

# Firms as tax collectors


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NBER Business Taxation in a Federal System



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# Motivation

- Governments at all levels struggle to raise revenue and build tax capacity
- Large-scale compliance requires govts to modernize tax administrations
  - Recent evidence of dramatic returns to improved tax admin [Basri et al AER'21]
- **Withholding regimes** as a policy tool:
  - Collection systems where 3rd parties collect/remit taxes owed by related parties
  - e.g., income tax, VAT built-in mechanism, credit card companies
  - [Besley & Persson, 2013; Waseem, 2020; Brockmeyer & Hernandez, 2019]
- Withholding of indirect taxes is widespread, but largely understudied 



## This paper

### What are the implications of delegating tax collection duties on firms?

1. Do withholding regimes lead to an increase in **revenue**? **YES** 
2. Does delegating collection duties on firms affect their **own activity**? **NO** 
3. Does it affect the **activity of linked firms** (suppliers or clients)? **YES**

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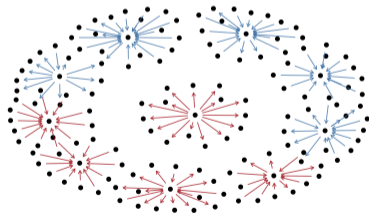
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- Monthly **B2B admin data** in the City of Buenos Aires, Argentina 




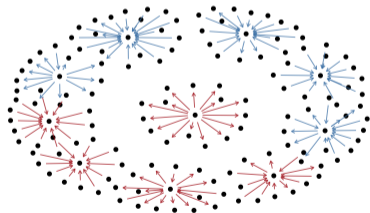
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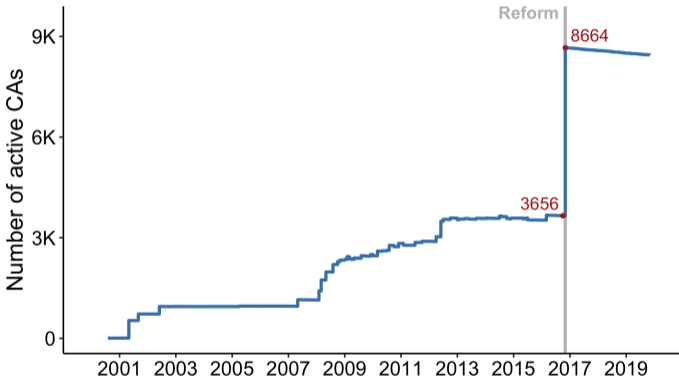
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- Monthly **B2B admin data** in the City of Buenos Aires, Argentina 
- An unprecedented **reform** that changed how business tax is collected, holding all else constant (tax base, tax rates, etc.)

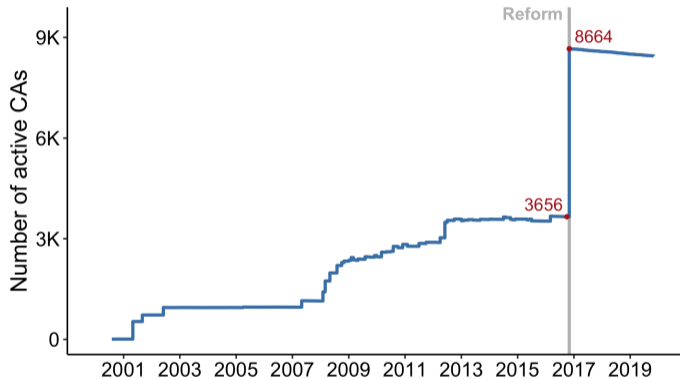


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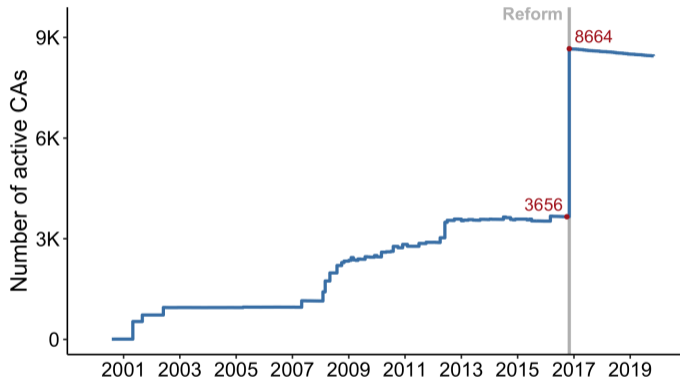
- Subnational **Turnover Tax** 






