

Transparency and Digital Government

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Transparency and Digital Government: The Impact of COMPR.AR in Argentina

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Abstract

Digital government and transparency regulations initiatives have become popular among policymakers in recent years; however the literature on causal links between digitization and transparency is scarce. This paper seeks to shed some light on the effectiveness of digitization to promote transparency by studying the effects of the implementation of the e-procurement platform COMPR.AR in Argentina. This study relies on a difference-in-differences identification strategy to show that the adoption of COMPR.AR decreased the duration of procurement processes and the prices paid by public bodies on various items analyzed. The findings also suggest that the platform increased the number of bidders involved in public procurement processes. Efficiency, transparency and the availability of information were enhanced as a result of the adoption of digital technologies.¹

JEL classifications: D02, D73, H11, H21 ,H43, H57

Keywords: Transparency, Digital Government, Efficiency, Public Procurement.

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1 Introduction

Lack of transparency manifests itself in many ways in both the public and private spheres. Transparency is essential for the effective delivery of public services and for building an environment that encourages private sector development. On some occasions, lack of transparency can cause corrupt behavior to emerge within public processes. Corrupt practices include behavior that violates fiduciary duties, leading to public distrust. There are many forms of such practices including conflicts of interest, the use of privileged information, bid rigging and procurement manipulation among many others².

The principal-agent theory analyses the relationship between the principal, the agent, and a client. This relationship is structured by rules, incentives, and information.³ According to this approach, the likelihood of corruption within a public procurement process is related to a lack of information and transparency on the part of the principal regarding the agent's behavior (Ackerman, 1978; Klitgaard, 1998). In complex extended bureaucratic processes, the principal cannot always observe how the agent delivers services or whether this is done in exchange for improper payment. Additional research has observed that the less information principals have about agents' behavior, the greater the chance that those agents will fail to fulfill their obligations, instead capturing rents by exploiting their positions (Marquette & Peiffer, 2018; Ugur & Dasgupta, 2011). One concrete measure to reduce the principal-agent problem is the use of digital technologies. Digital technology helps to leverage transparency and integrity reforms. The use of digital tools enhances transparency, improves the effectiveness of control and supervision bodies, and facilitates intelligent data analysis (Kahn, Baron, & Vieyra, 2018).

Public procurement is an important task performed by every government. This is due to both the amount of resources involvement and procurement's impact on the effectiveness of state policies. First, public procurement accounts for an important proportion of governments' expenditures. In 2018, expenditures on goods and services consumption by governments in Latin American and the Caribbean reached around 16.16% of the region's GDP, an amount equal to more than a trillion dollars per year⁴. For Argentina, the focus of this study, public procurement accounted for 16.1% of GDP. Because of this, an efficient public procurement system can generate important savings for the government. Second, greater efficiency in public procurement can enhance the delivery of public services for a country's citizens (Dávila, Campero, Prieto, López Fernández, & Tachlian-Degras, 2014). Improving the efficiency of public procurement systems can, for instance, lower the time that citizens need to wait to receive such services. This paper focuses exclusively on the procurement of homogeneous goods, and studies whether the efficiency of such procurement systems can be enhanced with digital government reforms.

²For more information on Transparency and Corruption please see the recently adopted IDB Sector Framework Document on Transparency and Integrity (<http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=EZSHARE-1023060505-96>)

³The literature is still at an early stage and more evidence is needed to gain a better understanding of the connection of technology, incentives, and government efficiency in administrative processes such as tax collection and expenditure.

⁴Authors' calculations based on the World Bank's 2017 GDP data, measured in current USD.

**Table 1: Expenditures in Consumption by the Public Sector Relative to GDP
(2018⁵)**

| Country / Region | % GDP |
|---------------------------------|-------|
| Latin America and the Caribbean | 16.2 |
| Argentina | 16.2 |
| China* | 14.5 |
| Russian Federation | 17.4 |
| India | 11.2 |
| OECD Members* | 17.6 |
| Worldwide* | 16.8 |
| Middle East and North Africa* | 18.4 |
| European Union | 20.1 |

Source: World Bank.⁶

Since the 1990s, several countries have started leveraging recent technological advances to reform their public procurement systems. These reforms usually go hand-in-hand with a series of adjustments to the rules governing these systems, with the goal of enhancing the transparency and efficiency of the government’s procurement transactions.⁷

Among these reforms, which streamlined public procurement processes, two solutions stand out: the digitization of documents and the implementation of virtual public procurement platforms. First, the digitization of documents can eliminate a large number of inefficiencies that are generated by the use of printed files: transferring and saving a large amount of printed documents is expensive, and it is not easy for several bureaucrats to work with a file of printed documents at the same time. Second, public procurement platforms centralize the information about all procurement processes and allow potential suppliers to access it through an online website. Beyond making procurement processes more efficient, such platforms make it easier for the general public to access information about such processes, thereby facilitating citizen oversight of procurement transactions. This access increases transparency because it reduces the costs of obtaining information on the tender process for potential bidders, so the number of companies that can bid is more. Because of this access, there may be less incentives for collusion between bidders, which can lead to lower prices.

This study analyzes the causal effects of a large-scale e-procurement reform in Argentina. Starting on 2016, the Argentinian government launched a reform to digitize its public procurement system (*Disposición 65/2016*). The Inter-American Development Bank (IDB) assisted Argentina via the Program to Support Transparency and Integrity (AR-L1303)⁸. The overall objective of this program is to contribute to the transparency and integrity of public management through regulations and mechanisms to promote access to information. One specific component of this program was designed to strengthen transparency in the use of public resources, including those related to human resources and public procurement. This program contemplated the design of

⁵Figures marked with * correspond to the 2017 period.

⁶Including all current public expenditures in goods and services (including payroll expenses for public sector employees).

⁷Dávila et al. (2014) provides an overview of the reforms recently implemented by Latin American governments.

⁸For more information on this please check the following link <https://www.iadb.org/en/project/AR-L1303>

an impact evaluation of the COMPR.AR initiative ⁹.

Before the introduction of COMPR.AR in 2016, public procurement transactions were carried out on paper. However, by that time, most Latin American countries had already implemented e-procurement reforms to a large extent. Before the 2016 reform, procurement processes in Argentina lasted for over 90 days and exhibited low competition among providers. The reform implemented a digital public procurement platform called COMPR.AR, which encompasses various functions ranging from the online publication of buying offers to the virtual issue of purchase orders¹⁰. One of the main functions of the platform is to facilitate public access to information on procurement processes, facilitating the participation of a greater number of suppliers in them. By expanding access to information, the platform was intended to allow for a larger number of bidders. And by providing access to all, COMPR.AR also reduced asymmetry of information between agents and bidders. These features were expected to introduce more competition and lower prices for goods and services.

This paper seeks to provide causal evidence on the effectiveness of digital reforms that promote transparency, which have been ubiquitous around the world, and particularly in Latin America, over the past twenty years. A report from the Inter-American Development Bank (Dávila et al., 2014) concludes that Latin American governments had managed to save more than USD 100,000 million over the 2002-2013 period due to reforms in public procurement that relied on increased transparency coupled with some degree of process digitization.¹¹ However, despite the popularity of these initiatives among policymakers, the literature provides few causal estimates that could shed some light on their effectiveness. This is extremely important because it allows the state to reallocate its budget more efficiently and save money. This paper seeks to contribute in this regard. Furthermore, this paper is novel because it contributes to obtaining evidence that the benefits of e-procurement are presented not only through improvements in quality, as found by Lewis-Faupel, Neggers, Olken, and Pande (2016), but also in the form of lower prices. For this purpose, this evaluation implements a difference-in-differences identification strategy that exploits the gradual adoption of the COMPR.AR e-procurement platform in different public bodies of the Argentinian government.

In doing so, this paper contributes to the growing literature on the determinants of state effectiveness in public procurement. This literature goes back to the seminal studies of Di Tella and Schargrodsky (2003), who show that prices paid for medications in Argentinian hospitals decreased in response to monitoring, and Bandiera, Prat, and Valletti (2009), who introduce a theoretical model on the sources of wastage in procurement, which manifests as excessively high prices. Bandiera et al. (2009) take their model to Italian procurement data and show that corruption or *active waste* can only account for 20% of procurement wastage. The remaining 80% of wastage is due to problems of bureaucratic inefficiency, which the authors refer to as *passive*

⁹Although an experimental method was considered in the original design of the evaluation, changes in the implementation protocol led to the modification of that design to that proposed in this paper. For more information on the Monitoring and Evaluation Plan of AR-L1303, please check the following link: <https://www.iadb.org/Document.cfm?id=EZSHARE-716868511-20>.

¹⁰Statistics estimated by the ONC. During the period studied, Argentine firms and the government faced monthly financial costs of close to 3%, on average. This implies that delays of more than 3 months in purchasing processes induce financial costs above 9%.

¹¹The report's estimates are not based on quasi-experimental methodologies. Thus, its conclusions are merely descriptive and must be interpreted with caution.

waste. More recently, this literature has focused on specific determinants of wastage in procurement, studying the roles of transparency in procurement auctions (Coviello & Mariniello, 2014), discretion of bureaucrats (Coviello, Guglielmo, & Spagnolo, 2017), politician turnover (Coviello & Gagliarducci, 2017), and the role of the rules governing auctions (Decarolis, 2014).

