

IMPACTS OF PUBLIC PROCUREMENT ON BUSINESS R&D EFFORTS: THE BRAZILIAN CASE**André Tortato Rauen**

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To fulfill their social role in capitalist societies, governments must engage in market relationships. They must employ people, provide grants, regulate transactions and, above all, purchase goods and services. The main goal of this purchase is to satisfy a certain demand, which can be ordinary, like cleaning services, or more sophisticated, like sending a robot to Mars. In public procurement processes, governments usually try a “the-cheaper-the-better” strategy. However, not always.

In the era of “machines, platforms, and crowds” (McAfee and Brynjolfsson, 2017), research and development (R&D) have been widely recognized as the main source of the most relevant innovations. Therefore, this paper aims to evaluate the impact of federal public procurement on business R&D efforts in the 2013-2016 period regardless the participation in any public procurement program (PPI).

The main assumption is that public procurement has the power to create demand for innovations. In general, this can be done through the requirement of innovation in purchase bids or in the preference for innovative suppliers. In either case, the central point is that governments can stimulate the quest for private innovation by creating and/or consolidating a market for innovation.

We conducted a quasi-experiment in which we compared firms that sold to the federal government with firms that did not. We do not evaluate the impact of any specific PPI instrument.

In fact, as showed by Rauen (2016), the use of PPI in Brazil is more about protectionism and lobby than a real innovation strategy. Taking into account the last ten years, these are the main Brazilian government’s initiatives regarding public procurement for innovation: *i)* additional preference margin; *ii)* sustainable public procurement; *iii)* Productive Development Partnerships (PDP) for healthcare products; and *iv)* some scarce pre-commercial procurement processes.

However, these are a collection of disperse and sparse initiatives and by any means imply the existence of a coordinated and strong PPI policy in Brazil. In fact, it is the opposite case. Squeff and Holanda (2014) showed that the Brazilian federal government sells to the least innovative companies in the country. Then, considering all of the above, expecting public procurement impacts on private innovation efforts is not rational, and this is the main hypothesis of this work.

In order to understand the differences between type of procurer and type of procured goods and services, we conducted five exercises: with the general sample; contracts from the of Ministry of Health, Ministry of Education and, Ministry of Defense. In addition, to narrow down the analysis, we selected another subsample and tested the model with only high-tech suppliers.

Regardless of the sample type, there was no impact of public procurement on the technology efforts of suppliers (considering the technology intensity approach).

We were expecting these results for the total sample but not for the Ministry of Health or the high-tech suppliers. The purchases of this ministry, for instance, are quite complex in terms of technology, then we expected some positive impact. In fact, between 2014 and 2018, the most relevant (in terms of value) products purchased by this ministry were vaccines and medicines.

However, we found an unexpected impact on suppliers’ total personnel (PO). According to all models, public procurement increases suppliers’ PO. This positive impact is higher in the purchases by the Ministry of Defense and lower in the total sample. Nevertheless, it is positive and statistically significant for all samples.

For instance, high-tech suppliers’ PO increased 28% more than the PO of firms that did not negotiate with the federal government. This is quite surprising considering that Brazil does not have a strong and effective public procurement policy. These results point

out that general public procurement does not affect R&D innovation efforts, but it changes suppliers' PO.

This positive result on PO is relevant mainly because the Brazilian preference margin was poorly implemented. In other words, even without an effective procurement-based policy, the regular bidding process already favors local firms. Therefore, there is no need to pay more in public procurement in order to boost employment. Our data showed that this will happen regardless of the execution of a preference margin policy.

Our results also shows that to produce some positive results on technological R&D, public procurement should be specifically designed to do that. In other words, *without a strong PPI program, there will be no positive outcome in terms of technology development. Public procurement works as innovation policy tool, but must be design to do so.*

Finally, this study investigated procurement processes regardless of any kind of PPI policy (preference margin, pre-commercial procurement, etc.), since these strategies were small, disarticulated, or poorly implemented in Brazil. Our conclusion is that Brazil has been wasting its procurement power instead of using it to boost innovation.

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EXECUTIVE SUMMARY