

DIRECTORATE FOR EDUCATION AND SKILLS

Budgeting and Accounting in OECD Education Systems: A Literature Review**By Tala Fakharzadeh****OECD Education Working Paper no.128**

This paper was prepared by Tala Fakharzadeh during an internship at the Early Childhood and Schools Division, Directorate for Education and Skills, OECD, for the period May-July 2014. At the time of the internship, Tala Fakharzadeh was completing her Master of Science in Management at Grenoble École de Management. The paper is part of the work undertaken by the OECD Review of Policies to Improve the Effectiveness of Resource Use in Schools (School Resources Review) and benefited from the supervision of Deborah Nusche from the OECD Secretariat. It was prepared for discussion at the 2nd meeting of the Group of National Experts on School Resources (20-21 May 2015).

The purpose of the OECD School Resources Review is to analyse how resource inputs in school systems should best be distributed, utilised and managed to optimise school outputs, encourage successful teaching and learning and promote continuous improvement. The Review provides analysis and policy advice to help governments and schools achieve effectiveness and efficiency objectives in education. More information is available at: www.oecd.org/edu/school/schoolresourcesreview.htm.

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BUDGETING AND ACCOUNTING IN OECD EDUCATION SYSTEMS: A LITERATURE REVIEW

ABSTRACT

Recent demographic, economic and political trends have drawn attention to the issue of effectiveness and efficiency in the use of resources in the education sector. In the context of the renewed interest for the optimisation of resource use, this paper attempts to review the literature on budgeting and accounting in OECD education systems.

The analysis of accounting and budgeting in education systems provides an understanding of decision-making processes regarding education policies and projects, in terms of prioritisation, planning, allocation, monitoring and evaluation of resource use. The subjects covered in the paper also help to understand how resources are distributed. Greater requests for transparency from citizens are indeed pressuring governments to justify how public resources are allocated, and which variables determine the levels of funding flowing to schools. Finally, accounting standards and budgeting methods are studied in the current paper as they may also have an impact on effectiveness and efficiency of resource use.

This report first explores governance questions underlying budgeting and accounting. Subsequently, the report reviews procedures and tools adopted by countries for budgeting and accounting. Finally, it presents methods for evaluation and monitoring of resource use. The paper attempts to identify trends and commonalities in country practices in primary, secondary and post-secondary non-tertiary education; however, there are great variations on the studied topics across and within countries.

RÉSUMÉ

En raison des récentes évolutions démographiques, économiques et politiques, une plus grande attention est accordée aux questions d'efficacité et d'efficacités dans l'utilisation des ressources dans le domaine de l'éducation. Dans le contexte d'un renouveau d'intérêt pour l'optimisation de l'utilisation des ressources, ce papier vise à réaliser une revue de littérature au sujet des processus budgétaires et comptables au sein des systèmes éducatifs de l'OCDE.

L'analyse des systèmes comptables et des procédures budgétaires dans les systèmes éducatifs permet de donner un aperçu des processus de décision relatifs aux politiques et aux projets dans l'éducation, en termes de priorisation, planification, allocation, pilotage et d'évaluation de l'utilisation des ressources. Les sujets étudiés dans ce papier permettent également de comprendre comment les ressources sont distribuées. Une plus grande demande de transparence de la part des citoyens met en effet sous pression les gouvernements, qui doivent justifier l'allocation des ressources publiques et la nature des variables permettant de déterminer le montant des fonds alloués aux écoles. Enfin, les standards comptables et les méthodes budgétaires sont étudiés dans ce papier car ces derniers peuvent également avoir un impact sur l'efficacité et l'efficacités dans l'utilisation des ressources.

Ce rapport explore tout d'abord les questions de gouvernance sous-jacentes aux systèmes budgétaires et comptables. Par la suite, le rapport effectue une revue des procédures et outils budgétaires et comptables adoptés par les pays. Enfin, le papier présente des méthodes pour l'évaluation et le pilotage de l'utilisation des ressources. Le papier vise à identifier les tendances et les points communs au travers des pratiques des pays au niveau de l'école primaire, secondaire et post-secondaire non tertiaire. Cependant, il faut noter de grandes variations relatives aux sujets étudiés, entre et au sein-même des pays.

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SECTION 1: INTRODUCTION

Purpose of the paper

Effectiveness and efficiency of resource use are increasingly on countries' education policy agendas as they strive for better student performance, while experiencing fiscal pressures related to the global financial crisis, and demographic developments that influence the size and composition of student populations.

Expenditure on education is a significant share of countries' GDP: in 2011, OECD countries spent on average 12.9% of total public expenditure and 6.1% of their GDP on education for all levels of education combined (OECD, 2014a). In addition, greater requests for transparency from citizens are pressuring governments to justify how public resources are allocated, and which variables determine the levels of funding flowing to schools. These trends have led to a renewed interest for the optimisation of resource use in the education sector.

This paper tackles the topic of system-level budgeting and accounting in the education sector, by focusing on governance and procedural aspects, as well as on the evaluation and monitoring of resource use. It is prepared as a background paper for the OECD *Review of Policies to Improve the Effectiveness of Resource Use in Schools* (also referred to as the *School Resources Review*).

Key terms and scope of the paper

Budgeting and accounting

According to OECD (2012a), a budget is “a comprehensive statement of Government financial plans which include expenditures, revenues, deficit or surplus and debt. The budget is the Government's main economic policy document, demonstrating how the Government plans to use public resources to meet policy goals”. For the purpose of this paper, budgeting is considered from the point of view of expenditures, e.g. “Government spending (or outlays) made to fulfil a Government obligation [...]” (OECD, 2012a). Budgeting is an important component in the planning of resources and their allocation to education, and across the education sector, e.g. across the levels in the education system, across geographical regions, across types of expenditure, and across education and policies programmes.

Accounting refers to how resource allocation and resource use are reported. Accounting is an important component of financial management in the public sector. Accounting policies and standards can help achieve integrity, control and accountability goals and provide a basis for analysis and comparison. Accounting rules also influence the quality of reporting, e.g. the production of financial information, and therefore the quality of the decision-making to plan resource use. The OECD (2002a) advises that the accounting policies used for government documents be described in public budgeting documents.

Scope of the paper

This paper focuses on pre-tertiary levels of education, including vocational and prevocational education at the secondary level. The scope of the paper does not include tertiary education and adult education. The *School Resources Review* project considers four resource types of school systems: financial transfers, human resources, physical resources, and targeted programmes. This paper focuses particularly on financial transfers (e.g. public funding of individual schools, transfers to different levels of school administration). It should be kept in mind, however, that these different resource types are closely interlinked, as a large part of financial transfers are typically invested in human and physical resources.

The level of analysis adopted in this paper is the system level. The paper will consider the role of system-level authorities in budgeting resource use across the education system. There are, however, large differences in the extent to which central governments provide initial resources and take decisions regarding budgets across countries. In addition, the top level of authority for education in some countries is different from the central government. For instance, the school sector is largely under the responsibility of the Community governments in Belgium, the Länder governments in Germany, the governments of the Autonomous Communities and the central government in Spain; and the education ministries of England, Wales, Northern Ireland and Scotland in the United Kingdom (European Commission, 2013). Education budgeting and funding almost always involve several levels of authority and the paper therefore also considers the interactions between these different levels (Eurydice, 2014a). It can be noted that although the paper focuses predominantly on the system-level perspective, the resources budgeted at the system level can then be used at different levels of the education system.

Contextual factors across and within countries, the education environment, and educational objectives greatly affect the governance of resource use, as well as the procedures, monitoring and evaluation of resource use in education systems across countries. The paper reviews comparative studies of budgeting and accounting across countries and also draws from analyses of individual country practices and case study examples. It aims to outline commonalities and general patterns while keeping in mind the complexity of the topics covered and the often considerable differences observed across countries.

Summary of the different parts

The paper addresses the question of governance of resource use in schools (e.g. distribution of decision making and education administration arrangements), the planning of resource use (e.g. distribution of responsibilities for resource use, methods and instruments for planning resource use, and knowledge management), and resource management aspects (e.g. evaluation and monitoring of resource use, competencies, and tools and guidelines).

The paper is structured into four main sections: following this introduction, section 2 tackles the question of the governance of system-level budgeting, first in the public sector, and then more specifically in the education sector. The question of governance of system-level budgeting deals with the role and responsibilities of the different actors involved in the budget process, the distribution of authority, particularly between the ministry of finance, the line ministries and agencies, as well as the institutional arrangements and relationships between these actors.

Section 3 describes the procedures for system-level budgeting and accounting in the public sector and in the education sector. This section covers the steps of the budget process, the types of budgeting, the different methods and tools used across countries, and the forms of funds and funding mechanisms that exist. It also covers the topic of public sector accounting including the instruments for accounting.

Section 4 covers the evaluation and monitoring of system-level budgeting and accounting, including tools and country practices.

Related work and methodology

This paper draws together information from a range of previous projects conducted by the OECD Directorate for Public Governance and Territorial Development (GOV) and the Directorate for Education and Skills (EDU). The paper also takes into account the work of other international organisations, the European Union institutions as well as information collected from countries' ministerial websites.

A combination of keywords were used to locate the relevant literature from online search portals, key article reference searches, existing OECD literature, and ministries' websites. The keywords included a

combination of the following: “government accounting”, “budgeting”, “public sector”, “education sector”, “education finance”, “planning of resources”, “monitoring and evaluation”, “ministry of education”, “ministry of finance”. Empirical papers on the topics covered in this paper were lacking, and the paper relies, therefore, mostly on policy papers and country practices. Government reports and corporate reports were among other documents used to support the paper. More literature was available in relation to the public sector as a whole rather than the education sector specifically.

SECTION 2: GOVERNANCE OF SYSTEM-LEVEL BUDGETING AND ACCOUNTING

The governance of system-level budgeting deals with: the role and responsibilities of the different actors involved in the budget process; the distribution of authority, particularly between the ministry of finance, line ministries and agencies; and the institutional arrangements and relationships between these actors. Governance also touches upon the question of distribution of power between regional and central government, as well between the executive and legislature. However, the latter will not be explored in depth in this paper, as the scope is limited to governance at the system level.

As covered in section one, the budget process involves decision-making at different administrative levels and by various actors at each of the stages of the process. In addition, each institutional actor may play a variety of roles in the budget process, and the general budgeting and accounting systems vary a great deal across countries. It is difficult, therefore, to provide a unique definition of governance with regards to system-level budgeting and accounting. However, several commonalities can be outlined across OECD countries.

The following section on the governance of public sector budgeting will draw on the work carried out by the OECD Directorate for Public Governance and Territorial Development (GOV). GOV has extensively studied the question of budgeting in the public sector, including governance and management issues. The Directorate publishes the *OECD Journal on Budgeting* three times a year and, in cooperation with the World Bank, has constructed a comprehensive database on budget practices and procedures covering 97 countries (www.oecd.org/gov/budget/database). With regards to governance in the education sector specifically, the paper will take into account the work of international organisations, the European Union (Eurydice) as well as information collected from OECD countries' governmental websites.

A) GOVERNANCE OF PUBLIC SECTOR BUDGETING

In most OECD countries, the Ministry of Finance is the body responsible for the government's budget (OECD, 2004a). However, various actors play a role in the budget process, the two main actors being the government (the executive), and the parliament (the legislature) (Posner and Park, 2007). Several bodies within the government and the parliament are specifically concerned with budgetary issues. Roles, responsibilities and the location of these bodies within the government vary greatly across OECD countries, depending on the countries' system and form of government, as well as the degree of centralisation and decentralisation in the system. However, several common observations can be made, especially with regards to the roles of the Ministry of Finance, spending ministries, parliament, and accounting and audit bodies.

Institutional actors

The Central Budget Authority (CBA) is the public entity (or several co-ordinated entities) responsible for the budget formulation and oversight. In the vast majority of OECD countries (28 out of 33 OECD countries for which information was available), the CBA is located in the Ministry of Finance or Economy (OECD, 2014b). In Australia, Canada and Ireland, the CBA is split between several governmental entities. In the United States, the CBA is located at the President's office and in Belgium, it is located at the Federal Public Service Budget and Management Control (OECD, 2014).

The CBA holds several responsibilities relative to the budget (OECD, 2004a) either on its own, or shared with other institutions (OECD, 2014). Some key responsibilities of the CBA are similar in the majority of OECD countries. The CBA typically has authority over the general framework for the budget process, as it defines the procedural rules and budget guidelines, and ensures that the rules of budget

discipline are respected (OECD, 2004a). In the majority of OECD countries, the CBA drafts the budget circular, which is the document containing the rules for the budget process, the macroeconomic assumptions to be used, the spending ceilings/targets, and often the information on government priorities. The CBA therefore has a role in the definition of the methodology for fiscal projections, the formulation of economic assumptions used in the budget (this applies to half of OECD countries¹), and in the determination of the ceiling/expenditure target for line ministries prior to the budget proposals of the ministries (OECD, 2014).

Further, in the budget preparation the CBA has a role of coordinator as it receives and reviews the budget documentation submitted by spending ministries. In the majority of OECD countries, the CBA conducts negotiations with line ministries and develops a final budget proposal, which it then presents to the parliament. Depending on the degree of the CBA's authority, in the event of a dispute over budget allocations with spending ministries, the CBA may or may not have the final word on the budget proposal. In seven OECD countries, disputes between line ministries and the Central Budget Authority in the budget preparation process are resolved by the CBA. It is also responsible for conflict resolution in Canada, Finland and Ireland, but along with other entities (OECD, 2014). Other responsibilities granted to the CBA include the authorisation of line ministry outlays (in 16 countries), the approval for the reallocation of funds by line ministries within their budget envelope (in 23 countries), and the approval of carryover of unused funds for ministers (in 19 countries). Finally, the CBA is typically entrusted with the task of monitoring performance of line ministries, and producing supplementary budgets, mid-year reports and end-of-year reports (OECD, 2014).

The other key actors in the budget process are the spending ministries, also referred to as line/sectoral ministries. Spending ministries usually have a specific body in charge of budgetary and financial matters. In Finland, for example, there is a Finance Unit in the Ministry of Education and Culture (Finland Ministry of Education and Culture, n.d.), while in Iceland, the Department of Education includes an Office of Information and Financial Affairs. In Lithuania, the Ministry of Education and Science, composed of five departments, includes a Finance Department that works on the funding system of education and ensures the rational distribution and use of resources, among other matters (Lithuania Ministry of Education, 2014). There is also an Accounting Division within the Ministry of Education and Science (Lithuania Ministry of Education, 2014).

With the decentralisation of budget processes, spending ministries have been given more autonomy and flexibility in the management of their resources. The more specific responsibilities assigned to spending ministries and their authority over their departmental budgets, however, vary across countries. Usually, line ministries are responsible for providing budget proposals that explain how they will use funds to achieve the governments' strategic goals. In "top-down" budgeting systems, the ministry of finance typically sets spending ceilings for each line ministry, and the line ministries have decision-making powers over the detailed allocations (OECD, 2014). In addition, in a majority of OECD countries, line ministers are able to reallocate funds within their budget envelope, either up to a certain threshold or without any limit or threshold. In Norway and Sweden, however, the reallocation is not permitted for line ministries. In the majority of OECD countries, line ministries are also responsible for setting performance targets and monitoring the performance of the ministry against these targets (Hawkesworth and Klepsvik, 2013; Curristine, 2005b). They also generate performance information and conduct evaluations, along with their agencies (Hawkesworth and Klepsvik, 2013).

¹ The OECD Budget Practices & Procedures Database is updated every four to five years. The current report is based on 2012 data from the 2012 OECD Budget Practices & Procedures Survey. The survey is based on reports completed by governments. 33 OECD countries responded to the survey; Iceland has not responded yet. Further reference to the respondent countries in this article will thus consider the 33 OECD countries and exclude Iceland (OECD, 2014).

Other governmental actors play a role in the budget process, but this varies considerably across countries. For example, the Cabinet Office is typically responsible for developing long-term fiscal projections (OECD, 2014), and in 15 countries out of 29, it is responsible for approving the Medium-Term Expenditure Framework (MTEF) before it is implemented (OECD, 2014). As part of this, it may also be responsible for developing macroeconomic estimates that will be used in the budget formulation. In top-down budgeting, there are typically sectoral ceilings set in terms of spending as part of the MTEF, in order to ensure fiscal discipline and align sectoral budget to the aggregate public finance targets. The Cabinet usually needs to approve the sectoral ceilings before they are adopted. The Cabinet resolves disputes in the budget process over allocations in the budget formulation process in 13 countries. The Cabinet can also be entrusted with the approval of reallocations and of carryover of unused funds (OECD, 2014). Other actors are the President and the Prime Minister. In seven countries (Australia, Chile, France, Greece, Japan, Turkey and United States), one role of the Chief Executive (the President or the Prime Minister) in the budget process is to settle allocation disputes during the budget process (OECD, 2014).

Parliament is another major actor in the budget process, and in 34% of countries, it is responsible for approving the Medium-Term Expenditure Framework (OECD, 2014). The ministry of finance typically submits a draft budget to the parliament for discussion and approval, after negotiations with line ministries. The parliament can suggest amendments to the budget, but its authority in comparison with the executive varies across countries. In some countries, the legislature has precedence over the executive power on the budget process, while in other countries, the authority is delegated to the executive power and the legislation is there solely to indicate this delegation of power (OECD, 2004b). However, in general, the parliament needs to adopt a budget before it can be implemented. At a later stage in the budget process, the financial statements and results are audited and performance evaluation is carried out. Audit bodies are in charge of the evaluation and monitoring of the budget once it has been implemented. The audit body can be located either within the ministries, can be government-wide, or can be an external body that is independent from the government: “a supreme audit institution” (Robinson, 2011). Supreme audit institutions are mandated by the parliament to audit the budget implementation and to report to the parliament (Hawkesworth and Klepsvik, 2013). For further information on the roles and responsibilities of different actors involved in the monitoring and evaluation of education budgets, see the dedicated Section 4.