This paper complements these studies by focusing on the rule of information and communication technologies (ICTs). Specifically, in the potential of technologies to streamline processes and increase transparency and dissemination of information to all people. In this way, it is particularly related to Lewis-Faupel et al. (2016), who estimate the causal effects of e-procurement platforms for the procurement of public works in India and Indonesia.¹² This study finds that such reforms improved the quality of roads in both countries, but they did not have significant effects on their cost. E-procurement appears to have led to increased ability of firms from outside the home region to win contracts. These firms, in turn, tended to be higher quality firms in general. This led to improvements in the quality of roads and timeliness but no detectable changes in price. The results of this evaluation complement those of Lewis-Faupel et al. (2016) in several ways. The identification strategy is slightly different because it compares the introduction of the platform between public offices from a country located in a different region (Argentina), while Lewis-Faupel et al. (2016) compare it between states within India and Indonesia. Moreover, this study focus on the procurement of homogeneous goods instead of public works. This paper finds evidence on price reductions complementing the evidence of improvements in quality by Lewis-Faupel et al. (2016).

This paper’s main results show that the implementation of the e-procurement platform achieved significant improvements in the efficiency of Argentinian public procurement. By looking at the two sources of wastage in public procurement, this study shows that e-procurement made processes faster by reducing problems of bureaucratic inefficiency (reduce passive waste) and reduced prices paid by increasing the number of suppliers involved in public procurement processes (reduce passive and/or active waste)¹³. In particular, the reform made procurement processes faster, reducing their duration by 11 days. In addition, the reform reduced prices paid in the procurement of off-the-shelf goods by 4%—leading to savings for the Argentinian government of over USD 35 million. This study also finds suggestive evidence that the adoption of the COMPR.AR platform increased the number of suppliers involved in public procurement processes. In these ways, the COMPR.AR platform enhanced the efficiency and competitiveness of public procurement in Argentina.

The rest of the paper is organized as follows. Section 2 reviews the related literature. Section 3 describes the context of the reform and the data sources used. Section 4 describes the empirical strategy. The main results are shown in Section 5. Finally, Section 6 presents the conclusions.

¹²The authors implement a difference-in-differences identification strategy exploiting the roll-out of the e-procurement reforms across these countries’ regions.

¹³This paper cannot demonstrate whether the higher prices paid before using COMPR.AR were caused by inefficiencies in the purchasing process or by the existence of corruption. Therefore, it is assumed that passive and/or active waste are reduced

2 Related Literature

2.1 State Effectiveness in Public Procurement

Within the framework introduced by [Bandiera et al. \(2009\)](#), wastage in public procurement—which manifests as excessively high prices—can arise from two different sources. First, wastage can be caused by corruption: a public official can benefit certain suppliers by paying excessively high prices in exchange for bribes (*active waste* of public resources)¹⁴. Second, wastage can be caused by inefficiencies in procurement systems (*passive waste*). These inefficiencies can be the consequence of excessive regulations or an under-qualified bureaucracy, which lead to slow and burdensome procurement processes, raising transaction costs for the government’s suppliers. In turn, these transaction costs reduce the number of firms willing to participate in public procurement, lowering the competitiveness of procurement systems and raising the prices ultimately paid by governments.

While both active and passive waste play a role in any procurement system, their importance can differ notably. [Di Tella and Schargrotsky’s \(2003\)](#) result that monitoring lowers prices in public procurement suggests that corruption plays an important role, but [Bandiera et al. \(2009\)](#) show that, in Italy, over 80% of wastage arises due to passive waste. Corruption seems to play a secondary role in procurement, at least in the Italian system. However, the literature is still at an early stage and more evidence from different countries is needed to gain a better understanding of the relevance of active and passive waste.

The subsequent literature complements the study of [Bandiera et al. \(2009\)](#) studying a wide array of procurement systems around the world. These studies typically seek to provide causal evidence on a source of wastage, or in evaluating the effectiveness of a specific reform. [Coviello and Mariniello \(2014\)](#) study the role of transparency in bidding processes for public works. In Italy, the country studied by the authors, contracts for public works with a budget above 500,000 euros must be awarded through competitive auctions for which an advertising campaign is carried out. The authors implement a regression discontinuity design (RDD) to evaluate these information campaigns. Their results show that, as intended, advertising campaigns improve the effectiveness of bidding processes: the campaigns increase the number of bidders per process and ultimately lower the prices paid by the government in the procurement of public works.

Similarly, [Coviello and Gagliarducci \(2017\)](#) focus on the role of political turnover. The authors also study the procurement of public works in Italy, and ask whether local governments in which politicians have stayed in office for long periods are less effective in procuring these works. Relying on an RDD based on the margins of victory obtained by mayors who run for re-election, the authors find that mayors who get re-elected are, in fact, less effective than mayors who are not re-elected. The authors argue that this result is explained by the collusion between suppliers and mayors, which is facilitated when a single politician stays in office for a long period. This

¹⁴This idea was already explored in the theoretical study of [Celentani and Ganuza \(2002\)](#), who develop a model linking corruption to the competition among suppliers engaged in public procurement. Additional evidence also confirms the potential impact of corruption in procurement. Specifically, such risks include the possibility of collusion between public official (agent) and the bidder (client). Academic research indicates that such opportunities for illicit behavior are reduced by adopting a combination of measures to regulate discretion, increase information, and use technology. For more information please see [Di Tella and Schargrotsky \(2003\)](#), [Bandiera et al. \(2009\)](#), [Lewis-Faupel et al. \(2016\)](#), [Szucs, Ferenc \(n.d.\)](#), [Fazekas, János, and King \(2013\)](#), [Fazekas \(2017\)](#)

paper relates to that argument by showing that e-procurement can reduce incentives for collusion between bidders by enhancing transparency in public procurement processes.

Another study by [Coviello et al. \(2017\)](#) analyzes the role played by the discretion of bureaucrats. The study found that discretion increases the probability that the same firm wins repeatedly, but it does not deteriorate the procurement outcomes. Thus, some discretion, even at the risk of a reduction in accountability, may be necessary to achieve good public management. Using a similar methodology, [Coviello and Mariniello \(2014\)](#) establishes that public works with a budget over 300,000 euros must be tendered through open auctions—in which any firm can participate. The authors use an RDD strategy to study the impact of these open auctions, comparing them to the auctions by invitation used to tender smaller projects, in which officials have full discretion to decide which firms can participate. The authors find that open auctions show an increased number of participating firms, and that the pool of companies earning the contracts is more diverse. When works are awarded by restricted tenders, a small set of firms seem to consistently get contracts. Apparently, these are the firms with the strongest political connections. This study relates to that research by showing that e-procurement can also reduce the role played by the discretion of bureaucrats by making processes more transparent and open to more bidders.

Two more recent studies analyze the importance of the quality of the bureaucracy managing public procurement processes. Both [Decarolis, Giuffrida, Iossa, Mollisi, and Spagnolo \(2019\)](#), who focus on the procurement of public works in the United States, and [Best, Hjort, and Szakonyi \(2019\)](#) who study procurement of off-the-shelf goods in Russia, argue that the low effectiveness of certain bureaucrats can account for a significant portion of wastage in procurement. The study of [Best et al. \(2019\)](#) is particularly related to this paper in terms of how the outcomes are measured, since in both studies the prices of homogeneous goods are evaluated. These authors rely on a methodology based on text analysis, of the detailed descriptions of the purchased products. This methodology allows one to identify the prevalence of excessive prices (i.e. wastage) among purchases of equivalent products. The results show that the quality of the bureaucracy implementing procurement processes can explain about 20 % of the variance in prices paid. Likewise, the authors find that reforms implemented within public procurement systems may have different effects depending on the quality of the implementing bureaucracy. This last result may explain why similar reforms may have different effects across countries.

The COMPR.AR platform studied in this paper can potentially enhance the transparency and openness of the Argentinian public procurement system. In this way this paper is closely related to [Coviello and Mariniello \(2014\)](#) and to [Coviello et al. \(2017\)](#). To a lesser extent, this evaluation is related to [Di Tella and Schargrodsky \(2003\)](#) and [Coviello and Gagliarducci \(2017\)](#)—modifying the incentives of bureaucrats by making purchasing processes transparent could mitigate the harmful effects of corruption that both authors document. Finally, the results shed additional light on why different organizations and bureaucrats differ in their effectiveness in procurement ([Best et al., 2019](#); [Decarolis et al., 2019](#)). The results presented below show that government offices who have adopted e-procurement systems to different degrees differ in their effectiveness in procurement.

2.2 The Benefits of ICTs

This study also contributes to a broad literature studying the benefits of adopting information and communication technologies (ICTs), especially to the strand of that literature that performs this analysis within the public sector. A first related paper is the one by [Singer, Konstantinidis, Roubik, and Beffermann \(2009\)](#), who study the Chilean case. The authors argue that the adoption of an e-procurement platform can be associated with a 3 % reduction in the prices paid. However, the methodology used by the authors is not quasi-experimental, and so their results must be interpreted as suggestive rather than causal.¹⁵

The previously mentioned study by [Lewis-Faupel et al. \(2016\)](#) examines the adoption of e-procurement platforms for public works in India and Indonesia. Exploiting the gradual implementation of these platforms across each of the two countries mentioned, the authors implement a difference-in-differences identification strategy with which they recover the causal effect of the platforms. The authors find that, first, the platform increases the number of firms bidding for contracts and winning them. This greater competitiveness in public procurement has positive effects on the quality of the executed works, although the prices paid for them by governments do not vary significantly.