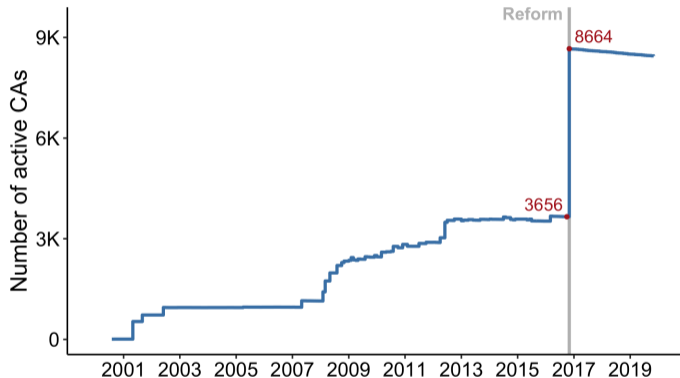
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- **Tax collection:**
  1. Direct payments
  2. Withholding by CAs




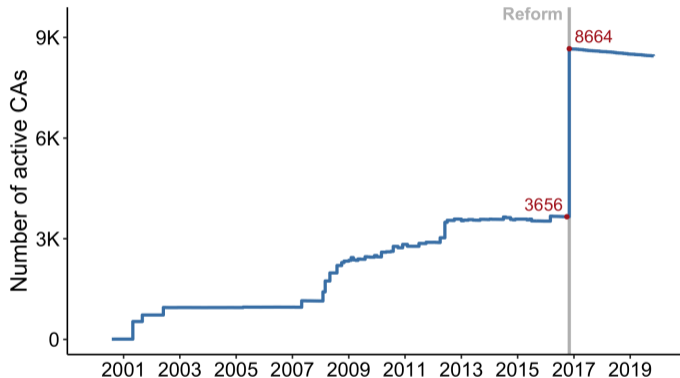
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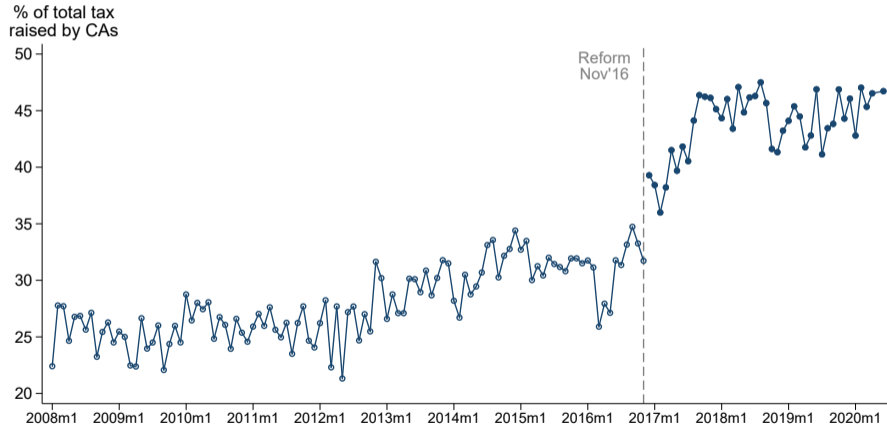


Implication: More tax collected at source by CAs *in lieu* of direct payments 

# Macro evidence

## Withholding


Increase in tax collected through withholding (~ 30% to 45%)