Other institutions indirectly play a central role in the budgeting process, for example, those responsible for setting the accounting rules and standards that are applicable to government bodies’ financial documents. Historically, accounting standards in the public sector have been set by the ministry of finance (Blöndal, 2003). However, there is a growing need for internationally harmonised standards and an independent international body responsible for standard setting. Therefore, in many OECD countries, an independent professional advisory body has been established to focus on government accounting standards (Blöndal, 2003). These bodies are generally composed of representatives from within and outside of the government, and advise the Minister of Finance on accounting standards. The Minister of Finance has the power to reject recommendations from the advisory body on accounting standards, but would have to provide justification as to why this decision was made (Blöndal, 2003).

In Austria, the Ministry of Finance, Court of Audit and Federal Chancellery share responsibility for setting accounting standards. In Australia and New Zealand, it is a single professional body in each country that sets standards for private and public sector entities, and the government must adhere to their decisions (Blöndal, 2003). This entity in New Zealand is called the New Zealand Accounting Standards Review Board (ASRB), and it establishes specific standards depending on the size and nature of the entity in question (IAS Plus, 2014). In the United States, the Governmental Accounting Standards Board (GASB) is the standard-setting authority of Generally Accepted Accounting Principles (GAAP) specifically for state and local governments, including school districts (National Centre for Education Statistics, 2003). In South

Africa, the Accounting Standards Board (ASB), funded by the Treasury, develops public sector accounting standards, applicable to national and provincial departments, agencies, legislatures, municipalities and their entities, among other specific entities.

Organisational arrangements for budgeting

There are different levels of dialogue and of formal and informal relationships between actors during the budget process; especially between the executive and the parliament, the ministry of finance and spending ministries, spending ministries and their agencies, and within agencies (Posner and Park, 2007; De Jong, Van Beek and Posthumus, 2013). This paper will focus on the organisational arrangements and dialogue between the ministry of finance and line ministries, and between ministries and agencies.

Relationship between the ministry of finance and line ministries

There are different types of relationship between the ministry of finance and spending ministries, which may vary based on factors such as whether or not the budgeting system adopted is top-down or bottom-up. In a bottom-up budgetary approach, closer relations exist between line ministries and the ministry of finance, as line ministries typically submit budget requests to and negotiate appropriations with the ministry of finance, with the latter tackling individual spending proposals. OECD (2014) reports that bottom-up budgeting typically involves long negotiation processes. In a top-down budgeting approach, the ministry of finance sets the aggregate spending level while line ministries allocate financial resources within the spending ceilings assigned to them (OECD, 2014).

The ministry of finance often has a close relationship with line ministries and their agencies, and interacts in particular with line ministries throughout different stages of the budget process to combine macroeconomic, fiscal and strategic information along with the operational knowledge and information of spending ministries (Hawkesworth and Klepsvik, 2013). The ministry of finance typically plays a horizontal support role for spending ministries as it provides them with a timetable and guidelines for the budget process, and other relevant financial and accounting documents (Curristine, 2005b). In top-down budgeting frameworks, the ministry of finance also defines expenditure ceilings for spending ministries, prior to their budget bids (De Jong, Van Beek and Posthumus, 2013). The ministry of finance compiles all budgetary information coming from the spending ministries and, in conventional budget formulation procedures, conducts budget negotiations of varying scope and importance with line ministries and agencies (Hawkesworth and Klepsvik, 2013). It also monitors budget execution by spending ministries and their agencies and may be responsible for conducting performance evaluations.

There are a growing number of countries that have introduced greater autonomy for spending ministries in the budget process, particularly in the area of monitoring and evaluation, for example, through the adoption of performance-based budgeting and management frameworks. In these cases, the spending ministries define their goals through a set of outcomes and related indicators, and report on the efficiency and effectiveness of their work against these indicators (Kristensen Groszyk and Bühler, 2002). In these countries, budget negotiations between the ministry of finance and the spending ministries focus on outcomes (Kristensen Groszyk and Bühler, 2002). Although spending ministries set their performance targets, the ministry of finance must still provide guidance on the relevance and appropriateness of the chosen performance indicators in order to make it relevant to budget decision makers outside of the spending ministry (Robinson, 2011).

In the Netherlands, ministries are responsible for their budget authorisation, execution and evaluation (De Jong, Van Beek and Posthumus, 2013). They present their budget proposal and report on their performance to the parliament, instead of the usual ministry of finance (De Jong, Van Beek and Posthumus, 2013). The budget process and planning are decentralised, with the ministry of finance's role

being confined to the definition of the budgeting process, the provision of budgeting guidelines, and the approval of budget drafts once there are prepared by spending ministries (De Jong, Van Beek and Posthumus, 2013). However, despite this decentralisation, collaboration between the ministry of finance and spending ministries is important, as the ministry of finance can influence the spending of line ministries and request information on their planned spending and policies. Allocations of funding are made through budget letters from the ministry of finance to all ministries (De Jong, Van Beek and Posthumus, 2013).

In some countries, it is the ministry of finance that has control over spending ministries' budgets. For instance in Israel, the ministry of finance defines and controls the budget for spending ministries and limits non central budgets (OECD, 2010b). In other countries, the relationship between the ministry of finance and spending ministries is weaker, such as in Norway where budget negotiations between ministry of finance and line ministries are limited (Anderson, Curristine and Merk, 2006). Instead, it is the cabinet that formulates the budget during the annual budget conferences, and greatly influences budget execution.

Budgetary negotiations between the ministry of finance and spending ministries are a key stage in the budget process, as it is the decisive step before a budget is authorised and implemented. In many OECD countries, negotiations are under the responsibility of the ministry of finance (Anderson, Curristine and Merk, 2006). These negotiations can revolve around setting allocations for programmes, strategic planning/prioritisation or the suggestion of new spending areas, setting allocation for ministries or agencies and reducing spending, increase spending, developing management reform proposals, and eliminating programmes (Hawkesworth and Klepsvik, 2013). Budget discussions can also revolve around the compliance with certain rules, such as the need for ministries to justify spending requests (Moeser, 2010).

According to the results of a 2006 OECD survey,² negotiations between the ministry of finance and line ministries can be guided and regulated by formal rules and procedures or established practices (Curristine and Bas, 2007). In the surveyed countries, the timeframe for negotiations between the ministry of finance and line ministries varied from less than one month in Brazil, to five months in Colombia (Curristine and Bas, 2007). In Japan, the Budget Bureau of the ministry of finance prepares a draft budget based on the budget requests submitted by ministries and agencies. The negotiations and discussions on the draft budget, the "revival negotiations", last one week (Ministry of Finance Japan, 2004). Some countries, such as Bolivia and Ecuador, have not set timeframe for these negotiations (Curristine and Bas, 2007).

Negotiations between the central government and ministries on budget settlement are based on various types of information deemed relevant at the time by the parties involved (Spackman, 2002). Budget negotiations between the central budget authority (CBA) and line ministries almost always involve financial information (Hawkesworth and Klepsvik, 2013). In the Netherlands, budgetary negotiations are based on ministry of finance macroeconomic and fiscal estimates (Bos, 2008). Non-financial performance data may also be discussed as part of negotiations, especially in countries that have adopted performance budgeting, or that are using, to a greater extent, performance information in their budget process (Hawkesworth and Klepsvik, 2013). In some countries, the integration of performance information from spending ministries in budget negotiations has become formally required by the Ministry of Finance (Curristine, Lonti and Joumard, 2007).

² An OECD survey on budgetary institutions, procedures and practices in Latin American countries was carried out in 2006. In 2006, the OECD sent this survey to a selection of Latin American and Caribbean countries. 13 Latin American countries completed the full questionnaire. Panama completed the first two sections. These countries are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Peru, Paraguay, Uruguay and Venezuela. All countries filled in the questionnaire in Spanish: www.oecd.org/governance/budgeting/37848494.xls.

However, in about one third of cases,³ performance information does not play a role in the budget negotiations between line ministries and the CBA (Hawkesworth and Klepsvik, 2013). To a lesser extent, independent performance information from non-government actors can be used in negotiations (Hawkesworth and Klepsvik, 2013).

The dialogue between the ministry of finance and spending ministries is important when there are conflicts over the budget. In these cases, some OECD countries (e.g. Finland, Luxembourg, the Netherlands, Poland and the United States) advocate bilateral negotiations between the ministry of finance and the ministries, or head of concerned ministries, before the dispute is sent for resolution to another authority (OECD, 2014).

The ability of spending ministries to discuss and negotiate is a key determinant in the budget process, and budgetary negotiations are seen as an important instrument for ministries and agencies to preserve their interests. Prior analysis of expenditure is one determinant of the spending ministries' capacity to negotiate, as well as their ability to have well prepared budget proposals. More generally, the effectiveness of the arguments used in the negotiations will depend greatly on the analysis conducted by the relevant body (Spackman, 2002). It can also be assumed that pressure from outside the government, coming from lobbies, civil society groups, academics or social media, may influence the budget negotiation and formulation process by leading to concessions from one party in the negotiations, or by giving more material for intensive negotiations and enhanced dialogue (Sänger, 2009).

The power of the ministry of finance and spending ministries in negotiations differs across countries, based on the body that has authority over budget dispute resolution. In Sweden, the government has the final word on the content of the Budget Bill (Bos, 2008). In the United Kingdom, in the event of disagreements between the Ministry of Finance and line ministries, the budget is reviewed by a committee composed of senior ministers without portfolio rather than by the full cabinet. (Hallerberg, 2003). In Germany, the finance ministry has the right to unilaterally veto a spending proposal by spending ministries. However, the Chancellor and a majority of the cabinet can overrule a finance minister's veto (Hallerberg, 2003). In Austria, the Cabinet has no power over the decision of the ministry of finance on the budget content whereas in the Netherlands the Cabinet has the final word in the case of disagreements between the ministry of finance and spending ministries (Hallerberg, 2003).

Following the 2008 crisis, it has been observed that some countries have shifted from the usual bilateral negotiations between finance ministries and spending ministries to more unilateral actions, where spending ministries have a somewhat more restricted say than before in the decision making process (De Jong, Van Beek and Posthumus, 2013), the purpose being to ensure fiscal discipline and avoid budget deficits.

Relationship between line ministries and agencies

Spending ministries and their agencies interact at different stages of the budget process, with budget negotiations being an important element of this interaction. Budget negotiations almost always involve financial information, and may include performance information, particularly in countries that have adopted performance budgeting frameworks (Currstine, Lonti and Joumard, 2007; Hawkesworth and Klepsvik, 2013). Statistical information is also commonly used in budget negotiations between ministries

³ 2011/12 OECD survey on performance and results. In late 2011, the OECD sent a questionnaire to the central budget authorities in all member and partner countries. There was a high response rate: 32 out of 34 OECD member countries and the Russian Federation completed the questionnaire. Figures and graphs show information for OECD countries only; however, tables include information on the Russian Federation (Hawkesworth and Klepsvik, 2013).

and agencies, while independent information from non-government actors is used to a lesser extent (Hawkesworth and Klepsvik, 2013).

In some cases, agencies may enjoy a greater flexibility with regards to the budget process, in which case the relationship between the spending ministries and the agencies is weaker. This is a feature of “new public management”, whereby increased budgetary and management authority and autonomy is provided to units within ministries (OECD, 2004b). For example, in some countries, lump-sum budgets are allocated to agencies and programmes in order to achieve specific outcomes and outputs. This differs from the traditional detailed appropriations with input restrictions/control, because the heads of agencies and programmes can decide more freely on the inputs, as long as their activities lead to the expected outputs and outcomes (Hawkesworth and Klepsvik, 2013).

In Sweden, funds are provided to agencies through letters of appropriation. Spending ministries discuss with their agencies in order to prepare these letters of appropriations, which are then submitted to the ministry of finance (Bos, 2008). In Australia, spending ministries have a limited relationship with their agencies regarding budget negotiations. Instead, it is the Ministry of Finance that maintains direct relationships with the largest agencies, especially the 50 largest agencies. An agency and its ministry will only interact for incremental bids for increased appropriations. In addition, agencies have authority over the reallocation of resources (Blöndal, Bergvall, Hawkesworth and Deighton-Smith, 2008).

B) GOVERNANCE OF EDUCATION SECTOR BUDGETING

Education is a key policy priority in most OECD countries. For all levels of education combined, OECD countries spent on average 12.9% of total public expenditure⁴ on education, representing an average of 6.1% of GDP in 2011 (OECD, 2014a). Education funding needs to be equitable across schools and pupils, efficient due to current governments’ budgetary constraints, and effective because of education’s important contribution to social and economic objectives. The budgeting of education expenditure is an important factor in reaching efficiency, effectiveness and equity targets in education.

Building on the above review of the governance of budgeting in the public sector in general, this section will analyse the governance of budgeting from the perspective of the education sector in particular. Education budgeting presents a set of issues requiring a specific focus that have not been extensively analysed in past literature. The governance of education sector budgeting may differ greatly within a country depending on the level of education and the type of resources considered.

Key actors

Multiple system-level actors have key roles and responsibilities in the budgeting and accounting of the education sector. Although this paper focuses primarily on system-level budgeting and accounting, it is important to note that in countries with decentralised budgeting and management responsibilities, regional, local and school levels have gained increasing authority with regards to budgeting. “New public management” and decentralisation in the education sector have had a big impact on the roles and responsibilities of educational actors, and have been perceived as a way of improving the relevance, efficiency and effectiveness of the education sector (UNESCO, 2014), as well as a way of relieving central government from day-to-day tasks that can be performed at lower level of authority. Sub-system level

⁴ Direct public expenditure on educational institutions plus public subsidies to households and other private entities, as a percentage of total public expenditure and as a percentage of GDP, by level of education. Public expenditure presented in this table includes public subsidies to households for living costs (scholarships and grants to students/households and students loans), which are not spent on educational institutions. Therefore the figures presented here exceed those on public spending on institutions found in Table B2.4 of Education at a Glance, 2013.

authorities enjoy more responsibility for the allocation of resources across sectors, education levels, or categories of education expenditure, for budgetary negotiations with the central level authorities (UNESCO, 2005a), and for evaluation and monitoring (Tolofari, 2005). Therefore, the central government is not always the single authority in charge of budgeting, and there are often several levels of authority involved (Eurydice, 2014b).

Eurydice's 2014 report on *Financing Schools in Europe* provides an extensive report on the authorities involved in the funding of schools in European countries.⁵ In most countries, the actors involved belong to three levels of authority: the top-level authority, which is often central government with its ministries and agencies, also referred to as the “system-level”; an intermediate level composed of regional and local education authorities, also referred to as the “sub-system level”; and the school level of heads and teachers (Eurydice, 2014b). Intermediate level authorities have responsibility over a geographic area in a country, which can be regional, municipal or at the city level (European Commission, 2013). In some countries, the top-level authority for education is not the national government. For instance, “top-level of authority” refers to the Community governments in Belgium, the Länder governments in Germany, the governments of the Autonomous Communities and the central government in Spain, and the education ministries of England, Wales, Northern Ireland and Scotland in the United Kingdom (European Commission, 2013).

Roles and responsibilities

The roles and responsibilities of each actor in education sector budgeting have shifted in many countries due to the trend for decentralisation over the past three decades. Decentralisation has led to new relationships and the shifting of decision-making powers, especially between central governments, education ministries and stakeholders at the local and school levels (UNESCO, 2005a). In addition, different patterns have emerged in the roles and responsibilities of education authorities based on the school level and category of resources in question, as will be discussed further below.

The sources of funds and the distribution of roles and responsibilities

Funds for education institutions in OECD countries typically come from public and private sources of funds and international agencies, for example, the European Union’s structural funds from which some EU member states are able to benefit.⁶ Primary, secondary and post-secondary non-tertiary education are mainly compulsory and, being considered as a public good, they are largely financed by the public sector (OECD, 2013a). On average in OECD countries in 2011, the expenditure on educational institutions at all levels of education combined⁷ was 83.9% from public sources and 16.1% from private sources (OECD, 2014a). For pre-primary education, 81.6% of total expenditure on educational institutions came from public sources, and for primary, secondary and post-secondary non-tertiary education, 91.4% of

⁵ This report covers 27 of the 28 EU Member States as well as Iceland, Liechtenstein, Norway and Turkey. Further references to countries using this reference will thus refer to these 27 countries as well as Iceland, Liechtenstein, Norway and Turkey. It focuses on the transfer of funds and funding systems and not on the budgeting process. Therefore, the authorities named as being responsible for funding in the report may be different to those involved in the budgeting and decision making process for funding methods.

⁶ The European Social Fund (ESF) is a structural fund that targets education, among other objectives (European Commission, 2014). It amounted to EUR 308.041 billion between 2007 and 2013. Another Structural Fund relevant to education is the European Regional Development Fund (ERDF), which may contribute to the renovation, modernisation and extension of schools. Structural Funds have always invested substantially in education and training systems, and between 2000 and 2006 the ESF supported EU member state actions in the area of education and vocational training, mainly related to ‘promoting lifelong learning’ (European Commission, n.d.).

⁷ Expenditure on educational institutions for all levels of education after transfers from public sources, including subsidies attributable to payments to educational institutions received from public sources

expenditure came from public sources (OECD, 2014a). Within private sources of investment, it is possible to differentiate between household expenditure and the expenditure of other private entities.

Different levels of government contribute to raising funds for education across OECD countries. On average in OECD countries, initial funds⁸ (before transfers between levels of government) amount to 52% from central level, 23.7% from the regional level, and 27% from the local level (OECD, 2014a). On average in OECD countries, final funds⁹ (after transfers between levels of government) amount to 36.3% from the central level, 23.9% from the regional level, and 43.4% from the local level (OECD, 2014a). The Eurydice (2014) report highlights that in many countries, intermediate authorities also raise their own revenue in addition to the funds received from central authorities, and in more than two thirds of countries covered in the report, local or regional authorities' own revenues also play a role in the funding of education (Eurydice, 2014b). However, the share of the funds coming from state versus intermediate authorities in the total education budget varies greatly across countries.

An authority raising funds may also enjoy greater authority over the allocation of these funds, although this is not always the case. In decentralised governments, although the central government may maintain its role of collecting funds, the sub-system and school levels may be the bodies that submit budget requests and decide on the allocation of the funds raised at the central level.

