Technology and Local State Capacity: Evidence from Ghana

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We provide descriptive and experimental evidence on the role of technology in improving government tax capacity.
Tax Collection Capacity is Essential for Development

- Besley-Persson (2013), Gordon-Li (2009)
  - Public goods provision facilities development process
  - Lack of ‘state capacity’ limits taxation, which limits public goods provision

- How to raise tax collection capacity?
  - Better incentives for collectors (Khan, Khwaja, Olken, 2016)
  - Sending more letters / reminders (Hjort, Rao …)
  - Better citizen engagement / morale

- This paper: Role of technology in tax collection
Setting: Local Governments in Ghana

- 216 local governments; provide few public goods on average
- Collect on average $0.75 per capita per year
- Property taxes particularly under-collected (Govt of Ghana, 2014)
- Limited prior evidence on why tax collections so low
Descriptive evidence
Survey of tax collection practices and constraints

- Census of all the 216 local governments in Ghana
- Surveyed
  - officials involved in tax collection
  - elected assembly members
  - crossed section of citizens
- Comprehensive questions on tax collection practices and constraints
Technology Use in Billing + Collections is Low

![Bar Chart]

- Use software for billing: 17.9%
- Have electronic database of properties/businesses: 33.3%
- Properties in Electronic Database: 17.4%
- Use software for property valuations: 17.0%
Use of Technology Correlates with better Tax Collection

- Local governments which chose to invest in technology:
  - deliver more bills,
  - collect more revenues and
  - have lower non-payment rates than do governments without technology.

- Question of causality?
Experimental evidence
Randomised the use of technology in one local government in Ghana
ERMS
This reflects advantage in locating taxpayers more efficiently in an environment with scant property addressing.
Technology → 103% more taxes
Why the treatment effect on collections is so much larger than the treatment effect on bill deliveries?
Plausible explanations

- Households have different attitudes toward payment when visited by collectors who show up with the technology.

- The technology helps reduce leakages,

- The technology allows collectors to learn about and focus their scarce time on households that are most likely to make tax payments.
Implications: the promises and pitfalls of technology investment