



# A New Data Tool to BOOST Public Spending Efficiency

Igor Kheyfets, Massimo Mastruzzi, Dino Merotto and Lars Sondergaard

## Key Messages

- The BOOST<sup>1</sup> data tool makes it easy to analyze how the allocation and use of public expenditure can be made more efficient.
- BOOST makes detailed public spending data, including data on sub-national spending, more open and accessible than ever before.
- BOOST facilitates more practical and insightful analytical work to inform policy recommendations to improve the quality and efficiency of public service delivery.
- BOOSTs are being constructed in more than 17 countries around the world (as of August, 2011). Two countries have already made BOOST publicly available so that citizens can monitor public spending more actively.

## Introduction

The global financial crisis has prompted many governments to seek efficiency savings in order to reduce budget deficits and restore medium-term structural balance without harming long-term growth prospects or service quality.

**To reap savings from inefficiencies, governments must be able to identify such inefficiencies and examine their root causes.** One way of doing so is through analytical work that sheds light on where in the budget more can be done with less.<sup>2</sup> The quality and usefulness of such analytical work depends, in part, on whether available data is sufficiently detailed to allow public sector analysts to

pinpoint where in the country (by sector, type of spending, or by ministry or agency) resources can be saved.

**Officials looking for inefficiencies in spending are not the only ones asking for more data.** Governments are under increased pressure from civil society to be more transparent about how they use scarce taxpayer resources. Despite the presence of comprehensive government data systems in many Eastern Europe and Central Asian (ECA) countries, little information is actually available publicly in a format useful enough to hold governments to account. Typically, aggregated budget and spending figures are made available on government websites in multiple files, which can make it prohibitively costly and time consuming for non-government groups to collect and make assessments of spending data.

**On the international front, currently available public expenditure databases suffer from three main problems.** First, available data is aggregated, usually at the national level, providing little information on spending by sub-national entities. Second, data is available with a two or three year lag, making it less useful for informing policy decisions in a timely manner. Third, the data rarely contains information about initial and revised budgets in addition to actual spending. Existing databases may be useful for quick cross-country comparisons but are inadequate for the type of detailed efficiency analyses that can identify specific inefficiencies.

## Enhancing Analytical Work and Giving a BOOST to Public Sector Transparency

**A new World Bank tool called BOOST seeks to address the problems described above.** BOOST collects and compiles detailed data on public expenditures from national treasury systems and presents it in a simple user-friendly format. BOOST can then be used by researchers, government officials and ordinary citizens to examine trends in allocations of public resources, analyze potential

<sup>1</sup> BOOST is not an acronym. It is the name of a new data tool developed at the World Bank to help enhance public sector performance.

<sup>2</sup> Within the World Bank, such work is carried out in Public Expenditure Reviews (PERs).

sources of inefficiencies, and become better informed about how governments finance the delivery of public services.

**How does BOOST work?** The process starts by gathering detailed government expenditure data directly from a country's treasury system. By requesting raw data at the most disaggregated level available, the resulting BOOST database takes advantage of the full breadth and depth of the country's budget classification system. The data on expenditures, organized using all of the country's budget classification codes, is then compiled in one database that covers all sectors, all spending units, and all types of expenditures recorded in the treasury system.

**The content of each BOOST is country-specific.** For instance, some Ministries of Finance have IT systems that record detailed expenditure data for every provider of public services (for example, schools, health clinics, police stations, etc.), while others may only have data aggregated at the district levels. Nonetheless, all BOOSTs have some common features. Each database typically contains information on the approved budget, revised budget, and actual expenditure amounts broken down by:

- *government level* (central or local);
- *administrative unit* (typically a ministry, department, agency, university, hospital, or school);
- *sub-national spending unit* (such as districts, municipalities, towns and villages);
- *economic classification* (wages, goods and services, capital expenses, etc.);
- *functional classification* (sector and sub-sector);
- *program classification* (if the country uses program-based budgeting); and
- *financing source* (budget revenue, domestic or foreign borrowing, etc.).