Eurydice distinguishes the set of actors involved in the funding system based on spending categories, sources and types of funds.

- According the Eurydice report (2014), in most countries, central governments are almost always involved in the funding of teaching staff. In more than one third of the countries in the Eurydice report, the transfer of resources for teaching staff is only performed by the central government, and in most of the countries where this happens, there are similar patterns with regards to resources for non-teaching staff. In Northern European countries (Finland, Norway, Sweden, the United Kingdom, among others), however, the local level authorities are involved in the funding process of teaching staff along with central government. In Sweden for instance, the central government transfers a lump sum to intermediate authorities (which in Sweden's case are municipalities) that is aimed at funding several public services. However, the municipalities have their own budgets that are significantly bigger than the lump sums received by the central government. In some other countries, such as France or Turkey, the regional level authorities are also involved in the funding process.
- For non-teaching staff, in many countries the intermediate and local level authorities are involved with the funding process along with central ministries.
- Transfers of funds for operational goods and services, in more than two thirds of countries, involve both the central government and municipalities.
- The funding of capital goods usually involves the central government and the intermediate level authorities.

⁸ Sources of public educational funds, for primary, secondary and post-secondary non-tertiary education, by level of government (2010) EAG before transfers

⁹ Sources of public educational funds, for primary, secondary and post-secondary non-tertiary education, by level of government (2010) EAG after transfers

Relationship and negotiations between the ministry of finance and education ministries

Dialogue and negotiations exist at different levels during the budgeting process: between different units within the ministry of education (particularly planning and finance); between the ministry of education and its central agencies; between the ministry of education and the ministry of finance; and between central government and local and intermediate level actors (school committees), particularly in decentralised systems.

There is little internationally comparable information on who has the power and how it is wielded during negotiations and informal decision-making processes across OECD countries. Questions also remain around how funding formulas are decided, who the different stakeholders taking part in the dialogue are, and who decides on the spending categories to which a specific allocation method will be applied.

More literature exists on the negotiations that take place during the planning process than on the budgeting process itself (Magnen, 1991; UNESCO, 2005a; UNESCO, 2012). The negotiations are a key determinant of the education budget outcome. For instance, as part of the planning process for education, it is necessary to set targets, which involves negotiations between several education stakeholders (UNESCO, 2005a), namely the Prime Minister, the parliament, ministries, intermediate level education authorities, and school level representatives. Negotiations thus include both the financial side and the education spenders (UNESCO, 2015).

De Jong et al. (2013) point out that the ministry of finance and education ministries may have conflicting interests and priorities and possess different types of information. The ministry of finance is responsible for balancing the resource needs of all public sector services and maintaining aggregate fiscal discipline. On the other hand, line ministries, such as education ministries, consider financial resources as a means to help them meet the service needs of society. In addition, there are information asymmetries between these actors. For instance, the ministry of finance does not usually have an operational vision, and may lack specific information on the effectiveness of education programmes and budgetary needs (De Jong, Van Beek and Posthumus, 2013). The success of negotiation outcomes will depend on several factors some of which can be controlled and some of which are more context-dependent (UNESCO, 2015).

Power is a key determinant of negotiation outcomes (UNESCO, 2015). As the ministry of finance is usually the body possessing financial resources, it is often the duty of the other parties to prepare for the negotiations. Education authorities, however, often enjoy a particular bargaining power as education is considered a key national priority in many countries. This is demonstrated by the share of the total government budget allocated to education. In addition there are several pressure groups in the education system that may influence negotiations, for example, teachers groups (UNESCO, 2015) can exert pressure for greater resource allocation to the education sector. However, as education spending represents such a significant part of total government spending and GDP relative to other public services, the budgets of education ministries are often under increased scrutiny for efficiency. Information is another key determinant of the negotiations outcomes; and a well drafted and presented document, for example draft budget or project appraisal, can help a party during negotiations (UNESCO, 2015; Magnen, 1991).

There are several factors that reinforce the priority given to education, such as demographic growth leading to stronger demand for schooling and shortage of school staff (UNESCO IIEP, 1989). These factors may mean that the demand for education, the level of quality of education, and the salary claims of staff in the education sector become key arguments in the budget negotiation process (UNESCO IIEP, 1989). Budget simulation models usually incorporate these factors in the calculation of forecasts and are thus useful for resource negotiation and for developing financial frameworks (UNESCO, 2005b). For more information on the topic, see Section 3 on Procedures.

Relationship between education ministries and those who monitor and evaluate resource use

Responsibility for the monitoring and evaluation of resource use differs between countries and between the type of monitoring and evaluation in question. Generally, evaluation is undertaken by line ministries (Curristine, 2005b), however, in many countries, spending ministries, their agencies, the ministry of finance and the parliament may work together. In addition, monitoring and evaluation is often performed at different levels of the education system, with the lower levels performing more operational monitoring and evaluation. In this paper, we will focus on monitoring and evaluation at the system level. Practices vary across countries:

- In Iceland, the Ministry of Finance monitors the financial performance of spending ministries in comparison with the budget (Curristine, 2005b). Ministries, on the other hand, decide on their performance evaluation system and monitor their progress against targets and goals (Curristine, 2005b; Kristensen, Groszyk and Bühler, 2002).
- In Croatia, the state treasury, located in the Ministry of Finance, monitors the implementation of programmes by spending ministries and evaluates them through the use of performance indicators linked to government priorities (Republic of Croatia Ministry of Finance, n.d.).
- In New Zealand, the Ministry of Education monitors and advises schools on financial matters. It reviews audited financial statements and may ask for explanations in the event of liquidity issues, if performance is poor or if there is a reduction in net assets (New Zealand Ministry of Education, 2015a).
- In Denmark, ministries and agencies decide on evaluation models, and spending agencies control and follow up on the spending and appropriations allocated to them. If there is a risk of overspending, spending agencies can apply for an increase in the appropriation. This requires spending agencies to send their application to the relevant spending ministry. Only after approval by the Ministry of Finance can the application be sent to the Parliament Finance Committee. Spending ministries and the Ministry of Finance also collaborate several times a year to monitor the fiscal policy and aggregate government finances. This is published as the Budget Outlook (Denmark Ministry of Finance, 2015).
- In Finland, the National Audit Office (NAO) is the Finnish Supreme Audit Institution and is affiliated to the parliament. The NAO audits the state's finances, monitors and evaluates fiscal policy and oversees election and party funding. It ensures that public funds are spent according to the parliament's decisions, in compliance with legislation, and ensures that fiscal policy is exercised in a sustainable manner (National Audit Office of Finland, n.d.).
- In Lithuania, the National Audit Office of Lithuania, along with municipal auditors, supervises the utilisation of financial and material resources (Lithuania Ministry of Education, 2014). The quality assurance of education is performed by the National Agency for School Evaluation (Lithuania Ministry of Education, 2014).
- Several OECD countries have set up independent bodies charged with monitoring budgeting and fiscal policy.
- In Sweden, the fiscal council (*Finanspolitiska rådet*) is an independent agency with eight members appointed by the government for three years. The members of the council are mostly academic economists, and it typically reports to government once a year during the pre-budget discussions (OECD, 2010b).

- In Australia, the Joint Committee of Public Accounts and Audit (JCPAA), a committee of Members and Senators of the Australian parliament, monitors performance in the spending of funds appropriated to them by the parliament (The Australian Government Department of Finance, n.d.).

Spending reviews usually involve several actors: the political leadership or Cabinet, the ministry of finance, spending ministries, and external players, who all have different roles and interact in a manner that differs based on the stage of the spending review. Further development on this topic is to be found in Section 4 (OECD, 2013d).

SECTION 3: PROCEDURES FOR SYSTEM-LEVEL BUDGETING AND ACCOUNTING

A) PROCEDURES FOR PUBLIC SECTOR BUDGETING

Extensive research has been conducted on the topic of budgeting and financial management in the public sector. The OECD Directorate for Public Governance and Territorial Development published the OECD Best Practices for Budget Transparency (2002), Budgeting Practices and Procedures in OECD Countries (2014) Government at a Glance (2013) and the *OECD Journal on Budgeting*. This section describes procedures for public sector budgeting in general while Section 3.B will analyse procedures that are more specific to the education sector.

The context for the budget process

The budget process typically happens within a broader general framework consisting of fiscal rules, a specific timeframe, and government priorities, among other factors. In most OECD countries, budgeting is carried out as part of Medium-Term Expenditure Frameworks (MTEFs). For European Union Member States, the budget process is integrated into an overall budgetary framework specific to the European Union area. However in general, the effective impact of these frameworks on the budget process depends on several factors detailed below.

Fiscal rules

Fiscal rules are an important context for the medium-term and annual budget process as they impose constraints on budgetary aggregates that impact the budgetary decisions of a country's government, its ministries and the legislature (OECD, 2013b). In 2012, fiscal rules existed in almost all OECD countries, consisting mostly of expenditure rules, fiscal balance rules (deficit/surplus), debt rules, and, to a lesser extent, revenue rules (OECD, 2014). Only New Zealand and Turkey¹⁰ reported no fiscal rules at all affecting fiscal policy (OECD, 2014). The OECD (2013b) provides a typology of fiscal rules and practices in place across OECD countries, which can be found in the statistical annex of the OECD Budget Practices and Procedures or the online survey database (OECD, 2013b).

The effectiveness of fiscal rules depends on several factors, such as their design, timespan, legal basis and enforcement mechanisms. In 18 OECD countries, long-term fiscal projections, are mainly developed by the ministry of finance (OECD, 2014) and usually consist of estimates of demographic and socio-economic developments. In two out of three OECD countries, long-term fiscal projections contain the following elements: economic growth rate, unemployment trends, short-term and long-term interest rates on government debt, fiscal gap projections, effects of significant policy reforms, demographic changes/ageing population growth, health care costs, and civil servants' pension obligations (OECD, 2014). The effects of these factors can be significant on policies considered in a country, which underlines the importance of long-term fiscal projections in the budgeting and planning process. In 2012, 12 OECD countries reported a link between the annual budget and long-term fiscal projections (OECD, 2014). In about two out of three OECD countries, the long-term fiscal projections cover a time span of more than 30 years.

Fiscal rules in OECD countries have differing legal bases: they can be established in primary law (constitution or legislation), a government commitment as part of a government strategy statement, a special instrument provided by constitution, an international treaty, or internal

¹⁰ see note 1.

rules/policies (OECD, 2014). The enforcement mechanisms for these fiscal rules are mostly in place for budget balance rules and debt rules (OECD, 2014), for example the excessive deficit procedure accounts for 26% of enforcement mechanisms. This procedure has several steps, culminating with sanctions, to get European Union member states' budget deficit under control if it exceeds the budgetary deficit imposed by the Stability and Growth Pact (further detailed later in this section). The other enforcement mechanisms mostly used are the automatic correction mechanisms (16% of enforcement mechanisms), and the presentation of correction proposals to the legislature (14% of enforcement mechanisms) (OECD, 2014b).

Macroeconomic estimates

The budget process is also influenced by macroeconomic estimates, which are developed in 21 OECD countries by the ministry of finance (OECD, 2014) and may be used as a basis for making assumptions and estimates in the budget process (OECD, 2014). In 19 OECD countries, these macroeconomic estimates span up to 5 years, and in 8 countries between 31 to 50 years (OECD, 2014).

Medium-Term Expenditure Framework (MTEF)

In an increasing number of OECD countries, the budget process is carried out as part of a Medium-Term Expenditure Framework (MTEF). In 2012, all except four OECD countries (Belgium, Hungary, Israel and Luxembourg) had adopted an MTEF (OECD, 2014). For further information on countries' adoption of MTEFs, please refer to the results of the 2012 survey of *Budgeting Practices and Procedures in OECD Countries* (OECD, 2014).

MTEFs usually cover a time frame of three to four years. The budget process, although it involves annual steps, is therefore carried out within a multi-year perspective. MTEFs allow for the integration of fiscal policy, planning and budgeting (OECD, 2013c), which means that they can combine aggregate fiscal forecasts with medium-term budget estimates from ministries (OECD, 2012a). To this end, yearly ceilings are set by governments, which consist of top-down targets or limits on aggregate spending. In 2012, 29 OECD countries reported that ceiling levels existed in their MTEF (OECD, 2014). In most cases, these ceilings are set at the overall/total expenditure level (in 10 OECD countries), and to a lesser extent they are set at other aggregate levels, for example, at the organisational level or for specific areas of the central government (in Poland), and at line item level in addition to the total/sub-aggregate levels (in New Zealand) (OECD, 2014). Most OECD countries set expenditure ceilings over three or four years (OECD, 2014) and revise them annually.

In addition to the ceilings, the MTEF is also based on "descriptive forward estimates", which consist of calculating how expenditure, revenue and the aggregate fiscal position will turn out under certain assumptions, related mainly to government objectives and economic projections (OECD, 2014).

The benefits of MTEFs are widely and internationally acknowledged, and MTEFs are now considered as a key dimension of the budget process (OECD, 2013b). Their benefits are believed to be multiple. They help the ministry of finance maintain aggregate fiscal discipline by ensuring that the plans and policies are backed by a medium-term budget, and they are also relevant tools for line ministries, allowing them to envision the effects of policies over several years and supporting effective resource allocation (OECD, 2014).

The legitimacy and authority of MTEFs and expenditure estimates and ceilings is, however, dependant on several factors, such as: the enforcement mechanisms, the legal basis, the design of the MTEF, and how and by whom MTEFs are defined (OECD, 2013b). There are significant variations across countries as to whether or not medium-term expenditure ceilings are enforced by law, whether they are decided by the legislature or the executive, and whether they are monitored by the legislature or

independent bodies. In addition, expenditure ceilings prescribed by the MTEF or set by the government can relate to several factors, for example, there may be ceilings imposed over the total aggregate expenditures, by programme, sector and/or organisation (OECD, 2013b), with each situation having different effects on the planning and budgeting processes. In half of OECD countries, MTEFs are enforced by law, and in most other cases, MTEFs are set within a policy or a strategy. In addition, in most OECD countries, MTEFs are approved by the Cabinet or by the legislature (OECD, 2014). In Sweden for instance, the annual budget process is based on an MTEF that covers three years including the forthcoming budget year. This framework is enforced by law and it sets a ceiling for aggregate expenditure at the government level as well as “the indicative level of funding” for each of the 27 Expenditure Areas. Austria recently introduced a MTEF with the aim of modernising the budget (Steger, 2013). For further information on MTEFs, please refer to chapter two of the Budgeting Practices and Procedures in OECD Countries report (OECD, 2014).

Box 1. Success factors for an MTEF to work

- Conservative forecasting of expenditure and revenue (better to have more good surprises).
- Provide ministers with incentives to under-spend.
- Complete coverage of the MTEF increases its credibility.
- Keep it simple: the public (and parliament) need to understand the MTEF to support it.
- Compliance with the MTEF needs to be a binding consideration in the design of sectoral policies.
- Deviations from previously-set ceilings should be reconciled transparently each year.

Source: OECD (2014), *Budgeting Practices and Procedures in OECD Countries*, <http://dx.doi.org/10.1787/9789264059696-en>.

Other budgetary frameworks

Other specific budgetary frameworks exist for member states of the European Union (EU) and countries in the Eurozone. EU member states are subject, for instance, to the Stability and Growth Pact Fiscal Rules, the six-pack regulations and The Treaty on Stability, Coordination and Governance in the EU (the Fiscal Compact). The budgetary framework designed by the EU has been reinforced during the past few years, especially after the 2008 crisis.

The Stability and Growth Pact is a framework designed to govern fiscal discipline in the European Union. It sets requirements for EU member states to have an annual budget deficit below 3% of GDP, and a public debt of below 60% of GDP (Eurozone Portal, 2014). The Stability and Growth Pact was reformed in 2011 to further ensure budget discipline, among other objectives. As part of this reform process, six legislative acts, known as the *six-pack* (five Regulations and one Directive), entered into force on 13 December 2013 (European Union, 2012). The six-pack’s overall aim is to reinforce the preventive and corrective arm of the Stability and Growth Pact. For example, within the six-pack, the Directive 2011/85/UE has set specific rules regarding: systems of budgetary accounting and statistical reporting, rules and procedures for preparing forecasts for budgetary planning, country-specific fiscal rules, and medium-term budgetary frameworks. The directive states that fiscal planning should be based on “realistic macroeconomic and budgetary forecasts”, such as assumptions on the evolution of growth and interests rates, and that a set of fiscal rules, consisting mainly of public deficit and public debt ceilings, should be

respected by EU Member States. The EU directive also requires the implementation of medium-term budgetary frameworks, which are intended to change the budgetary calendar from being annual to covering at least a three-year period. A medium-term budgetary framework sets multi-annual budgetary objectives, provides projections of the most significant expenditure and revenue items at the general government level, and describes medium-term policies and their long-term potential effects on public finances (European Union, 2012).

Steps in the budget process

The main aspects of budgeting are: the steps in the budget process, types of budgeting, relative importance of performance information in the budget process, and the separation between capital and operational budgets. Most of these topics are covered in the “Budgeting Practices and Procedures in OECD Countries” report (OECD, 2014). Section 2 of this paper considered the governance aspects of the budgeting process, and the following paragraphs will consider the procedural aspects.

