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# GIVING A BOOST TO PUBLIC EXPENDITURE ANALYSIS

*A Guidance Note for Database Development*

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The photograph on the cover was taken on the floor of the Ghana Stock Exchange by Jonathan Ernst. It is available via the World Bank Photo Collection on Flickr and is used under a Creative Commons license (CC BY-NC-ND 2.0).

## **About the BOOST Initiative**

The BOOST<sup>1</sup> initiative was founded in 2010 with the aims of improving the World Bank’s ability to collect and analyze fiscal microdata and enhancing the quality of the World Bank’s technical advice in the area of public expenditures. Building on the experiences of pilot databases constructed for Uganda in 2008 and Poland in 2009, the BOOST initiative brought together staff from the World Bank’s Human Development (HD) and Poverty Reduction and Economic Management (PREM) networks, as well as the World Bank Institute (WBI) to work toward this common goal. More information on the activities conducted under the BOOST initiative can be found on the initiative’s website at <http://go.worldbank.org/UX0PVF5YM0> and on the Open Budgets Portal at <http://www.worldbank.org/openbudgets>.

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<sup>1</sup> BOOST (in all caps) is not an acronym. It is the name of a data tool developed by the World Bank to help enhance the analysis of public expenditure data. See **Kheyfets, et al. (2011)** for more information about the background of the BOOST initiative.

## 1. Introduction

For years, World Bank teams working on Public Expenditure Reviews (PERs) have noted the difficulty in obtaining reliable detailed data on public expenditures of client countries. Such data underlies much of the analysis the World Bank conducts in its country engagements, but is often difficult and costly to collect for each task. In response to this demand, a multi-sectoral Bank team has developed an approach that allows for standardized collection, compilation, and dissemination of detailed public expenditure data for each country.

In a nutshell, *BOOST is a user-friendly tool that facilitates access to fiscal microdata*. It can greatly reduce the time and expense associated with data collection efforts in PERs and other engagements, allowing task teams to proceed more quickly to the data analysis phase. In addition to financial data, extensions to BOOST include sector-specific module datasets that link spending data with non-financial indicators of sector inputs, outputs, and outcomes that can be used to enhance sector-specific analyses.

The purpose of this note is threefold. First, it provides an introduction to the World Bank's BOOST initiative. Second, it offers technical guidance on how to initiate and manage the process of developing a government expenditure database that meets BOOST standards. And, third, it summarizes various applications of BOOST datasets once they have been constructed.<sup>2</sup>

The *primary audience for this note comprises World Bank country and sector teams* interested in enhancing their ability to analyze public spending in greater detail and to provide better policy advice to their clients across a variety of sectors. Other stakeholders may also implement the steps described in this note to support the development of BOOST databases in order to work toward these goals in their respective countries. These actors may include, but are not limited to, national or sub-national governments, non-governmental organizations, research institutes, and donor agencies.

The rest of this note is divided into several parts. Section 2 describes *what* is a BOOST government expenditure database. Section 3 lays out the reasons *why* it can be useful to develop a BOOST database. Sections 4 and 5, respectively, discuss *who* and *when* should undertake the development of a BOOST database. Section 6 provides detailed guidance for *how* to proceed with developing a BOOST database for a particular country. Section 7 concludes.

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<sup>2</sup> This note does not provide detailed guidance on the many analytical uses of BOOST databases. Please consult separate BOOST guidance notes and analytical toolkits, which are being developed to provide methodological guidance for applying BOOST to specific topics in the area of public expenditure analysis.

## 2. What is BOOST?

The BOOST initiative centers around two main objectives: (i) to collect, compile, and distribute in a standard easy-to-use format detailed data on public budgets and expenditures gathered from national Treasury systems of countries around the world; and (ii) to foster the development and application of innovative methods and techniques covering various aspects of public expenditure analysis.

### ✓ What is a BOOST dataset?

The best way to become familiar with BOOST is to open a BOOST dataset.<sup>3</sup> At its core, BOOST is a large database of highly disaggregated budget and expenditure data for a particular country. The database is designed in a standard way for each country but its contents are country-specific, drawing on the respective national systems that record such data. The database may be accessed through a variety of interfaces, depending on user preference. BOOST datasets are typically prepared using Stata statistical software, which can be used by researchers to analyze large amounts of data. BOOSTs are also accessible in Microsoft Excel via a user-friendly PivotTable interface. Some BOOSTs are also available via web-based interfaces, either through national data portals or the World Bank Open Budget Portal (currently under development). For the purpose of this note, guidance on how to use a BOOST will refer to the Excel-based interface.<sup>4</sup>

### ✓ Where does the data come from?

The detailed data contained in all BOOST datasets is taken directly from national systems that record public expenditures. These are usually electronic systems maintained by national Treasuries and Ministries of Finance, such as the Financial Management Information System (FMIS). On occasion, non-electronic systems, multiple systems, or systems maintained by third-parties are used when the Treasury system is insufficient.

As described further in this note, World Bank teams can collect the raw Treasury data on the basis of which BOOST datasets are built during the course of expenditure-related country engagements (such as Public Expenditure Reviews). This note offers guidance for how to initiate and manage such an engagement, given the often sensitive nature of national Treasury data.

### ✓ What type of data does it contain?

BOOSTs typically contain data on public budgets (planned and amended) and actual expenditures classified according to the country's national budget classification system. This information is arranged in line with a standard BOOST template and checked for quality and consistency. The spending data, typically disaggregated to the line item level, is classified according to several

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<sup>3</sup> An example of what a typical BOOST database looks like can be found in Annex 1.

<sup>4</sup> The minimum technical specifications required to work with BOOST vary depending on the interface. For accessing BOOSTs in Stata, a user must own a Stata software license, be proficient in using the software, and have sufficient RAM available to open the BOOST dataset (varies by country but can exceed 1 GB). For Excel-based BOOSTs, in addition to the RAM requirement, Microsoft Excel 2007 or later version is needed in order to open large datasets with 1 million or more observations. For web-based interfaces, the technical requirements vary.

dimensions of budget classification. Although the exact budget classification categories vary by country, they can generally be grouped as follows:

- Administrative/organizational classification provides information on which budget unit incurred the expense (e.g., Ministry of Education);
- Functional classification provides information about the sector or purpose for which an expense was incurred (e.g., pre-school education);
- Economic classification: provides information about the category or type of expense incurred (e.g., staff salaries).

Additional categories of budget classification are often present in the raw Treasury data. These may include information on financing sources, budget programs or investment projects, and so forth. When assembling the BOOST database and aligning it with the standard BOOST template, the database development team should aim to retain as much of the original information as possible.

### 3. Why use BOOST?

Once developed for a particular country, a BOOST database makes a wide range of public expenditure analyses routine. By including BOOST as an additional tool in an analyst's toolkit, the economist or sector specialist can more quickly generate standard budget and expenditure tables and conduct more in-depth analyses that would previously require a substantial expense of time and resources devoted to data collection. Among other uses, the BOOST Excel PivotTable interface allows the user to:

- Quickly prepare custom reports, tables, and charts on the basis of the rich underlying Treasury data organized in a standard and logical fashion;
- Use the highly disaggregated spending data that is fully cross-referenced across multiple dimensions of budget classification to analyze spending across different combinations and levels of budget classification categories;
- Analyze spending trends over time—in aggregate or within specific categories—by taking advantage of comparable time-series spending data being available in a single file;
- Link detailed expenditure data from BOOST with other data sources to bring an added dimension to sector analysis by linking spending with measures of sector performance.

The structure of a BOOST dataset takes advantage of the breadth and depth of each country's budget classification system, allowing the user to present spending data in many different ways. Though the content is country-specific, each dataset typically allows for approved, revised and executed budgets to be presented by:

- Government level (e.g., central or local);
- Administrative unit (e.g., ministries, departments, agencies, schools, hospitals, etc.);
- Subnational authorities (e.g., districts, municipalities, other local government units);
- Functional classification categories (e.g., sectors or subsectors);
- Economic classification categories (e.g., staff salaries, procurement of goods, utility payments, etc.);
- Financing sources (e.g., budget funds, off-budget funds, external financing, etc.);
- Budget programs (if the country uses a program-based budgeting system);
- Years.

The fully cross-referenced nature of the disaggregated line-item level Treasury data also allows the user to query the BOOST database for expenditures arranged by any combination of the categories described above.

The tool can also enhance public access to detailed budget and expenditure data, thus enabling non-state actors to engage in budget analysis, become better informed about public spending decisions, and hold governments accountable. One example of such engagement is the cooperation with non-state actors in developing third-party data visualization apps that make public budgets more accessible to the general citizenry. These and other analytical and budget transparency uses of BOOST are described in greater detail in subsequent sections of this note.

#### 4. Who should BOOST?

Once developed, a BOOST database for a given country becomes a public good that can enhance the work of a wide range of actors.<sup>5</sup>

✓ How BOOST assists country-level stakeholders

##### *Ministry of Finance*

The Ministry of Finance is typically the owner of the underlying data on the basis of which the BOOST is constructed. However, many finance ministries do not possess sufficient capacity to fully utilize the data collected by their IT systems for data analysis that informs policymaking. A BOOST engagement with the Ministry of Finance can help overcome this obstacle by putting a simple, user-friendly dataset composed of the country's own data in the hands of the people who would use it most. Technical staff in departments that serve the budget preparation, monitoring, and analytical functions can go a long way to increasing the use of data and evidence-based policymaking within the ministry. Activities that build further capacity by training technical staff in the various budget analysis techniques using BOOST can make the tool more useful still.

##### *Sector Ministries*

In most countries, ministries and agencies responsible for managing the various sectors typically play an important role in allocating budgets within those sectors. Yet the capacity of line ministries (such as those responsible for agriculture, education, health, etc.) to manage, monitor, and analyze budgets in their respective sectors is often significantly lower than that of the finance ministry. Some line ministries do not even have access to the detailed expenditure data for their sectors collected by the finance ministry's systems. By facilitating access to such data through a BOOST (accompanied by the necessary training), the World Bank can help build up the capacity of the budget and analytical departments of line ministries.

##### *Civil Society*

In addition to the finance and sector ministries, other non-state actors may also benefit from having access to detailed data on public expenditures in their country. These include civil society organizations, think tanks and research institutes, universities, members of the press and the general public. However, for these actors to be able to use a BOOST database, two key requirements must be satisfied. First, the Ministry of Finance (whose ownership of the Treasury data is often governed by data secrecy laws) needs to place such data in the public domain. This may require a change in national legislation or a government decree that allows such data to be made public. Second, civil society actors would need to receive sufficient training to be able to use detailed fiscal microdata for informed analysis. Such training and capacity building can take many forms and can be supported by Bank experts in open government practices. BOOST can therefore

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<sup>5</sup> The development of a BOOST database can similarly be initiated by any of these stakeholders. However, this note focuses on BOOST engagements initiated by World Bank country teams in partnership with the respective national authorities.

serve as one tool in response to the growing demand for budget transparency in many countries around the world.

✓ *How BOOST assists World Bank country teams*

For *country and sector economists*, BOOST can be useful for analyzing, among other things, the efficiency of public spending. By contributing to a deeper understanding of recent expenditure trends, BOOST can also assist in preparing well-informed prospective sector strategies, strengthen medium-term expenditure frameworks, and organize the annual budget cycle dialogue between the client and the development partners.