This paper builds on [Lewis-Faupel et al. \(2016\)](#) but differs in a number of relevant aspects. First, the country studied is quite different. Argentina is a country with significantly higher levels of development than India and Indonesia in terms of access to digital technologies and the degree of connectivity. Having evidence from a more developed country is important because it is plausible that e-procurement in low-income settings can harm competition if many small companies have limited access to the Internet and are left out of the processes. On the contrary, this paper shows this is not the case in Argentina because an increase in the number of bidders is observed.¹⁶ Second, this paper focuses on the purchase of homogeneous off-the-shelf goods instead of focusing on the public works. This facilitates the empirical analysis of the e-procurement reform because it allows comparing purchases of equivalent goods.¹⁷ Third, the proposed identification strategy exploits the roll-out of the COMPR.AR platform across state offices according to a calendar imposed by a central authority. In contrast, [Lewis-Faupel et al. \(2016\)](#) implement a strategy that exploits the roll-out of e-procurement platforms across the various regions of Indonesia and India. The problem with their strategy, however, is that the governments of each of these regions could choose when to adopt the platforms.

By analyzing the benefits of an e-procurement reform, this study also contributes to the broader literature on the digitization of the government's processes (digital government). This literature has also studied the benefits of digitizing electoral processes ([Callen & Long, 2015](#); [Fujiwara, 2015](#)), as well as the usage of these technologies in the implementation of social programs ([Aker, Boumnijel, McClelland, & Tierney, 2016](#)).¹⁸

¹⁵Instead of relying on a quasi-experimental identification strategy, the authors estimate a structural model of auctions for public procurement contracts. This approach requires strong assumptions, on which the validity of the authors' results hinge.

¹⁶Evidence of this result is presented in section 5.

¹⁷[Best et al. \(2019\)](#) exclude public works from their analysis of state effectiveness in procurement arguing that it is not feasible to define groups of equivalent public works projects.

¹⁸A recent study by the IDB ([Kahn et al., 2018](#)) describes that the emergence of new digital technologies offers powerful tools to improve the transparency and efficiency of public investment. This paper examines the challenges

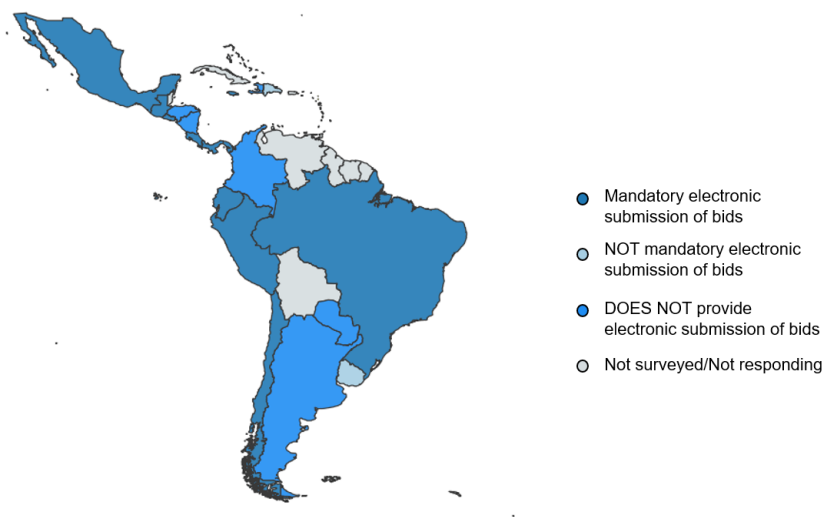
The literature about digital government is in turn a strand of a larger literature that studies the benefits of ICTs on the broader economy. A study by [Bloom, Garicano, Sadun, and Van Reenen \(2014\)](#) argues that information technologies, such as the COMPR.AR platform, allow organizations to more effectively delegate various tasks to the lower levels of their hierarchies. Likewise, [Bloom, Sadun, and Van Reenen \(2012\)](#) find that the use of ICTs, on average, increases the productivity of firms in the United States. Finally, a recent paper by [Hjort and Poulsen \(2019\)](#) studies the arrival of high-speed Internet in Africa. The authors study 12 countries in that region simultaneously with an identification strategy of difference-in-differences that—similarly to [Lewis-Faupel et al. \(2016\)](#)—compares locations where high-speed internet first came to those where it arrived later. The authors find that high-speed internet enhanced the productivity of local firms, stimulated job creation and, ultimately, had positive effects on the development of the benefited regions.

3 Context and Data

3.1 Context: The COMPR.AR Platform in Argentina

Over the past decade, Argentina and other Latin American countries have modernized their public procurement systems with the use of ICTs. As shown in Figure 1¹⁹, in 2015 over 50 % of the countries in the region had rules that commanded public bodies to announce public procurement processes electronically. At the beginning of the period studied in this paper, in 2015, only 4 countries (18 % of the respondents) in Latin America and the Caribbean utilized e-procurement platforms for the electronic management of purchase contracts (OECD-IDB, 2015).

Figure 1 - Capabilities of E-Procurement Platforms in the Region - 2015²⁰



of building transparent public investment management systems and highlights how a suite of new technological tools can improve the implementation of infrastructure projects and public services.

¹⁹Map drawn up with data from the Inter-American Development Bank (OECD-IDB, 2015) for countries in Latin America and the Caribbean (LAC).

²⁰Over the subsequent three years (2015-2018), important progress was made in the plotted countries. Specifically, Argentina and Uruguay approved rules mandating the usage of e-procurement platforms.

Source: Author's elaborations based on the Survey of Public Procurement by the OECD and the IDB (2015).

Figure 1 shows that, in 2015, Argentina, like many countries in the region, had a low adoption of e-procurement systems. A symptom of the problems prevalent in the Argentinian public procurement system was the prevalence of wastage (i.e., excessive prices paid). For some products, some agencies paid up to 25% more than the average price paid by other agencies for that same product.²¹ The deficiencies of the Argentinian system could be attributed by two main factors: the inefficiencies of public procurement process and the lack of information and transparency. Both factors are described below.

An indicator of the inefficiencies prevalent in the country's public procurement processes was the long delay elapsed from the opening of a tender process to the awarding of a procurement contract. In 2015, this delay was greater than 91 days on average.²² The procurement processes prevalent until 2015 had not been modernized: public purchases were managed through paper files and the presentation of documents by suppliers were carried out in person (Martelli, Clusellas, & Martelo, 2019).

Long processes not only generate delays in the provision of public services, but also generate financial costs. The duration of the public purchase processes, from the presentation of the offer to the payment to the awarded company, acquires especial relevance in countries with high inflation and financing costs, as is the case for Argentina. Specifically, between 2016 and 2019, the relevant interest rates in Argentina fluctuated between 26% and 68%, while inflation often exceeded 50% year-on-year. Thus, processes with delays of more than 90 days could impose financial costs on suppliers greater than 12%. These costs exerted an upward pressure on the prices paid by the state on purchased goods, leading to wastage in procurement.

Beyond the inefficiencies, procurement processes had transparency gaps.²³ Until 2015, less than 50% of purchases from the National Public Administration were published online. Thus, the high costs that companies had to face to participate in public procurement processes and the lack of information about these processes both led to few suppliers being engaged with the country's public procurement system, compared to suppliers engaged in a more competitive process.

In 2015, the Argentinian government launched a series of reforms that sought to modernize and de-bureaucratize the state. The then Ministry of Modernization²⁴ was created to achieve this goal. The reforms started by digitizing purchase processes and creating a digital records management system. Historically, all records of the national administration were handled in paper format.²⁵

²¹ Author's estimates based on COMPR.AR data.

²² Author's calculations based on Argentinian procurement data from Argentina's National Procurement Office (ONC). Check footnote 11.

²³ Author's calculations based on Argentinian procurement data from Argentina's National Procurement Office (ONC).

²⁴ In Argentina, ministries are public offices with the highest rank. The Ministry of Modernization lost its rank of ministry in a September 2018 reform and was demoted to the rank of secretariat within the Head of Cabinet of Ministers.

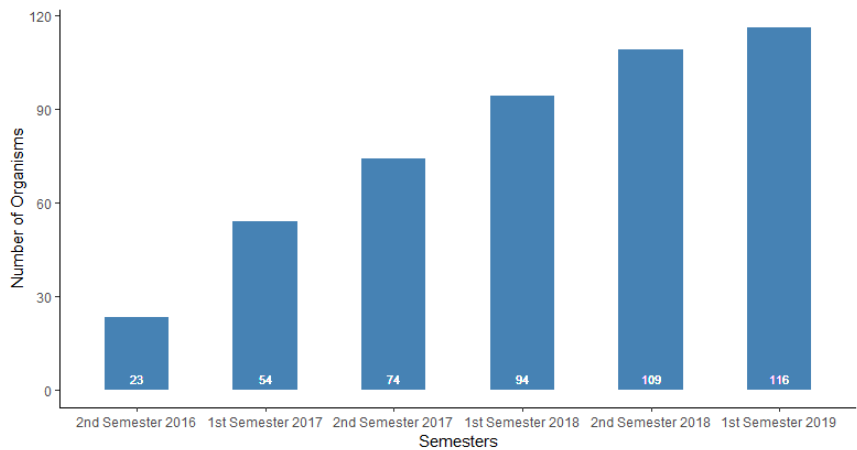
²⁵ An electronic financial management system that precedes the discussed reforms is the *Sidif Local Unificado* (SLU). The SLU was merely a system for recording operations that had been previously carried out through non-digitized processes.

