

# State Paralysis: The Impacts of Procurement Risk on Government Effectiveness

## Pre-analysis Plan

*Public procurement plays a key role in allocating limited budgetary resources to public service delivery in countries with a functional rule of law. This project studies a puzzling phenomenon: in developing countries like Brazil, substantive shares of the federal and sub-national budgets are not spent despite clear needs for additional resources to improve the quality of public services or to fund emergency spending in contexts of crisis. In line with a growing literature that documents the potential unintended effects of the enforcement of rules on bureaucratic performance, we investigate the role of procurement risk - when passive waste is misinterpreted as active waste – as a driver of unspent public funds by Brazilian municipal governments. Randomizing information that decreases the perception of procurement risk, we investigate its effects on budget execution.*

## I. Introduction

Decentralization typically goes hand-in-hand with the introduction of strict regulatory rules by the federal government in an attempt to limit moral hazard by the local bureaucracy. However, there is increasing evidence that such mechanisms often focus too narrowly on avoiding wrongdoing rather than promoting high quality spending, generating incentives that can ultimately hurt the ability of local governments to provide local goods and services. In Brazil, the country of our study, even in the context of the COVID-19 crisis, less than 30% of emergency federal funds had been spent many months after approval.<sup>1</sup> In local governments, where state capacity is lower, this problem pre-dates the COVID-19 crisis.

A growing literature documents the effects of the strict enforcement of rules on bureaucratic performance.<sup>2</sup> In this project, we investigate the role of procurement risk as a driver of under-spending of existing funds by local governments in Brazil. A key mechanism for why external monitoring might hurt public service delivery is procurement risk: when passive waste is misinterpreted as active waste (Bandiera, Prat and Valetti, 2009), bureaucrats might decide that procuring goods and services is not worthwhile. This

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<sup>1</sup> See <https://valor.globo.com/brasil/noticia/2020/06/17/na-saude-governo-gasta-so-28-do-total-autorizado-para-despesas-emergenciais.ghtml>, accessed on June 24, 2020

<sup>2</sup> Avis, Ferraz and Finan (2018) document that random audits by the Office of the Comptroller General decrease corruption among Brazilian municipalities. Lichand and Fernandes (2019) finds that an anti-corruption program based on federal audits to Brazilian municipalities drastically decrease local spending; Gerardino et al. (2019) finds that public officials avoid procurement processes that are more regulated in response to audits; Bertrand et al. (2017) find negative effects of distorted incentives from bureaucratic rigidity on downstream outcomes – quite substantial in terms of GDP growth –; and Rasul and Rogger (2017) and Shin (2008) find that similar inefficiencies arise out of monitoring bureaucratic performance.

can deteriorate the quality of public service delivery, hurting downstream outcomes – particularly in the context of a crisis like COVID-19. Evidence on this mechanism is, however, difficult to generate, as the incidence of external monitoring (e.g. the probability of being audited) is not randomly assigned. What is more, experimentally varying the probability of monitoring by changing legislation would be politically complex and involves high costs.

Our intervention will introduce exogenous variation in the perception of procurement risk. We will suggest to local bureaucrats in the health sector different policies that aim to solve some of the current problems their municipalities are dealing with. These solutions will be presented along with an offer of a strategy that facilitates the execution of resources. We randomly assign information on whether the spending plan will be interpreted as compliant with the rules by the control agency. This will introduce exogenous variation in the perception of procurement risk involved in these strategies. Following a Becker-DeGroot-Marschak (BDM) procedure, we will elicit the demand of local bureaucrats for the different policies. We expect that even in the absence of opportunity for corruption, lowering the perception of procurement risk will boost budget execution. The experiment will also randomize the complexity of the spending plan. We expect that local bureaucrats will be more hesitant to implement complex health interventions unless they have the guarantee that the control agency will approve. This result would indicate that strict regulatory rules might limit the utilization of effective tools.

The project addresses the following research questions:

1. Will local bureaucrats be hesitant to execute resources even when the spending plan has no opportunity for corruption?
2. Can reducing procurement risk increase the implementation of effective health interventions?
3. Are local bureaucrats more hesitant to implement effective health interventions when executing resources imply more complex transactions (in terms of approval of the control agency)?

## **II. Intervention and experimental design**

### **Pilot**

A pilot of this experiment was conducted in 2020. First, we submitted a baseline online questionnaire to health officials about their experiences in the context of the COVID-19 response, regarding perceived procurement risk, their main challenges for budget execution, and public service delivery during the pandemic. The baseline survey findings are quite revealing regarding the role of procurement risk for these policymakers. 63% of health officials say that “the worry about not complying with the State Courts rules” is among the top three barriers to purchasing health-related goods during the COVID pandemic.

## Experiment

The experiment will be implemented in collaboration with CONASEMS<sup>3</sup>, the Brazilian Council of Municipal Health Secretaries. We will administer our survey experiment during CONASEMS conferences organized over time. These events bring together municipal health secretaries, managers, workers, and professionals from the health sector from all over Brazil. Health officials participating in these events will be invited to participate in our interactive questionnaire that seeks to understand municipalities' demand for different strategies that facilitate the execution of resources.

