User’s Manual to
The Minas Gerais Expenditures Database

The World Bank and the Minas Gerais Secretary of Planning
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1. Introduction
A central function of any government involves collecting and spending public funds and maintaining records of such expenditures. Budgets are at the core of government activity: they provide a clear picture of what the national priorities are, and where governments can make efficiency gains. From that perspective, timely and concise budget analysis is necessary for policymaking. Despite their relevance for policymakers, public budgets are usually hard to access and understand, even though IT-based applications can open doors for analysis and policymaking. In that spirit, the World Bank has collaborated with governments around the World to create easy-to-use public expenditure databases that make budgets accessible, understandable, and ready to use.

As part of its commitment with a more efficient and effective Public Financial Management, the Government of Minas Gerais created, jointly with the World Bank, a public expenditure database to track and analyze public expenditures.

The purpose of this project was to construct a comprehensive database of Minas Gerais’ budget by collecting expenditures executed by the state government from data provided by the Secretary of Planning for the period between 2005 and 2011, and presenting the final product in a user-friendly manner. This is a tool designed for budgetary analysis by public officials and researchers. This manual describes the database and provides the information necessary to analyze Minas Gerais public expenditures. This document is organized as follows:

- Part II outlines the structure of the data provided by the Minas Gerais Government.
- Part III presents the organization of the database.
- Part IV explains how to use the database with an Excel pivot table.

The Minas Gerais Expenditure Database was built as part of the BOOST project. The purpose of the BOOST project (started by the World Bank in early 2010) is to enhance budget analysis across the globe by improving access to government expenditure data and linking spending to outputs and outcomes to the extent of possibilities. Minas Gerais was the first subnational government to participate in the initiative. As of June 2013, the BOOST Team has collected and processed detailed government expenditure data from more than twenty countries across four regions, creating easy-to-use databases that have been employed by World Bank researchers and policymakers on a variety of projects. As of today, 12 countries and states have agreed to make their databases publicly available. A BOOST consists of three Excel spreadsheets: the first one, called “Variables description”, describes the variables of the database. The second one, called “Raw Data”, contains information at the line level and can be used by experts in budget and Excel to do in-depth analyses. “Raw Data” also feeds into the sheet “Pivot”, which allows users to do customized tables using Excel’s Pivot Table functionality.

The core BOOST team for Minas Gerais consists of Massimo Mastruzzi (mmastruzzi@worldbank.org) and Francisco Vazquez-Ahued.
(fvazquezahued@worldbank.org). Please feel free to contact us with any questions or suggestions about BOOST.

We hope this database is helpful in opening new avenues of analysis and providing answers to important questions regarding the efficiency, equity, and effectiveness of government spending.
2. Structure of the Database
The data for Minas Gerais includes expenditures executed by different agencies of the central government. The data is disaggregated by administrative, functional, program, and economic classification. The source of funding for each budget line is also identified.

For comparison purposes, Table 1 classifies the variables of the Minas Gerais database according to the economic, functional, and administrative classifications of other BOOST public expenditure databases created by the World Bank.

As far as expenditures are concerned, the Minas Gerais database presents 5 stages of the budgetary cycle:

- Approved budget (*Orcamento*), which is the budget originally approved by the Minas Gerais Legislative Assembly. This variable is available only from 2007 onwards and is available only at the ECON4 level.
- Committed (*Despesa Empenhada*), which is the amount apportioned for expenditure.
- Validation (*Despesa Liquidada*), which is the amount recognized for payment.
- Ordered to pay (*Despesa Realizada*), which is the amount authorized for payment.
- Payment (*Pago orcamentario*), which is the amount actually paid.

Table 1. Variable description

<table>
<thead>
<tr>
<th>BOOST Variables</th>
<th>Original Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin1</td>
<td>Unidade Orcamentaria</td>
</tr>
<tr>
<td>Function1</td>
<td>Funcao</td>
</tr>
<tr>
<td>Function2</td>
<td>Subfuncao</td>
</tr>
<tr>
<td>Econ1</td>
<td>Grupo Despesa</td>
</tr>
<tr>
<td>Econ2</td>
<td>Modalidade</td>
</tr>
<tr>
<td>Econ3</td>
<td>Categoria</td>
</tr>
<tr>
<td>Econ4</td>
<td>Elemento Despesa</td>
</tr>
<tr>
<td>Econ5</td>
<td>Item Despesa</td>
</tr>
<tr>
<td>Program1</td>
<td>Programa</td>
</tr>
<tr>
<td>Program2</td>
<td>Acao</td>
</tr>
<tr>
<td>Source_fin1</td>
<td>Chave</td>
</tr>
<tr>
<td>Source_fin2</td>
<td>IPU</td>
</tr>
</tbody>
</table>
### Expenditure variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPROVED*</td>
<td><em>Orcamento</em></td>
</tr>
<tr>
<td>COMMITTED</td>
<td><em>Valor Despesa Empenhada</em></td>
</tr>
<tr>
<td>VALIDATION</td>
<td><em>Valor Despesa Liquidada</em></td>
</tr>
<tr>
<td>ORDER TO PAY</td>
<td><em>Valor Despesa Realizada</em></td>
</tr>
<tr>
<td>PAYMENT</td>
<td><em>Valor Pago Orcamentário</em></td>
</tr>
</tbody>
</table>