Then, in 2016, the national government began using electronic files by launching the GDE (Electronic Document Management System).²⁶ This system is a unified platform that allows all documents and administrative actions to be managed comprehensively and electronically and facilitates the access of officials to the administration remotely. The GDE, in addition to streamlining processes and improving access to information, directly combats discretion in actions and decision-making processes, often present in paper culture. In addition, the use of the electronic and digital signature was legislated. These two reforms were necessary so that formal purchase offers could be submitted electronically by supplier companies.

Shortly after the implementation of the GDE, in the same year, the government launched the public procurement platform COMPR.AR.²⁷ The portal was established as the means to perform electronically all the procedures prescribed in the regulations of the contracting regime of the National Administration. The COMPR.AR platform allowed free public access through the internet and dissemination of purchasing and contracting processes, which increased transparency in processes. In addition, the platform allowed innovative mechanisms for selecting suppliers and contracting modalities and updated information available on the portal, increasing efficiency in the system. Appendix A presents images on the COMPR.AR web portal.

As shown in Figure 2, the COMPR.AR reform exhibited a gradual roll-out based on a pre-established schedule defined by a central authority. In each office, the implementation of COMPR.AR began with training provided by the National Procurement Agency’s (ONC) to the bureaucracy of each office on how to use the new system. After receiving the training, using the COMPR.AR e-procurement platform became mandatory. In Appendix B, the dates from which the usage of the platform became mandatory are detailed.

Figure 2 - Offices using COMPR.AR



Source: Data from the ONC.

The COMPR.AR reform was first implemented in organizations that concentrated the highest proportion of public spending. It was only in the second half of 2018 that organizations such as the National Road Administration and the Armed Forces were incorporated—these are institutions that have more than 20 offices each due to their decentralized nature. By August 2019,

²⁶For more information, visit its website <https://www.argentina.gob.ar/aplicaciones/gde>

²⁷Provision 65/2016

116 organizations had been trained and used the tool. Appendix C presents the regulatory framework for public procurement processes in Argentina.

A feature of the reform worth highlighting is the significant number of capabilities exhibited by the COMPR.AR. It allows managing each process from its publication until the issuance of the purchase order for all purchases of the State. The portal generates two types of benefits. First, it increases the efficiency of the system by reducing administrative costs. Suppliers can use the platform to prepare and present their offers at a low cost. Unlike the previous system, the new COMPR.AR-based system spared providers from facing the costs of reproduction and transfer of the required documents²⁸. In turn, it facilitates the participation of new enterprises, since 60% of the enterprises that won tenders through COMPR.AR were enterprises that had not won a tender before during the sample period. It also facilitates the participation of enterprises outside the country's capital city, since before COMPR.AR, 92% of the amount awarded was earned by enterprises located in the country's capital city, but with the implementation of the platform this participation was reduced to 85%. Regarding the structure of winning enterprises, no significant change was observed: both when there was no COMPR.AR and after its implementation, 36% and 37% of public purchases (measured in constant Argentine pesos) were won by SMEs.²⁹ The system also saves costs for public officials in charge of the processes, eliminating the need for face-to-face procedures when handling offers. However, this study does not calculate these effects on savings costs.

The COMPR.AR platform also enhanced the transparency of Argentina's public procurement system. In addition, it facilitated the public's access to information about procurement processes, making it easier for a greater number of suppliers to participate in them. Reducing the asymmetry of information between different suppliers can foster the competitiveness of the procurement system and, consequently, reduce prices paid by the government (Coviello & Mariniello, 2014). A greater degree of transparency also makes it possible to curb monopolies and eliminate barriers to entry that mainly exclude smaller suppliers. Likewise, the platform generates a large amount of data on prices, contract fulfillment's, and suppliers that can be used by the state, civil society, and journalists to monitor the system and detect corruption.

Considering these potential benefits, the platform can generate a significant change in cost overruns paid by the public administration and in the efficiency of public procurement. However, the magnitude of such gains is not clear a priority. In addition, the literature has found that these platforms do not always have all the theoretically expected effects. For example, in Indonesia and India, Lewis-Faupel et al. (2016) showed that e-procurement improved the quality of public works but did not affect the prices paid by the state. In the rest of the paper, administrative procurement data from before and during the reform are used to accurately estimate the causal effect of the implementation of COMPR.AR.

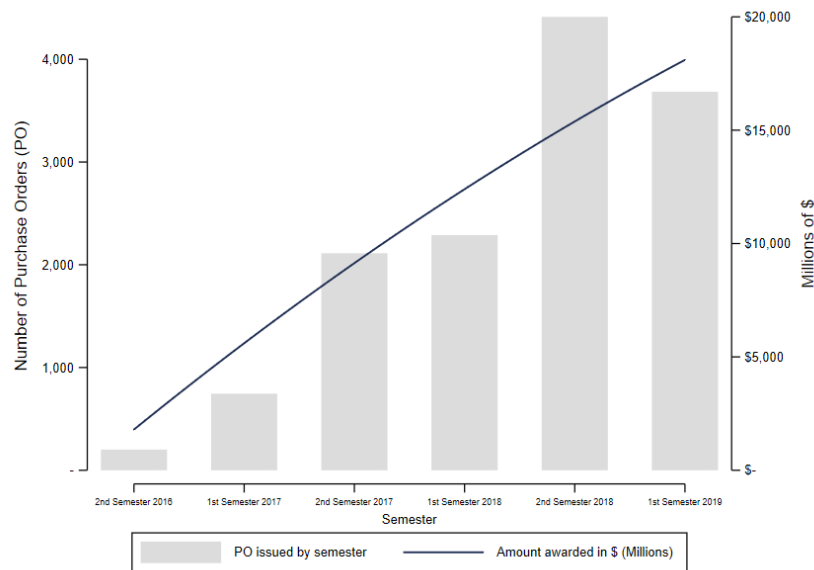
²⁸Beyond the foregoing, the order of implementation was random with some adjustments based on the availability of the officials of the agencies to participate in the training, a reason that prevented the experimental design included in the PME of AR-L1303 from being carried out.

²⁹Author's calculations based on Argentinian procurement data from the COMPR.AR system and the SLU system.

3.2 Data

The empirical analysis of the present study is based on two data sources. The first data source has information on all purchases made through the COMPR.AR platform. This dataset contains information on the number of bidders, prices offered for each item, suppliers awarded, delays between the publication of processes and issuance of purchase orders, among others. The COMPR.AR dataset covers the September 2016 - August 2019 period and contains information on over 26,900 purchase orders, 14,000 processes, and more than 41,800 different purchased items. Figure 3 shows the amounts of transactions contained in the COMPR.AR data in each semester of the period studied.

Figure 3 - Purchases per Semester



Source: Administrative data from the COMPR.AR platform

As shown in Table 2,³⁰ the processes registered in the COMPR.AR data represent purchases of goods and services for more than 83,000 million Argentine pesos that were allocated to more than 5,200 different companies and were acquired by more than 360 different government offices. Regarding suppliers, until June 2018 the number of registered suppliers amounted to more than 19,000.

Table 2: Description of the COMPR.AR Dataset

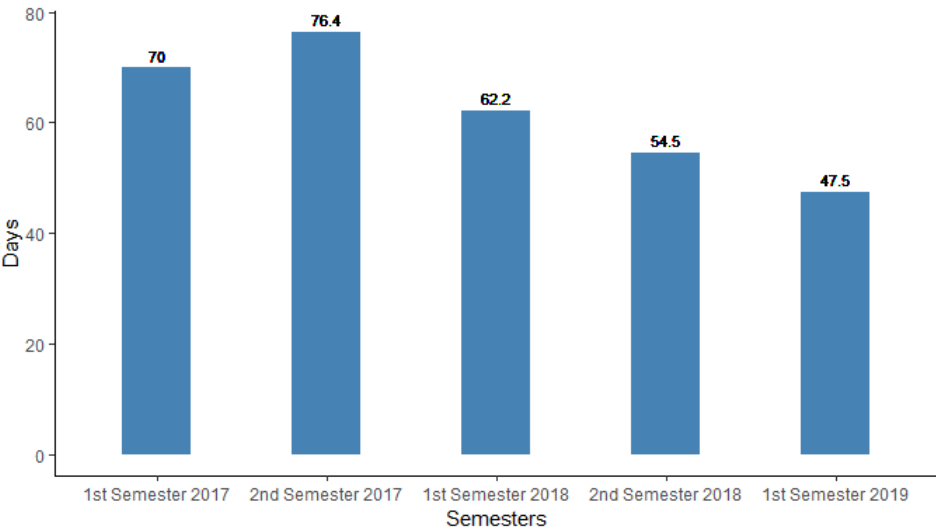
| Process type | Amount awarded |
|--|---------------------------------|
| Number of purchase orders | 26.900 |
| Number of processes | 14.000 |
| Number of lines awarded | 165.000 |
| Number of different products awarded | 41.800 |
| Number of awarded companies | 5.200 |
| Number of executing units with adjudicated processes | 360 |
| Total amount awarded | 83.000 millions Argentine pesos |

³⁰Using all available data, until August 2019.

Second, to evaluate the effects of the adoption of COMPR.AR, the data are complemented with information of purchases made by various agencies before they adopt such a platform. For this, administrative data directly obtained from Argentina’s National Budget Office (ONP) are used. This dataset contains³¹ a list of expenditures in more than 110,000 items of contracts made by the Central Administration for the acquisition of consumer and consumer goods (since 2015 as of August 2019). The dataset only includes purchases that were not made through the COMPR.AR platform.