For *public sector specialists*, expenditure data from BOOST can be linked with information on staffing and salary levels to identify potential hiring or remuneration problems across different public sector units. Many BOOSTs also allow for detailed disaggregation of the public sector payroll into its components, allowing for analyses of non-salary remuneration.

For *financial management specialists*, BOOST can be used to understand and identify gaps in accounting and reporting systems and weaknesses in budget or commitment controls.

For *procurement specialists*, BOOST can be used to identify the main expenditure items or administrative units in which budget under- or over-spending frequently occurs. This can help identify and remedy potential procurement bottlenecks.

For *governance and social development specialists* working with civil society actors, the open government agenda can be strengthened through greater access to government expenditure data and a higher degree of civil society involvement in public budgeting decisions.

## 5. *When to BOOST?*

This section provides guidance on the conditions that should be in place when a World Bank team decides to initiate the development of a BOOST government expenditure database.

A BOOST engagement can be considered successful when a reliable BOOST tool is developed within a reasonable time frame, resulting in a sustained policy dialogue between the World Bank and country counterparts and the continued use and sustainability of datasets. Several initial factors can contribute to the eventual success of such an engagement; these include, but are not limited to:

- Good lines of communication between the Bank team and the client
- Strong client interest and demand for developing a BOOST
- One or more “champions” identified among key Government officials
- Responsive technical staff from the client side providing answers to technical questions
- Active involvement of key members of the Bank country team, including the local country economist
- Strong support and endorsement of Bank management

The presence of these and other factors is likely to speed up the development of a BOOST tool for a particular country and ensure that the final product is one that is useful for both Bank and client work in the area of public expenditure analysis. The World Bank team should therefore assess whether these and other initial conditions are in place before proceeding with a BOOST engagement.

At a minimum, such an assessment should be undertaken in the planning stages of each Public Expenditure Review. The majority of initial BOOST engagements have begun through a PER, serving as either an input for the PER analysis in the various sectors or as an output of the PER process itself. Forward-looking country teams planning to conduct a PER should assess the suitability of the country dialogue for a BOOST engagement well in advance of commencing the actual analysis. Experience in several countries (e.g., the Kyrgyz Republic) has shown that having a BOOST database ready before commencing PER analyses in the various sectors can greatly enhance the speed and internal consistency of the task team’s work.

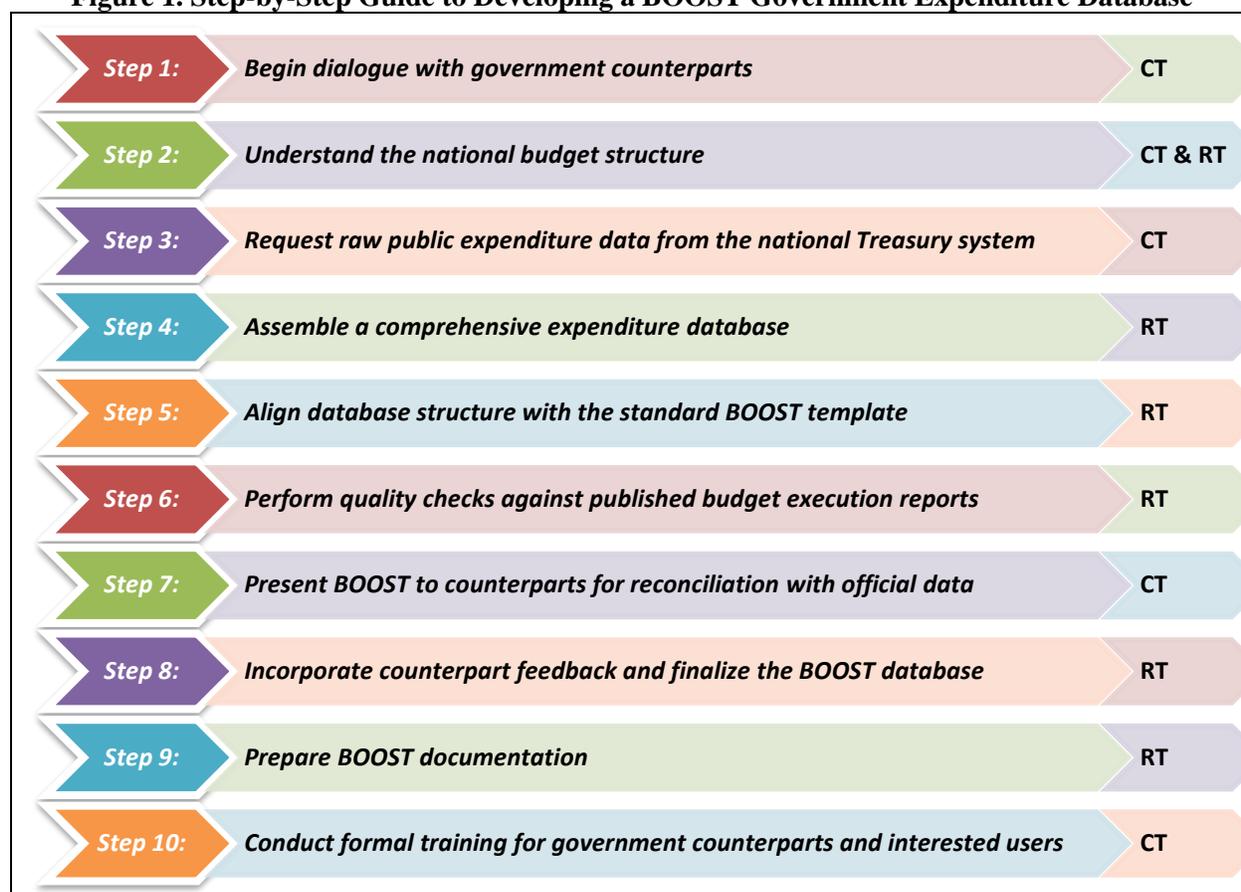
A BOOST exercise can also be carried out in the context of a sectoral engagement within a country. For example, the BOOST engagements in both Serbia and Ukraine were initiated under an education sector technical assistance program. Because of its strong public good aspect, however, the development of a BOOST database should seek buy-in from country team colleagues working in the various sectors. A well-managed country team should work together to take full advantage of this tool, including by considering its future use within a country-level engagement.

## 6. How to BOOST?

### 6.1. Constructing a BOOST government expenditure database<sup>6,7</sup>

The World Bank's BOOST team has compiled a sequence of steps to be followed in order to maximize the effectiveness of a country-based BOOST engagement. Summarized in Figure 1, this sequence represents a collection of lessons learned from what has worked well in successful BOOST engagements across the globe.

**Figure 1. Step-by-Step Guide to Developing a BOOST Government Expenditure Database**



Note: Notations on the right indicate the suggested division of responsibilities for each step of the BOOST development process between the World Bank Country Team (CT) and the BOOST Resource Team (RT).

<sup>6</sup> A five-phase approach to initiating country-level BOOST engagements under the BOOST program funded by the Gates Foundation has been developed by the BOOST Secretariat. The guidance to country teams applying for Gates funding focuses on milestones and outputs for each phase of the engagement. See **BOOST Secretariat (2013)** for more information.

<sup>7</sup> Additional guidance on the basis of lessons learned from constructing BOOST databases in Africa has been developed by the World Bank Institute (WBI). The guidance focuses mainly on issues of data reconciliation and integrity, as well as database design choices in terms of scope and breadth. See **Mastruzzi, et al. (2012)** for more information.

✓ Step 1: Begin dialogue with government counterparts

A successful BOOST engagement requires a strong rapport and working relationship between the World Bank’s country team and the country client—usually, the national Ministry of Finance. The engagement typically begins when the World Bank identifies Country X to be a good candidate for the development of a BOOST tool. A wide range of factors can determine whether the country is a good candidate for such an engagement. These include, among others:

- whether the Bank is already viewed in the country as a credible partner in discussing fiscal policy through an ongoing or planned engagement on public expenditures;
- whether the client expresses a desire for reform and increased use of evidence-based policymaking in this area; and
- whether the client has the capacity to contribute to the development and operation of a BOOST tool, but does not already have in place a system that makes rapid on-demand analysis of detail public expenditure data readily available.

On the Bank side, the identification of Country X as a good candidate for BOOST development, ideally, would take the form of a broad discussion within the country team and country management about the merits and risks of undertaking such an engagement. This discussion should weigh the needs of various sector teams working in the country that would benefit from the development of a BOOST tool and should consider whether the Bank has the comparative advantage to engage in this exercise for this country at this particular time.

After Bank management identifies Country X as a good candidate for a BOOST engagement, the country team should present the client with detailed information about the BOOST initiative in order to gauge client interest. This can take the form of a workshop or roundtable discussion in the country with the representatives of the Ministry of Finance, line ministries and other policymakers, and (if appropriate) members of civil society in attendance. The technical description of the BOOST tool can be supplemented with examples of the Bank’s BOOST-related work in other countries, the benefits of engaging in in-depth analyses of public expenditures for informed decision-making, and the positive aspects of making detailed government spending data more widely accessible.