**To allow users to easily navigate these multiple dimensions, the data is presented in Microsoft Excel with a PivotTable front-end user interface.** The PivotTable feature in Excel allows the user to aggregate data using different combinations of budget classifications, or to choose (using filters) individual items of spending by sector, region, or budget holder and drill down further to get a better understanding of how that spending has evolved. For instance, a user of Moldova's BOOST can filter the data to focus only on education expenditure; then break it down into spending by each district, mayoralty, and down to each school. The data can be further broken down by economic use: salaries, textbooks, heating, etc. Similarly, the user can break down the total expenditure of one of Moldova's universities by spending financed by budget revenues

and/or spending out of own-source revenues obtained from student tuition payments. The tool comes with a user manual and World Bank teams are also providing training in its usage to counterparts and civil society (in the countries where governments have already made the tool publicly available).

**Since 2009, BOOST databases have been developed (or are currently under construction) for 17 countries around the world.** As of August 2011, BOOSTs are available for the following countries in the ECA region: Armenia, Azerbaijan, Bulgaria, Latvia, Moldova, Poland, and Romania. Databases for Belarus, the Kyrgyz Republic, Serbia, and Ukraine are under construction.<sup>3</sup> Moreover, two governments, Moldova and Kenya, have worked with the BOOST team to increase the transparency of public spending by making the full set of public expenditure data available on the web through their respective Open Data portals.<sup>4</sup>

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### Using BOOST to Improve the Quality and Efficiency of Service Delivery

**How are public resources being spent and who is spending them?** BOOST can provide information on *how* money is spent and by *whom* it is spent. Standard tables showing trends in spending - broken down by the economic, functional, or administrative classification of the budget (or any combination of each) - can be generated in a matter of hours instead of weeks or months. Most usefully, where a country's budget classification allows, the user can track expenditures at the point of service delivery - districts, hospitals, schools, etc.

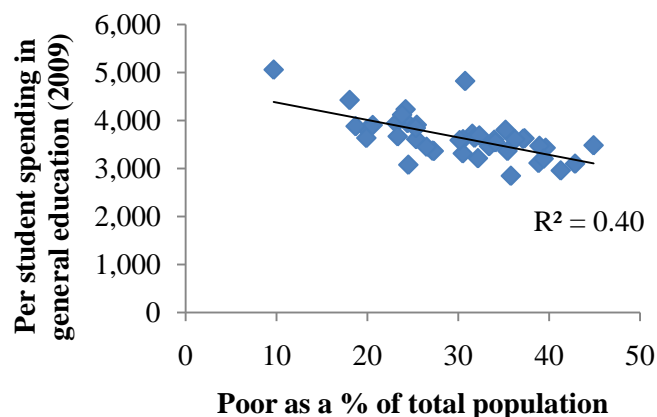
**Is public money reaching those with the greatest need?** Most countries build equity into the provision of budgetary resources for municipalities and districts. BOOST can be used to examine the extent to which resources have actually penetrated areas where the need is greatest. For instance, the BOOST tool was used to illustrate inequities in the financing of pre-university education in Romania. In Figure 1, district level data was used to calculate per-student expenditure across Romania's 41 districts. The graph showed that poorer districts, which would arguably require more resources to raise the learning outcomes of their students, were spending less than richer districts.

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<sup>3</sup> For Belarus and Ukraine, BOOSTs cover only the education and health sectors.

<sup>4</sup> Kenya's and Moldova's BOOSTs are available, respectively, at <http://www.opendata.go.ke/> and <http://data.gov.md/data/?did=107>

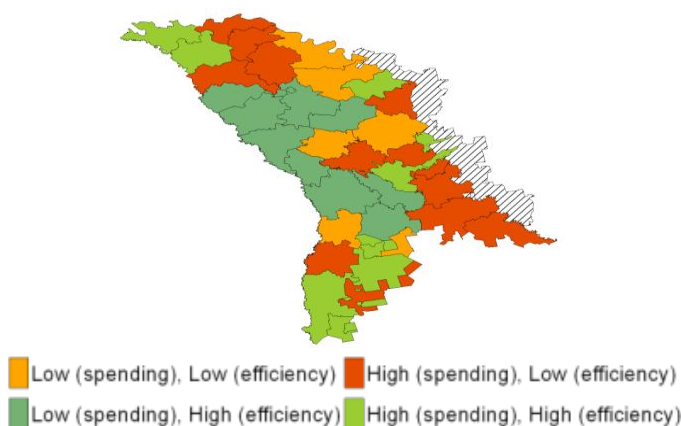
**Figure 1: Per-Student Spending and Poverty Levels in Districts of Romania, 2009**



