	0.038	0.036	0.039	0.079	0.084	0.032	0
PI.1	0	0	0	0	0	0	0	0	0	0	1.000	1.000	0	0	0	1.000	0	0	0	1.000
P2.1	0	0	0	0	0	0	0	0	0.833	0	0.167	0.250	0	0	0	0.750	0	0	0	0.156
P2.2	0	0	0	0	0	1.000	0	0	0.167	0	0.833	0.750	1.000	1.000	0	0.250	0	0	0	0.745
P2.3	0	0	0	0	0	0	1.000	1.000	0	0	0	0	0	0	0	0	0	0	0	0.099
P3.1	0	0	0	0	0	0	0	0	0	0	0	0.342	0.528	0	0.667	0	0	0	0	0.054
P3.2	0	0	0	0	0	0	0	0	0	0	0	0.134	0.333	0	0.333	0	0	0	0	0.263
P3.3	0	0	0	0	0	0	0	0	0	0	0.167	0	0.140	0.250	0	0	0	1.000	0	0.199
P3.4	0	0	0	0	0	0	0	0	0	1.000	0.833	0.524	0	0.750	0	1.000	0	0	0	0.484
P4.1	0	0	0	0	0	0	0	1.000	0	0	0	0.070	0	0	0.046	0.111	0	0.277	0	0.019
P4.2	0	0	0	0	0	0	0	0	0	0	0.679	0	0	0	0	0	0.2	0.032	0	0.045
P4.3	0	0	0	0	0	0	0	0	0	0	0	0.604	0.143	0	0.203	0	0	0.417	0	0.231
P4.4	0	0	0	0	0	0	0	0	0	0.167	0	0	0	0	0.650	0	0	0.274	0	0.499
P4.5	0	0	0	0	0	0	0	0	0	0.833	0	0.326	0.857	0	0.101	0	0.8	0	0	0.079
P4.6	0	0	0	0	0	0	0	0	0	0	0.256	0	0	0	0	0.889	0	0	0	0.127
t3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 77: Weighted super matrix for the ANP related to the third target

	A6	A7	A8	A9	A10	P1.1	P2.1	P2.2	P2.3	P3.1	P3.2	P3.3	P3.4	P4.1	P4.2	P4.3	P4.4	P4.5	P4.6	t3
A6	0	0	0	0	0	0.462	0.441	0.027	0.096	0.080	0.245	0.266	0.279	0.046	0.092	0.242	0.100	0.253	0.350	0
A7	0	0	0	0	0	0.159	0.202	0.183	0.370	0.298	0.132	0.124	0.129	0.425	0.191	0.069	0.243	0.079	0.263	0
A8	0	0	0	0	0	0.091	0.051	0.069	0.206	0.085	0.028	0.021	0.028	0.127	0.048	0.015	0.034	0.014	0.328	0
A9	0	0	0	0	0	0.057	0.045	0.032	0.066	0.057	0.027	0.015	0.017	0.127	0.048	0.022	0.022	0.014	0.027	0
A10	0	0	0	0	0	0.030	0.035	0.023	0.035	0.017	0.055	0.060	0.047	0.029	0.014	0.014	0.034	0.033	0.032	0
P1.1	0	0	0	0	0	0	0	0	0	0	0.026	0.026	0	0	0	0.048	0	0	0	0.326
P2.1	0	0	0	0	0	0	0	0	0.189	0	0.011	0.017	0	0	0	0.023	0	0	0	0.010
P2.2	0	0	0	0	0	0.200	0	0	0.038	0	0.055	0.050	0.068	0.063	0	0.008	0	0	0	0.049
P2.3	0	0	0	0	0	0	0.226	0.097	0	0	0	0	0	0	0	0	0	0	0	0.006
P3.1	0	0	0	0	0	0	0	0	0	0	0	0.051	0.080	0	0.063	0	0	0	0	0.009
P3.2	0	0	0	0	0	0	0	0	0	0	0	0.020	0.051	0	0.032	0	0	0	0	0.044
P3.3	0	0	0	0	0	0	0	0	0	0	0.025	0	0.021	0.046	0	0	0	0.095	0	0.033
P3.4	0	0	0	0	0	0	0	0	0	0.163	0.123	0.078	0	0.137	0	0.088	0	0	0	0.080
P4.1	0	0	0	0	0	0	0	0.570	0	0	0.018	0.019	0	0	0.024	0.052	0	0.142	0	0.009
P4.2	0	0	0	0	0	0	0	0	0	0	0.186	0	0	0	0	0	0.113	0.016	0	0.020
P4.3	0	0	0	0	0	0	0	0	0	0	0	0.165	0.040	0	0.104	0	0	0.214	0	0.102
P4.4	0	0	0	0	0	0	0	0	0	0.050	0	0	0	0	0.333	0	0	0.140	0	0.221
P4.5	0	0	0	0	0	0	0	0	0	0.251	0	0.089	0.240	0	0.052	0	0.453	0	0	0.035
P4.6	0	0	0	0	0	0	0	0	0	0	0.070	0	0	0	0	0.420	0	0	0	0.056
t3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 78: Limit matrix for the ANP related to the third target

