Tax collection and firm trade decisions: Direct and network effects*

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Job Market Paper

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Summary

Tax collection mechanisms where third-parties are responsible for remitting the tax are ubiquitous: employers usually withhold income taxes from employees and it is also standard for firms to withhold from their trade partners in order to collect value added, sales, or turnover taxes. The reason behind the widespread use of withholding mechanisms is the high compliance they ensure along with a reduction in administrative costs (Slemrod, 2008; Slemrod, 2019). However, it is still not clear whether incentives to trade among economic agents may be altered under such collection schemes: if a firm who is subject to withholding ends up facing a higher effective tax rate, it may decide to switch trade partners in order to minimize its tax burden. This would lead to distortions in production decisions and ultimately to a reduction in tax revenue. Despite its potential relevance, little is known about the effects of withholding on firm-to-firm trade decisions. Policy variations that allow for identification of a causal effect are hard to find and, in addition, only recently have researchers been able to access data enabling them to observe commercial linkages between economic agents.

This paper studies the effects of a tax withholding program that delegates collection duties on firms. Our goal is to document the response of firms to the reform and to determine whether enrolling firms to collect taxes has implications on the commercial relations they have. For this purpose we analyze the implementation of a withholding scheme to collect the Turnover Tax in the City of Buenos Aires, Argentina. The Turnover Tax is the largest source of own revenue at the subnational level accounting for about 75% of tax receipts. Under the standard filing procedure, firms are required to report their monthly sales and then apply the corresponding tax rate to it. The reform we analyze implied an unprecedented expansion of the withholding scheme set up to collect the tax (Figure 1). Under this reform some big firms were appointed to act as Collection Agents (CAs) according to a rule based on size: firms whose gross income in the preceding year was greater than AR$ 60M (located at the 96th percentile of the revenue distribution) were automatically appointed as CAs (Figure 2). Appointed firms then started to withhold the tax from their commercial partners whenever there was a purchase or a sale. This implied an increase in the share of taxpayers' tax liability collected indirectly at source by CAs *in lieu* of direct payments at the end of the month to the tax authority (Figure 3).

The data consist of monthly tax declarations for nearly the universe of firms operating in the City of Buenos Aires. In addition, firms acting as CAs are required to file every month a supplementary "invoice summary" that contains transaction-level details of purchases and sales. This allows us to identify the parties involved in each transaction. By combining these two data sources we obtain a panel of 250 thousand firms and 1.6 million client-supplier pairs spanning from 2015 to 2020. The high frequency of the data allows us to have multiple observations for each taxpayer in a short interval of time, a feature that we will exploit when we analyze the response to the new withholding scheme.

We begin our empirical analysis by estimating the direct effects of the reform on the newly-appointed CAs. We use a regression discontinuity design (RD) that exploits the sharp change in the probability to work as a CA based on 2015 gross income (pre-reform) to test whether CAs change their behavior by comparing reported income for firms close to the cutoff. We also complement the analysis with a difference-in-differences (DD) approach that allows us to study the response of firms farther away from the cutoff. Preliminary evidence suggests that CAs did not experience any effects on their business activity (Figures 4 and 5). We attribute this result to the fact that appointed firms were among the largest—and presumably most formal—firms in the economy, so it makes sense that tax collection duties did not imply a significant compliance costs to them, nor did they change their perception on tax enforcement.

Next, we shift focus to firms who regularly trade with newly appointed CAs. As was previously mentioned, firms experienced an increase in the amount of tax collected through withholding as a consequence of the reform. This might have triggered a behavioral response for two reasons. First, as a fraction of the tax is now payed at source, this might impose a financial burden on firms. Second, as the tax is now partially remitted by a third party, this potentially sets a lower bound for self-reported income. To determine whether changes in the collection scheme triggered a response from taxpayers, we implement a DD design relying on the differential exposure to newly-appointed CAs.

The data allows us to distinguish two different groups of firms: those who trade with old CAs appointed in 2012 (our Control group, C) and firms who trade with new CAs appointed at the time of the reform in November 2016 (our Treatment group, T). Firms in C did not experience a change in the number of CAs operating in their network of commercial partners—they were withheld by the same CAs before and after the reform took place. For firms in T, the key difference is that they had commercial ties with firms who suddenly became CAs in November 2016—therefore, they experienced an increase in the number of CAs in their network at the time of the reform. The first-stage results show that the share of due taxes withheld at source increase sharply for T relative to C precisely at the time of the event (Figure 6). Moving to the analysis of behavioral responses, our preliminary findings suggest that treated firms increased their reported gross income by 9 percentage points relative to the control group after the reform is in place (Figure 7). A potential interpretation of this result is that withheld taxes act as a lower bound on self-reported income: if firms were under-reporting their sales before the reform, having a larger part of the tax remitted by a CA might have forced them to increase the amount they must report.