A first descriptive analysis of the ONP dataset suggests that, between 2017 and 2019, as COMPR.AR was gradually adopted by government agencies, various improvements were achieved in some variables of interest. First, Figure 4 shows an important reduction in the extension of the purchasing processes. From the second half of 2017, the average duration of public procurement processes fell from 76.4 days to less than 50 days in the first half of 2019, that is, a decrease of around 38 %. This reduction in delays not only allows the state to make the acquired goods and services available to people more quickly but also can generate significant savings, especially in countries such as Argentina that have had moderate or occasionally high inflation for several years.³²

Figure 4 - Average Delay of Procurement Processes per Semester



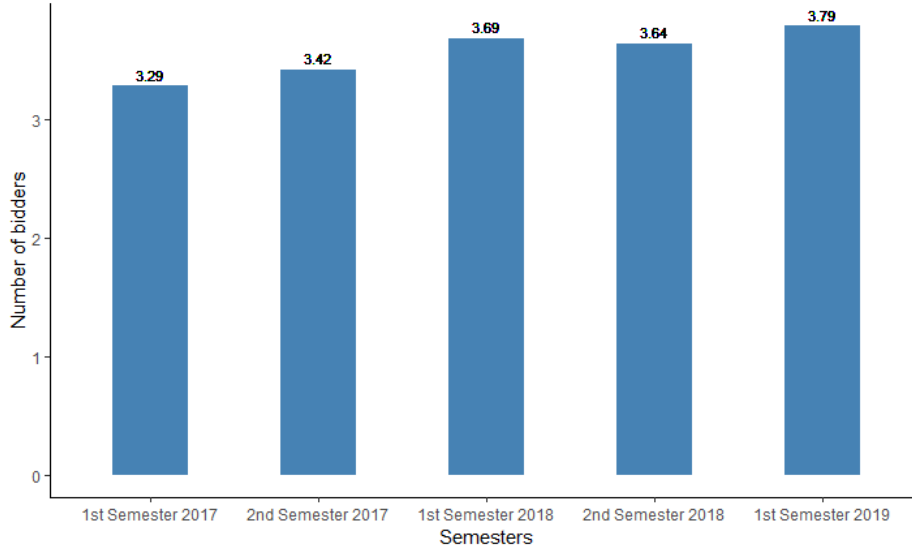
Source: ONP data

On the other hand, Figure 5 shows a semester to semester improvement in the average number of bidders per process.

³¹The sample is restricted to purchases of Section 2 (Consumer Goods) and Section 4 Main 3 (Machinery and Equipment - Fixed Assets). Thus, other payments were eliminated for other purposes such as the payment of salaries.

³²Countries with high inflation face significant financial costs and a continuous increase in prices. For example, in the past 4 years Argentina’s monthly financial cost varied between 1.9 % and 4.4 % on average. In this framework, very long purchasing procedures cause bidders to incorporate in their budgets the financial cost or the possible increase in their costs that can happen between the day of the opening and the day of the issuance of the purchase order for the company winning.

Figure 5 - Suppliers per Semester



Source: ONP data

In addition to the improvements shown in both figures, it is important to mention that the platform generated a large amount of internal savings — something that cannot be measured directly with the ONP data. By ceasing to use paper files for each process, the state can reduce costs associated with logistics, storage and administrative expenses. [Singer et al. \(2009\)](#) already found that, in Chile, an e-procurement reform resulted in the state’s administrative expenses in public purchases being reduced by approximately \$ 15 million annually. However, as mentioned above, given the methodology used in that paper, the evidence obtained is not causal.

To recover the causal effect of the adoption of the platform, the COMPR.AR dataset is merged with the ONP dataset. The resulting dataset is used to implement a difference-in-differences identification strategy, which is described next.

4 Methodology

This paper compares public procurement transactions that use the COMPR.AR platform with transactions based on pre-existing processes. The outcomes of interest are both the prices paid in each purchase and the duration or delays of the purchase processes.

The gradual roll-out of the COMPR.AR platform across various public offices³³ generates significant quasi-experimental variation in the usage of the e-procurement platform. While the first agencies began using the platform in 2016, some agencies did not begin using it until 2019.³⁴

To identify the causal effect of this reform, an event study design is implemented, which is a particular type of a difference-in-differences identification strategy ([Corrado, 2011](#)). The validity of this approach requires that the dates on which the organizations begin to use the platform are exogenous to factors that affect the treated group of the control group in a differentiated

³³See Figure 2 described in the previous section.

³⁴By mid-2019, all offices had adopted the platform except for two.

way. This methodology allows to control for idiosyncratic differences of offices that do not vary across the studied periods and for events that affect both treatment and control units at the same time.

The evaluation uses this event study methodology to analyze the effect of the reform on the prices paid by the government for off-the-shelf goods. To ensure greater comparability between the different observations used by the estimators, only purchases of 50 products that are homogeneous and are acquired by most offices are analyzed. These products are listed in Appendix D. This sample of products is used to estimate equation 1:

$$LPrice_{ipt} = \beta \times COMPR.AR_{ipt} + \gamma X_{ipt} + \theta_p + \mu_t + \epsilon_{ipt}, \quad (1)$$

Where $LPrice_{ipt}$ denotes the unit price, adjusted for inflation and expressed in logs,³⁵ $COMPR.AR$ is a dummy variable that takes the value of 1 if the process was carried out using the platform and X is a vector of controls (office fixed effects, quantities acquired, etc.). In this equation, the coefficient of interest is β , which captures the effect of the COMPR.AR-based e-procurement reform on the prices paid by the government. The specification also incorporates fixed effects at the product-level, θ_p , and at the period-level, μ_t . Finally, ϵ_{ipt} is the error term. The subscript t denotes the year in which the purchase was made, the subscript p denotes the type of product and the subscript i denotes the different public purchase transactions.

Figure 6 - Treatment and Control Units

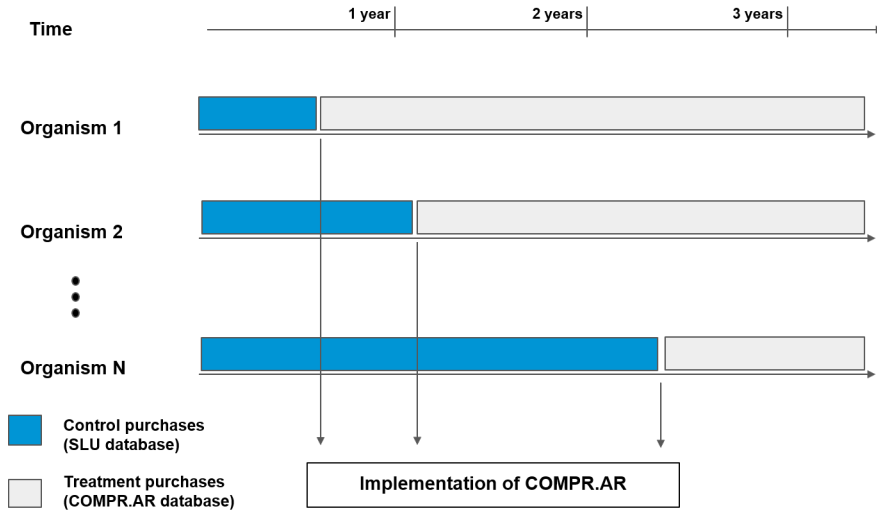


Figure 6 provides an overview of the identification strategy. The treatment group is made up of all purchases made through the COMPR.AR platform. On the other hand, the control group consists of purchases made by the offices which, on a given date, were not using the platform but rather the paper-based procedures accompanied by the SLU system (see section 3.1).³⁶ These groups change over time as more offices begin compulsorily using the COMPR.AR platform and have spent one year using of the tool. At the beginning of the analyzed period, all purchases

³⁵Prices to be comparable were adjusted for the monthly inflation of the CPI of the City of Buenos Aires

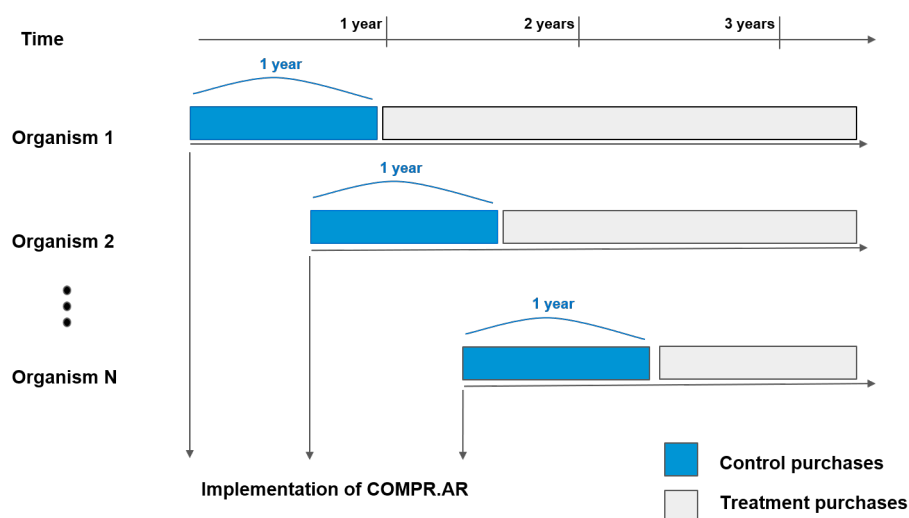
³⁶As mentioned in section 3.1, the SLU was merely a system for recording operations that had been previously carried out through non-digitized processes.

belong to the control group. In the end, all purchases belong to the treatment group.