	A6	A7	A8	A9	A10	P1.1	P2.1	P2.2	P2.3	P3.1	P3.2	P3.3	P3.4	P4.1	P4.2	P4.3	P4.4	P4.5	P4.6	t3	
A6	0	0	0	0	0	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0	0.203
A7	0	0	0	0	0	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0.200	0	0.200
A8	0	0	0	0	0	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0	0.085
A9	0	0	0	0	0	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0	0.041
A10	0	0	0	0	0	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0	0.032
P1.1	0	0	0	0	0	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0	0.008
P2.1	0	0	0	0	0	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0	0.008
P2.2	0	0	0	0	0	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0	0.025
P2.3	0	0	0	0	0	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0	0.010
P3.1	0	0	0	0	0	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0	0.013
P3.2	0	0	0	0	0	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0	0.007
P3.3	0	0	0	0	0	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0	0.026
P3.4	0	0	0	0	0	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0	0.042
P4.1	0	0	0	0	0	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0.066	0	0.066
P4.2	0	0	0	0	0	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0	0.015
P4.3	0	0	0	0	0	0.054	0.054	0.054	0.054	0.054	0.054	0.054	0.054	0.054	0.054	0.054	0.054	0.054	0.054	0	0.054
P4.4	0	0	0	0	0	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0	0.037
P4.5	0	0	0	0	0	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0	0.076
P4.6	0	0	0	0	0	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0	0.053
t3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

## I.2. Supplementary Information for the Resource Allocation Model

The GAMS IDE code of the proposed resource allocation model for the unit is shown in Figure 28. The code of the non-itemized budget alternative is shown in Figure 29.

```

Sets i /1,2,3,4,5,6,7,8,9,10/
    j /1,2,3/
    n1 /033,035,037/
    n2 /033,035,037/
    d /0,1,2,3,4,5/
    g /1,2,3,4,5/;

Parameter
K(j)
/1 0.064
2 0.290
3 0.646/;

Parameter
PGT(j)
/1 100
2 100
3 100/;

Table PW(i,g)
      1   2   3   4   5
1    100  0   0   0   0
2    100  0   0   0   0
3    100  0   0   0   0
4     15  15  15  25  30
5     10  10  20  40  20
6     10   5   5  15  65
7     10  10  70  10  0
8    100  0   0   0   0
9    100  0   0   0   0
10   25  15  35  25  0;

Table IM(i,g)
      1   2   3   4   5
1    100  0   0   0   0
2    100  0   0   0   0
3    100  0   0   0   0
4     25  10  30  10  25
5     15  15  15  30  25
6     10   5  15  10  60
7     20  20  45  15  0
8    100  0   0   0   0
9    100  0   0   0   0
10   25  25  25  25  0;

```

**Figure 28: GAMS code for the proposed model**

Table W(i,j)

	1	2	3
1	0.112	0	0
2	0.292	0	0
3	0.366	0	0
4	0.230	0	0
5	0	1	0
6	0	0	0.362
7	0	0	0.357
8	0	0	0.152
9	0	0	0.073
10	0	0	0.056;

Parameter

R(n1)

/033 36000

035 180000

037 15000/;

Table C(n1,i,g)