The OECD provides a theoretical framework for the public budgeting process, describing it as a five-stage process (OECD, 2004b):

- **Budget preparation:** The executive is usually in charge of the budget preparation stage because of its knowledge of operations, costs and revenue and spending forecasts. Usually, the revenue forecasts are broken down for all sources of revenue, and spending forecasts cover all programmes and are broken down for each agency (Deng and Peng, 2011). The Minister of Finance conducts the budget preparation stage, with the ministry of finance preparing a budget circular for line ministries with guidelines on the preparation of their ministry budget proposals and definitions of the expenditure ceilings applicable to each ministry. Line ministries then prepare their budget proposals based on these guidelines. Usually, ministries submit an initial spending request, which is, in 28 OECD countries, constrained by an expenditure ceiling. Expenditure ceilings are taken into account to varying degrees by finance ministries (OECD, 2014). Budgetary discussions and negotiations are afterwards carried out between line ministries and the ministry of finance, until the draft budget is finalised. Negotiations are carried out between ministries and the ministry of finance, with disputes potentially needing to be resolved by the President, Prime Minister, cabinet and/or finance minister (OECD, 2014). In nine OECD countries, the carryover of unused funds on discretionary, operational and investment spending is not permitted for ministers, and in the remaining OECD countries it is permitted but with approval. The budget proposal is then approved by a Cabinet of Ministers, or equivalent, and then submitted to the parliament. The draft budget for sectoral ministries must be consistent with the aggregate resources available. On average in 2012, the Executive Budget Proposal in OECD countries contained 4 732 line item appropriations. Often, the budgeting process is carried out as part of the medium-term expenditure framework which includes the fiscal targets and macroeconomic forecasts. Thus, the budget documents presented to the legislature in two out of three OECD countries include: medium-term fiscal policy objectives, budget priorities, macroeconomic assumptions, clearly defined appropriations for legislature vote, linkage of appropriations to administrative units and medium-term perspective on total revenue and expenditure, non-financial performance targets, and a comprehensive table of tax expenditure (OECD, 2014). The fiscal perspective covers three to five years and is updated yearly.
- **The review and adoption stage:** Parliamentary committees discuss and approve the budget. The legislature typically asks for further information on the budget from the executive, asks for public hearings to collect views on the budget, proposes amendments, and finally passes the budget (Deng and Peng, 2011). The legislative debate spans over 2.9 months on average in OECD countries (1 month in Greece and in the United Kingdom versus 8 months in the United States,

for instance) (OECD, 2014). In 17 OECD countries, the legislature has unrestricted amendment power, while in 8 OECD countries, the amendment power is restricted to the executive's aggregates (i.e. it can't make net changes). In the remaining countries, amendment power is limited to cutting existing items (Chile, the United Kingdom), approving or rejecting the budget proposed (Greece and Ireland), or other arrangements (OECD, 2014). After the budget is passed, it becomes legally binding (Deng and Peng, 2011) and legal authority is given to the executive for collecting revenues. In 18 OECD countries, once the budget has been approved the executive is not permitted to increase spending for at least one type of spending (mandatory, discretionary, operational and/or investment) and in 23 OECD countries the executive is not permitted to cut these types of spending (OECD, 2014).

- **Implementation and execution of the approved budget:** The executive and/or government agencies collect revenue and control expenditure. The ministry of finance monitors budget implementation and prepares periodic budget execution reports for the executive's own use and for parliament. Changes to the budget, in terms of both revenue and spending, may be needed over the year, but they require the legislative approval. Changes can involve adding or subtracting from programmes, or transferring funds between or within programmes (Deng and Peng, 2011). The periodic financial reports are helpful to support such changes as they give information to the legislature and public on the actual revenue collection and spending, and any variance to the initially projected revenues and spending up to that point in the year (Deng and Peng, 2011). In 29 countries the ministries and agencies cannot overspend during the year and in 28 OECD countries they cannot compensate by underspending in the following year (e.g. borrow against future appropriations) with or without approval (OECD, 2014).
- **Parliamentary control of budget implementation:** During and after the end of the fiscal year, the parliament controls budget implementation, based on reports provided by the executive. The parliament may decide on the periodicity and content of these reports. The reports can contain financial and non-financial data, such as annual reports and performance targets attainment.
- **Financial reporting and external audit:** In 25 OECD countries, a mid-year report is issued and in all OECD countries (no data for Iceland), a year-end report is issued (OECD, 2014). At the end of the fiscal year the government presents a comprehensive financial report that covers spending and revenue, as well as explanations of any discrepancies between these, in addition to assets and liabilities accounts, and details of changes in the level of assets and liabilities compared to the previous year (Deng and Peng, 2011). An independent audit of the financial accounts and this financial report is performed by an agency outside of the government (Deng and Peng, 2011). The independent external audit office may also be mandated with the assessment of budget results with regards to efficiency, effectiveness and economy perspectives. In Australia, departments need to prepare Portfolio Budget Statements for each of the agencies in their portfolio detailing how their annual budget will be allocated to reach each government outcome (The Australian Government Department of Education, 2014). In Brazil, spending ministries input their detailed allocations in a computerised budget formulation system, based on imposed ceilings, within a maximum three-week timeframe (Blöndal, Goretti and Kristensen, 2003).

Types of budgeting

There are significant variations regarding the budgeting approaches adopted by countries, and budgeting techniques are constantly evolving. Country practices show that many countries have tried to move away from input budgeting and place greater importance on outcome and output. There have also been changes in relation to the degree of importance that performance information plays in the process,

with country practices showing that countries are increasingly attempting to link budget decisions with performance (Kristensen, Groszyk and Bühler, 2002).

Overall, the adoption of a budgeting technique is usually aimed at supporting an efficient and realistic allocation of resources, and being effective by responding to actual needs. This section focuses on budgeting types adopted at the system-level, but these can also refer to budgeting methods used at sub-system levels. In addition, the concepts developed here can either be considered from the perspective of budgeting across spending ministries, or budgeting within a line ministry, depending on the type of budgeting in question. It is important to remember that the categories and types of budgeting are not mutually exclusive, and the different types of budgeting described below may in practice overlap and be used in conjunction. This is because depending on the definition of the provider and practitioner, budgeting approaches may either refer to the deciding factors in budget allocation, to the way the budget is presented (nomenclature, classification, units to which budget is allocated), to the type of information used in the budget process, to the purpose of the method (basis for policy decisions or for resource allocations), or to the object in question (presentational aspect or procedural/allocative aspect). Also, there may be an equivocal use of the concepts of budgeting frameworks and management frameworks.

Line item budgeting

Line-item budgeting focuses on the inputs necessary to perform the functions of the government. In pure line-item budgets, the allocation of funds is based on the objects of expenditure, such as full-time personnel, part-time personnel, and pension expenses. In practice, line item budgeting is easy to understand and easier to apply for smaller governments faced with simple, stable tasks. The line-item budgeting method does not consider what the government does, its activities and accomplishments, or the results. Moreover in such a framework, the costs of inputs are not related to the services performed or the resources consumed. The focus of the governing bodies' discussions tends to be on inputs to the budget and not on the services that a fund will buy (Kim, n.d.). According to the National Center for Education Statistics (2003), line-item budgeting is the most used budgeting method at the school level, based on the United States experience.

Activity-based budgeting

Activity-based budgeting refers to the way costs are classified, and can be defined as a budgeting technique whereby costs are based on activities performed by entities in order to perform a service or market a product, rather than on departments, products etc. The EU states that activity-based budgeting refers to a framework where "expenditure budgets must be set out on the basis of a nomenclature with a classification by purpose ("activity-based")" (European Union, 2011). Such a budgeting technique requires defining what the outputs are, and determining the cost of achieving them. Activity-costing models therefore need to be developed to support this budgeting technique and cost drivers need to be determined. Activity-based budgeting is used in the health care sector in several countries such as Australia, Denmark, Norway and Sweden (Center for Health Economics, 2007). In the education context, an activity-based budget can be calculated based on activities such as enrolment in a school or passing an exam, for which a tariff or fixed average price/an amount of money is set (Ginnerup et al., 2007). Some countries, such as Denmark, have adopted activity-based budgeting in the education sector (The Danish National Center for Social Research, n.d.).

The use of performance information in the budget process and performance-based budgeting

There are different ways of using performance information in the budget process. Performance information can consist of financial data, operation and performance reports and performance evaluations originated by line ministries and agencies, spending reviews, and other independent or statistical

information. Performance information usually takes the form of indicators, targets, evaluations and benchmarks (Kristensen, Groszyk and Bühler, 2002; Curristine and Bas, 2007).

In many countries, performance information is used in the budget process by the ministry of finance and line ministries to aid decision making. A 2005 questionnaire conducted by the OECD indicated that about three quarters of OECD countries (from 26 country responses) have non-financial performance data in their budget documents (Curristine, 2005b). The countries that develop performance measures have often also developed a combination of outputs and outcomes (Curristine, 2005b). The questionnaire also indicated that in about one third of OECD countries (out of 28 country responses), line ministries develop their own performance measures with no involvement from the ministry of finance, and in another one third of OECD countries, the ministry of finance is involved in the process and agrees with the performance measures (Curristine, 2005b).

Broadly defined, performance budgeting is the use of performance information in the budget process, or a budget approach or methodology that focuses on impacts and presents what agencies have done or expect to do with the money provided to them (Curristine, 2005a; De Jong, Van Beek and Posthumus, 2013; Webber, 2004). In some contexts, performance budgeting may incorporate several types of budgeting, such as output budgeting or budgeting based on outcomes. Outcomes are the intended effects of government programmes, whereas outputs (goods or services delivered by government) are the means of achieving those outcomes (Webber, 2004). Output and outcome-focused budgeting is the process of allocating resources, i.e. appropriating public funds on the basis of outputs and the production of outcomes (National Center for Education Statistics, 2003). Few countries have fully adopted output budgeting, although some have borrowed ideas from this budgeting approach or have adapted the method to their countries. For example, output budgeting was one of the components of the public financial management reform in New Zealand in the late 1980s and early 1990s (Webber, 2004). During this reform, the legal environment had to be adapted to this budgeting technique and amendments to the Public Finance Act of 1989 were passed in order to allow for budget appropriations by output class and to support the application of output budgeting methods (Webber, 2004). However, from 1997 onwards, output budgeting did not prove to deliver the expected benefits, and there were, for instance, difficulties revealed in the definition and measurement of outputs.

Under strict terms, a performance budget “explicitly links each increment in resources to an increment in outputs or other results” (Curristine, 2005a; De Jong, Van Beek and Posthumus, 2013). However, although performance measures inform decision-makers during the budget process, the OECD found that performance information very rarely determines and represents the basis upon which budgeting is carried out (Curristine, 2005b).

According to OECD definitions, performance budgeting can be classified in three ways, depending on the degree to which performance information is linked to the actual funding:

- **Direct/formula performance budgeting:** In some cases, a direct link between performance, resource allocation and accountability is in place.
- **Performance-informed budgeting (PIB):** More often, the link is indirect, and planned performance targets and results are used for planning and accountability purposes only.
- **Presentational performance budgeting:** Performance budgeting systems have no link between performance and funding and only use performance information for accountability.

In practice, many governments satisfy the broad definition of performance-budgeting, usually considered as performance-informed budgeting, but very few satisfy the strict definition (De Jong, Van Beek and Posthumus, 2013; Schick, 2014). According to the responses to the 2005 OECD questionnaire on performance information in the budget process, approximately two thirds of OECD countries have issued guidelines and definitions for performance budgeting, and some have standard methods for reporting performance information to the central budget authority (Curristine, 2005b). However, overall, only 8.79% of respondents stated that performance results are actually used as part of the budget discussions between the ministry of finance and spending ministries (Curristine, 2005b).

When performance information is present in budget negotiations, it is rarely used to eliminate programmes or cut expenditure (Kristensen, Groszyk and Bühler, 2002; Curristine, 2005b). In general, the OECD study highlights that despite increased attention to measuring the performance of the public sector over the last decade, countries have not completely shifted away from inputs in preparing budgets (Kristensen, Groszyk and Bühler, 2002). Reasons for this include the difficulty of integrating this nature of information into the budget process framework (such as the need to change the budget classification to adapt it to outcome and output measures) (Curristine, 2005b), and the difficulty of defining performance for public services, such as education.

Programme-based budgeting

There are different definitions of programme-based budgeting, but in broad terms it refers to a budgeting technique in which the classification of expenditure in the budget is based on programmes or outputs, in comparison to the usual classification based on inputs and organisational units (Kraan, 2007; Kim, n.d.). With traditional budget classifications, expenditure is categorised by economic categories (salaries, material costs, etc.), organisation/entity-based categories and purpose-based/functional categories (OECD, 2011d), while under programme budgeting, budget expenditure is classified by programmes' objectives, outputs and outcomes (OECD, 2013d). Programme-based budgets usually imply a reduction in the number of line items. With programme-based classifications, the parliament can appropriate funds to programmes as a whole, and the budget submitted to parliament can include information on sub-programmes, but only for informative purposes. Some countries have, however, kept a separation between operational expenditures and programmes because of the difficulty with splitting operational expenditure across programmes in some cases, and also in order to easily monitoring this expenditure.

Programme-based budgeting can be considered as one form of performance budgeting as it implies a budget that displays objectives, outputs, and outcomes measures, which are major forms of performance information (OECD, 2013d). However, the OECD advises to restrict the amount of output and outcome measures in the budget document to those that have a direct impact on the determination of allocations (OECD, 2011d).

In France, a new budgetary framework, *Loi Organique relative aux Lois de Finances* (LOLF), introduced in 2011, has shifted budgeting to programme- and performance-based budgeting in order to achieve greater efficiency and effectiveness from public expenditure. This new budgetary framework is organised around a three-level structure: missions, programmes and actions and includes a set of performance indicators. Romania has also gained experience with programme budgeting, and for the 2007 budget, 64% of the total budget was allocated on the basis of programmes (European Commission, 2007).

Different methods for defining, analysing and negotiating the budget

Zero-based budgeting

With zero-based budgeting, budgets are prepared from scratch at each new budget cycle, requiring each line ministry to justify its entire budget. Zero-based budgeting consists of “discussing funding for ongoing programmes as if they were being created, asking fundamental questions on their justification and key design and operational choices” (Kristensen, Groszyk and Bühler, 2002).

This budgeting technique enables a basis of comparison across programs and can effectively support decisions to cut a programme or reallocate resources, but it may require a lot of time to carry out such a detailed level of programme analysis (Kristensen, Groszyk and Bühler, 2002).

Incremental budgeting

Incremental budgeting refers to the process of making gradual changes in expenditure, as opposed to the review of expenditures from scratch. One reason for using incremental budgeting is to allow the government to only analyse new requests for expenditure. Incremental budgeting can also help to avoid intra-governmental conflicts by reducing the perception that line ministries are in direct competition for funding (OECD, 2001). Line ministries within this framework bid for incremental resources and do not debate over a share of a general budget, this leads to more pressure wielded on the overall expenditure aggregates, than on individual line ministries request for budget. Practices show that the aggregate spending in this context tends to be the sum of budget demands, rather than a fixed budget independent of line ministries’ budget requests (OECD, 2001).

Gender budgeting

In recent years, the integration of a gender equality dimension in the delivery of public services has gained growing attention, and education is one of the main areas concerned. Gender budgeting, gender-responsive budgeting or gender-sensitive budgeting refers to the process of showing what percentage of a budget will benefit men and women respectively (The Netherlands Ministry of Foreign Affairs, 2002). Gender budgeting attempts to adopt a gender equality perspective in the budget process and resource allocation, and promote gender equality and women’s empowerment by means of revenue and expenditure restructuring (Sänger, 2009). Ideally, gender budgeting is part of a general financial management framework, where fund allocations and their implications are tracked in terms of gender equality outcomes (The Netherlands Ministry of Foreign Affairs, 2002). Practices show, however, that gender budgeting is often implemented partially in the form of one-off analyses of benefits or allocations in a sector. In addition, although gender budgeting initiatives were present in more than 60 countries (OECD, 2009), many pilot projects were abandoned, and overall, gender budgeting made more progress in developing countries than in OECD countries.

Gender budgeting requires a specific mind-set because financial practitioners need to be able to split public funds by gender. In addition, due to the lack of experience with the approach, it is difficult to budget female and male demand for a service. A 2002 study conducted on gender budgeting in the budgets of three Dutch ministries showed that data requirements are a major challenge in the gender budgeting process (Sänger, 2009). Institutional requirements for gender-sensitive budgeting are tackled in the “Institutional Requirements for Gender-Sensitive Budgeting” brief (2009), in the OECD Issues Brief Integrating Gender Equality Dimensions into Public Financial Management Reforms (OECD, 2010a), and in the OECD Issues Brief on “Gender Equality Results Management in Partner Countries” (OECD, 2009).

Budgeting based on value-for-money analysis

Value-for-money analysis aims to achieve the best balance between efficiency, effectiveness and economy (Jackson, 2012). Value-for-money reviews take various forms and can be carried out during the budget process, particularly for capital and infrastructure projects,¹¹ which in many countries are subject to a specific budgeting and funding process. For capital projects all OECD countries,¹² with the exception of the Slovak Republic, use an absolute value-for-money analysis (OECD, 2014). This analysis is often used to evaluate large-scale projects and programmes that involve significant resources, such as capital projects. In 2012, the governments of 17 OECD countries applied an absolute value-for-money analysis, such as cost-benefit or cost-effectiveness analysis, that took a whole-of-life¹³ approach to prospective capital projects (OECD, 2014). In another 11 countries, value-for-money analysis was carried out for projects when they were above a certain threshold (OECD, 2014), and in a further 9 countries on an ad-hoc basis (OECD, 2014). As part of value-for-money analysis, some specific tools are used by countries, for example: cost-benefit analysis, cost-effectiveness analysis, net present value, internal rate of return, qualitative expert opinion, and, to a lesser extent, payback period, analysis of the capacity/willingness of the user to pay, and residual income (OECD, 2014).