# Indirect effect on linked firms

## Strategy & First Stage


### Strategy:

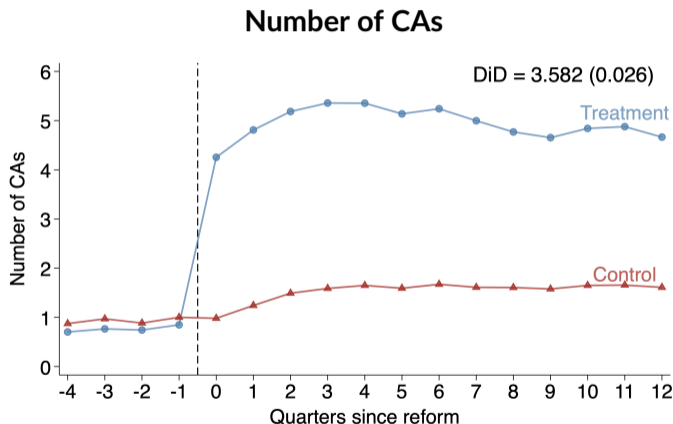
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- **Control:** linked to old CAs
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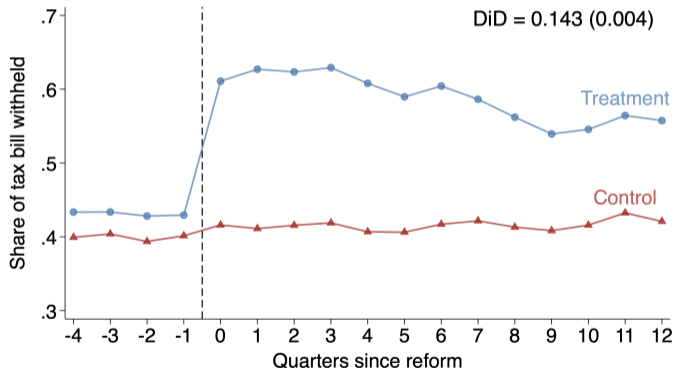
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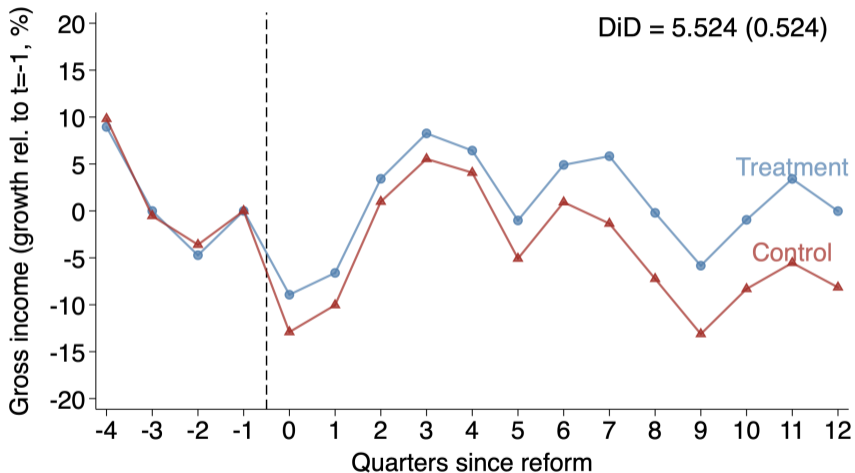
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## Share of tax withheld by CAs

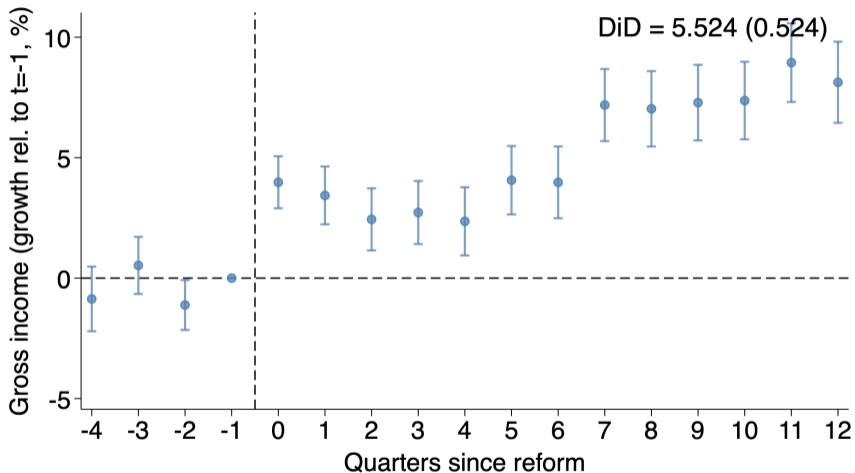


## Response of linked firms: Gross income (levels)

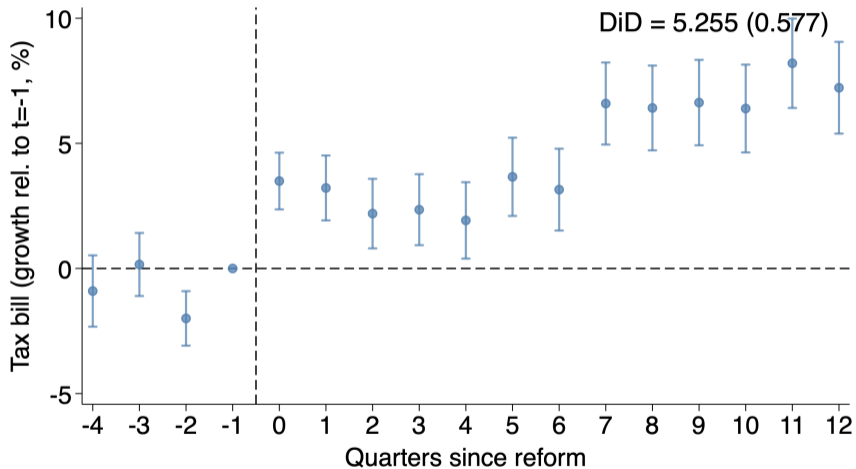




## Response of linked firms: Gross income (DiD)



## Response of linked firms: Tax liability (DiD)



## Closing remarks

### Appointing firms as tax collectors is a promising tax administration tool

1. Does not harm the activity of the **collector**
2. Leads to increased reported income of **linked firms**
3. Overall, increases **tax revenue**