	1	2	3	4	5
035.1	500				
035.2	500				
035.3	15400				
033.4	2200	7800	0	0	0
035.4	0	0	3800	2000	0
037.4	0	0	0	0	15000
033.5	4000	4000	13100	0	
035.5	0	0	0	6000	10800
033.6	4700	4700	8400	8400	
035.6	0	0	0	0	150000
035.7	1800	1800	50000	1800	
035.8	1500				
035.9	1500				
033.10	4800	4800	8750	8750;	

Positive Variables X(n1,i,g),S(j),E(j),BT(n1,n2);

Variables z,PG(j),A(i),HW(i);

Binary Variables SC(i,g),BTS(n1,n2);

Equations transfer(n1,n2), ratio1, ratio2, ratio3,

ratio41,ratio42,ratio43,ratio44,ratio45,ratio51,ratio52,ratio53,ratio54,ratio55,ratio61,ratio62,ratio63,ratio64,

ratio65,ratio71,ratio72,ratio73,ratio74,ratio8,ratio9,ratio101,ratio102,ratio103,ratio104,completion62,

completion64,completion71,completion72,completion102,completion104,REquality3,REquality5,

REquality7,performance(j),upper(n1,i,g),objective, completion(i), effect(i), deviation(j), completionA1,

transfer13,transfer15,transfer17,transfer2,transfer3,transfer4,transfer5,transfer6,transfer7;

REquality3.. sum((i,g),X('033',i,g))=I=R('033')-sum(n2,BT('033',n2))+sum(n1,BT(n1,'033'));

REquality5.. sum((i,g),X('035',i,g))=I=R('035')-sum(n2,BT('035',n2))+sum(n1,BT(n1,'035'));

REquality7.. sum((i,g),X('037',i,g))=I=R('037')-sum(n2,BT('037',n2))+sum(n1,BT(n1,'037'));

transfer13.. sum(n1,BT(n1,'033'))=I=R('033')\*0.2;

transfer15.. sum(n1,BT(n1,'035'))=I=R('035')\*0.2;

transfer17.. sum(n1,BT(n1,'037'))=I=R('037')\*0.2;

transfer2.. BTS('033','035')+BTS('035','033')+BTS('035','037')=I=1;

transfer3.. BTS('033','037')+BTS('037','033')+BTS('037','035')=I=1;

transfer4.. BTS('037','035')+BTS('035','037')+BTS('035','033')=I=1;

transfer5.. BT('033','033')=e=0;

transfer6.. BT('035','035')=e=0;

transfer7.. BT('037','037')=e=0;

transfer(n1,n2).. BT(n1,n2)=I=BTS(n1,n2)\*R(n2)\*0.2;