We are currently in the process of studying the effects of the reform on incentives to trade among firms, the final piece of our empirical analysis. Given that we observe all firm-to-firm transactions for CAs in our sample, we are able to quantify the number of trade links that survive at each point in time. To obtain a casual effect on the reform, we can compare how commercial relations evolve over time for newly appointed CAs relative to other CAs appointed in the past.

This paper contributes to the literature by providing new evidence on how tax collection schemes interact with taxpayers' sourcing decisions. Although previous work provides insights on how third-party information in general, and in particular, tax withholding enhances compliance and how its effect can propagate throughout the supply chain (Brockmeyer and Hernandez, 2018; Pomeranz, 2015; Waseem, 2020), there is little empirical evidence on the potential distortions this might generate on firms' sourcing decisions. In addition, recent work has relied on micro-data to study patterns of trade between firms (Gadenne et al., 2020; Gerard et al., 2019; Pessina, 2020), we contribute to this body of work by providing new insights based on novel administrative data coupled with sharp identifying policy variation.

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Figures

Fig. 1: Number of firms acting as CAs

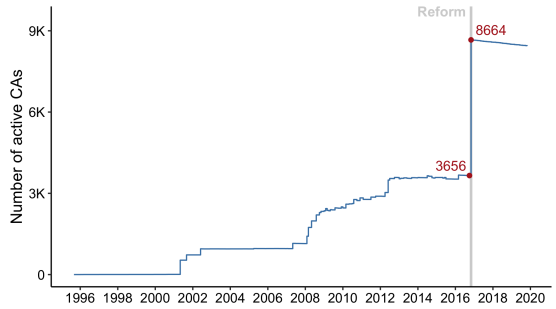


Fig. 2: Probability of appointment as CA

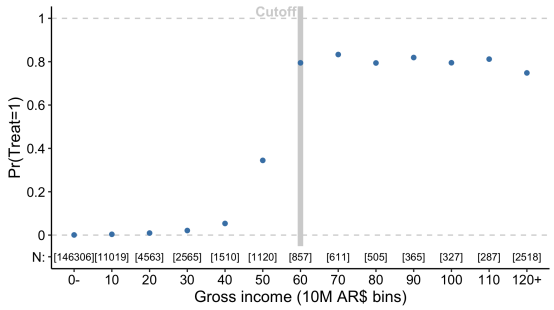


Fig. 3: Share of tax collected via withholding

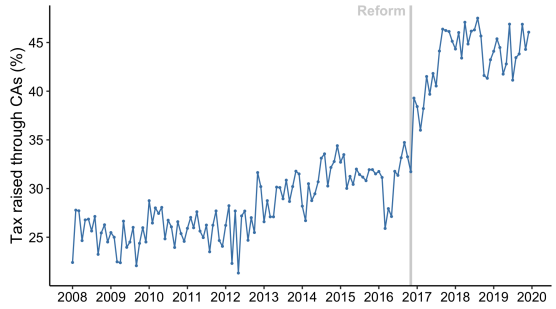


Fig. 4: RD for income growth (rel. to 2015)

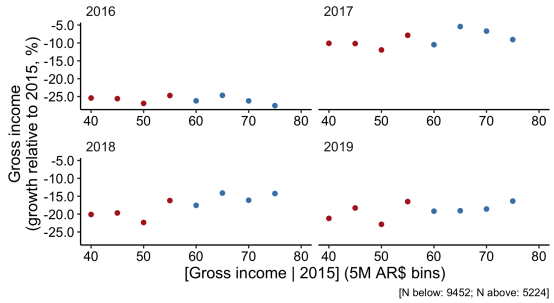


Fig. 5: Event Study for income growth (rel. to 2016q3)

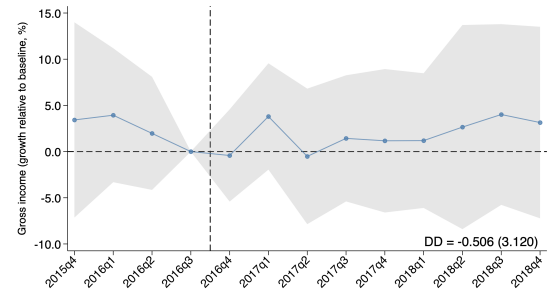


Fig. 6: Event Study for share of tax withheld

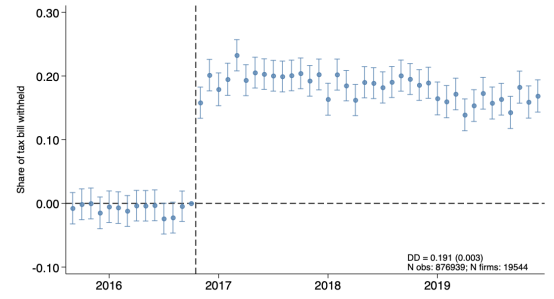


Fig. 7: Event Study for income growth (rel. to 2016m10)