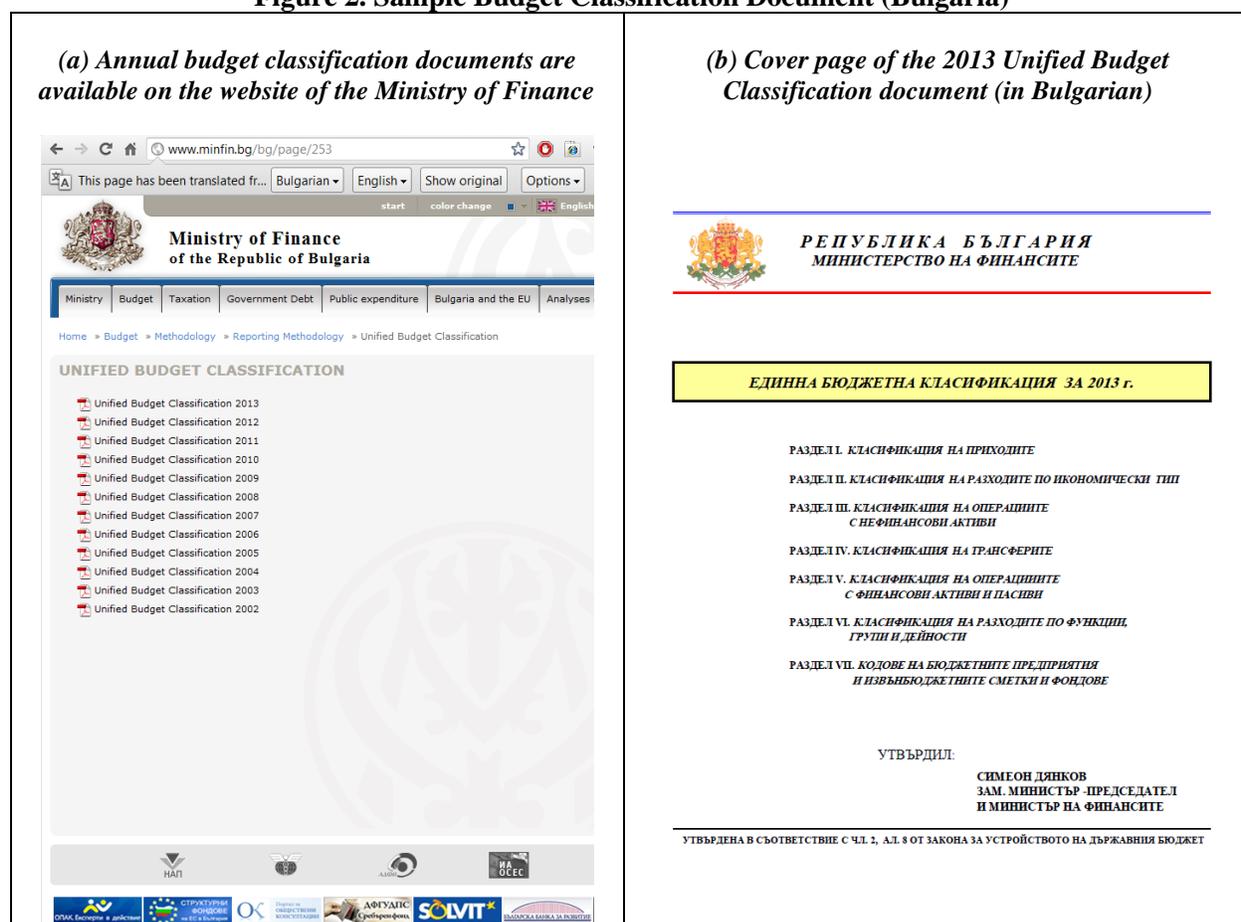
During this introductory stage, the Bank’s country team should undertake an initial assessment of client systems that record information on public expenditures. A modern Financial Management Information System (FMIS) that records all outlays by public spending units across the country will greatly reduce the time needed to compile and clean the necessary data for developing a BOOST dataset. On the other hand, countries that utilize multiple non-integrated public expenditure recording systems—or those that lack electronic systems altogether—may lead to BOOST engagements that are more time-consuming and technically challenging in their nature.

✓ Step 2: Understand the national budget structure

During the initial assessment of the country’s public expenditure recording systems, the Bank team should request and receive the latest official Budget Classification or Chart of Accounts (CoA) document from the Ministry of Finance. Such documents—often taking the form of a decree issued

by the Government or the Minister of Finance—contain the full set of codes used to classify public expenditures in the country and are frequently available on the website of the Ministry of Finance (see **Error! Reference source not found.**).

**Figure 2. Sample Budget Classification Document (Bulgaria)**



The Bank team should study the national budget classification document to answer a number of important questions about the budget structure of Country X. These include:

- Has the budget classification changed substantially in recent years? If so, are there bridge tables available between the previous set of budget codes and the current system?
- Is the budget classification used by all public spending units in the country? If not, is there information on any alternative classification systems currently in use?
- Is the budget classification structure compatible with commonly used international standards (e.g., COFOG or GFS)? If not, are there bridge tables that enable a concordance between the national budget classification system and international standards?
- Are there additional budget codes recorded by the Treasury system that are not included in the budget classification document? If so, these codes (often covering different financing sources or individual administrative units) will need to be requested separately from the Ministry of Finance.

If the national budget classification document is not available in English, the Bank team should commission a professional translation of the latest version of the document from the local language. This should be done even in cases where the development of the BOOST tool will be done primarily in a widely spoken local language (e.g., French or Spanish). The reason for this is to enable a broad user base to take advantage of the “public good” aspect of the BOOST tool across national and linguistic boundaries.

✓ *Step 3: Request raw public expenditure data from the national Treasury system*

After the team has gained a thorough understanding of the structure of the national public budget structure for Country X, a formal request for detailed public expenditure data should be sent to the Ministry of Finance. Typically expressed in a letter from the World Bank’s Country Manager to the Minister of Finance, the request should describe the exact nature of the data being sought (i.e., raw disaggregated public expenditure data from the country’s Treasury system) and provide a sample of what such data may look like with references to the country’s budget classification nomenclature. The letter should also explain the purpose of the request and the projected uses of the data, while referring to an ongoing or planned World Bank engagement in the country on the topic of public expenditures.

If the BOOST engagement is initiated with care through a dialogue on public expenditures as described in Step 1 above, a request from the World Bank for national Treasury data of unprecedented detail should not take the Government by surprise. Proper care should be taken to explain to high-level policymakers the benefits to the country of joining the Bank’s BOOST initiative before the formal data request is submitted. Among others, these benefits may include the joint development of an in-depth analytical agenda in the area of public expenditures and the demonstration of the Government’s commitment to public sector transparency.

Ideally, the data request should also seek an agreement between the Bank and the Ministry of Finance to put in place an arrangement under which the Ministry would share detailed public expenditure data (in a consistent format) with the Bank on an annual basis. This agreement should be seen as a sign of technical cooperation between the Bank and Country X that is non-political in nature and would remain in place regardless of the political forces in Government. Such continued cooperation would allow for easy annual updates of the BOOST tool and continued dialogue between the Bank and the client in the area of public expenditures.

✓ *Step 4: Assemble a comprehensive expenditure database*

Once the data request is submitted to the Government and the initial data is received, the process of assembling the BOOST database can commence. The level of effort and complexity needed to assemble the database depends on the quality and organization of the raw data received from the Ministry of Finance. Several factors can complicate the database assembly process, including:

- Treasury data is presented in a hard-to-decipher format or is scattered across multiple electronic (or non-electronic) systems.

- Structure of the national public budget or of the system that records public expenditures has changed significantly in recent years.
- The information contained in the national budget classification document and related documentation is insufficient for understanding the contents of the raw data received.

After the initial data is received, the Bank’s database development team may need to work with key technical staff in the Ministry of Finance to *fully understand the structure of the raw data*. The database development team should gain a complete understanding of all columns in the Treasury data and all codes contained in these columns. In many cases, the raw Treasury data will take the form of one or more data files containing thousands of lines made up of long strings of budget codes and associated expenditure amounts. The team should make sure to receive a complete explanation of all such codes from the Government counterparts familiar with this data, keeping in mind that some codes in the raw data may not appear in the official budget classification documents or may have changed over time.

Upon gaining a full understanding of the data, the database development team should *import, clean, and merge all raw data files* into one comprehensive budget and expenditure database. The exact steps to be taken will vary depending on the structure and contents of the raw data, but the goal of the database developer should be the same: to prepare a BOOST dataset that contains all public spending in Country X in its most detailed form for as many years as are readily available. This database assembly process has typically been done using Stata statistical software<sup>8</sup>, though other database software packages can be used instead. The key to BOOST database assembly is the need to clearly document all steps of the assembly process in order to ensure sustainability through easy database updating and replicability.

The database developer must then *perform initial diagnostics* to ensure completeness and consistency of the data. These include ensuring that the assembled database contains all of the necessary data that was available in the underlying source files. In particular, the developer should check for data gaps or duplicate observations that may result from errors in the database assembly process. Moreover, budget or expenditure subtotals may need to be removed from the resulting database to avoid double-counting, if such subtotals were present in the raw data. The correctness of the database assembly process can be verified by comparing the budget and expenditure totals in the raw Treasury data with the totals computed from the assembled database across various years and budget classification categories.

Lastly, the database developer will need to *attach descriptive labels* to the numeric budget codes in the database, in line with the official national budget classification.<sup>9</sup> When using Stata to assemble the database, the developer can assign labels in different languages to the same numeric variables by using the ‘**label language**’ command (for Latin-based alphabets only). Each BOOST database should receive at least two sets of labels, whether in Stata or through other means—one set in English and one in the local language.

✓ *Step 5: Align database structure with the standard BOOST template*

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<sup>8</sup> Sample Stata do-files used to construct existing BOOST datasets are available through the **BOOST iTeam site**.

<sup>9</sup> This can be done before or after the alignment of the database with the standard BOOST template (described in Step 5).

During the database assembly process, the developer should ensure that all variables names in the database are in line with the standard BOOST nomenclature. The BOOST nomenclature is designed to accurately and concisely convey the type of information contained in each BOOST variable. At a minimum, each BOOST database should include the following categories of variables:<sup>10</sup>

- Budget classification variables, which identify the type and level of budget classification to which expenditures correspond. These variables should align with the national budget classification structure, while allowing the user who is not familiar with the particular country’s budget structure to quickly find the relevant information.
- BOOST custom variables, which are not found in the raw Treasury data but are constructed by the developer for the purpose of improving the usefulness of the particular country’s BOOST database. Custom variables typically included in BOOST datasets include the “expenditure type” and “intrabudgetary transfer” indicators.
- Budget and expenditure variables, which contain the approved, amended, and executed budget amounts associated with each line item in the Treasury database. The exact nomenclature for these variables tends to vary across countries, but the database developer must have a clear understanding of the national terminology to ensure that the data in each standard BOOST variable corresponds to the appropriate national definition.

**Figure 3. Sample BOOST Variable Descriptions Spreadsheet (Moldova)**

	A	B
1	<b>BOOST Variable</b>	<b>Variable Description (en)</b>
2	year	Year
3	admin1	Budget -- Administrative Classification (Level 1)
4	admin2	Public Authority -- Administrative Classification (Level 2)
5	admin3	Central Government Institution -- Administrative Classification (Level 3-Central)
6	admin4	Municipality -- Administrative Classification (Level 3-Local)
7	admin5	Local Government Institution -- Administrative Classification (Level 4-Local)
8	admin6	Institution Type
9	program1	Program -- Program Classification (Level 1)
10	program2	Subprogram -- Program Classification (Level 2)
11	func1	Main Group -- Functional Classification (Level 1)
12	func2	Group -- Functional Classification (Level 2)
13	econ1	Article -- Economic Classification (Level 1)
14	econ2	Line Item -- Economic Classification (Level 2)
15	fin_source	Budget Component -- Source of Financing
16	exp_type	Expenditure Type
17	transfer	Intrabudgetary Transfers
18	approved	Approved (Lei)
19	adjusted	Adjusted (Lei)
20	executed	Executed (Lei)

Each dataset that is aligned with the standard BOOST template should also contain a quick-reference sheet that explains how each BOOST variable is aligned with the national budget

<sup>10</sup> A list of variables typically found in BOOST datasets, which correspond to each of these categories, can be found in Box 1.

classification structure of that particular country. Figure 3 demonstrates what a typical “Variable Descriptions” spreadsheet should look like. Screenshots of the standard structure of a BOOST government expenditure dataset can be found in Annex 1.