- **Cost-benefit analysis** involves the calculation of the total expected benefits and costs of an option (project, programme) to see if the benefits outweigh the costs and by how much (OECD, 2012a). The purpose of the analysis is to provide a measure of the expected yield of the investment as a guide to the rational allocation of resources. It is therefore used for prioritising government spending (Woodhall, 2004). Cost-benefit analysis allows to determine whether a decision is justified and feasible, and provides a basis for comparing different options. In cost-benefit analysis, all flows of money are expressed in terms of their net present value, in order to adjust for the time-value of money (OECD, 2012a). Cost-benefit analysis helps the government with various types of decisions *ex-ante* (before), such as to decide whether to undertake or continue a project or programme, to decide between alternative projects or programmes, and to choose the scale and timing for a project (Commonwealth of Australia, 2006). Cost-benefit analysis is also helpful *ex-post* (after) in order to evaluate the impact or outcomes of a project or programme already implemented. This use of the cost-benefit analysis method will be further developed in Section 4.
- **Cost-effectiveness analysis** involves the comparison of relative costs and different options to achieve one outcome. As opposed to cost-benefit analysis, it does not require the expression of benefits in monetary terms as it focuses on only one outcome. It is particularly relevant for public services where effects are hard to express in monetary terms (OECD, 2012a). Although

¹¹ Capital and operational budgets: There are two broad categories of education expenditure: capital expenditure and operational or current expenditure. For the definition and practices, please refer to the previous section. In 2012, 20 out of 33 OECD countries had separate capital and operating budgets versus 45% in 2007 (OECD, 2014). Budgeting for multi-year capital projects can be done in several different ways. More countries are funding capital projects up-front (OECD, 2014). In 13 OECD countries in 2012, the funding for the entire cost was up-front, and in 12 countries, the funding was done incrementally each year (OECD, 2014). In the rest of the 33 countries, budgeting of capital projects was determined on a case by case basis (OECD, 2014). For operating expenditure, in half of the OECD countries at least, agencies receive lump-sum appropriations (OECD, 2014). In these countries in most cases, these lump-sums appropriations have sub-limits, which in most cases are limits on wages and capital spending (OECD, 2014).

¹² Respondents corresponded to 32 OECD countries because there was no answer for Belgium and Iceland on this topic.

¹³ Net present value i.e. a valuation method where future flows of economic benefits are discounted to the present period to account for the time-value of money

conducting cost-benefit analysis is more demanding in terms of resources and expertise, it tends to be a more comprehensive tool as it allows thought to be given on whether or not to continue programmes, projects or policies. Cost-effectiveness analysis focuses solely on the most cost-effective option for achieving a set of objectives.

In Singapore, capital expenditures, called “development expenditures” amounting to more than SGD 50 million need to be approved by the Development Planning Committee (DPC) (Blöndal, 2006), which is composed of three members from the Ministry for Finance, the Ministry for Trade and Industry and the sectorial minister proposing a capital project. These members examine the projects to make sure it respects norms and that value-for-money alternatives have been considered (such as leasing or public-private partnerships) (Blöndal, 2006).

Public sector accounting

The basis of accounting refers to the “accounting principles that determine when transactions or events should be recognised for financial reporting purposes” (Allen and Tommasi, 2001). There is a spectrum of accounting bases, with the two main bases of accounting/budgeting in the public sector being the cash and the accrual bases. In-between, there is the modified cash or modified accrual accounting bases.

Box 2. Definition of accounting bases

- Cash accounting: Cash payments and receipts are recorded as they occur.
- Modified cash accounting: Cash receipts and disbursements committed in the budget year are recorded and reported until a specified period after year-end.
- Accrual accounting: Transactions and economic events are recorded and reported when they occur, regardless of when cash transactions occur.
- Modified accrual accounting: Accrual accounting is used but certain classes of assets (e.g. fixed assets) or liabilities are not recognised.

Source: PWC (2013), *Towards a new era in government accounting and reporting*, www.pwc.com/gx/en/psrc/publications/assets/pwc-global-ipsas-survey-government-accounting-and-reporting.pdf.

Under the cash basis, a transaction is recognised once the cash is received or the cash is paid out, while under the accrual basis, a transaction is recognised when the activity generating revenue or consuming resources takes place, even though the cash might not have been received or paid yet. Therefore, the accrual basis implies a certain degree of judgment as to when to recognise a transaction.

After many years of using cash accounting in the public sector, there is now a move towards accrual accounting systems in many countries (Christiaens et al., 2014). The OECD Directorate for Public Governance and Territorial Development conducts periodic surveys to assess the level of adoption of accrual financial reporting and accrual budgeting (appropriations) in OECD countries. The surveys focus solely on expenditure by national governments and thus exclude local/regional governments. The OECD research (2014) shows that many OECD countries now use accrual accounting, which means an accrual basis for their financial statements/financial reporting. For their budget however, many OECD countries still apply full cash budgeting, or accrual budgeting but only for a limited number of transaction in their budget statements.

- For **financial statements**, a majority of countries use accruals and many are in transition to accruals. Twenty three OECD countries use accrual financial reporting, as well as Latvia and Lithuania. The remaining OECD countries, in addition to Brazil and China, use cash financial reporting. Among the 23 countries that have adopted accrual financial reporting, several countries have made exceptions for public service pensions or the capitalisation/depreciation of assets. Ireland, Italy and Norway, who use cash financial reporting, provide supplemental accrual information. In the Netherlands and Portugal, agencies report on accruals. China and Brazil indicate that they are transitioning to accrual financial reporting. In Japan, the accrual financial report is supplementary to the statutory cash-basis financial accounts.
- For **budget (appropriations)**, very few countries use accruals: only 9 OECD countries (Australia, Austria, Belgium, Chile, Denmark, Iceland, New Zealand, Switzerland and the United Kingdom) use accruals budgeting while the rest of OECD countries, as well as the OECD four key partners (Brazil, China, Latvia and Lithuania), use cash budgeting. Among the 9 countries using cash budgeting, several have made exceptions for public service pensions, capitalisation/depreciation of assets, infrastructure and military investments. In some countries that use cash basis for budgets, some appropriations are accrual-based (Finland). Supplemental accrual information is provided by Italy and Norway, and Estonia indicates that it is transitioning to accruals. In Sweden, running costs and fees are on accruals, and taxes are on both accruals and cash bases.

Box 3. The IPSAS and the EPSAS

The International Public Sector Accounting Standards (IPSAS) developed by the IPSAS Board under the auspices of the International Federation of Accountants (IFAC), is gradually becoming recognised as an international standard setter for the public sector (IFAC, 2013). In addition to the IPSAS, the IPSAS Board develops Recommended Practice Guidelines (RPGs) “to provide guidance that represents good practice that public sector entities are encouraged to follow”. Most IPSAS are based on IFRS but several standards have been adapted to the case of public entities. A Review Group has been formed to tackle issues of governance and oversight and of insufficient resources of the IPSASB. The Review Group is chaired by representatives from the World Bank, International Monetary Fund (IMF), and Organisation for Economic Cooperation and Development (OECD), and includes representatives from the Financial Stability Board (FSB), the International Organisation of Securities Commissions (IOSCO) and the International Organisation of Supreme Audit Institutions (INTOSAI).

The European Public Sector Accounting Standards (EPSAS) is part of an ongoing EU effort to harmonise public sector accounting standards for Member States. The EPSAS will be significantly inspired by the IPSAS, but some standards will be adapted and improved (EPSAS, 2014). The website www.epsas.eu is an online project initiated by the University of Hamburg (Germany) and the University of Linz (Austria) that aims to provide information on implementing EPSAS.

In 2010, about 30 countries worldwide had adopted accrual basis IPSAS (including France, South Africa, Switzerland, Russia, Israel, the Slovak Republic and Brazil). Some countries adopt IPSAS directly (Switzerland and the Slovak Republic for instance) while some countries adopt IPSAS through national standards (e.g. South Africa or Brazil). Sub-national governments sometimes adopt IPSAS (Prefecture of Tokyo, State of Hesse, State of Zurich). According to the Survey of public sector accounting and auditing in the MSs, 9 MS' National standard are based on or orientated by IPSAS, 5 have some IPSAS references, 1 has IPSAS for some Local Government entities, and 12 No IPSAS relation. At the central level, 12 MS use accrual, 5 use modified accruals, 5 use a combination of accruals and cash, 4 use cash, 1 no answer. At the state level, none use cash (out of the 4).

Specific public sector accounting rules are required as there are significant differences between the accounting needs in the private and public sector. For example in the public sector, services are provided with no charge or for an amount which is less than cost recovery (Deloitte, 2013), and non-exchange transactions (see Box 4 below) have no equivalent in the private sector. In addition, the public sector requires specific information to be presented and disclosed, which is not the case for private sector statements prepared under the International Financial Reporting Standards (IFRS).

Box 4. Example of accounting topics specific to the public sector

IPSAS 21 Impairment of Non-Cash-Generating Assets. To ensure that non-cash-generating assets are carried at no more than their recoverable service amount, and to prescribe how recoverable service amount is calculated.

IPSAS 22 Disclosure of Financial Information About the General Government Sector (GGS). To prescribe disclosure requirements for governments that elect to present information about the GGS in their consolidated financial statements. The disclosure of appropriate information about the GGS of a government can provide a better understanding of the relationship between the market and non-market activities of the government and between financial statements and statistical bases of financial reporting.

IPSAS 23 Revenue from Non-Exchange Transactions (Taxes and Transfers). To prescribe requirements for the financial reporting of revenue arising from non-exchange transactions (other than non-exchange transactions that give rise to an entity combination). In a non-exchange transaction, an entity either gives or receives value from another entity without directly giving or receiving an approximately equal value in exchange.

IPSAS 24 Presentation of Budget Information in Financial Statements. To ensure that public sector entities discharges its accountability obligations and enhances the transparency of its financial statements by demonstrating compliance with the approved budget for which it is held publicly accountable and, where the budget and the financial statements are prepared on the same basis, its financial performance in achieving the budgeted results. IPSAS 24 applies to public sector entities, other than government business enterprises (GBEs) that are required or elect to make their approved budget publicly available.

Instruments for accounting

Accounting systems are a set of accounting procedures, internal control mechanisms, books of account, and plan and chart of accounts used for administering, recording and reporting on financial transactions (Allen and Tommasi, 2001). According to the OECD, accounting systems should “embody double entry bookkeeping, record all stages of the payments and receipts process needed to recognise accounting transactions, integrate asset and liability accounts with operating accounts, and maintain records in a form that can be audited” (Allen and Tommasi, 2001). Sound accounting systems therefore require the definition of accounting standards, a chart of accounts, bookkeeping systems (invoicing, asset register, etc.), integrated accounting system (IT system) and trained staff (in accounting, audit). The following paragraphs will give a brief overview of some of the accounting and budgeting systems tools and procedures.

Charts of accounts and budget classification

A chart of accounts (otherwise known as “accounting classification” or “financial reporting classification”) is the classification of transactions and events (payments, revenues, depreciation, losses, etc.) according to their economic, legal, or accounting nature (Allen and Tommasi, 2001). It is therefore the framework within which transactions and other events are recorded in order to “provide an overview of operating results and the financial position of the government, and to create a necessary link with financial reporting requirements” (Allen and Tommasi, 2001). The chart of accounts is often developed and maintained by the treasury, in consultation with professional/international bodies. Financial statements are prepared on the basis of the categories defined in the chart of accounts (Allen and Tommasi, 2001). Setting up a comprehensive chart of accounts is deemed important if a government wishes to consolidate data from the different agencies at the different levels.

The budget classification, on the other hand, refers to “all coding schemes that are used to define both revenue and expenditure transactions at budget planning, budget approval, and budget execution. The budget classification, at some level of aggregation, is used to present the budget to the parliament for

approval and, once approved, provides the legal expenditure limit, in the case of appropriations, and the approved plan in the case of revenues” (Jacobs, Héris & Bouley, 2009).

The use of accrual or cash accounting standards will affect the codes and classifications in the chart of accounts and in the budget classification. Some accounts may or may not be needed depending on the accounting basis adopted by the country, for example, accounts receivable and accounts payable are not needed if a cash basis is used.

The General Ledger is the set of books or the database where all transactions are recorded, according to the specification of the chart of accounts and the budget classification system. Therefore, the chart of accounts and the budget classification define the organisation of the ledgers kept by government accountants.

It is considered good practice to have completely integrated budget classification and charts of accounts that incorporate relevant asset and liability accounts. In some countries, however, it may be the case that charts of accounts and budget classifications are separate or only partially integrated, and differ in terms of structure and information content. When the chart of accounts is not consistent with the budget classification system, there is a risk of information loss because entries/transactions are not recorded in both financial statements and budgets. This means it becomes difficult to identify the exact accounting impact of a budget decision and vice versa.

Bookkeeping

With double entry bookkeeping or double entry general ledger system, each flow gives rise to two equal-value entries, a credit and a debit entry, within the accounts of each of the two parties to the transaction (Allen and Tommasi, 2001). In other words, each transaction must be recorded twice, once as a resource (or a change in liabilities) and once as a use (or change in assets) (OECD, 1993). Increases in asset accounts and decreases in liability and net worth accounts are debits, and decreases in asset accounts and increases in liabilities and net worth accounts are credits. The use of the double entry system facilitates consistency checks of recorded flows and stocks (Allen and Tommasi, 2001). Although the double-entry principle originally stemmed from business accounting, it is now a basic axiom of national accounting (Unstats, 2008).

IT systems/financial management information systems

The IT system supporting the financial management framework is a key component for the integration of information, especially as budgeting and accounting is based on information coming from dispersed sources. With a computer-based integrated financial management system, each transaction, and its attributes, can be recorded in an accounting and budget execution system, or Financial Ledger System. (Allen and Tommasi, 2001). The design and implementation of an integrated financial management information system is an important factor to consider when a government wishes to have access to consolidated and comprehensive information. Many developed countries have integrated accounting and budget execution systems. These systems are called “Core Accounting and Budgeting Systems”, “Treasury Systems”, “Financial Ledger Systems”, or “General Ledger Systems”.

In order to implement an integrated financial management information system, the charts of accounts and budget classification need to be integrated (Diamond and Khemani, 2006). In addition, the basic government financial management systems should be integrated with other systems (procurement, asset management, project management, etc.) to avoid the duplication of information, inconsistencies, and to provide all entities with the same information. Financial management involves a variety of actors (the ministry of finance, line ministries/agencies, the supreme audit institution, etc.). The ministry of finance

should, according to the OECD, co-ordinate the implementation of the financial management systems and be responsible for their regulation and overall effectiveness. However, designing and implementing these systems requires the full participation of the line ministries and agencies concerned (Allen and Tommasi, 2001).

Box 5. Features of an accounting system

Whatever the basis of accounting, an accounting system should have the following features:

- Effective procedures for bookkeeping, systematic recording of transactions, adequate security, and systematic comparison with banking statements. Computerising the accounts may help to improve accounting procedures, but the related security issues should be reviewed. Some countries have implemented or are implementing “light” computerised systems in order to facilitate the production of timely monitoring reports. Such systems can improve information dissemination, but often, data are not properly secured (backup procedures, control of access, etc.). In such situations, manual systems should not be abandoned completely.
- All expenditure and revenue transactions should be recorded in the accounts, according to the same methodology. This information should cover funds with earmarked revenues and foreign and domestic loans.
- A common set of expenditure classifications according to functional and economic categories.
- Clear and well-documented accounting procedures and clearly defined concepts (the notion of commitment, for example, can be interpreted in different ways).
- Financial reports and statements that are produced regularly.
- An adequate system for tracking the use of appropriations (“budgetary accounting”), at each stage of the expenditure cycle (commitment, verification, and payment).
- Transparent reporting of transactions made through “below-the-line”, suspense or liability accounts.
- Whatever the basis of accounting, notes to the financial statements should indicate the main accounting policies and provide sufficient detail to permit correct interpretation of the information, and a statement of accounting policies.

Source: Allen, R. and D. Tommasi (eds.) (2001), *Managing Public Expenditure: A Reference Book for Transition Countries*, <http://dx.doi.org/10.1787/9789264192607-en>.

- **Budget preparation** systems should support the exchange of information needed between the line ministries and ministry of finance and allow line ministries to directly submit their budget requests in the database. The systems could also contain the information on budget execution from previous years to help the budget decision making, and keep track of any revisions made to the budgets. A budget preparation system could be linked with the forecasting systems (see later in this section), especially for fiscal and macroeconomic projections and databases on personnel expenditure that feed into the budget preparation stage.
- The **budget execution** stage should be supported by budget execution accounting and financial reporting information systems. These systems contain data on the approved appropriations, fund release, commitments, accrued expenditures, etc. They also maintain the ledgers, and register data on: revenues, debt and other liabilities, financial assets (and physical assets under full

accrual accounting), and other financial transactions (such as internal transactions between government agencies) (Allen and Tommasi, 2001). Most importantly, the systems maintain information on the management of programmes and government agencies, and allow them to report on their activities. The ledger systems of the spending agencies should be closely linked to the general accounting systems. It is important that despite an integrated accounting system, the spending ministries maintain their responsibility over their accounts. Typically, spending agencies also have their own programmes and project planning and controlling tools to allocate costs among programmes and keep track of assets and inventories and maintenance works. Other systems may be needed based on the country's context and priorities. Additional systems for the purpose of revenue may help with managing the collection of taxes and other sources of revenue. Systems to support the MTEF may also be needed.

B) PROCEDURES FOR EDUCATION SECTOR BUDGETING AND ACCOUNTING

The context for budgeting and accounting in the education sector

Guidelines, national standards, and frameworks for budgeting and accounting can be established in different ways. The ministry of finance may communicate this type of information to line ministries, including the Ministry of Education, through budget circulars and other forms of reports. The Ministry of Education or the Ministry of Finance may also provide intermediate and school level authorities directly with guidelines on educational budgeting and accounting. Guidelines can also be established by the units in charge of planning and budgeting within the Ministry of Education.

Educational budgeting and accounting guidelines may not be available to the public as at the system level, this type of information is usually established for all line ministries or all entities with similarities, with no distinction made between sectors. In addition, at the system level this type of information may be used mainly for internal purposes. At lower levels of authority, greater budgeting and accounting accountability and transparency may be required from the public due to the greater proximity of the authority. Therefore, it is usually easier to find publications on budgeting and accounting guidelines directed at intermediate and school level authorities.

Guidance and requirements on educational budgeting and accounting may be communicated through different methods of support, such as budget circulars, budget law, education act, generally accepted accounting standards, chart of accounts, and budget classification. They can be prepared and directed to different authorities at different levels. This report will focus mainly on information prepared at the system level and specifically relating to education, but it will also take into account information relating to lower levels of authorities.

Budget circulars, guidelines and frameworks on educational budgeting and accounting

Usually, a set of guidelines and national principles on budgeting and accounting are developed at the government level specifically for the public sector or non-profit organisation.