Source: Authors' calculations based on the Romania BOOST database and national data sources

**How well are public resources being spent?** One way to answer this question is to examine the 'technical efficiency' of public spending, a task which the BOOST tool can facilitate. One particularly powerful way of examining this question is to link budget management centers, both within a sector and across geographic areas, to the inputs they use and the results (whether outputs or outcomes) they generate. Such work provides policymakers with invaluable insights into which spending units or regions are performing well or poorly with their available resources (and outside circumstances). While the BOOST tool does not automate the analysis of efficiency spending, it substantially lowers the cost of conducting such an analysis. In particular, without BOOST, analytical work comparing sub-national or even provider-level performance tends to be prohibitively costly because of the data requirements and the time it normally takes for outsiders to obtain such data.

**Figure 2: Relative Efficiency of Public Education Spending in Districts of Moldova, 2009**



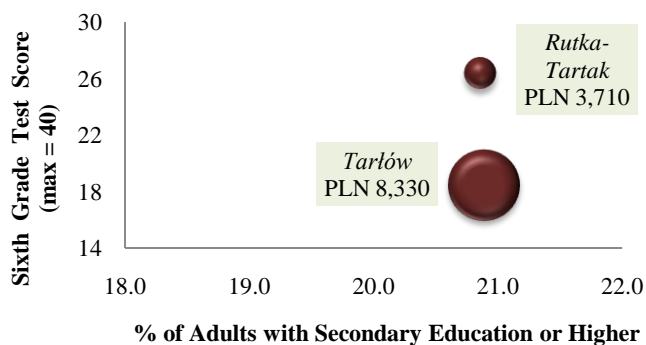
Source: Authors' calculations based on the Moldova BOOST database and national data sources

The World Bank team in Moldova used BOOST to combine per-pupil spending with other inputs and service delivery outputs in education to generate efficiency frontiers using

an analytical method called Data Envelopment Analysis (DEA). The relative efficiency scores thus derived were compared with approximations of need (as measured by a national deprivation index) and what was received (amount of per-student spending). The results were mapped to reveal differences across the country (see Figure 2): green areas represent the high performing districts worth emulating while red areas require corrective interventions because they achieve little despite high spending and favorable conditions.

Such analysis allows budget providers (for example, Ministries of Finance) and budget implementers (for example, line ministries and local authorities) to start a conversation on why similar combinations of spending and inputs result in different outcomes, and how better or similar outcomes can occur for budget centers that receive lower spending and lower inputs. BOOST was used, for example, to start a debate on primary education spending efficiency in Poland. In particular, Figure 3 illustrates that very similar rural municipalities (Rutka-Tartak and Tarlow) not only spent radically different amounts on a per-student basis, but low spending localities (in this case Rutka-Tartak) frequently outperformed the high-spending localities in students' test score results. These results, then, provided the starting point for further analysis of the underlying causes of these outcomes.