<b>Box 1. Variables typically found in a BOOST government expenditure database</b>	
<b><i>Budget classification variables</i></b>	
<p><u><i>Administrative:</i></u> provide information about which spending unit incurred the expense</p> <p><b>admin1</b> – Top level of administrative classification, typically referring to the budget or government level that incurred the expense (e.g., “1 Central”, “2 Local”, “3 Other”)</p> <p><b>admin2</b> – Second level of administrative classification, typically referring to the top-level spending unit (e.g., ministry or agency at the central level, top-level subnational authority at the local level)</p> <p><b>admin3, etc.</b> – Lower levels of administrative classification, typically referring to further subordinated spending units (e.g., departments within ministries or agencies at the central level, lower-level subnational authorities at the local level)</p> <p><u><i>Economic:</i></u> provide information about the category or type of expense incurred</p> <p><b>econ1</b> – Top level of economic classification, typically referring to the main category of expense incurred (e.g., “21 Compensation of employees” in the GFS 2001 classification system)</p> <p><b>econ2, etc.</b> – Lower levels of economic classification, typically referring to subcategories and further subdivisions of top-level economic classifications (e.g., “211 Wages and salaries” in the GFS 2001 classification system)</p>	<p><u><i>Functional:</i></u> provide information about the sector or purpose for which an expense was incurred</p> <p><b>func1</b> – Top level of functional classification, typically referring to the sector for which an expense was incurred (e.g., “09 Education” in the COFOG classification system)</p> <p><b>func2, etc.</b> – Lower levels of functional classification, typically referring to subsectors and further subdivisions of top-level functional classifications (e.g., “09.2 Secondary education” in the COFOG classification system)</p> <p><u><i>Other:</i></u> provide other information about the expense (but not the amount of the expense)</p> <p><b>year</b> – Financial or calendar year (be sure to note which) in which the expense was incurred</p> <p><b>fin_source</b> – Financing source from which the expense was financed (e.g., “1 Budget funds”, “2 Special funds”)</p> <p><b>program, etc.</b> – Where applicable, program classification or other budget classification variables may be included to fully cover the breadth of budget classification codes found in the raw Treasury data for a particular country</p>
<b><i>BOOST custom variables</i></b>	
<p><u><i>Expenditure type indicator</i></u></p> <p><b>exp_type</b> – Grouping of expenses into standard categories (“1 Personnel”, “2 Non-personnel recurrent”, “3 Capital”, “4 Other”) on the basis of the national economic budget classification, which allows the user to quickly break down spending into these</p>	<p><u><i>Intrabudgetary transfer indicator</i></u></p> <p><b>transfer</b> – Flag of intrabudgetary transfers, which allows the user to quickly perform the necessary budget consolidation procedures to avoid double-counting of expenses financed through transfers across different types of budgets covered by the BOOST</p>

main categories, which should be generally comparable across national budget classification systems.

dataset. The exact categories of expenditures flagged with this transfer filter should be determined on the basis of the national budget consolidation methodology.

***Budget and expenditure variables\****

***Approved budget***

**approved** – Original budget amount as approved in the Budget Law at the beginning of the year. Also known as “original”, “plan”, etc.

***Amended budget***

**amended** – Budget amount after all revisions at the end of the year. Should correspond to the latest “vintage” of the amended budget. Also known as “revised”, “adjusted”, etc.

***Executed budget***

**executed** – Amount of funds actually spent (on cash or accrual basis – be sure to note which) by the spending unit in question. Also known as “actual”, “fact”, etc. Different from “releases”, i.e., funds released by the Treasury to the spending unit in question.

*\* Various national Treasury systems may also contain supplementary financial information in addition to the variables listed above. (These may include allocations, commitments, liabilities, revenues, etc.) These additional categories may be included in the BOOST for that particular country if they are deemed to have important analytical value in the particular country setting. However, at a minimum, the developer must ensure that the three categories described above are found in each BOOST, as they form the basis for most analytical work in the area of public expenditures.*

✓ Step 6: Perform quality checks against published budget execution reports

Once the expenditure database has been assembled and aligned with the BOOST format, initial checks of the data will need to be performed against official sources. This “alpha testing” procedure is crucial for verifying the accuracy of the database assembly process. Ideally, the reconciliation will be conducted against official budget execution reports published by the Treasury or Ministry of Finance (“control tables”), which are prepared on the basis of the same underlying expenditure data as the BOOST database (see Figure 4).

Any discrepancies identified through this approach can be attributed to one two categories of factors. Either the inconsistencies stem from: (i) errors in the database assembly process or (ii) differences in the manner in which aggregate expenditure totals were calculated from the raw expenditure data. The former can be corrected by the BOOST database specialists who can review and debug the appropriate assembly procedures, while the latter can be reconciled by gaining a complete understanding of the manner in which the official budget execution reports are prepared. The second category of discrepancies is typically more difficult to reconcile because it requires in-depth technical consultations with MOF staff who have direct knowledge of the procedures governing the preparation of the official budget execution reports. During the reconciliation process, BOOST database specialists (with the help of country team members) should verify that the database: (i) acknowledges the definitions and classifications used in the national public budget, (ii) utilizes the official budget consolidation methodology, and (iii) accounts for any changes in these procedures during the years covered by the BOOST database.

**Figure 4. Sample MOF Budget Execution Report (Romania)**

	Bugetul de stat	Bugetul centralizat al unitatilor adm. teritoriale	Bugetul asig. sociale	Bugetul asig. pentru somaj	Fondul national de asigurari sociale de sanatate	Credite externe ministere	Bugetul institutiilor publice finantate integral sau partial din venituri proprii	Fonduri externe nerambursabile	Bugetul trezoreriei statului	Bugetul Companiei nationale de autostrazi si drumuri nationale	Titluri de despagubire A.N.R.P	Fondul Proprie tatea	Total	Transferuri intre bugete (se scad)	Total buget general consolidat	Operatiuni financiare	Buget general consolidat	% din PIB
	Sume																	
<b>CHELTUIELI TOTALE</b>	104.569,8	56.080,8	48.609,1	1.738,4	19.464,3	297,3	18.107,1	441,4	891,9	7.323,4	14,9	257.538,3	-44.359,6	213.178,7	-5.256,6	207.922,1	35,5	
Cheltuieli curente	100.150,0	45.056,7	48.650,4	1.743,7	19.368,4	5,3	16.922,2	441,4	891,9	1.094,9	14,9	234.339,7	-44.231,8	190.107,9	-833,7	189.274,3	32,3	
Cheltuieli de personal	17.141,6	10.430,4	148,5	79,5	134,1		6.023,3			232,3	0,2	40.798,8		40.798,8		40.798,8	7,0	
Bunuri si servicii	4.429,5	15.052,0	384,0	65,9	18.053,6		4.965,1		21,8	766,7	14,8	43.752,4	-9.308,5	34.443,9		34.443,9	5,9	
Dobanzi	0.221,1	812,9	24,7		7,2		22,8		870,0	98,9		11.055,5	-344,7	10.710,8		10.710,8	1,8	
Subventii	3.999,2	2.110,3		2,0			7,3							6.121,7		6.121,7	1,0	
Transferuri - Total	62.196,2	10.636,1	48.093,3	1.596,4	1.173,5	5,3	5.287,9	441,4				129.430,0	-33.011,4	96.418,7	-833,7	95.585,0	16,3	
Transferuri intre unitati ale administratiei publice	24.843,5	607,3	0,1	367,8			3.175,3					29.023,9	-27.665,9	1.357,9		1.357,9	0,2	
Alte transferuri	11.405,5	624,6		0,1		5,3	712,4	441,4				13.189,2	-2.196,0	10.993,1		10.993,1	1,9	
Proiecte cu finantare din fonduri externe nerambursabile	10.490,0	5.571,5	42,0	115,2	46,0		936,3					17.201,0	-3.149,4	14.051,5	-833,7	13.217,9	2,3	
Asistenta sociala	13.845,0	3.074,2	48.051,2	1.054,3	1.127,5		96,4					67.048,5		67.048,5		67.048,5	11,5	
Alte cheltuieli	1.812,3	758,6		29,1			307,6					2.967,5		2.967,5		2.967,5	0,5	
Cheltuieli aferente programelor cu finantare rambursabila	3.165,5						15,8					3.181,3	-1.567,3	1.614,0		1.614,0	0,3	
Cheltuieli de capital	2.108,4	10.174,3	1,6	2,5	108,5	292,1	1.155,3			5.528,0		19.371,7	-44,2	19.327,5	-22,0	19.304,9	3,3	
Active nefinanciare	2.085,9	9.954,7	1,8	2,5	108,5	292,1	1.155,3			5.528,0		19.129,5	-44,2	19.085,3		19.085,3	3,3	
Active financiare	22,8	219,6										242,2		242,2		242,2	0,0	
Operatiuni financiare	2.739,3	1.010,9					33,3			700,5		4.484,0	-83,7	4.400,3	-4.400,3			
Imprumuturi	99,2						0,5					97,4		97,4		97,4		
Rambursari de credite	2.642,4	1.010,9					32,8			700,5		4.386,6	-83,7	4.302,9	-4.302,9			
Plati efectuate in anii precedenti si recuperate in anul curent	-428,0	-161,2	-42,8	-7,9	-13,0		-3,6		0,0			-657,1		-657,1		-657,1	-0,1	
<b>EXCEDENT(+) / DEFICIT(-)</b>	-17.398,3	-2.639,1	249,2	176,2	-379,4	-297,3	-42,8		171,0	141,4		-6,6	-20.025,8	-20.025,8	5.251,9	-14.773,9	-2,52	

At the completion of the “alpha testing” procedure, the database specialist should prepare a BOOST checks file that can be shared with the government counterparts and the country team. This file should clearly identify any discrepancies remaining between the BOOST dataset and

official reports, which cannot be immediately reconciled with available information. The checks file should contain several spreadsheets that compare expenditure totals between BOOST and MOF sources disaggregated by various types of budget classifications—e.g., economic, functional, administrative—to the extent that such figures are available from official reports (see Figure 5).