### How? Implications for linked firms [▶ Conceptual framework](#)

- Third-party information reporting → **enforcement perceptions**
- Withheld amount → imposes a **lower-bound** on self-reported sales & tax owed

### Next step

- Did policy distort choice of trade partners away from CAs? A priori, no [▶](#)

# Thank you!

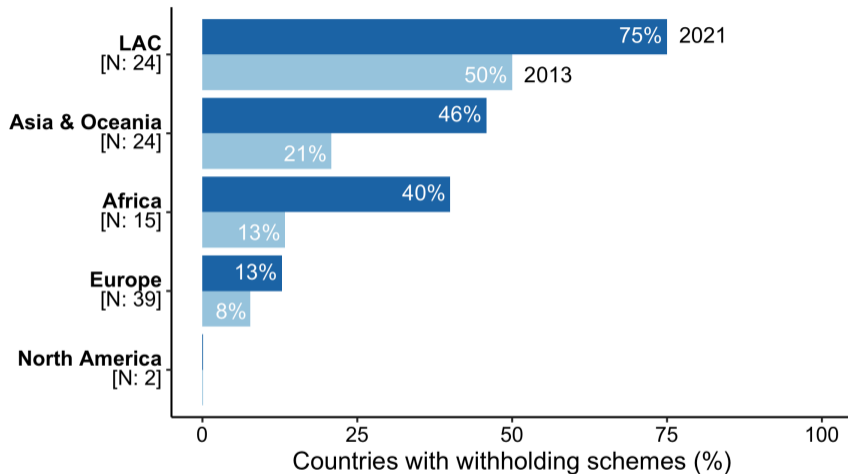
[pablo\\_garriga@brown.edu](mailto:pablo_garriga@brown.edu)

# Appendix

# Related literature

- **Tax capacity, compliance, and development**
  - Musgrave (1969), Besley & Persson (2013), Slemrod & Yitzhaki (2002), Keen & Slemrod (2017), Basri et al (2021), Bergeron et al (2021)
- **Behavioral responses to tax collection & info reporting**
  - **Remittance invariance:** Slemrod (2008, 2019), Pessina (2020), Kopczuk et al (2016)
  - **Info reporting:** Pomeranz (2015), Carrillo et al (2017), Almunia & Lopez-Rodriguez (2018)
  - **Withholding:** Waseem (2020), Brockmeyer & Hernandez (2019), Carrillo et al (2011)
- **Network effects of taxation schemes**
  - Gadenne et al (2020), Gerard et al (2019)

## Withholding of indirect taxes by region



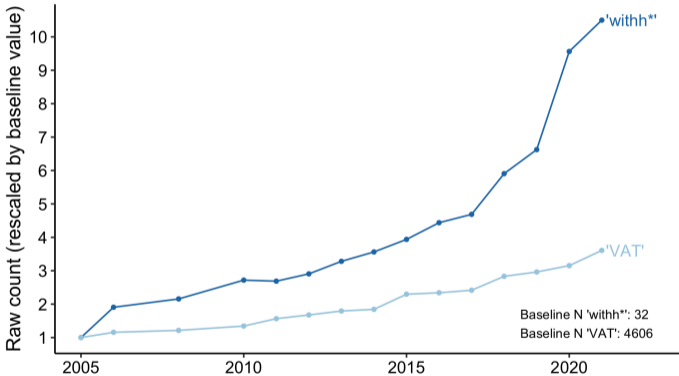
Notes: Text analysis using Ernst & Young's "Worldwide VAT, GST and Sales Tax Guide".



### Details of the previous figure:

- Text analysis of EY's reports:
  - Match strings containing "withh\*" (e.g., "withholding, withheld, withhold", etc.)
  - Split into country chapters where possible (2013 onwards)
  - Binary indicator if a country's chapter contains any matching strings
- There's a sharp increase in the number of matches over time

Number of matches per document:  
"withh\*" vs "VAT" (used as benchmark)

