

EDI Research Link Up Research Presentation



Center for Effective Global Action

*Tax Audits under Weak Fiscal Capacity
Senegal
Pierre Bachas
(World Bank Research)*

ECONOMIC
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Problem Statement/Motivation

- Low revenue collection in LICs ← tax evasion ← weak fiscal capacity
- **Dimensions of fiscal capacity:** weak audit processes & limited third-party data.
- Common features of tax administrations in SSA countries:
 - 1) Large discretion in audit case selection → allows inspectors to use soft info at the cost of potential misjudgment, bias & corruption
 - 2) High effort cost of linking taxpayer data across sources to assess evasion risk

Study Objective

- This study: all firms in Large and Medium Taxpayer offices (4,000 firms)
- Two types of audits: comprehensive (300 a year) and desk audits (800 a year)

Research Question/Hypotheses:

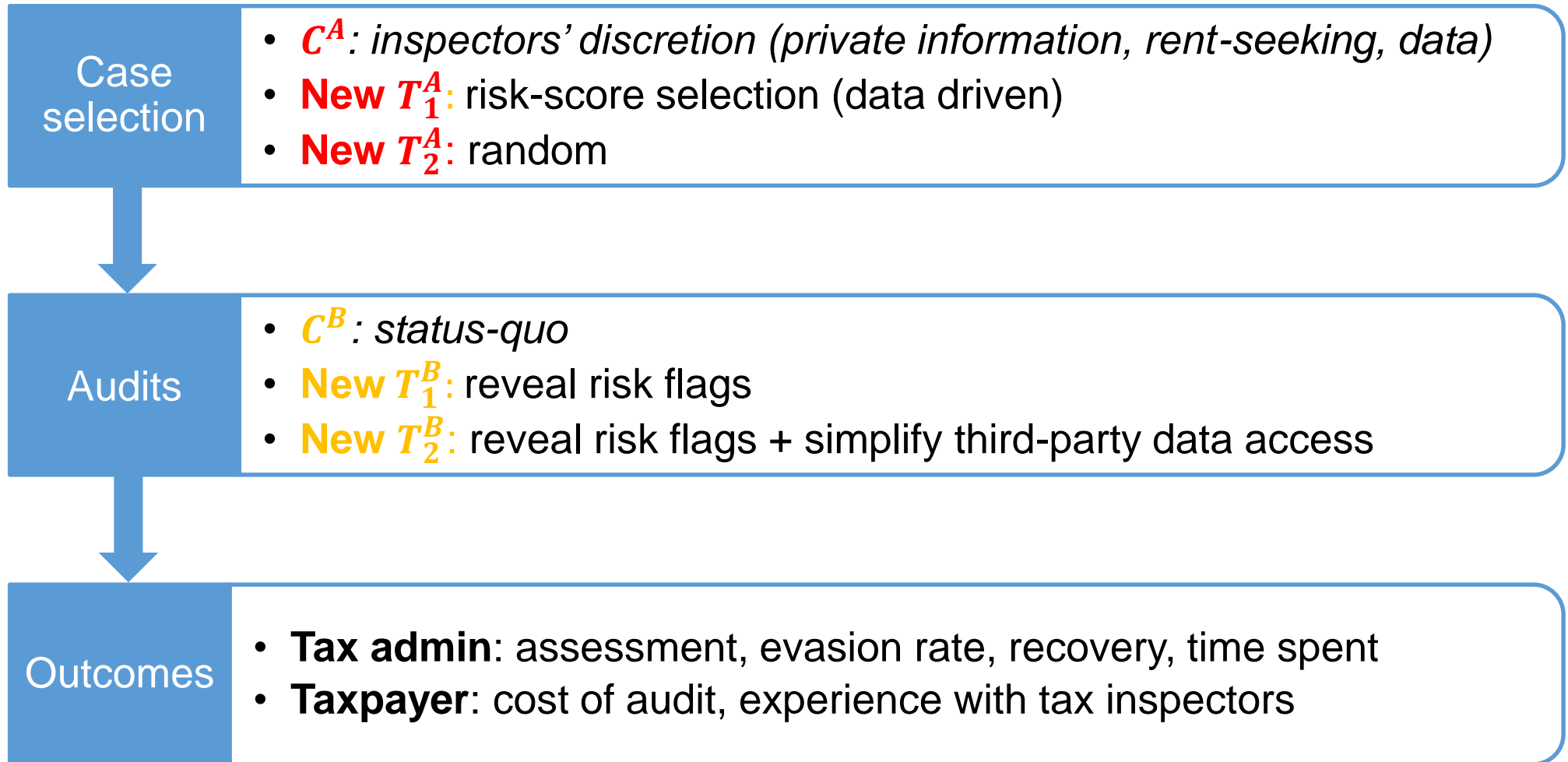
- 1) How does **discretionary** case selection compare to **risk-based** and **random** selection?
- 2) What are the returns from simplifying access to linked tax data during audits?