**Figure 5. Sample Spreadsheet from a BOOST Checks File (Tajikistan)**

Tajikistan Government Expenditures by Functional Classification																							
(a) From BOOST														(b) From MOF Budget Execution Reports					Difference (a) - (b)				
Code	Functional Category	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011							
<b>Republics Budget</b>																							
01	01 Governance and public administration sector	361,085,048	303,030,057	272,603,291	277,551,999	406,134,623	361,085,048	303,030,057	272,603,291	277,551,999	406,134,623	0.00%	0.00%	0.00%	0.00%	0.00%							
02	02 Defense	120,686,839	164,802,963	178,415,345	215,244,783	299,465,100	120,686,839	164,802,963	178,415,345	215,244,783	299,465,100	0.00%	0.00%	0.00%	0.00%	0.00%							
03	03 Law enforcement bodies	148,663,092	193,147,591	218,174,002	242,264,363	346,410,320	148,663,092	193,147,591	218,174,002	242,264,363	346,410,320	0.00%	0.00%	0.00%	0.00%	0.00%							
04	04 Education	83,760,628	167,976,104	236,409,884	251,069,029	315,537,749	83,760,628	167,976,104	236,409,884	251,069,029	315,537,749	0.00%	0.00%	0.00%	0.00%	0.00%							
05	05 Healthcare	41,885,602	55,374,537	54,024,242	60,226,380	99,481,559	41,885,602	55,374,537	54,024,242	60,226,380	99,481,559	0.00%	0.00%	0.00%	0.00%	0.00%							
06	06 Social insurance and social protection	96,635,108	148,992,484	193,935,556	265,458,621	253,811,909	96,635,108	148,992,484	193,935,556	265,458,621	253,811,909	0.00%	0.00%	0.00%	0.00%	0.00%							
07	07 Housing and communal services, ecology, forestry	22,494,067	22,254,395	22,977,378	30,884,363	38,019,634	22,494,067	22,254,395	22,977,378	30,884,363	38,019,634	0.00%	0.00%	0.00%	0.00%	0.00%							
08	08 Culture and sport	48,464,727	136,011,296	113,688,357	207,445,506	198,329,025	48,464,727	136,011,296	113,688,357	207,445,506	198,329,025	0.00%	0.00%	0.00%	0.00%	0.00%							
09	09 Fuel and energy complex	51,842,571	286,069,678	562,615,113	691,929,793	925,412,262	51,842,571	286,069,678	562,615,113	691,929,793	925,412,262	0.00%	0.00%	0.00%	0.00%	0.00%							
10	10 Agriculture, fishery and hunting	72,871,966	88,909,259	78,810,439	80,957,121	95,420,851	72,871,966	88,909,259	78,810,439	80,957,121	95,420,851	0.00%	0.00%	0.00%	0.00%	0.00%							
11	11 Industry and construction	23,520,203	44,937,857	23,150,591	46,631,672	73,701,934	23,520,203	44,937,857	23,150,591	46,631,672	73,701,934	0.00%	0.00%	0.00%	0.00%	0.00%							
12	12 Transport and communication	67,510,571	53,793,580	65,715,894	87,161,309	115,230,337	67,510,571	53,793,580	65,715,894	87,161,309	115,230,337	0.00%	0.00%	0.00%	0.00%	0.00%							
13	13 Other economic activities and services	5,592,575	21,888,718	15,210,763	44,791,323	29,015,361	5,592,575	21,888,718	15,210,763	44,791,323	29,015,361	0.00%	0.00%	0.00%	0.00%	0.00%							
14	14 Expenditures not included in other groups	289,395,208	323,773,155	533,739,172	496,206,876	615,440,964	289,395,208	323,773,155	533,739,172	496,206,876	615,440,964	0.00%	0.00%	0.00%	0.00%	0.00%							
<i>Transfers</i>																							
24	Total (excluding extrabudgetary funds, excluding transfers)	1,237,032,497	1,788,279,513	2,293,698,019	2,679,735,483	3,401,699,372	1,237,032,497	1,788,279,513	2,293,698,019	2,679,735,483	3,401,699,372	0.00%	0.00%	0.00%	0.00%	0.00%							
25	Total (excluding extrabudgetary funds, including transfers)	1,434,408,205	2,011,002,674	2,569,470,027	2,997,423,138	3,811,411,627	1,434,408,205	2,011,002,674	2,569,470,027	2,997,423,138	3,811,411,627	0.00%	0.00%	0.00%	0.00%	0.00%							
26	Extrabudgetary funds	145,433,839	214,691,766	303,415,890	387,882,132	486,054,643	145,433,839	214,691,766	303,415,890	387,882,132	486,054,643	0.00%	0.00%	0.00%	0.00%	0.00%							
27	Total (including extrabudgetary funds, excluding transfers)	1,382,466,336	2,002,971,279	2,597,113,909	3,067,616,615	3,897,754,015	1,382,466,336	2,002,971,279	2,597,113,909	3,067,616,615	3,897,754,015	0.00%	0.00%	0.00%	0.00%	0.00%							
28	Total (including extrabudgetary funds, including transfers)	1,579,842,044	2,225,694,440	2,872,885,917	3,385,305,207	4,297,466,270	1,579,842,044	2,225,694,440	2,872,885,917	3,385,305,207	4,297,466,270	0.00%	0.00%	0.00%	0.00%	0.00%							
<b>Local Budgets</b>																							
(a) From BOOST																							
(b) From MOF Budget Execution Reports																							
Difference (a) - (b)																							
33	01 Governance and public administration sector	59,893,190	80,185,505	104,019,193	117,119,405	131,157,215	59,870,675	79,461,691	102,859,976	107,085,517	131,163,367	0.04%	0.89%	1.13%	-0.71%	0.00%							
34	02 Defense	9,565,454	12,249,563	16,770,408	17,119,405	21,939,839	9,482,452	12,103,720	16,460,606	17,080,151	21,939,839	0.88%	1.20%	1.88%	0.23%	0.00%							
35	03 Law enforcement bodies	9,275,390	11,021,801	13,168,062	15,262,221	20,714,749	9,300,881	10,966,803	13,193,368	15,247,937	20,778,369	-0.27%	0.50%	-0.19%	0.09%	-0.31%							
36	04 Education	333,287,628	444,655,867	607,485,791	738,882,038	867,794,629	334,588,598	446,589,063	611,257,079	739,074,819	867,794,630	-0.37%	-0.43%	-0.62%	-0.03%	0.00%							
37	05 Healthcare	102,661,209	162,419,902	232,406,977	293,283,803	393,868,261	105,413,015	161,901,328	232,965,836	293,825,982	396,983,698	-2.61%	0.32%	-0.24%	-0.19%	-0.78%							
38	06 Social insurance and social protection	16,686,673	19,043,563	23,000,332	25,695,301	28,060,775	16,720,496	18,928,168	23,098,625	26,184,076	28,311,259	-0.03%	0.61%	-0.43%	-1.87%	-0.88%							
39	07 Housing and communal services, ecology, forestry	194,073,957	208,105,324	301,733,111	346,473,475	549,780,592	190,641,703	204,639,037	302,621,036	347,231,615	549,780,593	1.80%	1.69%	-0.29%	-0.22%	0.00%							
40	08 Culture and sport	27,715,355	42,180,615	65,354,196	90,294,173	129,723,616	27,929,357	40,920,397	65,633,939	90,496,523	129,723,615	-0.77%	3.08%	-0.46%	-0.22%	0.00%							
41	09 Fuel and energy complex	n/a	n/a	n/a	n/a	n/a	n/a																
42	10 Agriculture, fishery and hunting	4,059,351	5,829,956	9,960,708	11,630,372	13,507,462	4,018,494	6,005,810	9,705,311	11,570,774	13,507,462	1.02%	-2.93%	2.63%	0.52%	0.00%							
43	11 Industry and construction	4,119,525	1,191,327	850,769	2,708,493	8,681,932	5,491,409	2,124,699	819,239	2,481,807	8,681,932	-24.88%	-83.88%	3.85%	9.13%	0.00%							
44	12 Transport and communication	26,739,155	43,717,333	29,199,319	22,444,628	32,783,222	26,730,772	43,654,478	27,754,933	20,605,943	32,783,222	0.03%	0.14%	5.20%	8.92%	0.00%							
45	13 Other economic activities and services	n/a	n/a	n/a	n/a	n/a	n/a																
46	14 Expenditures not included in other groups	12,908,402	14,937,226	50,498,016	82,887,317	81,638,678	10,410,683	13,413,311	40,230,876	43,100,416	27,013,242	7.00%	-2.98%	-2.32%	-8.67%	-4.42%							
<i>Transfers</i>																							
51	Total (excluding extrabudgetary funds, excluding transfers)	819,216,025	1,043,694,070	1,443,267,540	1,709,448,689	2,223,832,499	821,098,535	1,040,708,505	1,449,940,862	1,716,312,203	2,228,461,228	-0.23%	0.28%	-0.46%	-0.40%	-0.21%							
52	Total (excluding extrabudgetary funds, including transfers)	820,985,289	1,045,617,782	1,454,447,482	1,752,971,129	2,279,650,970	823,676,991	1,042,639,815	1,461,601,087	1,787,656,918	2,268,109,119	-0.33%	0.28%	-0.49%	-0.26%	0.51%							
53	Extrabudgetary funds	23,912,316	39,181,346	47,623,965	96,369,669	85,205,493	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a							
54	Total (including extrabudgetary funds, excluding transfers)	843,128,341	1,082,775,416	1,490,891,505	1,806,817,758	2,309,037,992	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a							
55	Total (including extrabudgetary funds, including transfers)	844,897,605	1,084,699,128	1,502,071,447	1,849,240,298	2,364,856,463	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a							
<b>Consolidated State Budget</b>																							
(a) From BOOST																							
(b) From MOF Budget Execution Reports																							
Difference (a) - (b)																							
60	01 Governance and public administration sector	430,978,238	383,195,262	376,623,084	383,871,902	537,291,838	421,059,181	383,199,315	376,633,386	384,325,380	537,297,990	-0.02%	0.00%	0.00%	-0.12%	0.00%							
61	02 Defense	130,252,293	177,052,326	195,185,753	232,364,188	321,404,939	130,252,293	177,052,326	195,185,753	232,364,187	321,404,939	0.00%	0.00%	0.00%	0.00%	0.00%							
62	03 Law enforcement bodies	157,938,482	204,169,392	231,342,064	257,526,384	367,125,070	157,966,567	204,169,392	231,388,779	257,566,533	367,188,689	-0.02%	0.00%	-0.02%	-0.02%	-0.02%							
63	04 Education	437,048,256	612,631,971	843,895,675	989,951,067	1,183,332,379	437,048,251	612,631,971	845,419,289	989,951,062	1,183,332,379	0.00%	0.00%	-0.18%	0.00%	0.00%							
64	05 Healthcare	144,546,811	217,794,439	286,431,219	353,480,183	493,349,820	145,189,422	217,794,439	287,886,912	354,926,721	496,465,257	-0.44%	0.00%	-0.51%	-0.41%	-0.63%							
65	06 Social insurance and social protection	346,932,738	500,932,406	693,324,551	868,955,405	1,121,674,138	355,591,948	522,112,091	713,505,747	860,224,348	1,129,748,531	-2.44%	-4.06%	-2.83%	1.01%	-0.71%							

✓ **Step 7: Present BOOST to counterparts for reconciliation with official data**

Upon completion of the internal “alpha testing” phase, the Bank team should first the preliminary BOOST dataset over to the appropriate staff at the Treasury or Ministry of Finance for additional “beta testing”. During this stage, the technical counterpart team should be encouraged to perform extensive checks of the BOOST data, comparing it with official sources and flagging any remaining discrepancies. The objective of this stage is twofold: (i) by putting the BOOST dataset in the hands of the most frequent users of national budget data, the Bank team can ensure that the

Government begins to feel comfortable with it and accepts ownership of the data as its own; (ii) additionally, the thorough checks performed by MOF/Treasury staff can help identify and provide explanations for the discrepancies that only the most intimate users of national budget data can offer. This process should take the form of a dialogue between the relevant technical staff and the Bank’s country team (with support from the BOOST resource team). After a period of “beta testing”, the government counterparts should be encouraged to provide a list of fixes and suggestions to be implemented in the BOOST dataset in order to fully align it with national data.

✓ *Step 8: Incorporate counterpart feedback and finalize the BOOST database*

Once the feedback from the technical counterpart team is received, the BOOST database specialists should implement the proposed fixes. Every effort must be made on the part of the BOOST resource team—working together with the country team and the relevant MOF counterparts—to ensure the data’s alignment with national sources. Any remaining discrepancies must then be fully documented and, if possible, explained to the end-user. Upon completion of this phase, the country team should ensure that the Government is fully comfortable with the contents of the BOOST and “certifies” it (whether formally or informally) as information that is in line with national data sources.