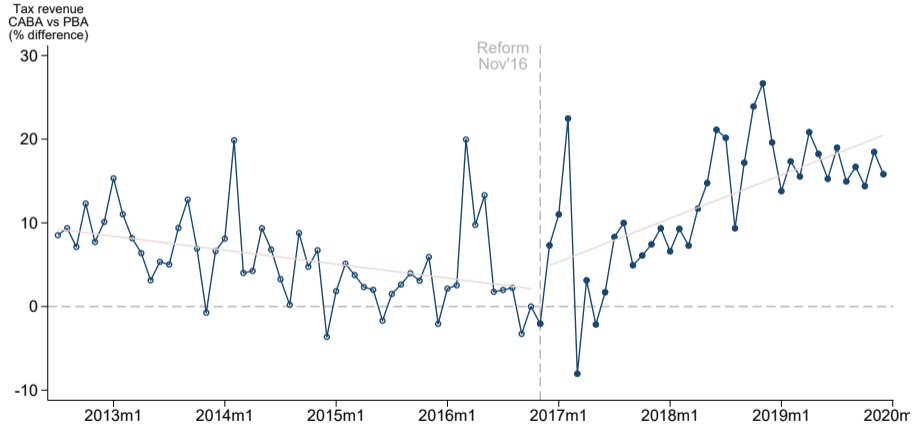




# Macro evidence

## Tax revenue

### Increase in tax revenue (relative to a comparable district)



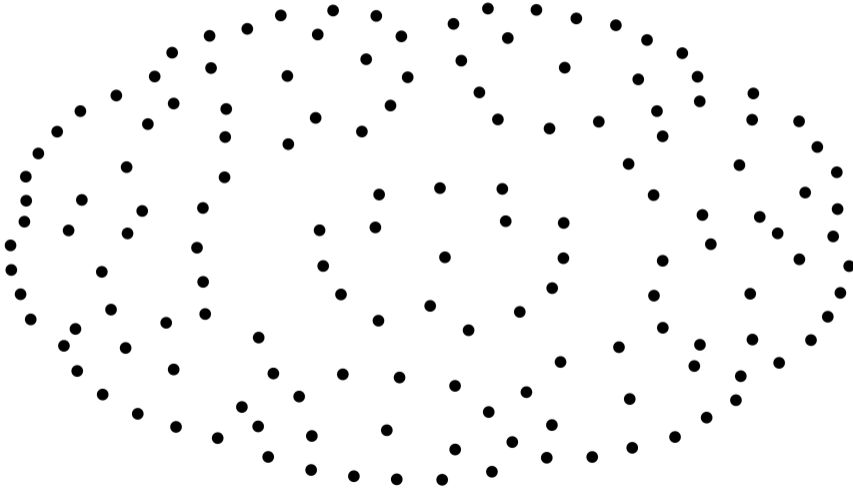
## Administrative Data

- Universe of taxpayers: 1M firms
- Sample: 250K firms
  - 78% of total TT revenue
- Period: Sep 2015 – Dec 2020
- Observe monthly filings for all firms
- Observe B2B transactions for 3000 CAs and their partners