Completed:

- Survey of tax inspectors -> private info is often used & linked data hard to access
- Database linked: tax returns (CIT, VAT, PAYE) + customs and procurement records
- Developed a **risk-score** for tax evasion following international “best practice”
based on different selection criteria for firms currently in the field



Research Design / Methods



Data Collection / Measurement Strategy

Admin data:

- Primary Outcomes: amount assessed, amount recovered, evasion rate
- Secondary Outcomes: time spent per audit, inspectors' perceived difficulty

Firm survey:

- Taxpayer satisfaction, audit cost, more sensitive questions (e.g. list experiment for bribes)
- Link survey response with treatment status, potentially tax data

Link up: gained valuable insights from discussions with the team working on ML methods to identify fraudulent VAT traders in India & from the property tax team in Senegal.



Status/ Early Results

- Status: selection was completed in April and audits are being conducted for FY 2017.
- 52 inspectors are involved in the experiment across the 7 main tax centers

<i>Desk Audit Selection</i>	(1) Total	(2) Algorithm	(3) IRS	(4) Random	(5) IRS and Alg
Risk Score (algorithm)	57.03 (1.67)	95.14 (1.81)	32.63 (2.56)	25.43 (1.83)	87.06 (5.14)
Log Turnover (1M)	5.67 (0.10)	5.51 (0.17)	5.65 (0.17)	5.79 (0.19)	6.34 (0.56)
Log Number employees	2.57 (0.06)	2.54 (0.11)	2.60 (0.11)	2.53 (0.13)	2.86 (0.34)
Profit Margin	0.04 (0.01)	0.02 (0.02)	0.08 (0.01)	0.03 (0.00)	0.07 (0.02)
Observations	779	284	263	199	33

<i>Full Audit Selection</i>	(1) Total	(2) Algorithm	(3) IRS	(4) IRS and Alg
Risk Score (algorithm)	94.16 (3.92)	140.04 (4.29)	36.46 (2.76)	115.33 (7.40)
Log Turnover (1M)	6.97 (0.16)	6.37 (0.24)	7.48 (0.21)	9.31 (1.33)
Log Number employees	3.09 (0.11)	3.00 (0.18)	3.08 (0.14)	4.12 (0.37)
Profit Margin	0.07 (0.01)	0.06 (0.01)	0.08 (0.01)	0.10 (0.05)
Observations	299	152	132	15



Challenges/Next Steps: experimental design for 2019 & taxpayer survey.

Additional Designs:

- Optimal interaction between human and machine (version 2.0) → e.g. New treatment: discretionary selection given risk-score restricted set
- Disentangling private info from rent seeking → e.g. New treatment: close the “rent-seeking” channel by announcing re-audit of specific slots

Taxpayers’ survey goals: asking potentially sensitive

1. **General info. on firms:** age, activity, financial information (profitability, credit constraints, etc.)
2. **Perception on the tax system:** perceived fairness, audit probability and frequency
3. **Experience with tax audits:** audit cost, satisfaction, perception of corruption
→ **Possible methodological contribution:** systematic differences between admin, self-reported survey and alternative measures (e.g. De Mel, McKenzie, Woodruff 2009, JDev)





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