✓ *Step 9: Prepare BOOST documentation*

When the database assembly is completed and has gone through the required “alpha” and “beta” testing phases, the BOOST resource team should prepare adequate documentation to inform the end-user about the various aspects of the database. The “User’s Manual” accompanying each country’s BOOST database should cover the following topics:

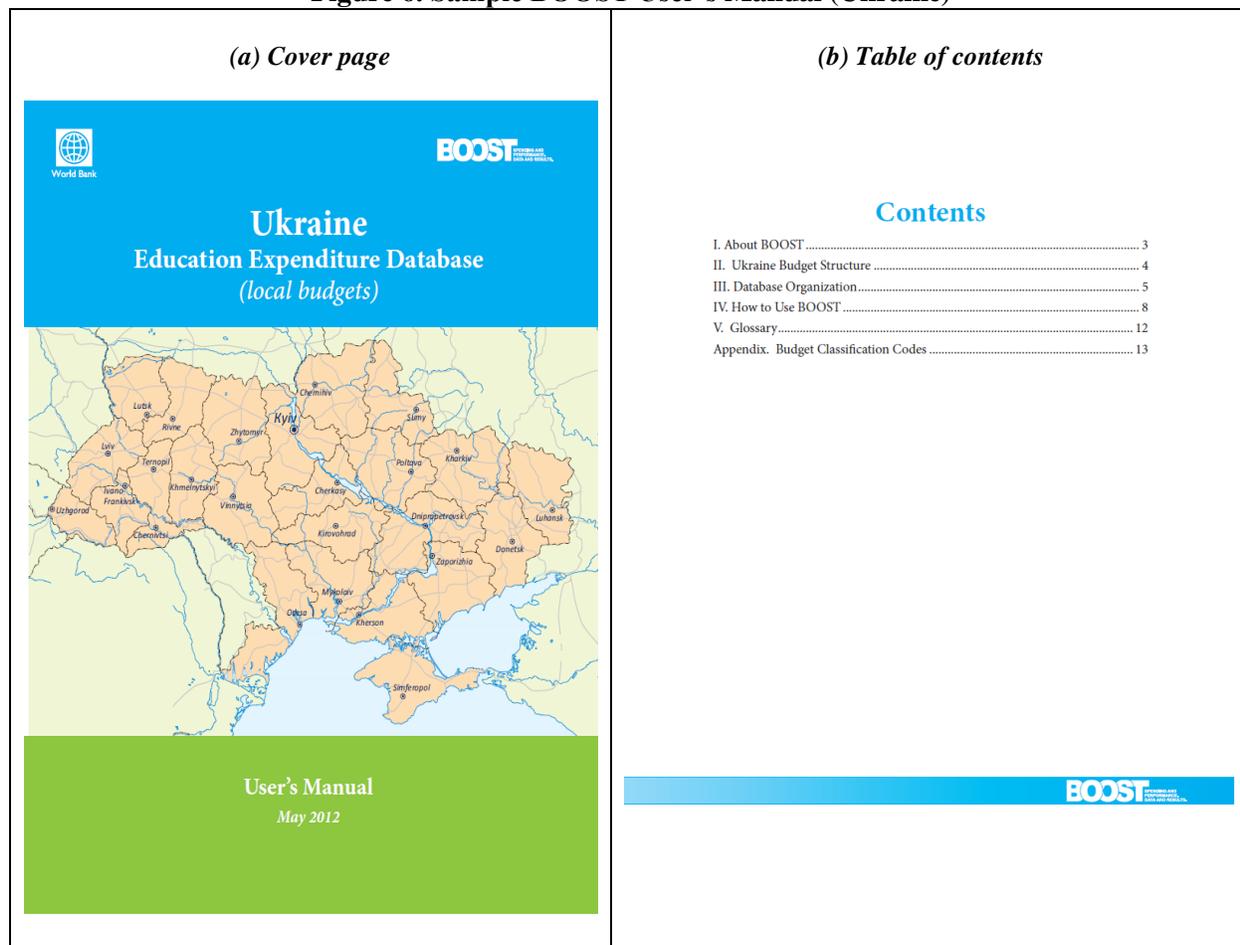
- Basic information about the BOOST initiative, such as its background, purpose, and objectives.
- Brief description of the national public budget structure of the country in question, including the various budget levels and financing sources through which public resources are spent.
- Detailed section describing the organization of the country’s BOOST database, including information about the data sources, the manner in which the national budget structure was aligned with the BOOST template, and the description of all variables and variable hierarchies in the BOOST database.
- Guidance on how to use the BOOST database with instructions for accessing the relevant data through Excel PivotTables or other available user interfaces, as well as examples of various analyses that can be performed with the dataset.
- Glossary of commonly used terms and acronyms.
- Appendix listing, if feasible, a full set of budget codes used in the BOOST database.

The documentation should clearly set out any assumptions or conversions employed during database construction. For example, if budget classification changes occurred during the years covered by the database, the manual should clearly outline how such changes were treated during database assembly and how they may affect the user experience. If some parts of the national

public budget are not covered, are not fully covered, or are covered in a lesser level of detail than other parts of the budget, the manual should fully describe the reasons for this.

Other sections and topics relevant to the country setting can also be covered in the User’s Manual, which should be prepared with the aim of maximizing the completeness and user-friendly nature of the BOOST tool (see Figure 6).

**Figure 6. Sample BOOST User’s Manual (Ukraine)**



✓ Step 10: Conduct formal training for government counterparts and interested users

The BOOST cycle can be considered complete when the Bank country team has engaged with the Government on maximizing the value of the BOOST database by utilizing it for in-depth analyses of public expenditures within the country. The country team should offer the Government a broad range of capacity building options, including areas in which the Bank can partner with the client to perform BOOST-aided analytical work on selected topics of interest.

Based on the client’s stated needs, the country team can identify the appropriate actors within or outside the Bank to deliver workshops and training seminars to government counterparts—including the Ministry of Finance and other interested ministries and agencies—on using the

BOOST tool to answer specific policy questions. Such an engagement can be included in the Bank's long-term work program in the country and linked to other planned activities in the respective sectors.

The country team can also engage with stakeholders in academia, civil society, and other non-government circles to build a broad user base for the BOOST tool within the country. A great deal of value can be added by fostering a dialogue between the Government and non-governmental actors on the need for a broad understanding and analysis of public spending. Issues of spending adequacy, equity, and efficiency in specific sectors or across the entire public sphere can be addressed productively when all interested users can have access to the same set of credible, detailed, and user-friendly set of data.

## *6.2. Analyzing public expenditures using BOOST*

The BOOST tool can facilitate the analysis of public expenditures in a number of ways. As discussed in the introduction above, detailed methodological guidance for applying BOOST to specific topics in public expenditure analysis is beyond the scope of this note. However, this section summarizes several areas in which the development of a BOOST government expenditure database can enhance the quality and depth of analysis on public spending.

BOOST's analytical uses can help answer two broad categories of questions: (i) *how* are public funds spent? and (ii) *how well* are they spent? To answer the first category of questions, a BOOST government expenditure dataset is often sufficient. Answering questions from the second category typically requires additional (non-financial) information in addition to the data on spending found in BOOST. This section summarizes the types of analyses that can be used to answer the two types of questions.

### ✓ *Analyses about **HOW** public funds are spent*

- Level and composition of expenditures: in the most recent year or in time-series; in aggregate or disaggregated by tiers of government, administrative units, sectors, expenditure categories, financing sources, or any combination of the above.
- Budget prioritization and allocations: alignment of approved and executed budgets with stated policy priorities; in the most recent year or in time-series; in aggregate or disaggregated by tiers of government, administrative units, sectors, expenditure categories, financing sources, or any combination of the above.
- Budget deviations: comparison of approved versus executed budgets to determine which budgets are under- or over-spent; in the most recent year or in time-series; in aggregate or disaggregated by tiers of government, administrative units, sectors, expenditure categories, financing sources, or any combination of the above.
- Trends within specific expenditure categories: such as personnel costs, procurement of goods and services, capital investment, or more detailed subcategories; alignment of trends within these categories with stated policy priorities.

✓ *Analyses about **HOW WELL** public funds are spent*

- Equity and targeting of expenditures: alignment of spending with perceived need; in aggregate or by sectors; typically measured in relation to levels of poverty or deprivation; requires merging BOOST data with information from household surveys, poverty maps, or other measures of social well-being (such as human opportunity indices, HOIs) to estimate benefit incidence across geographic areas or social strata.
- Efficiency of sectors or programs: alignment of spending on specific sectors or programs with sector/program performance; requires merging of BOOST data with information on sector/program performance, such as predetermined sector indicators used for performance-based budgeting or other available sector/program output or outcome indicators.
- Relative efficiency of expenditures: estimating technical efficiency in a sector of individual spending units, such as subnational/local governments or service facilities (e.g., schools, clinics); typically done through the application of one of several econometric techniques, which include linear or non-linear regressions and non-parametric estimation techniques (e.g., data envelopment analysis, DEA); requires merging of BOOST data with information on sector output or outcome indicators for each spending unit and some “controls” for variations in initial conditions.