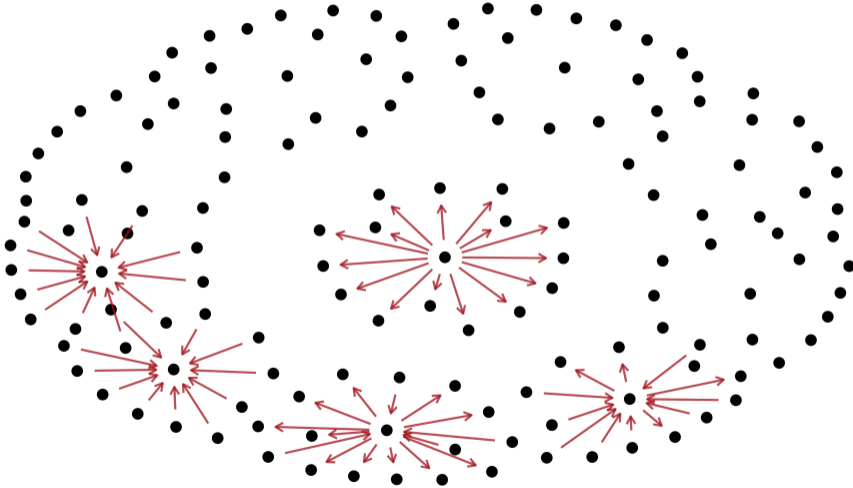
# Admin Data: Networks

Example



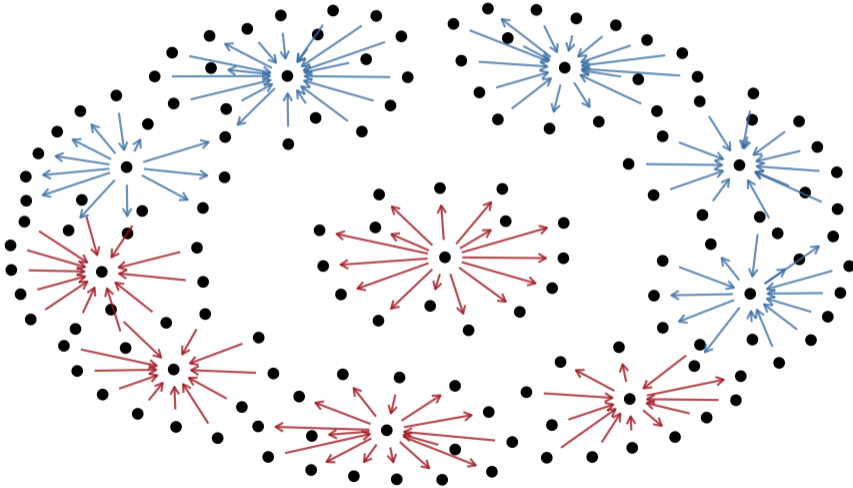
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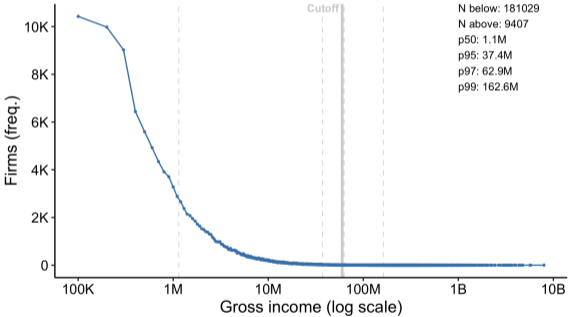
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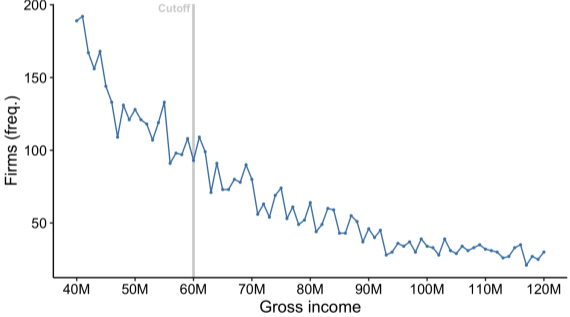
# Admin Data

## Firm size distribution

### Pre-reform gross income distribution



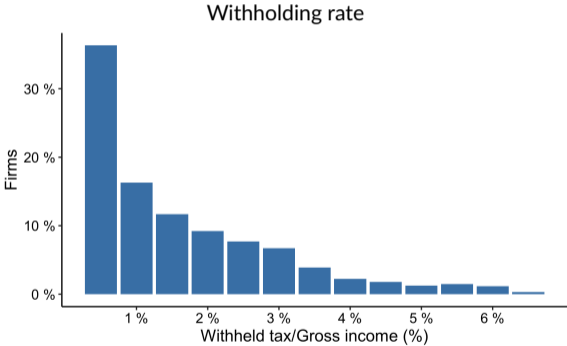
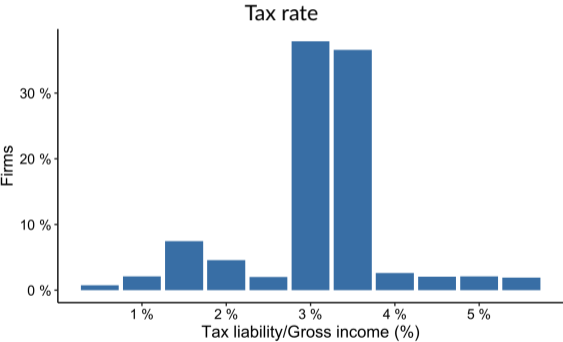
### Zooming in around appointment rule cutoff



Notes: Gross income bins of size 100K and 1M AR\$ (~ 8K and ~ 80K \$), respectively; "Cutoff" indicates the location of income threshold; Dashed lines indicate p50, p95, p97, p99, respectively; Showing relevant part of support in each plot.

# Admin Data

## Tax rates



Notes: Average annual rates by taxpayer.

# Turnover Tax & Collection

## - Subnational Turnover Tax

- Tax base: levied on gross income, no deductions for expenses
  - Tax rates: typically vary from 1% to 5%
  - Applies to B2B and B2C transactions (classic “cascading effects”)
  - Applies to local and out-of-jurisdiction transactions
  - Distortive but simple: Largest source of own revenue (~ 75%)
  - Imposed in each of the 24 jurisdictions in Argentina
- Note: **National VAT** (built-in self-enforcing incentives already in place)

## - Tax collection:

- Monthly electronic filing
- **Outstanding balance** = tax owed – amount withheld by CAs (if any)
- We exploit an exogenous and sharp increase in the number of CAs

