Supplementary Materials

Letting Luck Decide: Government Procurement and the Growth of Small Firms

August 9, 2019

1 Data Gathering Process

The data gathering process was divided into three phases. The first phase consisted in obtaining detailed information on all the public purchases performed under the *menor cuantia* processes for the years 2008-2012. This provided information on each public purchase as well as all individuals and firms that submitted a bid to participate in each public work. The second phase of the project consisted in obtaining detailed information on each individual and firm that participated in the *menor cuantia* process during the sample period. The third and final phase of the project, consisted in cleaning and entering this information into a database.

1.1 Phase I

The purpose of this phase was to obtain all public works done under the *menor cuantia* process for the years 2008-2012. To do this, I first downloaded a master file that contained all purchases done by public institutions in Ecuador for the years 2009-2015. The file was downloaded from the website of the public procurement agency (SERCOP)¹

The master file contained all purchases done by the government; including those done under processes other than the *menor cuantia*. Next, I selected the universe of all purchases under *menor cuantia*, which include their respective dates of publication. For each purchase, the file made available a description of the procurement process used, a purchase code, dates of the purchase, and other information. This file, however, did not provide the level of detail needed for the project. To obtain this additional information, I created a data scrapping code that searched and downloaded all meta-data. This required doing a personalized

¹The website link is: http://portal.compraspublicas.gob.ec/serc op/analisis-sercop/. After opening the link, it is necessary to click under "Reportes del Sistema de Contratación Pública" which will provide a login to the database. Once inside the database, one can choose to download a report containing all information. This file was obtained on February 15th, 2015

Figure 1: Sample search result for menor cuantia

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7	ROSERO CUEDA BYRON PATRICIO						CUMPLE LO SOLICITADO EN LOS PLIEGOS					Habilitado	
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The figure above presents the search results of a public work. The top part presents the requirements for the contest. The evaluation part presents, for each bidder, a note stating if they satisfy the requirements. The qualified sections shows those providers that qualified for the contest. The winner section presents the winner of the contest.

search for each public work in the sample. The gathering was restricted to the purchases which 1) were finalized 2) had a unique id number and 3) were awarded to only one contractor. 28,957 out of the total 32,551 public works in the *menor cuantia* met this criteria and form the universe of public works for the project.

The process above was done in three different batches during the year 2015. The first batch was a pilot project done in March,2015. The second batch took place between April and June,2015. The third batch was done in August,2015. For each of the 28,957 files, there were 9 pages that were downloaded: 1) basic information on the contract including length, terms of payment, and contacts, 2) information about deadlines for the public work, 3) information about the providers that had been invited, 4) information about the requirements for the public works, 5) information about the results of the contest 6) information about the providers that qualified, 7) information about the products or services that were required, 8) a section for questions and answers, and 9) an archive with all files for the process.

1.2 Phase II

In phase II of the project, I obtained the financial information of the firms and individuals that participated in the *menor cuantia* process. The metadata, gathered in the previous phase, provided information on all providers that submitted a bid to perform the public work. Each provider has a unique identification number used for tax purposes (RUC or registro único del contribuyente). There are two different types of providers: firms and self-employed. By law, financial information for firms is available at the Superintendencia de Companias, (SUPERCIAS). SUPERCIAS is a government institution and all companies must provide financial records, tax statements, and contact information to them. SUPERCIAS makes this information publicly available through their website.

Repeated requests to obtain the data on companies went unanswered. As a result, an automated program was created to obtain this information.² I downloaded two types of data. The first included basic company information and was scrapped directly from the website. The second included all yearly financial statements on record for that company.

1.3 Phase III

In this phase of the project, I had to enter the financial information into a database. The statements were stored as PDF documents in two different formats: 1) a scanned image and/or 2) a structured document. To obtain the financial data from the structured document, I ran several scripts to do so automatically. Figure 2 provides a sample of this type of balance. For balances that were scanned copies of documents, the data was entered manually and verified by at least an additional worker and was tested using accounting principles. Figure 3 and Figure 4 provide an example of the financial information available as scanned documents.

The final phase involved testing all information gathered to ensure it was consistent.

 $^{^2}$ In order to minimize the risk of skipping some companies, I performed the scraping 3 times on those companies I was not able to find.

Figure 2: Sample financial information



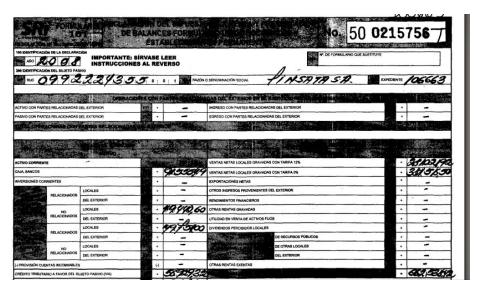
The figure above presents a financial return available as a structured format. The data from this balance was extracted using an automated script.

Figure 3: Sample financial information

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The figure contains a financial return available as scanned copies. The data from this balance was obtained via manual entry.

Figure 4: Sample financial information



The figure contains a financial return available as scanned copies. The data from this balance was extracted via manual entry.

2 Sample selection

A total of 1,920 registered firms participated in the process. To obtain the firm's financial information, I used the unique tax identification number and performed a search on the Superintendencia de Compañias' (SUPERCIAS) website. I was able to obtain information on 1836 firms. The remaining 84 firms did not have a record. Out of the 1836, there were 661 firms that won, at least once, a contest where there was only one qualified participant for the lottery. These 661 firms participated in a total of 3,160 public contests. I exclude from the sample these firms. The total sample for public works under menor cuantia to be 1,175 firms participating in 5,475 public works. The data obtained from the procurement agency suggests that all but 16 of the 5,475 public works were completed and delivered.³

 $^{^3}$ The remaining 16 public works were terminated unilaterally. There is no information that describes the reasons for the termination.