The budget circular (also known as memorandum or instructions) is one type of guideline for budgeting. It is the document containing the rules and norms for budget processes and procedures, the methodology for fiscal projections, the macroeconomic assumptions to be used in the preparation of budget proposals, the expenditure ceilings/targets and often information on government priorities (OECD, 2014). In the majority of OECD countries, the ministry of finance drafts the budget circular, and it is used by line ministries to prepare their expenditure proposals. Specifying strategic policy objectives and expected outcomes in the budget circular can also encourage line ministries to refocus their budget proposals and estimates around government priorities.

The Budget circular 2014-15 of the Government of India (2013), issued by the Ministry of Finance Department of Economic Affairs, sets out the timelines and format for information to be submitted to the Ministry of Finance. It also outlines several instructions specific to the education sector (Government of India Ministry of Finance, 2013). For example, it states that educational institutes are required to prepare estimates of interest receipts. It also specifies that as part of estimates of expenditure and the preparation of expenditure budgets, the Department of School Education and Literacy is particularly encouraged to identify schemes and programmes fulfilling the objective of the welfare of children, and the budget provision for them (Government of India Ministry of Finance, 2013).

In federal countries, such as the United States, the state or provincial level authorities play an important role in providing guidance for budgeting and accounting:

- The New York State Office of the State Comptroller (OSC) issued a report for accounting and reporting guidance directed at school districts in New York State (DiNapoli, 2012). It is based on the generally accepted governmental accounting and financial reporting principles of the Governmental Accounting Standards Board (GASB), but it also contains an interpretation and explanation of these principles with regards to their application to school districts in New York State (DiNapoli, 2012).
- The California Department of Education provides specific guidelines for Local Educational Agencies (LEAs) with regards to accounting and financial reporting (California Department of Education, n.d.). For instance, the Department published a school accounting manual specifying general accounting principles, accounting processes, the chart of accounts and topics relating to accounting for local educational agencies (California Department of Education, 2013a). The Department also re-stated on its website GASB Statements and further developed their implications for local educational agencies (California Department of Education, 2013b). The website provides specific guidance on the Standardised Account Code Structure (SACS), which is the state-wide financial reporting format (California Department of Education, 2014).
- The Florida Department of Education (Florida Department of Education, 2014) has developed documents, publications and worksheets on funding and financial reporting matters, including detailed and annotated budget accounts (Florida Department of Education, 2013) for school districts.

In Canada, the provinces play an important role in guiding education sector authorities on budgeting, accounting and other financial matters. The Ontario government has provided various types of information, memorandum and training materials for school boards on financial accounting and reporting, especially after schools were required to implement Public Sector Accounting Board (PSAB) recommendations in 2003-2004 (Ontario Ministry of Education, 2004). In the British Columbia province, the Ministry of Education requires that school boards manage and spend their education funding on their own. The Ministry, however, possesses a School District Financial Reporting Branch that monitors school boards and provides them with a financial reporting framework, as well as guidance on budgeting, accounting and reporting of funds allocated to them by the ministry and other sources (British Columbia Ministry of Education, n.d.). Guidance is provided in the form of a school district reporting timeline (British Columbia Ministry of Education, 2014). The Ministry of Education also provided a detailed report on operating fund account descriptions that gave the accounting classifications/headings of the different sources of revenues and expenses, and programs related to the instruction of students for school districts (British Columbia Ministry of Education, 2006). It also included cost allocation principles to help boards allocate costs by function and programme in the reporting systems.

The United Kingdom Governors' Handbook gives guidance to governors in maintained schools (schools maintained by local authorities), academies and free schools on financial requirements and the accountability of the bodies on financial matters (UK Department for Education, 2014).

The New Zealand Ministry of Education publishes forms, guidelines and policies covering the topics of grants, finance, investment and resourcing, among others (New Zealand Ministry of Education, 2015b). The documents also tackle various financial aspects relevant to the education sector, such as guidelines on the treatment of capital works for state schools (New Zealand Ministry of Education, 2015b) and policies for boards of trustees pertaining to asset management and cash management (New Zealand Ministry of Education, 2015c). They also provide models of annual reports and financial statements for boards. The New Zealand Ministry of Education also publishes education circulars for primary and secondary education that tackle various topics including information, advice and guidelines for the preparation of annual reports, and information on the funding for schools. These circulars are aimed at state schools, boards of trustees, principals, administrators and those preparing school annual financial statement. The Ministry of Education publishes a timeline aimed at boards with the key activities for planning and reporting (New Zealand Ministry of Education, 2015d).

Laws relating to educational budgeting and accounting

Educational budgeting and accounting can be inscribed in national legislation in different ways. An Education Act, in effect in certain countries, is typically a legislation setting out the requirements and regulations for the provision of education. Education Acts may include regulations on budgeting and accounting matters. Other statutes may also include requirements pertaining to budgeting and accounting for the education sector specifically.

In New Zealand, the Education Act 1989 comprises a section (Part 8) specifically relating to financial provisions (New Zealand Legislation, 2014). The Education Act 1989 provides general guidelines and standards applicable to the annual financial statements that must be prepared by boards, including that they should be consistent with the generally accepted accounting practice, and that they should include a statement of contingent liabilities and a statement of accounting policies.

North Carolina General Statutes, enacted by the North Carolina General Assembly, has within its Chapter 115C an Article 31 entitled "The School Budget and Fiscal Control Act", aimed at achieving a uniform system of budgeting and fiscal control for public schools through a series of provisions (North Carolina General Assembly, 1975). The Act specifies the basis of accounting that local school administrative units should adopt (modified accrual basis of accounting), the fact that school food services should be included in the local school administrative unit's budget, and other information on budget procedures and budget contents (North Carolina General Assembly, 1975).

In Canada, provinces have their own education acts with specific regulations for the budgeting and accounting of the education sector. The Education Act of Ontario (Government of Ontario, 2014) comprises specific finance regulations, for instance, the estimates of revenue and expenses of school boards, which the boards prepare, shall not (apart from certain exceptions) be adopted if they indicate that the board would have an in-year deficit during the fiscal year (Government of Ontario, 2014). In the province of Alberta, the School Act and Regulations includes regulations on capital borrowing by school boards. The Saskatchewan Education Act 1995 (Government of Saskatchewan, 1995) comprises a specific section on finance, and, more specifically, on budget, taxation, school assessment, grants, and the borrowing powers of boards of education or *conseils scolaires*. The Quebec Education Act (Publications Quebec, 2014) specifies that the Minister of Education, Recreation and Sports has to establish the budgetary rules determining the amount of subsidies granted to school boards for student transportation, and how they will be granted (for all students using transportation or only specific students, for all school

boards or only school boards under certain conditions, etc.), and has to communicate them to the *Conseil du Trésor* for approval.

How are resource needs calculated for the school sector? Simulation models and other technical tools

In the education sector, forecasts or projections of resource needs can be used at different stages of the budget process and by different entities, thanks to simulation models. For example, the ministry of finance may need to forecast resource needs for education prior to setting out expenditure ceilings for the Ministry of Education and as part of the preparation of the budget circular. The Ministry of Education may also need to simulate educational resources need in order to prepare its budget request and to be able to justify its budget estimates during negotiations with the ministry of finance. In addition, other entities may need to estimate resources needs, such as intermediate level and school level authorities, for many of their decisions. Generally, simulation tools help forecast current and capital expenditure, prepare budgets, and allocate educational resources. In addition, simulation models are used as a tool for strategic planning as they allow estimating revenue and expenditure under scenario changes, such as policy changes.

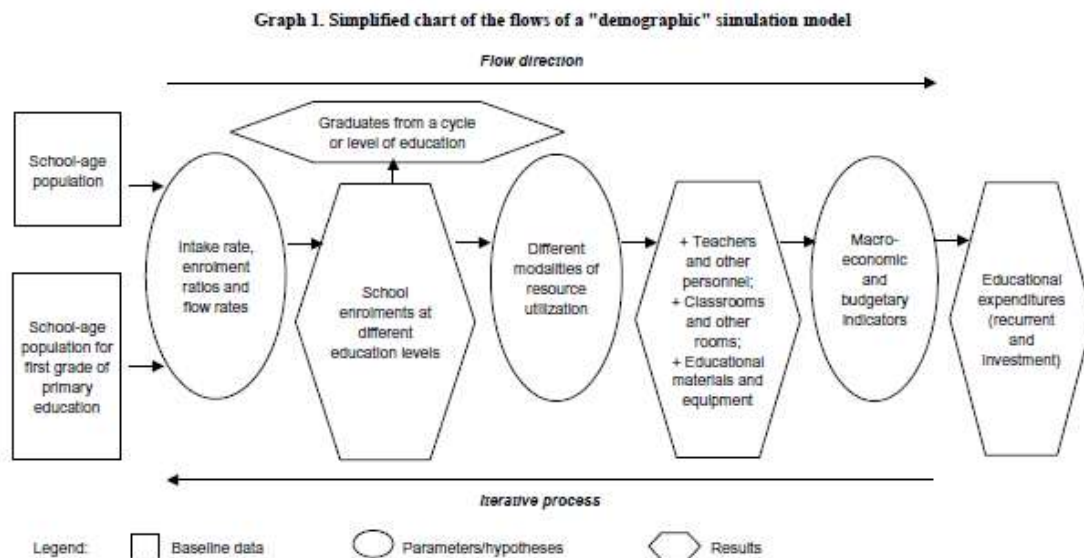
In Norway, the Ministry of Finance sends line ministries a circular letter asking them to provide expenditure projections covering the next four years based on unchanged policies, “baseline projections of unchanged policy”, along with proposals for new policies. Baseline projections are then used as a starting point for political discussions in order to decide total revenue and spending limits, total limits for new policies, and ministerial revenue and expenditure limits (Anderson, Curristine and Merk, 2006).

In New Zealand, the Ministry of Education uses projections and forecasts of school rolls in order to determine the resource needs for schools (New Zealand Government, 2011). These include forecasts of the expenditure on teachers’ salaries, schools’ operations grants, and student allowances. The forecasts are also used for the preparation of the Government’s five-year budget forecasts (New Zealand Government, 2011).

Countries have different methods for estimating resource needs, and within countries, different authorities may also use different methods. For example, computer simulations construct forecasts of education expenditure based on baseline data and hypotheses input or simulation parameters (Chang and Radi, 2001), which may vary across countries. It is possible, however, to identify some patterns in the models used. Some models focus on the stock of human capital (reflected by the education attainments of a population by age and sex across categories), while others focus on flows of students in the education system (Dickson, Hugues and Irfan, 2010). Some models are purely extrapolative models (extrapolative enrolment trend projections) while others are more normative (Dickson, Hugues and Irfan, 2010). Most of the time, baseline data used for estimating resource needs are the following:

- **Demographic data:** population projections by age and sex, gender parity indices, estimated fertility levels and infant and child mortality levels (Dickson, Hugues and Irfan, 2010).
- **Macroeconomic and budgetary indicators:** GDP, share of education expenditure in the total government expenditure and in GDP, the national budget, the GDP growth rate (Chang and Radi, 2001).
- **Data on students flows/education data to measure student flow forecast:** intake, promotion repetition and drop-out rates, transition rates (Chang and Radi, 2001), primary and secondary enrolment rate data, average entry and completion rate patterns, educational attainment levels, literacy, student headcounts (Dickson, Hugues and Irfan, 2010).
- **Data on pedagogical orientations:** classroom management, use of education personnel, regulations on the student flows, etc. (Chang and Radi, 2001).

Figure 1. Student flows



Source: Chang, G.-C. and M. Radi (2001), "Educational planning through computer simulation", *Education Policies and Strategies*, No. 3, http://portal.unesco.org/education/en/file_download.php/d5f7d7a356dbcfa333486d44e86065a6DocSimUK.pdf.

In some models, it can be assumed that policies are unchanged, or different scenarios, such as policy changes, can be simulated, for example an increase in public investment in education as a percentage of GDP.

According to Chang and Radi (2001), the two main types of simulation models are the demographic model and the budgetary model. The demographic model, which is the most used across countries, is a simulation model that calculates educational expenditure. In this model, enrolment targets are imputed and the model calculates the budgets that will be needed in the coming years in terms of human, physical and financial resources. In the budgetary model, the decision variable is the national education budget, which means that the national education budget can be controlled. In this model, the calculations lead to the determination of enrolment targets based on the national general budget (Chang and Radi, 2001).

Example of models applied in international organisations and governments

International Futures is a computer simulation for forecasting that proposes a model specific to the simulation of education participation and attainment (Dickson, Hugues and Irfan, 2010). It determines education demand supply and flows based on three drivers:

Accounting system (student and budgetary flows, education attainment of the adult population).

Dominant relationships (intake demand, survival rate and education cost: these are driven by household income and non-income systemic factors, per capita income).

Key dynamics (demographic change, economic development, public education spending, balance between demand and supply of education funds) (Dickson, Hugues and Irfan, 2010).

Cohort-projection models focus on the grade-by-grade dynamics of student flows, and are often used by countries to meet education system operational planning needs by projecting numbers of students by

grade and level and the school resources therefore needed (Dickson, Hugues and Irfan Unesco Education Policy and Strategy Simulation Model, EPDC Demo Ed Model, *Modelo de Necesidades de Financiamiento* - MNF, World Bank model group (Porta and Wils, 2007).

General simulation tools include ANPRO and MESANGE used by the French government, Demosim used for demographic projection by Statistics Canada, Statmath (*Institute für statistische Prognosen*) and NemeSIS.

Country practices

Some countries make available the basic methodology used to calculate enrolment projections for the projection of expenditures. However, detailed methodology on expenditure forecasts is not often publicly available.

The District of Columbia Public School (DCPS) published the methodology based on which it prepares enrolment projections used for budgeting purposes (Appendix H, District of Columbia Public Schools, 2011). Step 1 specifies that four years of enrolment history are used, and a grade by grade trend is applied at each individual school to adjust the rising cohort numbers. For example, if a school has a history of losing 10 percent of its rising grade 5 class, that loss rate will be applied to that year's grade 4 enrolment. This cohort model has proved to be the strongest predictor of future enrolment, according to the District of Columbia Public Schools (District of Columbia Public Schools, 2011).

In California, the Department of Finance publishes enrolment forecasts (State of California Department of Finance, 2013) using grade progression ratio (GPR) and a cohort-survival projection models to project enrolment from kindergarten through to twelfth grade and high school graduates.

- The GPR is the result of dividing the enrolment in one grade level by the enrolment in one lower grade from the prior year and represents the proportion of students expected to progress from one grade to the next. The most likely progression model is chosen based on analysis of historical trends and knowledge of the migration trends and demographic characteristics of each county.
- Entering cohorts of kindergartners and first graders are projected using actual and projected births. The best fitting progression ratios are chosen independently for the projection of each grade, including high school graduates. The state total by grade is the result of the summation of the projections by grade at the county level (State of California Department of Finance, 2013).

In New Zealand, National School Roll Projections are prepared by the Ministry of Education's Schools Analysis Unit. Several projections are done in order to analyse the effects of different scenarios and assumptions. To construct the forecasts, the Ministry of Education prepares three versions of roll projections: low, medium and high, in order to account for different risk levels. The medium projections are those usually used in the financial forecasting calculations and for planning purposes (New Zealand Ministry of Education, 2011). According to the Ministry, the determinants and drivers behind the roll rates, which are used in order to calculate the medium projections, are births/fertility levels, migration levels and progression/retention rates, but these are assumptions. (New Zealand Ministry of Education, 2011). The Ministry uses other models for Special School Enrolments and Home Schooled Students.

Types of budgeting in the school sector

There are differences in the approaches to budgeting and the allocation of resources depending on whether they are flowing from the central government to the line ministries, from the Ministry of Education to intermediate level authorities, or from intermediate level authorities to schools.

There is limited information on the detailed factors informing budget decisions at the system level, especially on the budget decision-making by the ministry of finance for allocating budgets to the different line ministries. It is possible that the ministry of finance adopts a similar approach to budgeting across all line ministries budget, with no significant specificity for the education sector. Budget processes in many countries highlight the fact that Ministries of Finance take into account budget requests from line ministries, as well as other sources of information, such as economic and demographic data, in order to decide budgets. In addition, it appears that budget negotiations between the ministry of finance and line ministries play a key role in the definition of the final budget. However, the detailed methods used, for instance the degree of importance granted to past budgets or the tools and models used, are usually not detailed in publicly available information, particularly with budgeting resources across line ministries. There is greater information on the budgeting of resources flowing to lower levels of authorities, by either the central government (Ministry of Education) or the intermediate and school level authorities. There may be greater requirements in terms of transparency and accountability at these levels, explaining why more information exists.

Performance information and performance budgeting (or results-based budgeting)

The first part of this section considered performance information in the budget process, and showed that although performance information rarely determines budgeting decisions, it has gained a greater importance in the budget process as a source of additional information for better informed decision-making. Therefore, performance budgeting in strict terms is rarely effective in countries, however as shown by the following examples, a performance-based budget structure is adopted in some countries in the education sector.

In Wales there are four regional education consortia. Grants are provided to consortia, but the consortia may be required to provide information on performance in terms of inputs activity (recruitment of outstanding teachers, etc.), outputs (evidence of activity, such as number of teachers receiving a specific training) and outcomes (the difference/impact, such as improvement in literacy and numeracy levels) (Welsh Government, 2013).

In New Zealand, the Education Act 1989 requires that the Minister of Education each year prepares and presents a report to the House of Representatives on the performance of the schools' sector, which includes information on the supply of outputs, management performance, and educational attainments (New Zealand Legislation, 2014).

In the United States, performance budgeting is used for activities within the education sphere that are discretely measurable, so it does not concern a major part of education sector (National Centre for Education Statistics, 2003).

In Thailand, ministries and agencies have to submit performance reports with key performance indicators during and at the end of the year, in order to assess their progress towards the achievement of agreed outputs. Input-based budgets still exist because of the difficulty for some agencies to cost their outputs. The format of the budget is therefore based on performance and results as well as inputs. However, in recent years there has been a decreased control over inputs, which has resulted in appropriations for operating expenditures to merge into only two categories: salaries and other operating expenditure. Ministries and agencies have gained authority over operating expenditure budgeting (Blöndal and Kim, 2006).