### *6.3. Linking spending and results using BOOST sector modules*

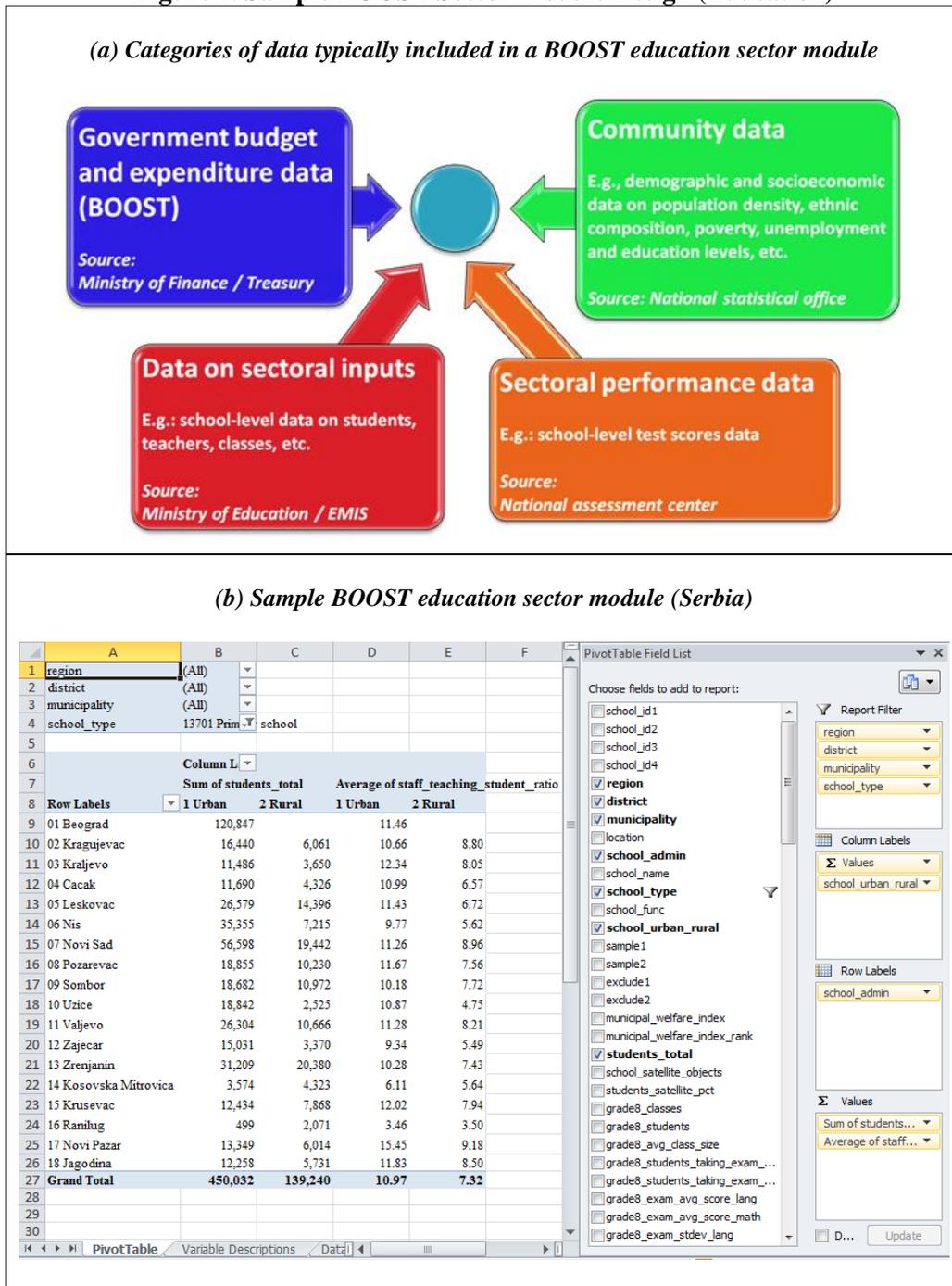
Conducting many types of analyses from the latter of two categories described above requires merging BOOST spending data with other types of information, including sector output or outcome indicators. This link between spending and results has been at the core of the BOOST initiative from the very beginning. Because BOOSTs compile all the detailed data on public spending for a country in one well-organized dataset, they can readily facilitate analyses that require merging such data with other highly disaggregated indicators. Combining financial data from BOOST with relevant non-financial indicators for a particular sector or type of analysis is typically done through the development of BOOST “sector modules”.<sup>11</sup>

The exact content and design of BOOST sector modules is determined by two factors: (i) analytical needs in a particular sector or topic and (ii) data availability. The typical unit of analysis for a given sector (e.g., a school in the case of education) will dictate the desired level of data detail in the respective sector module. If the national sources of available non-financial data do not collect information at the full level of disaggregation desired for analysis, the design of the sector module can be altered to a more aggregated level at which all of the required data are available (e.g., from the school to the municipality level). It is important to keep in mind that the level of observation in a BOOST sector module does not need to be the same as that of the core BOOST government expenditure database, which presents disaggregated spending at the level of budget line items.

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<sup>11</sup> Detailed guidance for the preparation of BOOST sector modules for individual sectors or topics is beyond the scope of this note. Subsequent BOOST analytical guidance notes for specific sectors/topics should cover the steps necessary to collect and compile the data required for each type of analysis.

**Figure 7. Sample BOOST Sector Module Design (Education)**



In the past, BOOST sector modules have been prepared in several countries for the education and health sectors, as well as for capital projects. Other areas of potential sector module development include, among others: agriculture, road, and judicial sectors. The indicators included in each module will be determined by the two factors described above. However, experience suggests that the following categories of indicators should typically be included:

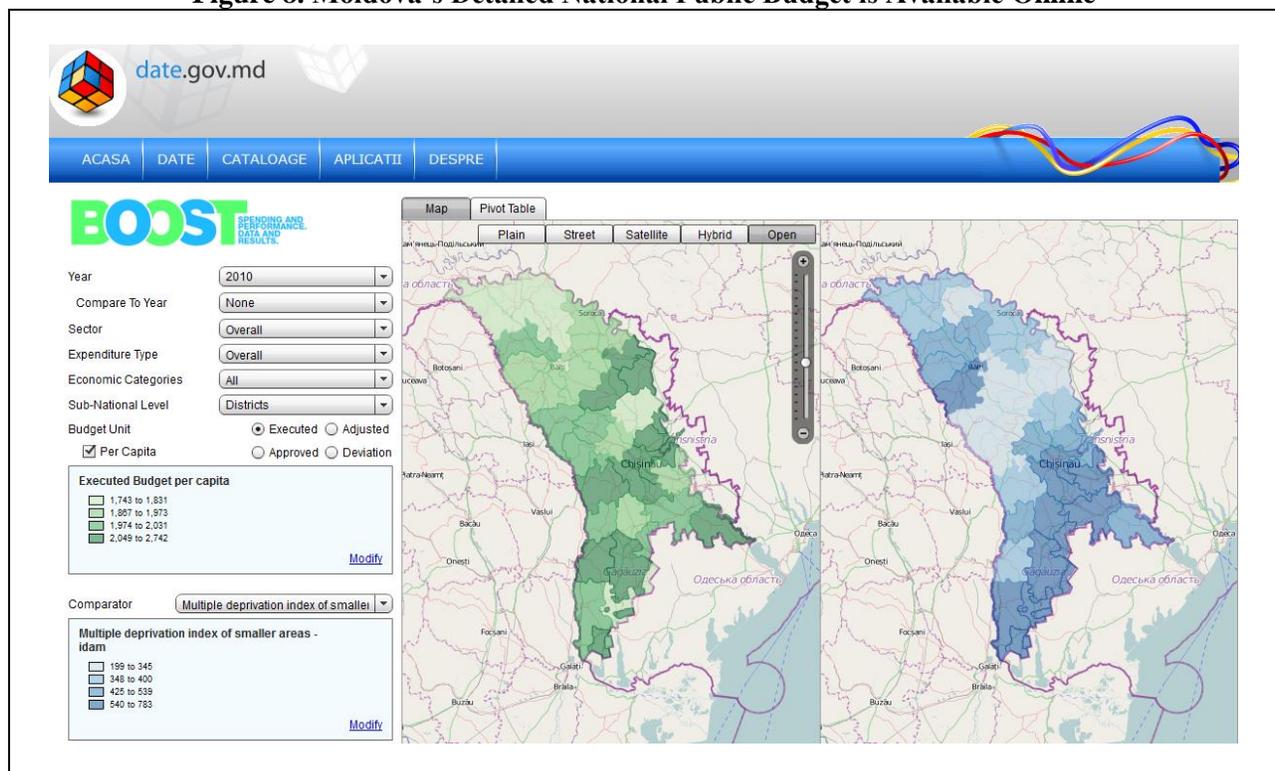
- Government budget and expenditure data (from BOOST)
- Sectoral input indicators (from administrative sources such as the sector ministry)
- Sectoral output/outcome indicators (from the sector ministry or other agency tasked with measuring sector performance)
- Data on background characteristics or other statistical indicators (from the national statistical agency)

A sample BOOST sector module design for the education sector is shown in Figure 7.

#### 6.4. Promoting budget transparency using BOOST

In addition to enhancing analytical capacity, another goal of the BOOST initiative is to increase transparency of public budgets around the world. Working toward greater transparency can improve public accountability of governments tasked with managing public finances. The development of comprehensive, easy-to-use government expenditure datasets under the BOOST initiative makes it easier for national authorities with a commitment to transparency to act on that commitment, and for non-state actors to access detailed fiscal data for in-depth analysis.

**Figure 8. Moldova’s Detailed National Public Budget is Available Online**



In recent years, the BOOST initiative has facilitated the public disclosure of detailed, user-friendly data on budgets and expenditures in several countries. In May 2011, Moldova became the first country in the world to publish its complete BOOST dataset online through its open data portal (see Figure 8). Kenya followed two months later. Since then, World Bank teams have used country

engagements on Public Expenditure Reviews as an opportunity to broach the subject of budget transparency. For example, the databases for Togo and Paraguay, released to the public in September 2012 and May 2013 respectively, served as outputs of the Public Expenditure Reviews conducted in each country.

These experiences reveal that more governments have an interest in providing more information to their citizens about how public funds are spent than previously thought. The binding constraint in many cases is not the desire for secrecy, but rather the lack of capacity to organize and disseminate large amounts of (often poorly organized) information to the general public. The development of a BOOST database, therefore, can help governments become more open with their citizens (in addition to also helping them become more sophisticated users of their own data).

The growing demand for budget transparency has led the World Bank to develop a new Open Budgets Portal. The Portal serves as a one-stop shop for fiscal microdata from around the world that is already found in the public domain. By assembling such data in the form of standard, comprehensive datasets that undergo the BOOST consistency checks, the Portal can serve as a valuable global public good for use by a wide range of stakeholders worldwide. More information about the Open Budgets Portal can be found in Box 2.

## Box 2. BOOST Open Budgets Portal

Scheduled for launch in the Fall of 2013, the Open Budgets Portal will for the first time create a one-stop shop for fiscal microdata from different countries around the world. Developed by the World Bank with the aim of bringing visibility to countries' efforts in the field of budget transparency, the Portal hopes to promote the use of such data for public expenditure analysis and motivate other countries into action.

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The **open budgets portal** is the first effort to create a one stop shop for budget data worldwide with the hope of bringing visibility to countries' efforts in this field, facilitate access and promote use of spending data, and motivate other countries into action.

The portal offers the opportunity to showcase a subset of developing countries and states (identified by blue markers) that have excelled in the exploration of new frontiers of fiscal transparency by choosing to disseminate in accessible formats (i.e., soft copy) the entire public spending datasets. For these countries, users will be able to download the entire public expenditure landscape in one consolidated file as it was rigorously collected, cleaned and verified through the **BOOST Initiative**. For each of these countries, the site also includes links to the original open data portals as they provide

The Portal offers several tools for accessing country-level data and provides reference resources that can be useful for users of such data. In particular, these include:

- Country data pages allow users to query expenditure data by constructing custom tables via an interactive data interface, access the entire expenditure database through a Socrata platform, or download the dataset in Excel. They include a BOOST user's manual and offer links to resources about the country's public expenditures from national or international sources.
- Country resource pages present official reports produced by governments, the World Bank, and other organizations engaged in public expenditure and budget-related work.
- Reference resources include links to World Bank Public Expenditure Reviews, methodological guidance on expenditure-related topics, as well as references to related international initiatives and other data portals.

As more countries place move to make their fiscal microdata available to the public, the Open Budgets Portal will continue to highlight these efforts and work to present standard, easy-to-use budget and expenditure datasets to a growing global audience.