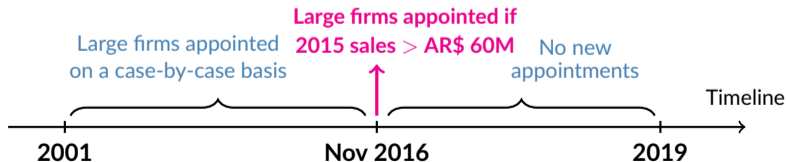




# The reform

## Indirect collection of Turnover Tax

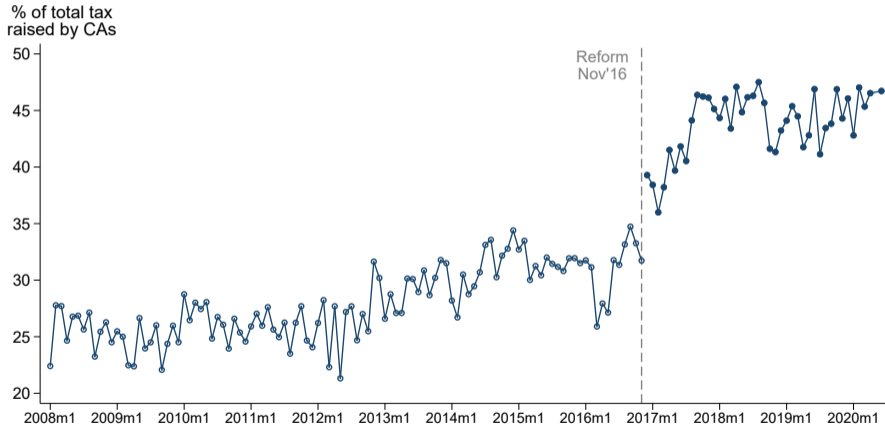
- Provinces rely on Turnover Tax as the main source of revenue
- **Historically:** part of the tax payed through direct payments, some firms acted as **collection agents (CAs)** and withheld the rest
  - Buyer: subtract a portion of the tax from suppliers' invoice
  - Seller: charge a portion of the tax on clients' invoice
- **Nov 2016 reform:** a substantial # of firms appointed as CAs
  - **Rule:** firms with **2015 annual sales > AR\$ 60M** ( $\approx$  p97)
  - More tax collected at source by CAs *in lieu* of direct payments



# Macro evidence

## Withholding

Increase in tax collected through withholding (~ 30% to 45%)



## Empirical strategy

$$y_{it} = \sum_{\tau=-q}^{-1} \delta_{\tau} \cdot D_{i\tau} + \sum_{\tau=0}^m \beta_{\tau} \cdot D_{i\tau} + \theta_i + \gamma_t + \varepsilon_{it}$$

- $i$  indexes firms and  $t$  calendar-quarters
- $D_{i\tau}$ : event-study indicator for each quarter relative to the baseline period
  - Baseline period: Nov16-Jan17
- $\theta_i$  firm FE,  $\gamma_t$  calendar-quarter FE
- SE clustered by firm
- Balanced panel of firms

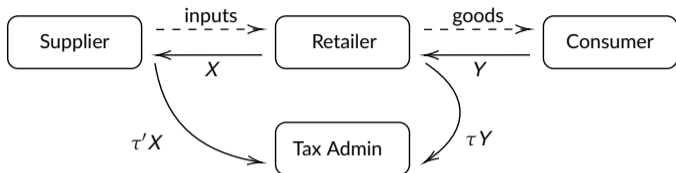


# Conceptual framework

## Tax collection mechanisms

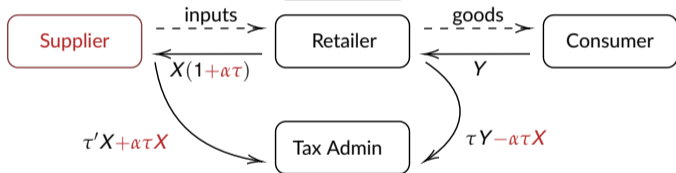
### Direct payment

- $\tau'X, \tau Y$  self-reported



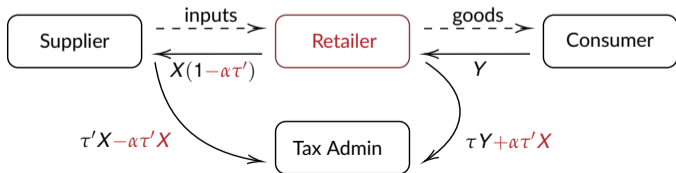
### Withholding (Seller)

- **Supplier** now charges  $X(1 + \alpha\tau)$  with  $\alpha \in (0, 1)$
- Remits  $\alpha\tau X$  to TA
- Retailer only owes  $\tau Y - \alpha\tau X$



### Withholding (Buyer)

- **Retailer** now pays  $X(1 - \alpha\tau')$  with  $\alpha \in (0, 1)$
- Remits  $\alpha\tau'X$  to TA
- Supplier only owes  $\tau'X - \alpha\tau'X$



# Conceptual framework

## Tax collection mechanisms

Withholding through CAs implies **2 main changes on tax payments**

- **WHEN:** tax filing date (end of the month) vs in advance (at source)
- **WHO:** direct payment vs withheld amount remitted by 3rd party