In Norway performance-based funding is in place in some sectors, for example, universities are paid based on the number of students who graduate (Anderson et al., 2006).

Poland has adopted a performance-based budget structure. However the structure is not supported by the current chart of accounts or the budget IT system, making the transition from the old to the new system of performance-based budget structure difficult. Therefore, ministries and agencies have to find their own ways to translate the current budget structure into the performance-based system in order to prepare financial plans and reports. The inclusion of performance information in the budget process has had various interpretations and uses in the different agencies. The Ministry of National Education, for instance, uses indicators and targets for internal management and to explain what the ministry will do with the taxpayers' money. After the introduction of performance-based budgeting, the education sector was one of the only sectors where performance information really played a role in the budgeting process. The Ministry of Education has emphasised the benefit of performance-based budgeting as a means of encouraging a new way of thinking about policy preparation and execution by the senior management in the Ministry (OECD, 2011a).

Denmark uses a formula for performance budgeting called the taximeter model in several policy sectors, including education (in vocational schools and upper secondary education). With the taximeter model, funding is provided based on the annual statement of activity levels, for example, the number of units performed, agreed unit prices and quality requirements (in the education sector, the units refer to the number of students). The models are different across sectors, for instance in the education sector, grants are provided to schools based on the schools' direct results and measured in terms of annual full students numbers or student full-time equivalents (OECD, 2011a).

In Austria, there have been efforts to move from an input-based type of budgeting formation to a performance-oriented regime (Blöndal and Bergvall, 2007).

Output and outcome based budgeting

Australia's government has moved away from inputs by introducing an outcomes and outputs framework with the 1999/2000 budget. Prior to the outcomes and outputs framework, budgeting was based on running costs (salaries and other operating costs) and programmes. Agencies received one lump-sum appropriation covering all running costs and there was a separate appropriation for each programme consisting, mainly, of transfer payments. Under the outcomes and outputs framework, each agency is required to identify outcomes that will be the exclusive legal basis for appropriations approved by the parliament. Portfolio Budget Statements support the budget and agencies identify the outputs to be produced and the administered items that will contribute to these outcomes. Portfolio Budget Statements are not binding (Blöndal et al., 2008). Agencies need to assess their achievements relative to their Portfolio Budget Statements in annual reports, and are expected to measure performance in terms of the effectiveness of agency outputs and administered items for achieving outcomes, and the efficiency of agency outputs for quantity, quality and price (Blöndal et al., 2008). The majority of agencies have only one outcome, and most agencies have one to ten outputs.

In Ireland, each programme expenditure includes budget estimates and the integration of outcome information, objectives and financial and human resources information (Ireland Department of Education and Skills, 2014).

In Finland, reforms have led to greater integration of results information in the budget process. For instance, results targets and information are included in budget documentation. There has been a relaxation of input control by the government and efforts towards the achievement of a performance and results-oriented budget. In addition, the funding process between state and independent municipalities integrates lump sums and block grant transfer, and is less based on costs (Blöndal et al., 2002).

Programme-based budgeting

In the context of the education sector, programme based budgeting can enhance the analysis of cost structures of production units, such as educational establishments, due to comparisons over time or across regions, in an attempt to achieve a budget with minimal costs per output (Kraan, 2007).

In the United States, programme budgeting is mostly used for planning purposes as the allocation of resources stays at an organisational unit level rather than programme level in many schools in the United States (National Center for Education Statistics, 2003).

In 2002, the Netherlands switched to a programme and performance budget. The budget is therefore based on government programmes with a set of policy goals and activities associated (De Jong et al., 2013).

Different methods for defining, analysing and renegotiating the budget

Zero-based budgeting

In the United States, zero-based budgeting is rarely applied in schools (National Center for Education Statistics, 2003), although it may be used at some levels of authority. For example, zero-based budgeting is in effect in Georgia's state government, and education has become one of the key sectors where it has been applied since the fiscal year 2014 when the zero-based budget included a section on the Department of Education's programmes. For each programme (agriculture education, charter schools, curriculum development, quality basic education, etc.), the programme's purpose and activities are detailed as well as the corresponding budget. The description of activities attempts to justify the expenditure that will need to be covered (State of Georgia, n.d.; Walter, 2012).

Gender budgeting

There are few OECD countries effectively using gender budgeting. One example is Austria that introduced gender responsive budgeting and gender impact assessment as part of the performance budgeting framework in 2013. The principle is also enacted in the Austrian Federal Constitution Article 13 paragraph 3: "Federation, Laender and municipalities have to aim at the equal status of women and men in the budget management". The application of gender budgeting within the performance and outcome budgeting framework has meant that since 2013, ministries are required to implement the effective equality of women and men as one of the principles of outcome orientation in budget management (Bundesministerium für Bildung und Frauen, 2014). In the municipality of Wien, for example, budget preparation integrates the indication of gender differences in an attempt to allocate resources equally between genders (Vienna City Administration, 2012). In the provisional budget, a section on gender budgeting is included, with one of the gender-specific goals being to increase male student participation in educational institutes for pedagogy of kindergarten (Vienna City Administration, 2012).

The UNESCO Bangkok advocacy brief describes procedures for the application of gender responsive budgeting to the education sector more specifically (Ichii, 2010).

Allocation of budgets: Forms of funds and funding mechanisms

The form of funds transferred to intermediate authorities and schools

There are three forms under which funds are transferred to schools: lump-sums, block grants, and earmarked grants (Eurydice, 2014b).

- **A lump sum** is a fund transferred from the central to the regional or local level authorities that covers a range of public services (Eurydice, 2014b). In countries where a lump sum is allocated to intermediate authorities, the intermediate authority has the decision making power over the proportion of the lump sum to be allocated to education, but is constrained by the limits imposed within legislations and regulations and by the need to balance other public services' needs. The intermediate authority does therefore not enjoy full autonomy in the allocation of lump sums to education. In about one quarter of the countries covered, intermediate level authorities receive lump sums from the top-level authorities.
- **A block grant** is a form of financial resource given by the grantor for specific purposes and can be attached to more or less restrictive guidelines. When an intermediate authority receives block grants, the amount of the block grant allocated to education is usually set by the central government, while the intermediate authority decides on the distribution of the block grant between the different resource categories. In Greece, for instance, municipalities receive block grants and have the power to decide on the distribution of the fund across the different categories. Six of the countries covered are provided with a block grant (Eurydice, 2014b).
- **Earmarked grants** are given for a specific use and under certain condition. When the central government provides earmarked funds to the intermediate and/or school levels it guarantees a certain level of funds for specific educational purposes and reinforces the central government authority over education financing. In contrast, the sub-system levels enjoy less autonomy over the spending patterns in education in this context (UNESCO, 2013).

Education funding models and mechanisms, and the distribution of roles and responsibilities

There are two main models of education funding noted in the Eurydice report (2014): the allocation of resources to schools based on **pre-defined criteria**, and the allocation of resources based on **schools' estimated needs**. In general, with the second model the intermediate authorities have greater power over the levels of resource allocation.

According to Fazekas (2012), it is possible to further distinguish three different funding mechanisms that are most often used by countries: formula funding, budgetary approval (or "bidding" in OECD terms), and discretionary determination of resources:

With **budgetary approval**, schools and other authorities prepare and submit budgets to be approved and allocated by the funding authority. The actors in the lower levels therefore play an important role in the budgeting process.

With **discretionary determination of resources**, the funding authority enjoys full authority over the determination of resource allocation after analysing the spenders' resource needs.

With **funding formulae**, the funding is based on a set of criteria usually controlled by the central government. However, there are few studies that clearly explain who makes decisions about the cash amounts, relative importance of variables, and sets of indicators used to establish the funding formula (Fazekas, 2012).

The following paragraphs will give some country practices of these forms of funds and funding mechanisms, including examples of the criteria used in funding formulas.

In Estonia, the allocation of state budget to local governments depends on the number of students in municipalities and on regional coefficients (Estonian Ministry of Education and Research, 2015). In the

Slovak Republic, the allocation of the state budget to elementary schools (and high schools) is determined at the central level based on the number of student in each school. The allocation of state funds to individual schools is then determined by founders of schools (Educational Policy Institute, 2015).

In the United States, the budget request of fiscal year 2015 for education is mainly composed of a formula grant programme for vulnerable students. States and school districts also receive competitive awards if they commit to educational innovation and transformation, but most of the budget request is based on formula funds for disadvantaged, poor and minority students, students with disabilities, and English learners. (United States Department of Education, 2014). The methods to allocate funds to schools may differ across geographical regions, as shown in the next two examples:

In New York City, school budgets are funded mainly through the Fair Student Funding based on a Fair Student Funding formula (New York City Department of Education, 2012). This formula is based on:

- The foundation: a fixed sum or lump-sum for all schools that is not tagged so that schools have discretion on how to spend it.
- Grade weights: based on the student grade level.
- Needs weights: based on student needs (student achievement upon entry for schools beginning in 4th grade or later, poverty when test results are not available, English–language learner status, Special Education, etc.).
- Enhanced weights: for students in “portfolio” high schools (specific categories of high school).

The Office of Student Enrolment (OSE) of New York City develops a projected enrolment for schools, calculated with a web-based register tool. The grade and special weights are then based on these projected enrolments. Principals can appeal these projections based on their own developed projections if they wish to. In addition, the model, in order to estimate needs weights, uses test score data for pupils from the prior year.

In the State of California, school districts have shifted from a funding model based on a “revenue limit” funding (fund used for general purposes and based on complex formulas) and categorical funding (funding through programmes serving a specific need passed by the Legislature, such as school safety programmes and building maintenance programmes), to one based on a base grant per student, plus additional funds calculated with the number of high needs and low-income student enrolments (EdSource, n.d.). Therefore school districts have discretion over how to spend their base grant compared to the categorical funds. The funding formula to calculate the base grant will be similar for each student depending on the grade level of students. The grant is allocated on a per student basis with differences based on the grade level in addition to a cost-of-living adjustment. The new funding formula will be phased in gradually over the next eight years, starting in 2013-14 (EdSource, n.d.).

In Latvia, the Ministry of Education and Science has shifted the funding mechanisms for schools from one that was based on the number of teachers to one based on the number of pupils (Kraan et al., 2009). The new financing model “money follows a pupil” aims for more equality and transparency in the allocation of resources to cover teachers’ salaries (European Agency, 2013).

In Lithuania, funding for primary and secondary schools is based on the “student basket”. The Ministry of Education and Science prepares the methodology for calculating this “student basket”, which is used to allocate state funds to the municipalities on the basis of student population, class size, qualification of teachers, urban versus rural geography, and other factors. The approximately 1 300 elementary and

secondary schools are then funded as “autonomous functions” through the municipalities (Hawkesworth et al., 2010).

In Korea, local education authorities receive local subsidies for education. These local subsidies are composed of general and special subsidies. General subsidies are targeted at education units with standard fiscal income below the standard fiscal demand. The amount of the general subsidy will be based on the level of this deficiency. Special subsidies are granted at the time of special fiscal demands, such as a national policy, pending demands for local education policy or a decrease in revenue (Korea Ministry of Strategy and Finance, 2014).

In the United Kingdom, Dedicated School Grants (DSG) and pupil premiums are allocated to local authorities based on historic data. The Department for Education (DfE) publishes the methodology under which this grant allocation is performed. In addition, there are conditions attached to grants, namely the requirement to use the grant in support of the Schools’ Budget and a provision for the Secretary of State to recover the grant (UK Department for Education, 2013). The amount allocated to individual schools is decided by local authorities based on another formula for local schools’ funding. The DfE still has a role to play in the funding system between the local authorities and schools as it provides local authorities with assistance in the decision over their local funding formula, and decides which factors are optional and which are required. The mandatory factors to include in the local formula for 2013-14 were basic per-pupil entitlement and deprivation, and other optional factors, such as, looked after children, low cost-high incidence special educational needs, English as an additional language, lump sum, among others (UK Department for Education, 2012). Finally, the DfE has a support function role as it aggregates and publishes information on all local authorities’ funding formulas (Gov.uk, 2015). According to Edwards and Ezzamel (1998), although the local management of schools in the UK initially appeared to have given more autonomy to the local level, it has actually reinforced the power of central government agencies over budgeting and accounting.

In Brazil, approximately one half of total tax revenue is earmarked, mainly in the social sectors of education, health care, housing and social benefits. This earmarking in bulk seems to have the same effect as setting expenditure ceilings for the sectors and allocating amounts across programmes, and means that there are rigidities in the budget formulation for sectors. In recent years there have been efforts to shift toward results-oriented budgeting through, for instance, the determination of quantitative targets for each programme. The quantitative targets are usually based on changes in the social indicators computed by agencies (Blöndal et al., 2003).

Chart of Accounts

As seen previously, accounting and budgeting are influenced by the Chart of Accounts and the Budget Classification. Chart of Accounts establish the standard accounting codes for revenue and expenditure transactions in the public sector. The Charts of Accounts therefore affects the preparation of financial reports, and ministries and agencies are required to submit budget requests that are consistent with the accounting codes it outlines. Specific accounts and classifications may also pertain to education.

In Australia, the Standard Chart of Accounts (SCOA) includes guidelines specific to the education sector, such as the need to include libraries and educational resources under the account named “Plant and Equipment” within the Assets. It also states that the account “Client Support Services” should include costs associated with the provision of education and support, tutoring and pre-school support, education fees and child care support (Council of Australian Governments, 2010).

The Abu Dhabi Chart of Accounts incorporates a specific account entitled “Education Services Fees”, which includes student registration fees, and is located in the section Administrative fees of the Charges for

Sales of Goods and Services (Abu Dhabi Department of Finance, 2010). The Chart of Accounts also specifies a typology of education services to be included in the expenses, along with public-private partnerships grants and subsidies in the education sector, grants to educational organisations, infrastructural assets for educational development (such as kindergartens, primary schools, secondary/intermediate schools, vocational/technical colleges, and school curriculum development) among other education-related accounts (Abu Dhabi Department of Finance, 2010).

The “Budget System of Korea” report specifies the classification/special accounts for education expenses by revenue source (Korea Ministry of Strategy and Finance, 2014). The Local Education Subsidy Act established by the Korean Ministry of Education, Science and Technology, pertains to the subsidies that the State grants to local governments. The Act specifies: that these subsidies should be divided into general subsidies and special subsidies, granted by the Minister following specific requirements, that the State shall revise subsidy rates in the event of significant changes in the demand for personnel expenses (increase of teachers, increase of educational institutions, etc.), and there other articles covering aspects related to the subsidies.

In the United States, the different states can have specific Charts of Accounts to assist schools with the management of their financial resources. The States’ Departments of Education usually publish a manual for school districts in the state with guidance on budgeting and accounting. The latter must be consistent with the GASB and other standards set at the national level. Examples include:

- The Georgia Department of Education Chart of Accounts specifies code classifications related to the education sector, for instance, transportation fees are defined as “revenue from individuals, welfare agencies, private sources, or other school districts and government sources for transporting students to and from schools and school activities.” There are also specific codes related to breakfast and lunch programs, and codes related to grants/entitlements for educational purposes (Georgia Department of Education, 2013).
- The New Jersey Department of Education has published a handbook on the Chart of Accounts for school districts (State of New Jersey Department of Education, 2008). The accounts are divided into fund, revenue, expenditure, balance sheet and other specific accounts. The codes are very specific to the school sector, for instance, within the funds classification there are specific codes for school-based budgets (accounts for revenues and expenditures) and for student activity funds (funds owned operated and managed by student bodies such as student clubs, choral and band groups, student councils). Within the revenue classifications, there are specific codes for tuition from summer school, and revenue from dispensing food service, textbook sales and rentals, etc. The codes for expenditure are: programme-based, function-based (instruction, educational library services, student transportation services, etc.), and object-based (salaries, employees benefits, amounts paid for supplies and materials, etc.). Within the balance sheet accounts, there are specific codes for budgetary accounts in terms of revenue and expenditure. These accounts allow for the comparison of budgeted and actual revenue and experiences, and therefore discourage overspending. In these sections an account is designated for appropriations, which corresponds to the amount authorised by the school board or legislative body for expenditure after the annual budget is adopted.
- The Louisiana State Accounting and Uniform Government handbook (Louisiana Department of Education, 2010) details the classifications of accounts, which are divided into revenue, expenditure and balance sheet.

In Canada:

- The Ontario Ministry of Education recently published a guide on Chart of Accounts for *conseils scolaires* detailing the financial information required and providing a definition of accounts (Ontario Ministère de l'Éducation, 2014).
- The government of Saskatchewan has provided guidelines on the Chart of Accounts adopted by the Ministry of Education (Government of Saskatchewan, 2014). The Chart of Accounts is divided into five mandatory account segments (fund, category, function, object and sub-object) and two optional segments (programme and location). The five mandatory account segments are required by the ministry of finance and for the preparation of year-end financial statements. The fund account segment is composed of the account for operating fund; the category account segment corresponds to financial statement categories (revenues, expense, financial assets, liabilities, non-financial assets, accumulated surplus/deficit); the function account segment corresponds to line items of financial statements; the object account segment corresponds to a breakdown of function accounts; the sub-object account segment provides a breakdown of the object accounts; the programme account segment allows for the identification of items by programmes carried out by the school division; and the location account segment allows to identify items by specific locations (Government of Saskatchewan, 2014).

In the United Kingdom, the Common Chart of Accounts is applicable across central government and uses a single set of codes for financial reporting based on the codes already used in the HM Treasury budgeting system, OSCAR. This should allow for a greater consistency of reporting and easier communication of financial information between departments (GOV.UK, 2013).