Figure 28 (continued)

```

upper(n1,i,g).. X(n1,i,g)=l=C(n1,i,g);
completionA1.. A(1)=e=100;

ratio1.. SC('1','1')=l=X('035','1','1')/C('035','1','1');
ratio2.. SC('2','1')=l=X('035','2','1')/C('035','2','1');
ratio3.. SC('3','1')=l=X('035','3','1')/C('035','3','1');
ratio41.. SC('4','1')=l=X('033','4','1')/C('033','4','1');
ratio42.. SC('4','2')=l=X('033','4','2')/C('033','4','2');
ratio43.. SC('4','3')=l=X('035','4','3')/C('035','4','3');
ratio44.. SC('4','4')=l=X('035','4','4')/C('035','4','4');
ratio45.. SC('4','5')=l=X('037','4','5')/C('037','4','5');
ratio51.. SC('5','1')=l=X('033','5','1')/C('033','5','1');
ratio52.. SC('5','2')=l=X('033','5','2')/C('033','5','2');
ratio53.. SC('5','3')=l=X('033','5','3')/C('033','5','3');
ratio54.. SC('5','4')=l=X('035','5','4')/C('035','5','4');
ratio55.. SC('5','5')=l=X('035','5','5')/C('035','5','5');
ratio61.. SC('6','1')=l=X('033','6','1')/C('033','6','1');
ratio62.. SC('6','2')=l=X('033','6','2')/C('033','6','2');
ratio63.. SC('6','3')=l=X('033','6','3')/C('033','6','3');
ratio64.. SC('6','4')=l=X('033','6','4')/C('033','6','4');
ratio65.. SC('6','5')=l=X('035','6','5')/C('035','6','5');
ratio71.. SC('7','1')=l=X('035','7','1')/C('035','7','1');
ratio72.. SC('7','2')=l=X('035','7','2')/C('035','7','2');
ratio73.. SC('7','3')=l=X('035','7','3')/C('035','7','3');
ratio74.. SC('7','4')=l=X('035','7','4')/C('035','7','4');
ratio8.. SC('8','1')=l=X('035','8','1')/C('035','8','1');
ratio9.. SC('9','1')=l=X('035','9','1')/C('035','9','1');
ratio101.. SC('10','1')=l=X('033','10','1')/C('033','10','1');
ratio102.. SC('10','2')=l=X('033','10','2')/C('033','10','2');
ratio103.. SC('10','3')=l=X('033','10','3')/C('033','10','3');
ratio104.. SC('10','4')=l=X('033','10','4')/C('033','10','4');

completion62.. SC('6','1')=g=SC('6','2');
completion64.. SC('6','3')=g=SC('6','4');
completion71.. SC('7','1')=g=SC('7','3');
completion72.. SC('7','2')=g=SC('7','3');
completion102.. SC('10','1')=g=SC('10','2');
completion104.. SC('10','3')=g=SC('10','4');

completion(i).. A(i)=e=sum(g,(SC(i,g)*IM(i,g)));
effect(i).. HW(i)=e=sum(g,(SC(i,g)*PW(i,g)));

performance(j).. PG(j)=e=sum(i,W(i,j)*HW(i));
deviation(j).. E(j)-S(j)=e=PGT(j)-PG(j);
objective.. z=e=sum(j,K(j)*(E(j)+S(j)));
Model UPDATE /all/;
solve UPDATE using MIP minimizing z;

```

**Figure 28 (continued)**

```

Sets i /1,2,3,4,5,6,7,8,9,10/
     j /1,2,3/
     n /033,035,037/
     d /0,1,2,3,4,5/
     g /1,2,3,4,5/;

Parameter
K(j)
/1 0.064
2 0.290
3 0.646/;

Parameter
PGT(j)
/1 100
2 100
3 100/;

Table PW(i,g)
      1   2   3   4   5
1    100  0   0   0   0
2    100  0   0   0   0
3    100  0   0   0   0
4     15  15  15  25  30
5     10  10  20  40  20
6     10   5   5  15  65
7     10  10  70  10   0
8    100  0   0   0   0
9    100  0   0   0   0
10   25  15  35  25  0;

Table IM(i,g)
      1   2   3   4   5
1    100  0   0   0   0
2    100  0   0   0   0
3    100  0   0   0   0
4     25  10  30  10  25
5     15  15  15  30  25
6     10   5  15  10  60
7     20  20  45  15   0
8    100  0   0   0   0
9    100  0   0   0   0
10   25  25  25  25  0;

Table W(i,j)
      1   2   3
1    0.112  0   0
2    0.292  0   0
3    0.366  0   0
4    0.230  0   0
5     0     1   0
6     0     0  0.362
7     0     0  0.357
8     0     0  0.152
9     0     0  0.073
10    0     0  0.056;

Parameter
R(n)
/033  36000
035  180000
037  15000/;

```

**Figure 29: GAMS code for the non-itemized budget alternative**

Table C(n,i,g)

	1	2	3	4	5
035.1	500				
035.2	500				
035.3	15400				
033.4	2200	7800	0	0	0
035.4	0	0	3800	2000	0
037.4	0	0	0	0	15000
033.5	4000	4000	13100	0	
035.5	0	0	0	6000	10800
033.6	4700	4700	8400	8400	
035.6	0	0	0	0	150000
035.7	1800	1800	50000	1800	
035.8	1500				
035.9	1500				
033.10	4800	4800	8750	8750	

Positive Variables X(n,i,g),S(j),E(j);

Variables z,PG(j),A(i),HW(i);

Binary Variables SC(i,g);

Equations ratio1, ratio2, ratio3,

ratio41..ratio42,ratio43,ratio44,ratio45,ratio51..ratio52,ratio53,ratio54,ratio55,ratio61..ratio62,ratio63,ratio64,

ratio65,ratio71,ratio72,ratio73,ratio74,ratio8,ratio9,ratio101,ratio102,ratio103,ratio104,completion62,

completion64,completion71,completion72,completion102,completion104,REquality,performance(j),

upper(n,i,g),objective, completion(i), effect(i), deviation(j), completionA1;