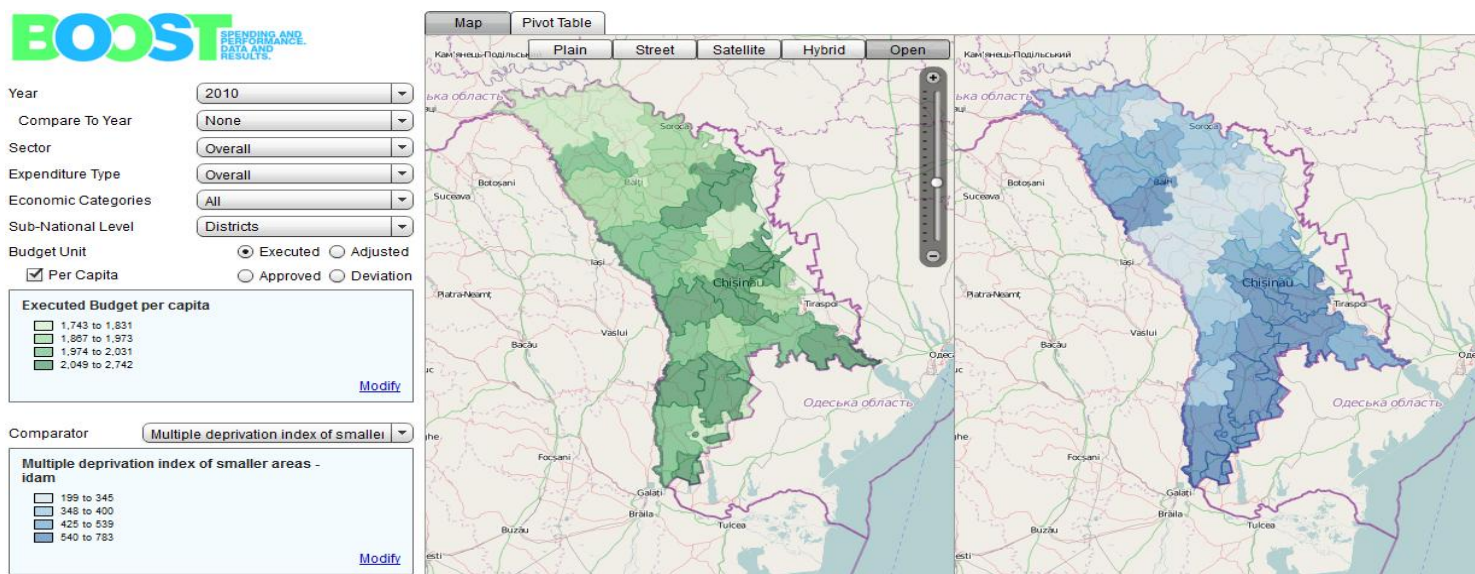
**Figure 3: Per-Student Spending (Size of Bubble) and Test Score Results (Vertical Axis) in Poland, 2009**



Source: Authors' calculations based on the Poland BOOST database and national data sources

**Are budgets over- or under-spent?** BOOST allows analysts to examine the deviation between planned and actual budget expenditures, thus providing economists and financial management and procurement specialists with an additional indicator of technical efficiency in implementing a budget. Officials and analysts need to know the extent to which inefficiencies are the result of managerial problems in implementing planned spending, and not caused by the allocation of resources or the choices made about how to spend them.

Figure 4: Web-Based BOOST Portal



Source: Authors

In several countries, BOOST has helped identify the main sectors and agencies responsible for systematic over- and under-spending.

## Open Data: Fostering Budget Transparency

The BOOST tool presents an enormous opportunity for governments to provide easier access to budget data and to allow civil society the means to get involved in monitoring public spending. To this end, a web-based application has been developed (see Figure 4) that will allow citizens easy access to public data. Of course, no data is disclosed without government consent but the BOOST team continues to emphasize that making such data publicly available signals a government's strong commitment to transparency.

## The Path Ahead

Obtaining more detailed data than what is commonly available to researchers and making it readily available in an easy-to-use format will facilitate the work of many different actors within and outside the World Bank. Any opportunity to conduct more insightful analytical work improves the quality of advice provided to policymakers. Currently, since the BOOST initiative is still in its infancy, most users are from the Ministries of Finance in various governments or from the World Bank. However, the tool will have far wider reach into civil society, academia and other areas going forward.

In the coming months and years, the BOOST team will continue to improve this tool, working along four dimensions:

- Build BOOSTs in more countries;
- Expand training in the use of BOOSTs to government officials and civil society;
- Showcase that superior policy advice can be generated when detailed data is placed in the hands of policy analysts; and
- Work with governments to make their BOOSTs publicly available.

## About the Authors

To learn more about the BOOST initiative, please contact the authors.

Igor Kheyfets (ikheyfets@worldbank.org) is a Consultant and Lars Sondergaard (lsondergaard@worldbank.org) a Senior Economist with the Human Development Sector Unit of the Europe and Central Asia Region of the World Bank.

Dino Merotto (dmerotto@worldbank.org) is a Senior Economist with the Poverty Reduction and Economic Management Unit of the Europe and Central Asia Region of the World Bank.

Massimo Mastruzzi (mmastruzzi@worldbank.org) is an Economist with the Open Government Unit of the World Bank Institute.