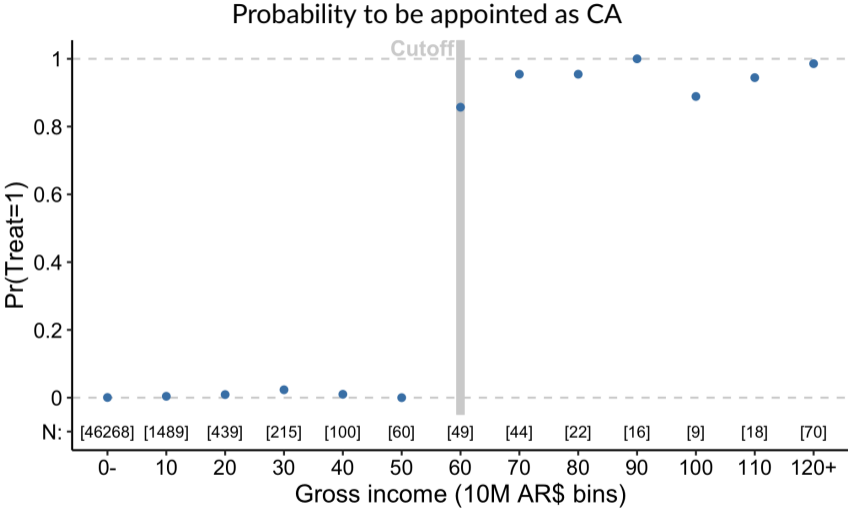
## Implications

- **For CAs:**
  - Administrative burden
  - “Cash-flow benefit”
  - Scrutiny from govt (enforcement perceptions)
- **For linked firms:**
  - Third-party information reporting (enforcement perceptions)
  - Withheld amt → lower-bound on self-reported sales & tax owed
  - Might distort the choice of trade partners towards non CAs

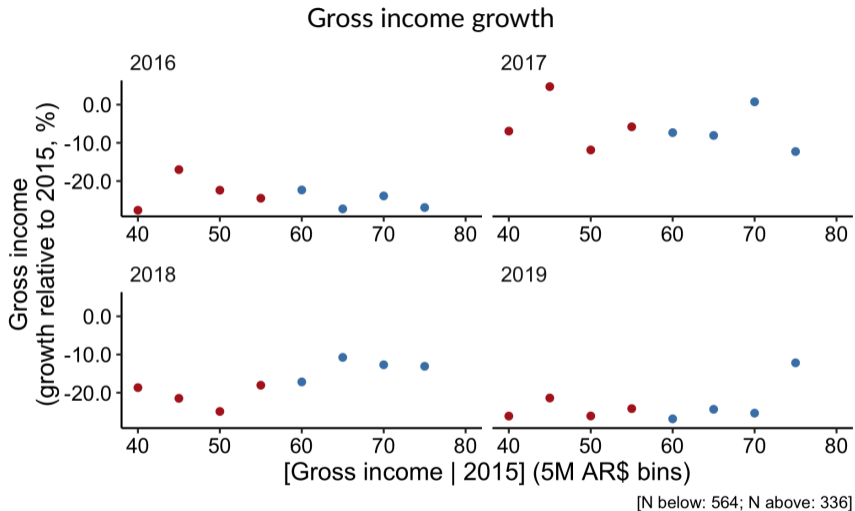
## Direct effect on CAs

- **Nov'16 reform:** large firms appointed to collect taxes on behalf of clients/suppliers
- **Rule:** firms with **2015 annual sales > AR\$ 60M** ( $\approx$  p97)
- **Empirical strategy:**
  - (1) **Document expansion of withholding net**  
Probability to: **(i)** be appointed as CA; **(ii)** start withholding
  - (2) **RDD: response of newly-appointed CA firms**  
Compare changes in gross income (sales) close to the 60M cutoff

# Appointment as CA



# Response of appointed CAs



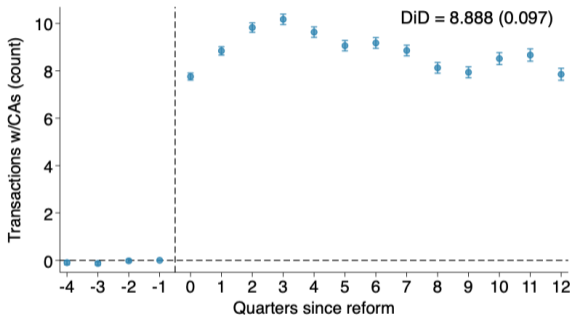


## Direct effect on CAs: summary

- CAs activity does not seem to be affected
- **Explanation:** These are **large/formal firms**
  - Collecting taxes from others is not an administrative burden, already have professional accountants in-house
  - These firms are not financially-constrained, so no “cash-flow benefit”
  - Scrutiny from govt does not induce higher compliance as they are already formal

### No. of transactions with CAs

jump with reform and remain stable thereafter



### Average transaction amount with CAs

jump with reform and remain stable thereafter