*Available only since 2007

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#### 2.1 Particularities of the Data

Compared with other datasets, the Minas Gerais database presents the following particularities:

- Inclusion of two levels of source of funding for investment expenditures.
- The main limitations of the database are:
  - The variable APPROVED (*Orcamento*) is available only from 2007 onwards and only at the level of ECON4 (*Elemento Despesa*).
  - In light of the extremely limited resources available to the BOOST Team, the variable PROGRAM2 (*Acao*) was not translated from Portuguese to English.
3. How to use the Minas Gerais Database. Some examples
For ease of use, the BOOST team has developed a standard user interface through which to access the BOOST government expenditure database with the help of Excel PivotTables.

A PivotTable report is an interactive way to quickly summarize large amounts of data. Use a PivotTable report to analyze numerical data in detail and to answer unanticipated questions about your data. A PivotTable report is especially designed for:

- Querying large amounts of data in many user-friendly ways.
- Subtotaling and aggregating numeric data, summarizing data by categories and subcategories, and creating custom calculations and formulas.
- Expanding and collapsing levels of data to focus your results, and drilling down to details from the summary data for areas of interest to you.
- Moving rows to columns or columns to rows (or “pivoting”) to see different summaries of the source data.
- Filtering, sorting, grouping, and conditionally formatting the most useful and interesting subset of data to enable you to focus on the information that you want.
- Presenting concise, attractive, and annotated online or printed reports.¹

PivotTables are straightforward and easy to use and allow for quick, customizable analyses of large amounts of data. This section presents several examples of using the BOOST PivotTable interface to general custom reports. With BOOST, as with many things in life, the best way to learn is by doing.²


² The minimum technical requirements for using the Moldova BOOST government expenditure database are as follows: (i) a computer with at least 1 GB of RAM (2 GB preferred); (ii) Microsoft Excel version 2007 or later (or similar database software that allows loading of files with at least one million lines of data).
3.1. Example 1. Trend Analysis by Administrative Unit

Figure 2 below presents a simple example of time trend analysis at the macro level. It reports total government expenditures from 2005 to 2011, broken down by the top-level administrative classification. To generate this PivotTable, \textit{ADMIN1} is placed in the Row Labels box, \textit{Year} in the Column Labels box, and the values in the body of the table consist of the sum of the \textit{PAYMENT} variable.

**Figure 1. Examining Government Expenditure across years**

Do it yourself: how would you generate a similar table using the functional (\textit{FUNCTION1}) instead of the administrative classification?
3.2. Example 2. Composition Breakdown

Figure 3 below presents a breakdown of 2011 government expenditures by economic category and sub-category for each sector in the Minas Gerais functional budget classification. To generate this PivotTable, ECON1 and ECON2 are placed in the Row Labels box, FUNCTION1 in the Column Labels box and the Year (2011) variable is used as a filter. The values in the body of the table consist of the sum of the PAYMENT variable.

Figure 2. Examining the Composition of Expenditure by Sector
3.3. Example 3. Deviation Analysis

One of the most basic but revealing exercises you can do with BOOST is a deviation analysis; i.e., how much of the budget authorized by the Legislative Assembly was executed at the end of the year. To do this, you need to follow the following steps:

1. Place ADMIN1 is the Row Labels box. Year in the Column Labels box. As no data on approved budget is available for 2005 and 2006, it is necessary to filter for the period between 2007 and 2011 by clicking on the gray square in the right side of cell B3 and ticking off 2005 and 2006. The values in the body of the table consist of the sum of the APPROVED and PAYMENT variables. You should get a table like the following one:

2. Create a new sheet called “Deviation”.
3. Go back to sheet Pivot Table. Copy the Table you created in step 1.
4. Paste the table in the cell A1 of sheet “Deviation”. We need to copy and paste the table in a different sheet because Pivot Tables erase data in case modifications are done. In other words, any analysis you do in this sheet will get lost if you create a new pivot table. At the end of this step, sheet “Deviation” should look like this:
5. In cell L2, write “Deviation 2007”. We will estimate the deviation between executed and budgeted amounts in this column.

6. In cell L3, write down the following formula: =C3-B3. This is the estimation of the difference between the executed and the budgeted amounts for 2007.

7. Extend the formula until it reaches the end of your table. At the end of this step, your table should look like this:
8. Repeat the process for 2008-11.