REquality.. sum((n,i,g),X(n,i,g))=l=sum(n,R(n));

upper(n,i,g).. X(n,i,g)=l=C(n,i,g);

completionA1.. A('1')=e=100;

ratio1.. SC('1','1')=l=X('035','1','1')/C('035','1','1');

ratio2.. SC('2','1')=l=X('035','2','1')/C('035','2','1');

ratio3.. SC('3','1')=l=X('035','3','1')/C('035','3','1');

ratio41.. SC('4','1')=l=X('033','4','1')/C('033','4','1');

ratio42.. SC('4','2')=l=X('033','4','2')/C('033','4','2');

ratio43.. SC('4','3')=l=X('035','4','3')/C('035','4','3');

ratio44.. SC('4','4')=l=X('035','4','4')/C('035','4','4');

ratio45.. SC('4','5')=l=X('037','4','5')/C('037','4','5');

ratio51.. SC('5','1')=l=X('033','5','1')/C('033','5','1');

ratio52.. SC('5','2')=l=X('033','5','2')/C('033','5','2');

ratio53.. SC('5','3')=l=X('033','5','3')/C('033','5','3');

ratio54.. SC('5','4')=l=X('035','5','4')/C('035','5','4');

ratio55.. SC('5','5')=l=X('035','5','5')/C('035','5','5');

ratio61.. SC('6','1')=l=X('033','6','1')/C('033','6','1');

ratio62.. SC('6','2')=l=X('033','6','2')/C('033','6','2');

ratio63.. SC('6','3')=l=X('033','6','3')/C('033','6','3');

ratio64.. SC('6','4')=l=X('033','6','4')/C('033','6','4');

ratio65.. SC('6','5')=l=X('035','6','5')/C('035','6','5');

ratio71.. SC('7','1')=l=X('035','7','1')/C('035','7','1');

ratio72.. SC('7','2')=l=X('035','7','2')/C('035','7','2');

ratio73.. SC('7','3')=l=X('035','7','3')/C('035','7','3');

ratio74.. SC('7','4')=l=X('035','7','4')/C('035','7','4');

ratio8.. SC('8','1')=l=X('035','8','1')/C('035','8','1');

ratio9.. SC('9','1')=l=X('035','9','1')/C('035','9','1');

ratio101.. SC('10','1')=l=X('033','10','1')/C('033','10','1');

ratio102.. SC('10','2')=l=X('033','10','2')/C('033','10','2');

ratio103.. SC('10','3')=l=X('033','10','3')/C('033','10','3');

ratio104.. SC('10','4')=l=X('033','10','4')/C('033','10','4');

Figure 29 (continued)

```

completion62.. SC('6','1')=g=SC('6','2');
completion64.. SC('6','3')=g=SC('6','4');
completion71.. SC('7','1')=g=SC('7','3');
completion72.. SC('7','2')=g=SC('7','3');
completion102.. SC('10','1')=g=SC('10','2');
completion104.. SC('10','3')=g=SC('10','4');

completion(i).. A(i)=e=sum(g,(SC(i,g)*IM(i,g)));
effect(i).. HW(i)=e=sum(g,(SC(i,g)*PW(i,g)));

performance(j).. PG(j)=e=sum(i,W(i,j)*HW(i));
deviation(j).. E(j)-S(j)=e=PGT(j)-PG(j);
objective.. z=e=sum(j,K(j)*(E(j)+S(j)));
Model UPDATE /all/;
solve UPDATE using MIP minimizing z;