Subsequently, it is analyzed whether the reform caused an improvement in the duration of public procurement processes. A difficulty in this part of the analysis is that there are no complete records on public purchases made prior to the implementation of COMPR.AR that detail the opening date and the amount of offers that were presented in each process.

Considering this limitation, it was decided to use the purchases made during the first year of implementation of the tool in each of the agencies as a control group. On the contrary, the treated group will be constituted by the public purchases that each agency makes only one year after the tool was adopted in that agency. This strategy is displayed in Figure 7.

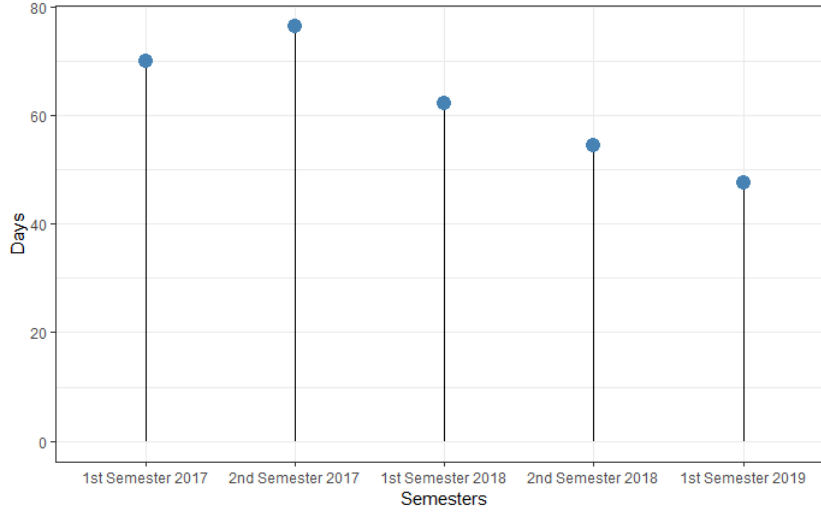
Figure 7 - Treatment and Control Units



The strategy in Figure 7 exploits the fact that the implementation of COMPR.AR required an adaptation process for suppliers and public officials who were not used to using the system.³⁷ These elements cause a learning curve to arise. As can be seen in Figure 8, the duration of the purchasing processes did not change during the first year of implementation of the tool (2017); the first effects only begin to be observed during the following year (2018). This learning curve was an element that was also mentioned by representatives of various state offices in interviews that the authors conducted during 2018 and 2019.

³⁷The strategy depends on the assumption that the period of adaptation to COMPR.AR lasts exactly one year, so the results based on it must be interpreted with caution.

Figure 8 - Average Delays, per Semester, from the Publication of a Process to the Awarding of a Contract



Source: COMPR.AR dataset

Considering these arguments, this evaluation relies on the assumption that the reform has zero effects over the first year of implementation in each agency. Under this assumption, the first year of using COMPR.AR can be considered a control period. The assumption is conservative: if COMPR.AR has effects from the moment of its implementation, the strategy will only capture a portion of the total effects of the platform and will underestimate the estimated impacts. Thus, the paper relies on the following specification:

$$y_{igp} = \beta \times \text{COMPR.AR}_{igp} + \gamma X_{igp} + Q_g + \lambda_p + \epsilon_{igp}, \quad (2)$$

where y_{igp} denotes the duration of procurement processes measured in days, COMPR.AR_{igp} is a dummy variable equal to 1 if a purchase belong to the treatment group, and X_{igp} is a vector of controls. As in equation 1, fixed effects at various levels are included: Q_g is an office-level fixed effect and λ_p is a fixed effect at the level of type of purchase. Finally, ϵ_{igp} is the error term, g indexes offices making purchases, and sub-indices i and p keep their definitions from equation.

5 Results

Table 3 presents the main results of the paper, obtained from estimating the first equation. In the first row of the table, significant effects on the price paid for the 50 homogeneous items selected for the estimate are shown. Specifically, this evaluation finds that purchases made through the COMPR.AR platform have an average unit price that is 4.4 % lower than the price that would be paid without using the platform. This represents an important saving for the Argentinian state. The results imply annual savings of more than 35 million USD, only taking into account the effect of the lower prices paid.³⁸ At the same time, as shown in the second row of the table, the quantities acquired are not affected by the adoption of the platform.

³⁸These calculations are based on the dollar having an average value of \$50, in 2019 and public purchases awarded through COMPR.AR in 2019, represent a total value of \$40,000 million.

Table 3 - Regression I

| | Value for money |
|------------------|------------------------|
| Treatment | -0.0446*** (0.0139) |
| Amounts acquired | -0.0000 (0.0000) |
| Observations | 12,764 |
| R^2 | 0.796 |

Robust standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Next, Table 4 presents the results of estimating the second equation. In the first column it shows the estimated effects of COMPR.AR on the duration of the purchasing processes, measured in days. It is observed that the purchases that are part of the treated group have an average extension of 11.09 days less (first column). In addition, the second column presents descriptive evidence that the adoption of COMPR.AR is associated with increases of 0.3 in the number of bidders involved in public purchases.

Table 4 - Regression II

| | Duration of the process in days | Number of bidders |
|-----------------------|---------------------------------------|----------------------|
| Treatment | -11.09*** (1.018) | 0.300*** (0.092) |
| Amount of the process | 0.000 (0.000) | 0.000*** (0.000) |
| Public Tender | 28.33*** (1.865) | 0.934*** (0.156) |
| Private Tender | 17.69*** (1.263) | 0.673*** (0.125) |
| Public contest | 19.71*** (5.903) | -1.296*** (0.285) |
| Private contest | -2.014 (4.242) | -1.509*** (0.361) |
| Certified copy | -20.98** (8.374) | 0.34 (1.743) |
| Observations | 9,596 | 6,987 |
| R^2 | 0.234 | 0.096 |

Robust standard errors in parentheses.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Overall, this paper finds significant effects of the implementation of the COMPR.AR platform. The reform generated a significant reduction in cost overruns or wastage, in the number of days that the public purchase processes last and in the number of bidders that present themselves to each process. The results are based on a difference-in-differences identification strategy which, given the availability of data, yields particularly reliable efficiency estimates. All these results provide evidence in favor of the effectiveness of the COMPR.AR platform. Likewise, these results, taken together, are consistent with the interpretation that the platform, by making the processes faster and more competitive, ultimately generates savings for the state.

6 Conclusion

The study provides one of the first robust estimates of the effects of an e-procurement system in Latin America, studying both efficiency gains in procurement processes and effects of prices paid. All results present a consistent history.

The COMPR.AR system seems to have led to strong efficiency gains: on average, the duration of public procurement process fell by over 11 days and the prices ultimately paid by the state decreased by 4 %. These gains led to significant reductions in wastage, which this paper conservatively estimates at more than USD 35 million only considering the effect of lower prices (i.e., ignoring the gains from fewer delays in the delivery of public services).

Consistent with the existing literature, this study finds that improvements in the efficiency of state processes are linked to savings (Bandiera et al., 2009). In the Argentinian context of high

inflation, in which this study is carried out, bidders incorporate in their budgets the financial cost of participating in long-duration processes, which reinforces the savings induced by reforms that expedite processes.

The results found provide new evidence on the potential benefits of digital government reforms that enhance transparency. The fact that these results are broadly consistent with those found by [Lewis-Faupel et al. \(2016\)](#), a study conducted for Asian countries, suggests that the results presented here have a high degree of external validity. These results are also consistent with a growing literature that finding evidence in favor of similar reforms in the domains of electoral processes ([Callen & Long, 2015](#); [Fujiwara, 2015](#)) and social program delivery ([Aker et al., 2016](#)).

An interesting question to be explored in future work is whether the savings to the state are due to potential changes in the composition of state providers induced by the platform and how COMPR.AR affects this composition in terms of the gender of the bidders, size and geographical location. Likewise, the present study focuses on the average effectiveness of the platform. The work of [Best et al. \(2019\)](#) emphasizes that, in the public sector, a particular reform can have heterogeneous effects depending on the effectiveness of each state office. In the context of this study, it is reasonable to assume that more skilled officials, for whom using modern technologies is easier, would particularly benefit from the platform. The interaction between information technologies and the capacity of the implementing bureaucracy is a topic that would be worth studying in the future. Finally, exploring linkages with other integrity reforms, such as ultimate beneficial ownership of bidding firms, conflicts of interest regulations, and financial disclosure of public officials, may provide a wider coverage of transparency and integrity efforts.