First, we will describe some of the main problems that municipalities are dealing with in the health sector. We will present health officials several initiatives that aim to overcome those challenges. These solutions will be presented along with a strategy to execute resources. Then, we will ask participants about their interest in the proposed solutions. We will use the Becker-DeGroot-Marschak (BDM) method to elicit their demand. This procedure recovers the maximum true willingness to pay by eliminating strategic issues. Participants will be endowed with 1000 tickets per round, which they will use to declare interest in the strategies suggested. For each of the proposed programs, participants will choose the maximum number of tickets that they would be willing to use to be considered a priority municipality in the program. Then, the computer will randomly pick a cut number from 0 to 1000. If the number of allocated tickets is higher than the cut number, their municipality will be included in the priority list and they will have the cut number deducted from the total of their tickets. If instead, they allocated fewer tickets than the cut-off number, they will not be included in the priority municipality list for this strategy and they will not have any tickets deducted from their total tickets. The tickets not spent in the experiment can be used to participate in a lottery for an in-person course on budget planning in the area of public health. Spots for this course are limited and will be drawn at random. Since it is important that participants understand thoroughly the procedure before it starts, we will start with an example.

Once the first proposed policy is introduced, participants will be randomized into a treatment and control group. The treatment will increase the guarantee that the control agency will approve the accounts once the strategy to execute resources is implemented. While participants in the treatment group will be ensured that the spending plan will be interpreted as compliant with the rules, health officials in the control group will be informed that the expense is subject to approval from the control agency. This treatment reduces the perception of procurement risk associated with budget execution.

The experiment will have a second round, where participants are randomized again. The second treatment will introduce variation in the complexity of the proposed policy. In the treatment group, one component of the proposed policy will be related to the education sector. This generates uncertainty on whether the expenses will be accepted as eligible for the application of the constitutional minimum for health and whether it could be executed from a certain source of resources. Also, since they might not be

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<sup>3</sup> <https://www.conasems.org.br/>

familiar with regulations in the education sector, it increases the perceived risk of incurring procedural mistakes that could be framed as wrongdoing. We will also randomize in the second phase the information on whether the spending plan will be interpreted as compliant with the rules by the control agency.

Third, we will randomize information about institutional incentives and policy effectiveness. First, we will remind treated participants that federal transfers for primary health care through *Previne Brasil* depend on performance indicators. Then, we will provide information on empirical evidence of the effectiveness of the proposed policy in other contexts. We plan to study the variation in institutional incentives as a source of heterogeneity.

Finally, the survey will have a question that aims to gauge the valuation of the prize. Participants will be asked to value the tickets in terms of the federal transfers municipalities receive for primary health care.

Our sampling frame is the 5,570 municipal health secretariats in Brazil. As a benchmark, the expected number of participants in the *Congresso Nacional de Secretarias Municipais de Saúde*, the 2022 annual congress of CONASEMS is 4000 people. Considering the estimated average duration of these event, the length of our questionnaire, and the number of enumerators, we expect to be able to survey between 200 and 400 health officials in each event.

### III. Variables

The pilot provided us survey answers by municipal health secretaries about perceived procurement risk, main challenges in budget execution and public service delivery in the context of COVID-19.

Our outcome variable will be participants' willingness to pay for the proposed strategies to execute resources. Through our experiment, we will elicit participants' maximum willingness to pay to receive these strategies. This will inform us about the local health officials' demand for guarantees of approval from the control agency even in the absence of opportunities for corruption. Also, we will capture demand for complex initiatives when they have the guarantee that the control agency will approve.

Besides survey data, we have access to monthly data on federal transfers and respective idle cash balance for all municipalities, from CONASEMS, and we calculate the ratio of such balances relative to amount transferred. This is a purely financial proxy for inflows and outflows of these accounts. For health budget execution we have quarterly data from SIOPS (the federal system that monitors expenditures of the National Health System). In particular, we compute the delivery rate (the value of goods and services delivered as a share of procured resources, net from expenditures with personnel). For other, more detailed budget execution metrics (such as planned spending, planning rates, delivery rates and payment rates, funded by both transfers and municipalities' own budget), we will try to get access to quarterly data for the States of Ceará, Maranhão, Minas Gerais, Pernambuco, Piauí, Rio Grande do Norte, Rio Grande do Sul, Rio de Janeiro, Sao Paulo and Tocantins (based on contract-level data).

Potential refinements include exploring heterogeneous treatment effects based on variation in the extent of control enforcement by different State Courts of Accounts, on baseline budget execution rates, and on whether municipalities are part of consortia that centralize public procurement procedures. Also, we plan to study the variation in institutional incentives as a source of heterogeneity.

#### IV. Empirical analysis

Since the intervention is randomly assigned, comparing outcomes across the treatment and the control group yields causal treatment effects on the outcomes of interest (Section III). Using ordinary least squares regressions, we will estimate the following equation for round 1:

$$Y_i = \beta_0 + \beta_1 T1_i + \lambda X_i + u_i$$

And the following equation for round 2:

$$Y_i = \beta_0 + \beta_1 T1_i + \beta_2 T2_i + \beta_3 T1_i * T2_i + \lambda X_i + u_i$$

Where:

- $Y_i$ : Outcome variable for municipality  $i$ ;
- $T1_i$ : Indicator variable equal to 1 if municipality  $i$  is assigned to compliance treatment, 0 otherwise;
- $T2_i$ : Indicator variable equal to 1 if municipality  $i$  is assigned to complexity treatment, 0 otherwise;
- $X_i$ : municipal-level controls

We expect that lowering the perception of procurement risk (treatment 1) will increase health officials' interest in the proposed initiatives and accompanying strategy to execute resources. We also expect that increasing the complexity of the health interventions (treatment 2) will make local officials more hesitant to implement the policies, unless they have the guarantee that the control agency will approve.

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