SECTION 4: EVALUATION AND MONITORING OF SYSTEM-LEVEL BUDGETING AND ACCOUNTING

Monitoring and evaluation are two complementary but distinct processes (OECD, 2011b). Under OECD terms, monitoring refers to “a continuing function that uses systematic collection of data on specified indicators to provide management and the main stakeholders of an ongoing development intervention with indications of the extent of progress and achievement of objectives and progress in the use of allocated funds” (OECD, 2002b). In other words, monitoring focuses on systematically tracking inputs, outputs, outcomes and impacts as interventions are implemented (OECD, 2011b). Evaluation is defined as a “systematic and objective assessment of an on-going or completed project, programme or policy, its design, implementation and results (OECD, 2002b). In other words, evaluation systematically assesses the efficiency, effectiveness, sustainability and impact of interventions typically after they have been implemented (OECD, 2011b). Together, monitoring and evaluation allow policymakers to track results, suggest corrections or improvements during implementation, and to assess success (OECD, 2011b).

This section will focus on the use of monitoring and evaluation with respect to the implementation of a policy, programme or project. The report has already discussed how performance information and evaluation tools, such as cost-benefit analysis, can be used during the budget formulation stage, and this section will consider how these tools are present in the different stages of the budget cycle and how the evaluation stage helps to prepare the budget formulation stage for the next budgetary cycle. It will also focus on monitoring and evaluation with regards to budgeting and accounting, however the full extent of monitoring and evaluation topics will not be covered. Specific tools, measurements methods and indicators used to support an evaluation framework will also be discussed.

Evaluation and the use of performance information

Twenty-six OECD countries in 2005 reported to use performance measures and evaluation to assess performance (Curristine, 2005b). According to the OECD, evaluation primarily aims to improve the effectiveness of programmes or the efficiency of expenditure (Schick, 2014). Could we please add this paragraph? The World Bank has for instance developed a tool for public expenditure analysis called BOOST, which is based on data collected from national treasury systems (including government expenditure data on education). While it is not primarily directed at OECD countries, BOOST datasets have been developed for Mexico and Poland. By linking detailed public spending data (‘fiscal micro-data’) available in BOOST with other sector indicators, the tool facilitates the performance of efficiency and effectiveness analyses of resource use in education. It also allows to perform within-country benchmarking and to monitor resource allocation and budget execution over the years.

Evaluation findings can be used for several purposes in the budget cycle and budget preparation stage, and the results of evaluation activities inform different actors involved in the budgeting process of the success of policies, programmes and projects, and help to define the budget for the following year (Curristine, 2005b). Approximately half of OECD countries used evaluation findings in negotiations between spending ministries and the ministry of finance for budget preparations in 2005, with the remaining half rarely or never using evaluation findings. An OECD study found that performance measures are more often used in negotiations than the findings of evaluations (Curristine, 2005b), however these measures are rarely used to eliminate programmes or to cut expenditure. The study also found that

recommendations from evaluation activities were only partially followed up by the sector and central authorities (Marcel, 2012).

Evaluation activities are often more widely used by spending ministries for their own purposes than for the budget formulation process. In many OECD countries, evaluation activities are commissioned and conducted by the spending ministries or national audit offices and are used to define strategies and set targets (Currstine, 2005b).

Evaluation activities can take several forms, including programme evaluation, where the activities undertaken by ministries and agencies are assessed against a set of objectives or criteria (OECD, 1997). Programme evaluation may be carried out internally or by a third party, such as the ministry of finance, the supreme audit institution, or external consultants (OECD, 1997). The necessary data inputs must be comprehensive and accurate for the monitoring and evaluation to be of good quality and reliability.

Benchmarking

Under OECD terms, benchmarking is the process of comparing performance against that of others in an effort to identify areas of improvement (OECD, 2006). In this sense, it is an efficiency tool used to improve value for money offered by public services, such as education (Cowper and Samuels, 1997). Twelve OECD countries out of 28 participating in a 2005 survey reported using benchmarking for performance assessment purposes (Currstine, 2005b).

Benchmarking techniques are important in the strategy of the UK government to improve the value for money offered by its public services (Cowper and Samuels, 1997). The Department for Education has developed a framework for better value for money in the education sector that emphasises the use of benchmarking. It publishes performance tables annually that include information on schools' spending (Cowper and Samuels, 1997), classified by income and expenditure type. With this publicly available data, various interested parties can track schools' spending and the outcomes achieved. There is also a website for schools' financial benchmarking to allow schools to benchmark spending and performance (UK Department for Education, 2014).

Measures of attainment are also displayed as part of this framework, with data available on: progress measures (in reading, writing, maths, etc.), absence levels, and finance (income per pupil from grant funding and self-generated income, expenditure per pupil for teaching staff, supply teachers, education support staff, learning resource, ICT learning resources, catering, premises, energy, etc.) (Cowper and Samuels, 1997).¹⁴

In 1993, the UK's Audit Commission set key performance indicators to assess the performance of local authority activities, including indicators for the education sector (Cowper and Samuels, 1997).¹⁵ Since the Local Government Act 1992, the Audit Commission has produced annual comparative indicators of local authority performance (Cowper and Samuels, 1997), that include, for instance, the percentage of three- and four-year-olds with a school place within the local authority, expenditure per primary school pupil, expenditure per secondary school pupil, and the percentage of draft special educational needs statements prepared within six month periods (Cowper and Samuels, 1997).

¹⁴ Details of the 2013 measure in the performance tables can be found at www.education.gov.uk/schools/performance/archive/Statement_of_Intent_2013.pdf. The performance tables of schools for benchmarking purposes are available at www.education.gov.uk/schools/performance/.

¹⁵ The Audit Commission is a non-departmental public body tasked with auditing local authority expenditure in England and Wales (Cowper and Samuels, 1997).

Cost-benefit analysis

Cost-benefit analysis is an evaluation technique that allows comparisons to be made between different projects. It is usually applied to projects where the benefits can be expressed in monetary terms (Finland Ministry for Foreign Affairs, 2007).

Cost-benefit analysis can be used prospectively or retrospectively (“ex-post”). This paper focuses on ex-post cost-benefit analysis, which is carried out after a policy has been implemented to assess its returns and whether or not it should be continued.

The European Expert Network on Economics of Education’s (EENEE) 2014 analytical report explores in detail the use of cost-benefit analysis in educational programmes around the world, focusing on how it is used for creating policies rather than for evaluating programmes. The report highlights that cost-benefit analysis is less frequently used in the education sector than in areas such as health and employment, and is less common in Europe than in the United States. This may be because cost-benefit analysis is more often used for internal purposes and its findings are not always available to the public (Münich and Psacharopoulos, 2014).

In the cost-benefit analysis of an educational programme, the different costs that must be taken into account include public expenditure on teacher and other staff salaries, school buildings, teaching equipment, tuition fees charged to parents, and other schooling expenses by parents, for instance books and pens (Münich and Psacharopoulos, 2014). The benefits of the educational programme are then calculated in monetary terms, which may be a complicated task. Münich and Psacharopoulos (2014) provide a comprehensive picture of the considerations for conducting a cost-benefit analysis of an educational programme.

Financial audits

Audit bodies are in charge of the evaluation and monitoring of a ministry’s budget once it has been implemented. The audit body can be either located within the ministries, government-wide, or an independent external body: “A supreme audit institution” (Robinson, 2011). Supreme audit institutions are mandated by parliament to audit the budget implementation and to report to the parliament (OECD, 2002a).

In all OECD countries (no data for Iceland), the government presents a comprehensive financial report covering spending and revenue, and explanations of any discrepancies between them, at the end of the fiscal year, with 25 countries producing additional mid-year reports (OECD, 2014). The annual report includes information regarding assets and liabilities accounts and changes in their levels compared to the previous year (Deng and Peng, 2011). It is performed by an agency outside of the government (Deng and Peng, 2011) that may also be mandated with the assessment of budget results for efficiency, effectiveness and economy perspectives.

In Lithuania, the National Audit Office of Lithuania, along with municipal auditors, supervises the use of financial and material resources (Lithuania Ministry of Education, 2014). On a national level, the quality assurance of education is performed mainly by the National Agency for School Evaluation (Lithuania Ministry of Education, 2014), which works as a coordinator of school-level self-evaluation on performance and contributes to the data gathering for education monitoring. It also selects, trains and certifies the experts that will conduct the external evaluation of school performance (Lithuania Ministry of Education, 2014). In Lithuania, there are several tools and techniques to assess effectiveness and efficiency in the education sector. For instance on a national level, national education monitoring indicators provide the basis for assessing effectiveness and efficiency of education. These indicators include the number

of pupils per one qualified teacher, the average number of pupils in a class/group, qualified teachers and administrative staff ratio, percentage of pupils of at least level 3 in OECD PISA research, graduation and dropout rate of educational programmes, and employment rate of higher education graduates (Lithuania Ministry of Education, 2014). The Lithuanian education management information system informs on such indicators. Some indicators are directed to school founders and school heads to support them in their budget analyses, for example, the average school area per single pupil, or heating costs.

In Finland, the National Audit Office (NAO) is the Finnish supreme audit institution and is affiliated to parliament. The NAO audits the state's finances, monitors and evaluates fiscal policy and oversees election and party funding. It also ensures that public funds are spent according to parliament's decisions, in compliance with legislation and wisely and that fiscal policy is exercised in a sustainable manner (National Audit Office of Finland, n.d.).

Spending reviews

Spending reviews are a form of evaluation that are often the responsibility of the ministry of finance, in comparison to the other evaluation methods that are usually carried out by spending ministries (OECD, 2011d). The OECD definition of a spending review is: “The process of developing and adopting savings measures, based on the systematic scrutiny of baseline expenditure. Spending reviews may be efficiency reviews (focused on savings through improved efficiency) and/or strategic reviews (focused on savings achieved by reducing services or transfer payments)” (OECD, 2013d).¹⁶

Spending reviews are an important tool for generating information and increasing knowledge on the efficiency and effectiveness of programmes (Marcel, 2012). In the budgeting process, there is a significant information asymmetry due to the fact that spending ministries tend to focus on new spending proposals rather than on savings proposals. Spending reviews may include a percentage savings target that will require the spending ministries to reconsider their programmes. In such spending reviews, different funding scenarios and their expected outputs and outcomes are considered in order to decide on and reprioritise budget allocation. Spending reviews are also used for setting medium-term expenditure frameworks (OECD, 2011d), and may be conducted in order to set the sectoral or unit sub-ceilings of expenditure in the budget preparation stage.

Spending reviews can be divided into four stages, with different agencies often having decision-making power at different stages. In general, the ministry of finance, spending ministries, the cabinet or “political leadership”, and, to a lesser extent, external players such as civil servants have a central role in spending reviews (OECD, 2013d). These four stages are:

- **The establishment of the spending review framework.** Deciding the key design features of the spending review system, such as whether it covers budgetary or mandatory government expenditure, is comprehensive or selective, and whether it focuses on efficiency or strategic savings. Decision-making power is usually held by political leaders and the ministry of finance.
- **The setting of parameters of the specific spending review round.** Deciding review topics, criteria and questions to be addressed during reviews, the magnitude of saving targets, detailing the dates in the spending review calendar. Decision-making power is usually held by political leaders and the ministry of finance.

¹⁶ For more information on principles for the conduct of spending review, see [www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=GOV/PGC/SBO\(2013\)6&doclanguage=en](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=GOV/PGC/SBO(2013)6&doclanguage=en).

- **The development of savings options to propose to final decision makers.** The development of savings options is usually done by the ministry of finance and the spending ministries, and external players can play a support role in this stage. The roles of the ministry and finance and spending ministries depend on the approach adopted by the country with regards to the spending review. There are three main approaches across OECD countries:
 - In a bottom-up spending review approach, spending ministries are required to identify savings options. Internal teams within spending reviews are responsible for this. This approach has been adopted by Canada, the United Kingdom and Ireland.
 - In a joint spending review approach, the spending ministries and the ministry of finance constitute joint review teams in order to identify savings options. This approach is adopted by the Netherlands and Denmark.
 - In a top-down spending review approach, the review teams are composed primarily by a member of the ministry of finance, and the spending ministries have a limited participative role and power. There is no need for the approval of line ministries concerning savings options.
- **The savings decisions stage: the savings to be implemented.** The final savings decisions are usually made by elected politicians who have power over the content of the budget. In all OECD countries that have conducted spending reviews in recent decades, the executive has by default had the power in this stage rather than the parliament. Usually, this decision-making power is wielded by the president, prime minister, cabinet and/or ministry of finance (OECD, 2013d).

The nature of spending reviews varies greatly across countries with regards to their scope, time frame and periodicity, level of review, and resulting savings options.

- **Type of spending review:** Spending reviews can be comprehensive or selective, depending on the number of programmes they cover. Selective spending reviews are limited to a list of topics (programmes, process, agencies) specified at the beginning of the spending review period (OECD, 2013d). Comprehensive spending reviews, on the other hand, are not limited by a list of topics, and all ministries need to identify savings options (OECD, 2013d).
- **Coverage:** Spending reviews can focus on budget expenditure, for example the level of expenditure authorised in the annual budget law, or only mandatory expenditure, for example social security benefits (OECD, 2013d).
- **Types of savings measures:** Spending reviews can entail two types of savings measures: efficiency savings and strategic savings. Efficiency savings, also called operational savings, refers to the reduction of expenditure by changing the way services are produced to deliver the same quality and quantity of services (i.e. outputs) but at lower costs (OECD, 2013d). Strategic savings, also called output savings, refer to reductions in the level of expenditure that are possible by reducing services (outputs) or cutting transfer payments (OECD, 2013d).
- **Frequency of spending reviews:** In some countries, spending reviews are conducted on a systematic and ongoing basis, and in others only on a periodic basis or in a crisis situation. They can be integrated in the budget process and follow its timeline, or be considered as an external mechanism with its own frequency (OECD, 2013d). Robinson (2014) states that spending reviews should be integrated within the budget preparation process, as a key factor in the imposition of fiscal discipline, and this practice can be seen in most OECD countries.

Box 6. Selected principles for the conduct of spending review

Spending Review as Part of the Budget Process

1. Make spending review a regular rather than ad hoc process.
2. Integrate spending review in the budget preparation process.
3. Ensure that spending review presents savings options to the political leadership by the stage in the budget preparation process where decisions are made about new spending proposals put forward by spending ministries – so as to permit savings and new spending options to be considered simultaneously.
4. Base the frequency of spending reviews on the frequency with which government sets spending ministry budget allocations. In countries where budget allocations are set annually, the means carrying out spending review annually. However, in countries where firm ministry budget ceilings are set every, say, three years¹⁵, it means that spending review should also be carried out every three years.
5. Recognise that spending review is a resource-intensive activity, and that all aspects of the process need to be designed so as to deliver the best possible return (in the form of credible savings measures) on the resources committed to the process.

Information Base of Spending Review

1. Continue developing performance indicators which are as useful as possible for the identification of savings option, including programme effectiveness indicators (particularly for programs which are potentially expendable).
2. Ensure that spending review is able, where appropriate, to commission outcome (impact) evaluations of programs the cost-effectiveness of which is questionable, and to frame the terms of reference of those evaluations to ensure that they meet the information needs of budgeting.
3. Increase the use of efficiency-oriented evaluation designed specifically to support the search for efficiency savings options during the spending review process.

Source: OECD (2013e), "Spending Reviews", 34th Annual Meeting of OECD Senior Budget Officials, Working Party of Senior Budget Officials, OECD Conference Centre, Paris, 3-4 June 2013, [www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=GOV/PGC/SBO\(2013\)6&doclanguage=en](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=GOV/PGC/SBO(2013)6&doclanguage=en).

Since the 2008 financial crisis, spending reviews have gained more importance and have changed in nature in OECD countries. Half of OECD countries surveyed in 2012 reported to have a spending review process in effect (OECD, 2013d), with comprehensive spending reviews being the most common. Since the crisis, spending reviews have also been used to make efficiency and strategic savings (OECD, 2013d). Eleven out of fifteen OECD countries in 2012 reported that their spending review processes covered both budgetary and mandatory expenditure (OECD, 2013d).

Spending reviews usually draw on performance information from evaluation activities carried out by the review teams, already existing information, or informal expenditure analyses (OECD, 2013d). The information base used for spending reviews is of critical importance, and the presence of relevant evaluation activities carried out in the system is often useful for the quality and reliability of spending reviews (Robinson, 2014).

Spending reviews and programme-budgeting can be two complementary mechanisms. Programme-based budgeting, defined in the previous section, helps to develop relevant programme performance information, and as the information base for a spending review is particularly important for its reliability and quality, this information is a very useful source of data. In addition, programme-based classifications help to identify programmes and sub-programmes for which spending reviews can be carried out, and provides the necessary information on the spending by programme (OECD, 2013d).

Country Practices with regards to evaluation

In **Denmark**, each policy sector has its own approach to evaluation, and each ministry and agency can decide on an evaluation model (Ginnerup, Jørgensen, Jacobsen and Refslund, 2007). In addition, spending agencies have to control spending and follow-up on the allocated appropriations. If this follow-up shows that the given appropriations are about to be exceeded, the agency must either take action to reduce spending or apply for an increased appropriation (IFAC, 2004). This application must go through the relevant minister and approved by the Ministry of Finance (IFAC, 2004). In May and September each year, all ministries have to report a balance sheet and expected economic development to the Ministry of Finance (IFAC, 2004). Afterwards, the Ministry of Finance presents the information from the ministries to parliament in the publication of a Budget Outlook.

In **Iceland**, the Ministry of Finance monitors the financial performance of spending ministries in comparison with the budget. In case of significant variation, the Ministry of Finance calls for explanations and encourages the spending ministries to take action, for example to change the programme structure, processes or management. Most evaluation is done on an ad hoc basis. (Curristine, 2005b). Ministries have flexibility and freedom in their performance evaluation system, and the ministries monitor their progress against targets and goals (Curristine, 2005b; Kristensen, Groszyk and Bühler, 2002).

In **New Zealand**, forecasting performance is regularly monitored by the Treasury, and may also be reviewed by an external body commissioned by the Treasury (New Zealand Treasury, 2013). The Education Act 1989 sets the requirements for boards in relation to annual reports, and states that they should include annual financial statements, and performance information that provides an analysis of any variance between the school's performance and the relevant aims, objectives, directions, priorities, or targets set out in the school charter (New Zealand Legislation, 2014). In addition, every year the Minister of Education must prepare and present to the House of Representatives a report on the performance of the school sector, which includes information on the supply of outputs, management performance, and educational attainments.

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