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Appendix A: COMPR.AR Platform and Web Portal

Portal de Compras Públicas Argentino (COMPR.AR)



Source: COMPR.AR website

Information on Procurement Processes

Consultas Frecuentes

Procesos de compras

Procesos con apertura próxima 1136

Procesos con apertura en los últimos 30 días 491

Procesos que generan recursos al Estado

Bienes Muebles

Procesos con apertura próxima 3

Procesos con apertura en los últimos 30 días 3

Bienes Inmuebles

Procesos con apertura próxima 2

Procesos con apertura en los últimos 30 días 1

Procesos de compra con apertura próxima

| Número de Proceso | Nombre descriptivo de Proceso | Tipo de Proceso | Fecha de Apertura | Servicio Administrativo Financiero |
|-----------------------------------|--|----------------------|-----------------------|--|
| 84/89-0574-LPR20 | ADQUISICION DE DISPENSERS Y BIDONES DE AGUA PARA LA DGE | Licitación Privada | 07/05/2020 08:00 Hrs. | 374 - Estado Mayor General del Ejercito |
| 84/37-0519-LPR20 | ADQUIRIR ELEMENTOS DE LIMPIEZA PARA EL HMRC | Licitación Privada | 07/05/2020 08:00 Hrs. | 374 - Estado Mayor General del Ejercito |
| 84/12-0647-LPR20 | REPARACIÓN PATIO INTERIOR (SECTOR BALCARCE) - SEGUNDA ETAPA - SERVICIO HISTÓRICO DEL EJÉRCITO. | Licitación Privada | 07/05/2020 09:00 Hrs. | 374 - Estado Mayor General del Ejercito |
| 43-0010-CDI20 | Compulsas COVID - 19 N° 2/2020 - Adquisición de Insumos de Prevención | Contratación Directa | 07/05/2020 09:00 Hrs. | 470 - Instituto de Ayuda Financiera para pago de Retiros y Pensiones Militares |
| 84/138-0523-LPR20 | ADQUISICIÓN DE ELEMENTOS DE CARPINTERÍA PARA LAS UU DEPENDIENTES DEL CDO FDR PARA EL 2DO TRIM-2020 | Licitación Privada | 07/05/2020 09:00 Hrs. | 374 - Estado Mayor General del Ejercito |

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Jefatura de Gabinete de Ministros

Oficina Nacional de Contrataciones
Mesa de ayuda
Sistema de Información de Proveedores

Links externos
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[Argentina Compra](#)
[Infoleg](#)

Source: COMPR.AR website

Appendix B: Timeline of the COMPRA.AR Reform

| Description | Date |
|--|--------|
| Ministerio de Modernización | Jul-16 |
| Secretaría Legal y Técnica | Jul-16 |
| Secretaría General de Presidencia | Jul-16 |
| Jefatura de Gabinete de Ministros | Aug-16 |
| Agencia de Administración de Bienes del Estado | Aug-16 |
| Ministerio de Hacienda y Finanzas Públicas | Aug-16 |
| Ministerio de Justicia y Derechos Humanos | Sep-16 |
| Ministerio de Producción | Sep-16 |
| Sistema Federal de Medios y Contenidos Públicos | Sep-16 |
| Ministerio de Energía y Minería | Sep-16 |
| Ministerio de Comunicaciones | Sep-16 |
| Sindicatura General de la Nación | Sep-16 |
| Ministerio de Agroindustria | Oct-16 |
| Ministerio de Desarrollo Social | Oct-16 |
| Ministerio del Interior, Obras Públicas y Vivienda | Oct-16 |
| Ministerio de Seguridad | Nov-16 |
| Ministerio de Relaciones Exteriores y Culto | Nov-16 |
| Ministerio de Transporte | Nov-16 |
| Ministerio de Ciencia, Tecnología e Innovación Productiva | Nov-16 |
| Ministerio de Cultura | Nov-16 |
| Ministerio de Defensa | Dec-16 |
| Ministerio de Ambiente y Desarrollo Sustentable | Dec-16 |
| Ministerio de Trabajo, Empleo y Seguridad Social | Dec-16 |
| Ministerio de Salud | Jan-17 |
| Ministerio de Educación y Deportes | Jan-17 |
| Servicio Penitenciario Federal | Jan-17 |
| Instituto Nacional de Estadísticas y Censos (INDEC) | Feb-17 |
| Consejo Nacional de Coordinación de Políticas Sociales | Feb-17 |
| Instituto Nacional de Asuntos Indígenas- (INAI). | Feb-17 |
| Secretaría de Políticas Integrales Sobre Drogas de la Nación Argentina (SE-DRONAR) | Mar-17 |
| Comisión Nacional de Comercio Exterior (CNCE) | Apr-17 |
| Autoridad Regulatoria Nuclear (ARN) | Apr-17 |
| Ente Nacional de Comunicaciones (ENACOM) | Apr-17 |
| Tribunal Fiscal de la Nación (TFN) | Apr-17 |
| Unidad de Información Financiera (UIF) | Apr-17 |
| Dirección Nacional de Vialidad | May-17 |
| Policía de Seguridad Aeroportuaria (PSA) | Apr-17 |
| Dirección Nacional de Migraciones (DNM) | Apr-17 |
| Comisión Nacional de Valores (CNV) | Apr-17 |
| Instituto Nacional de Tecnología Industrial (INTI) | May-17 |

Table continued from the previous page

| | |
|---|--------|
| Registro Nacional de las Personas (RENAPER) | May-17 |
| Subsecretaría del Servicio Logístico de la Defensa | May-17 |
| Agencia Nacional de Materiales Controlados (ANMAC) | May-17 |
| Hospital Nacional Dr. Alejandro Posadas | May-17 |
| Instituto Nacional de Semillas (INASE) | May-17 |
| Servicio Nacional de Sanidad y Calidad Agroalimentaria (SENASA) | May-17 |
| Instituto de Investigaciones Científicas y Técnicas para la Defensa (CITIDEF) | May-17 |
| Comisión Nacional de Regulación de Transporte (CNRT) | May-17 |
| Ente Nacional de Obras Hídricas de Saneamiento (ENHOSA) | May-17 |
| Instituto Nacional de Asociativismo y Economía Social (INAES) | Jun-17 |
| Instituto Geográfico Nacional (IGN) | Jun-17 |
| Servicio Meteorológico Nacional (SMN) | Jun-17 |
| Superintendencia de Seguros de la Nación (SSN) | Jun-17 |
| Dirección General de Fabricaciones Militares (DGFM) | Jun-17 |
| Secretaría Nacional de Niñez, Adolescencia y Familia del Ministerio de Desarrollo Social | Jul-17 |
| Organismo Regulador de Seguridad de Presas (ORSEP) | Jul-17 |
| Administración Nacional de Seguridad Social - (ANSES) | Apr-17 |
| Administración Nacional de Aviación Civil - (ANAC) | Jul-17 |
| Comisión Nacional de Evaluación y Acreditación Universitaria- (CONEAU) | Jul-17 |
| Instituto Nacional contra la Discriminación, la Xenofobia y el Racismo- (INADI) | Jul-17 |
| Ministerio de Turismo | Aug-17 |
| Superintendencia de Servicios de Salud | Aug-17 |
| Tribunal de Tasaciones de la Nación (TTN) | Aug-17 |
| Agencia Federal de Ingresos Públicos (AFIP) | Mar-17 |
| Agencia Nacional de Laboratorios Públicos (ANLAP) | Sep-17 |
| Superintendencia de Riesgos de Trabajo (SRT) | Sep-17 |
| Instituto Nacional del Cáncer (INC) | Sep-17 |
| Centro Internacional Para la Promoción de los Derechos Humanos | Oct-17 |
| Organismo Regulador del Sistema Nacional de Aeropuertos (ORSNA) | Oct-17 |
| Junta de Investigación de Accidentes de Aviación Civil (JIAAC) | Oct-17 |
| Instituto Nacional del Teatro | Nov-17 |
| Servicio Nacional de Rehabilitación | Dec-17 |
| Teatro Nacional Cervantes | Dec-17 |
| ACUMAR | Dec-17 |
| Estado Mayor General de La Fuerza Aérea | Jan-18 |
| Instituto Nacional de Investigación y Desarrollo Pesquero - (INIDEP) | Jan-18 |
| Fondo Nacional de las Artes | Jan-18 |
| Agencia Nacional de Discapacidad | Jan-18 |
| Instituto Nacional de las Mujeres | Feb-18 |
| Hospital Nacional en Red Especializado en Salud Médica y Adicciones "Licenciada Laura Bonaparte" - CENARESO | Feb-18 |

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| Comisión Nacional de Energía Atómica | Feb-18 |
| Prefectura Naval Argentina | Mar-18 |
| Ministerio de Finanzas | Mar-18 |
| Instituto Nacional de la Propiedad Industrial | Mar-18 |
| Estado Mayor General de La Armada | Apr-18 |
| Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET) | Apr-18 |
| Instituto Nacional de Vitivinicultura | May-18 |
| Instituto Nacional Central Único Coordinador de Ablación e Implante (IN-CUCAI) | May-18 |
| Administración Nacional de Laboratorios e Instituto de Salud Dr. Carlos G. Malbrán (ANLIS) | May-18 |
| Administración Nacional de Medicamentos, Alimentos y Tecnología Médica (ANMAT) | May-18 |
| Policía Federal Argentina | May-18 |
| Ente Nacional Regulador del Gas (ENARGAS) | Jun-18 |
| Biblioteca Nacional "Doctor Mariano Moreno" | Jun-18 |
| Hospital Nacional "Baldomero Sommer" | Jun-18 |
| Agencia Nacional de Seguridad Vial (ANSV) | Jul-18 |
| Gendarmería Nacional Argentina | Jul-18 |
| Instituto Nacional de Rehabilitación Psicosfísica del Sur "Dr. Juan Otimio Tesone" | Jul-18 |
| Comisión Nacional de Actividades Espaciales | Jul-18 |
| Ente Nacional Regulador de la Electricidad (ENRE) | Jul-18 |
| Instituto Nacional del Agua | Aug-18 |
| Instituto de Ayuda Financiera para Pago de Retiros y Pensiones Militares (IAFPRPM) | Aug-18 |
| Caja de Retiros, Jubilaciones y Pensiones de la Policía Federal Argentina | Aug-18 |
| Administración de Parques Nacionales | Aug-18 |
| Fundación Miguel Lillo | Aug-18 |
| Colonia Nacional "Dr. Manuel Montes de Oca" | Aug-18 |
| Servicio Geológico Minero Argentino | Sep-18 |
| Superintendencia de Bienestar de la Policía Federal Argentina | Dec-18 |
| Estado Mayor Conjunto de Las Fuerzas Armadas | Sep-18 |
| Estado Mayor General del Ejército | Dec-18 |
| Agencia de Acceso a la Información Pública | Feb-19 |
| Procuración del Tesoro de la Nación | Feb-19 |
| Nación Fideicomisos S.A. (SUBAST.AR) | Mar-19 |
| PAMI | Apr-19 |
| Banco Nacional de Datos Genéticos | Apr-19 |
| Agencia de Deporte Nacional | Apr-19 |
| Dirección de Obras Social del Servicio Penitenciario Federal | Jun-19 |
| INCAA | Sep-19 |

Appendix C: Regulatory Framework

A wide array of regulations, decrees and laws govern public procurement in Argentina³⁹. Within this framework, the National Procurement Office (ONC) has a fundamental role. The ONC, created in 1994 by Decree No. 1545, has the function of being the Governing Body of the Contracting System of the National Public Administration. This body currently operates within the orbit of the Secretary of Modernization of the Nation.