```

**Figure 29 (continued)**

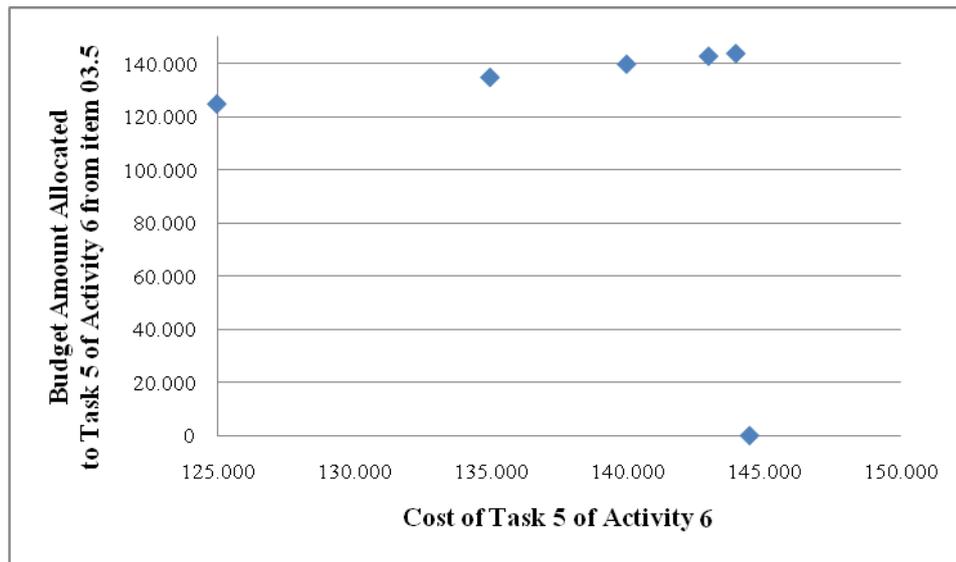
### Sensitivity Analysis:

The constructed model gives the optimal solution only under the given circumstances. However, there may be changes related to the weighting factor of elements, the available budget amount, addition or removal of an element, desired level of a performance target, cost requirement of an activity or a major change in the overall hierarchical structure. In order to handle such cases and to see their effects on the solution, sensitivity analysis can be employed.

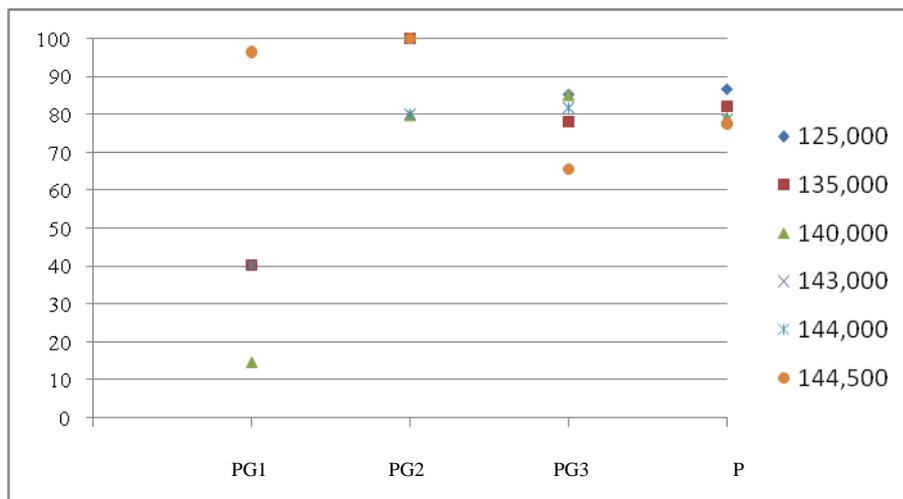
In the case for the Strategy Development Unit of the Treasury, the costs of the activities are taken as predetermined in the sample model. It is actually the case in the practice, except the cost of task 5 of activity 6. It includes purchase of a consultancy service, price of which will be determined by tender. Therefore, it is beneficial to make a sensitivity analysis for this case.

The minimum cost is determined as 125,000 TL and the model is run for various cost levels up to 150,000 TL, which was the amount used in the model. The solutions of the runs are summarized in Figure 30. As can be seen, if the cost is realized fewer than 114,500 TL, budget from item 035 can be allocated to task 5 of activity 6 for purchase of the service. However, the model does not assign any budget to the task, if the cost occurs above this level.

Related to the cost of the task, the performance levels change as shown in Figure 31. A significant improvement in the performance level can only be obtained if the cost of the task occurs at 135,000 TL or below.



**Figure 30: Comparison of allocated budget to task 5 of activity 6 with its cost**



**Figure 31: Comparison of performance levels with cost of task 5 of activity 6**