# Annex 1. Standard Structure of a BOOST Government Expenditure Database

## Figure 9. Standard Structure of a BOOST Government Expenditure Database (Moldova)

### (a) BOOST government expenditure database in Excel

1	year	admin1	admin2	admin3	admin4	admin5	admin6	func1	func2	econ1	econ2	program1	program2	fin_source	exp_type	transfer	approved	adjusted	executed					
2	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	111	Remun	111.00	Ren	0	0	Base comp/ Personnel	Excluding tr	15404600	22198500	22107734
3	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	112	Manda	112.00	Mfa	0	0	Base comp/ Personnel	Excluding tr	3715400	4822000	4816788
4	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.01	Pow	0	0	Special mea/ Non-pers	Excluding tr	25100	0	0
5	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.02	Nat	0	0	Special mea/ Non-pers	Excluding tr	70200	0	0
6	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.03	Offi	0	0	Special mea/ Non-pers	Excluding tr	16700	2700	2627.04
7	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.03	Offi	0	0	Base comp/ Non-pers	Excluding tr	1526800	1526800	1474723
8	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.06	Boo	0	0	Base comp/ Non-pers	Excluding tr	161600	161600	151980.6
9	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.10	Dru	0	0	Base comp/ Non-pers	Excluding tr	4100	4100	4000
10	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.11	Telk	0	0	Base comp/ Non-pers	Excluding tr	1334800	1174800	1149420
11	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.13	Tras	0	0	Base comp/ Non-pers	Excluding tr	10000	10000	9443.88
12	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.17	Cur	0	0	Base comp/ Non-pers	Excluding tr	500000	350000	347293.6
13	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.18	Cur	0	0	Special mea/ Non-pers	Excluding tr	70300	2600	2559.48
14	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.18	Cur	0	0	Base comp/ Non-pers	Excluding tr	456100	521900	511513.9
15	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.20	Use	0	0	Base comp/ Non-pers	Excluding tr	12000	15000	14920
16	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.21	Tras	0	0	Base comp/ Non-pers	Excluding tr	25000	7000	4034
17	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.22	Prin	0	0	Base comp/ Non-pers	Excluding tr	306600	156600	151185
18	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.23	Rep	0	0	Base comp/ Non-pers	Excluding tr	1051600	1536600	1446254
19	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.30	IT a	0	0	Base comp/ Non-pers	Excluding tr	138000	55800	53566.52
20	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	113	Payme	113.43	Goc	0	0	Base comp/ Non-pers	Excluding tr	60000	35000	26954.01
21	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	114	Duty t	114.01	Tras	0	0	Base comp/ Non-pers	Excluding tr	2700	2700	0
22	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	114	Duty t	114.02	Tras	0	0	Base comp/ Non-pers	Excluding tr	1497300	1847300	1757112
23	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	116	Emplo/	116.01	Emq	0	0	Base comp/ Personnel	Excluding tr	285800	369900	369185.3
24	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	131	Transf	131.09	Oth	0	0	Base comp/ Non-pers	Excluding tr	0	47300	42724
25	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	135	Transf	135.25	Oth	0	0	Base comp/ Non-pers	Excluding tr	1296000	1296000	1287962
26	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	242	Purcha	242.00	Pur	0	0	Special mea/ Capital	Excluding tr	134200	0	0
27	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	243	Purcha	243.00	Pur	0	0	Base comp/ Capital	Excluding tr	1775000	1269900	1263972
28	2006	Central	101	Parliar	0101	Parliament		010	Central	01	General	01.01	Legis	243	Purcha	243.00	Pur	0	0	Base comp/ Capital	Excluding tr	651100	651100	612506
29	2006	Central	101	Parliar	1001	Directorate service of the Mol218	Buildin	01	General	01.01	Legis	111	Remun	111.00	Ren	0	0	0	0	Base comp/ Personnel	Excluding tr	1478000	1813600	1744399
30	2006	Central	101	Parliar	1001	Directorate service of the Mol218	Buildin	01	General	01.01	Legis	112	Manda	112.00	Mfa	0	0	0	0	Base comp/ Personnel	Excluding tr	329400	412700	397690

### (b) BOOST Excel PivotTable interface

1	admin1	fin_source	exp_type	transfer	Sum of executed	2006	2007	2008	2009	2010	2011
7	01	General purpose state services			1,039,418,903	1,267,588,539	1,420,202,375	1,412,435,633	1,361,619,803	1,456,624,978	
8	02	Foreign relations			235,322,778	283,284,061	271,927,649	200,761,174	210,918,143	225,430,828	
10	03	National defense			216,106,284	275,906,560	382,917,523	249,165,253	235,616,227	269,494,978	
11	04	Justice			188,641,215	228,194,212	278,043,541	308,895,486	339,092,766	351,611,964	
12	05	Enforcement of public order and national security			990,356,272	1,269,659,006	1,381,971,911	1,522,376,690	1,305,168,026	1,534,847,334	
13	06	Education			3,680,225,311	4,258,784,449	5,193,674,088	5,671,899,958	6,574,842,825	6,868,897,246	
14	07	Research and innovations			199,490,664	307,742,655	394,833,082	353,774,986	357,030,995	336,732,271	
15	08	Culture, arts, sports and youth activities			510,129,841	567,630,217	645,658,429	589,769,023	589,891,626	750,705,282	
16	09	Healthcare			2,153,920,087	2,629,061,990	3,392,923,980	3,848,456,639	3,996,565,248	4,259,626,248	
17	10	Social care and social insurance			5,174,825,555	6,621,048,904	7,915,492,326	9,101,363,605	10,254,492,099	11,085,617,252	
18	11	Agriculture, forestry, fishery and water service			685,335,925	1,230,315,246	1,244,329,107	1,034,123,378	857,734,151	843,462,831	
19	12	Environment protection and hydrometeorology			108,171,446	104,406,558	94,085,827	125,985,382	127,691,426	220,550,182	
20	13	Industry and construction			40,793,833	44,877,988	31,637,487	34,189,177	30,778,877	34,675,091	
21	14	Transports, roads, communications and IT			594,921,464	1,063,956,727	1,147,277,203	684,462,703	1,104,134,215	1,469,171,169	
22	15	Utilities and housing			1,145,133,485	755,689,761	632,692,666	542,927,892	828,950,028	778,415,973	
23	16	Fuel and energy			569,903,481	461,186,626	261,499,540	192,442,896	184,652,156	89,710,576	
24	17	State debt servicing			428,592,896	609,794,672	721,591,064	834,250,576	547,615,368	662,430,367	
25	18	Restoring the state reserves			83,703,482	55,251,706	189,492,195	176,268,194	40,736,796	33,504,294	
26	19	Other economy-related services			96,041,632	190,240,665	183,086,829	138,787,977	190,554,881	401,144,928	
27	20	Services and activities unattributable to any other core			455,643,329	284,982,872	340,185,953	370,201,812	303,961,523	520,879,600	
28	23	Net lending			-60,950,313	-61,640,915	20,750,889	-50,139,181	-111,838,655	-82,384,702	
29	<b>Grand Total</b>				<b>18,535,727,578</b>	<b>22,447,962,498</b>	<b>26,144,263,664</b>	<b>27,342,399,253</b>	<b>29,330,188,524</b>	<b>32,111,168,690</b>	

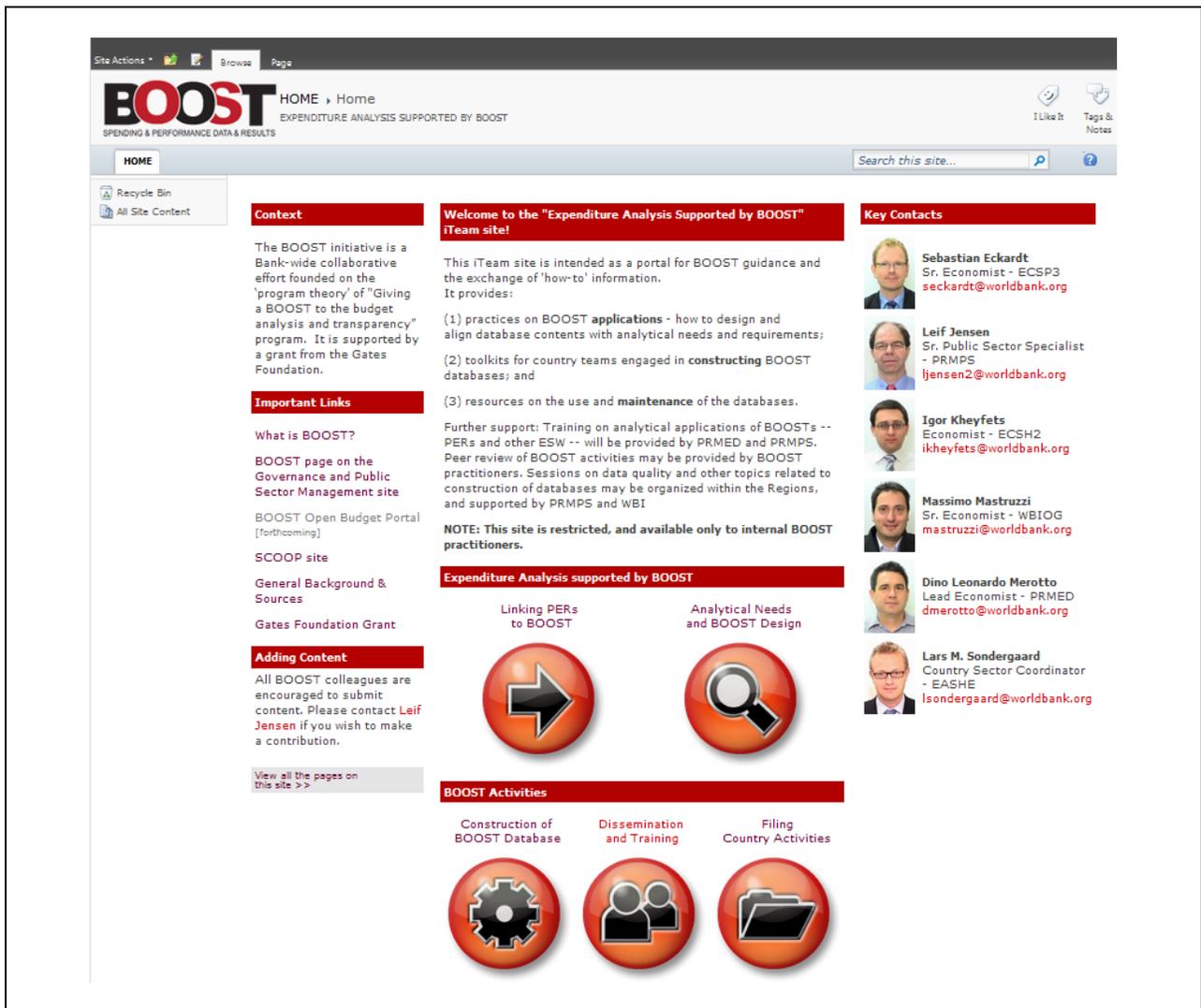
## Annex 2. List of Online Resources

Guidance on the following topics is available to World Bank users through the BOOST iTeam site:

- Analytical needs and BOOST design
- Construction of BOOST databases
- Dissemination and training
- Filing country activities
- Linking PERs to BOOST

Additional resources can be found in the References section below. The BOOST Secretariat and regional BOOST resource teams are ready to assist country teams with questions on a variety of BOOST-related topics.

**Figure 10. BOOST iTeam Site Provides Guidance for World Bank BOOST Practitioners**



## References

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\* = *Internal resources for World Bank use only.*



To learn more about the BOOST program visit us at: [www.worldbank.org/boost](http://www.worldbank.org/boost) or contact Massimo Mastruzzi at [mmastruzzi@worldbank.org](mailto:mmastruzzi@worldbank.org).