The main feature of the Argentinian procurement system is that it is governed by the principles of normative centralization and operational decentralization. Therefore, the Central Administration's ONC is responsible for establishing the rules, systems and procedures that govern contracts, while managing each individual purchase is delegated to offices lower down in the State hierarchy.

The same rules about public procurement are applied to each office in the Central Administration—including to the regional offices of such public bodies, in national universities and in the armed and forces. Overall, more than 100 agencies are regulated by the same set of rules. In contrast, local governments and public companies are excluded from the scope of these regulations. Public employment contracts, small purchases paid in cash, and contracts with international organizations are also excluded from these regulations. Finally, while public works are supervised by the ONC, they are not included in the COMPR.AR platform⁴⁰

³⁹The regulatory framework for public procurement in Argentina is defined by Delegated Decree N 1023/2001 (National State Contracting Regime), the Decree N 1030/2016 (Contracting Regime of the National Administration) and Decree N 436/2000 (Regulation for the Acquisition, Disposal and Contracting of Goods and Services of the National State). There are also other rules related to the subject, among which we can highlight: Law N 13.064 (Public Works); Law N 24,156 (Law on Financial Administration and Control Systems of the National Public Sector); Law N 25,188 (Ethics in the Public Function); Law N 25,551 (Buy Argentinian Work); Decree N 1818/2006 (Electronic Public Procurement System); Decree No. 1545/1994 (Creation of the National Contracting Office. Missions and Functions); Resolution FOLLOW N 79/2005 (Witness Pricing System) and Provision N 65/2016 (COMPR.AR) (Tools for transparency in management, 2017)

⁴⁰Public works have different characteristics to the acquisition of goods and services. Therefore, they are carried out by another platform called CONTRAT.AR (<https://contratar.gob.ar/>)

Appendix D: Off-the-Shelf Goods included in Study

| Code | Product |
|----------------|---|
| 2.5.5-570.34 | Esmalte sintético; presentación envase x 4 l |
| 2.1.1-7915.9 | Agua potable; presentación envase x 20 l |
| 2.3.5-8695.66 | Libros; temática: textos escolares |
| 2.9.2-317.5 | Bolígrafo; trazo 1,0 mm |
| 2.9.2-1354.22 | Resaltador; punta 5 mm (chanfleada) |
| 2.9.2-1354.21 | Resaltador; punta biselada |
| 2.5.5-6979.254 | Pinturas; tipo: látex, presentación: envase x 20 l, compuestos volátiles: sin, porcentaje de plomo: 0 % |
| 3.2.2-2014.1 | Alq. de dispensar; alq. de dispensar |
| 2.9.2-1616.128 | Marcadores; tipo para pizarra - trazo grueso - punta redonda - recargable no |
| 2.9.2-700.2 | Broches p/abrochadora; número: 21/6, presentación: caja x 1000 unidades |
| 2.1.1-478.39 | Agua mineral; tipo: sin gasificar, presentación: envase x 20 l, material envase: plástico 7, tipo envase: retornable, elem. transporte: sin, material elem. transporte: sin |
| 2.9.1-6951.30 | Limpiadores; tipo: lavandina, presentación: envase x 5 l |
| 2.9.2-317.17 | Bolígrafo; trazo grueso |
| 2.9.2-1358.3 | Carpetas; material cartulina - tamaño oficio |
| 2.9.1-6951.12 | Limpiadores; presentación: envase x 5 l, tipo: detergente |
| 2.1.1-7915.7 | Agua potable; envase x 20 l |
| 2.9.2-317.1 | Bolígrafo; trazo 0,7 mm |
| 2.9.2-1358.35 | Carpetas; material pvc - tamaño a4 |
| 2.1.1-478.47 | Agua mineral; tipo: sin gasificar, presentación: bidón x 20 l, material envase: policarbonato, tipo envase: retornable, elem. transporte: sin, material elem. transporte: sin |
| 2.9.2-317.31 | Bolígrafo; trazo medio |
| 2.9.2-1358.353 | Carpetas; material plástico - tamaño a4. |
| 2.9.2-1358.354 | Carpetas; material plástico - tamaño oficio. |
| 2.9.2-1616.24 | Marcadores; tipo p/pizarra - trazo grueso - punta redonda - recargable si |
| 2.3.1-9896.6 | Papeles obra; gramaje: 80 gr/m2, tamaño: oficio/legal, blancura: extra blanco (mayor a 92%), certificación sustentable: con, norma: iram 3100/3123/3124-iso 9706 |
| 2.3.1-6587.159 | Papeles encuadernados; cant. de hojas: 200, tamaño: oficio, tipo: libro de actas, certificado forestal (gfs): sin, porc. fibras recicladas: 0 %, cert. fibra alternativa (fca): sin |
| 2.9.2-1358.34 | Carpetas; material pvc - tamaño oficio |
| 2.9.2-660.1 | Clips p/papel; número: 3, material: metal, cant. x caja: 100, presentación: caja x 100 |
| 2.3.1-6563.129 | Papeles en hoja; tipo papel: papel obra, dimension: 21 x 29,7 cm, gramaje: 80 gr/m, presentación: resma x 500 hojas, tipo de papel: papel obra |
| 2.5.5-5444.1 | Diluyentes; presentación: envase x 4 l |
| 2.3.1-6586.171 | Papeles en rollo; tipo de papel: araña, longitud: 100 cm, ancho: 100 cm, certificado forestal (gfs): con, porc. fibras recicladas: 50 % |

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|----------------|--|
| 2.9.2-1611.3 | Folios transparentes; tamaño: a-4, perforaciones: 5 universales, material: plástico (polietileno) |
| 2.1.1-709.9 | Café; estado: molido, contenido: 1000 gr, proceso: tostado c/azúcar, envase: paquete, tipo: sin valor, presentación: envase x 1000 gr |
| 2.1.1-454.25 | Yerbas; palo: con, peso: 1 kg, material envase : papel, certificado forestal (gfs): con, elem. transporte: sin, material elem. transporte: sin, libre de gluten: si |
| 2.9.2-1611.1 | Folios transparentes; material: plástico (polietileno), tamaño: oficio, perforaciones: 5 universales |
| 2.9.2-323.4 | Corrector de escritura; presentación lápiz (punta metal) x 7 ml |
| 2.9.2-674.9 | Reglas graduadas; tipo: plana, material: plástico, long.de cuerpo: 30 cm |
| 4.3.7-15.117 | Heladeras; capacidad: 290 l, frio: con freezer, consumo: 0,33 kva, tension nominal: 220 v, criterio de seguridad: sello de seguridad, corriente nominal: 1,5 a, eficiencia energética: grado a |
| 2.9.2-848.11 | Lápiz; tipo: hb, color: negro |
| 2.9.1-683.5 | Secadores de goma; largo: 40 cm, color: negro |
| 2.9.1-2437.2 | Palas de residuos; material: plástico, mango: largo |
| 2.9.2-696.15 | Sacapuntas; material metálico - cantidad de bocas 1 - tipo escolar |
| 2.5.5-6979.260 | Pinturas; tipo: sintética, presentación: envase x 4 l, compuestos volátiles: sin, porcentaje de plomo: 0 % |
| 2.9.1-6950.30 | Lustradores; tipo: lustramuebles, presentación: aerosol x 360 cm3 |
| 2.5.5-570.268 | Esmaltes sintéticos; capacidad: envase x 1 l, presentación: envase x 1 l |
| 2.9.1-564.5 | Baldes de plástico; capacidad: 10 l, color: amarillo |
| 2.5.5-570.67 | Esmalte sintético; presentación envase x 20 l |
| 2.1.1-595.14 | Edulcorantes; presentación: polvo, envase: sobre individual, contenido: 500 sobres de 1 gr |
| 2.9.2-323.3 | Correctores de escritura; envase: lápiz (punta metal), presentación: lápiz (punta metal) x 10 ml, capacidad: 10 ml |
| 2.9.6-401.1362 | Cartuchos de toner; código: ce285a, uso: hewlett packard |
| 2.9.1-646.6 | Bolsas de residuos; dimension: 45 x 60 cm, presentación: bolsa x 10, color: sin valor, espesor: sin valor |
