

# Value-Added-Taxes and Supply chain: Evidence from India

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# TAXDEV research on VAT in West Bengal, India

- ▶ Data sharing agreement between CSSS Kolkata, Office of Commissioner for Commercial Taxes, Kolkata, and TAXDEV.
- ▶ Several outputs:
  - ▶ Policy note: impact of tax simplification reform on entries into tax system + tax payments.
  - ▶ Academic work: impact of tax system on supply chains in developing country setting [in-progress].
  - ▶ Policy note: implications of ↑ for VAT reform in West Bengal [in-progress].
  - ▶ ...

# Firm taxation in West Bengal

West Bengal: 95 million inhabitants, GDP per capita 1,200 USD.

- ▶ State government levies a VAT on sale of non-agricultural goods: main source of revenue. Main tax rates: 4%, 14%.
- ▶ 180,000 firms pay taxes to state over period 2010-2016.
- ▶ Large informal sector (survey data: only 30% of VAT-liable firms are registered with tax authorities).
- ▶ VAT tax returns: at least 10 pages.
- ▶ Simplified “turnover” scheme:
  - ▶ Small (turnover < 5 million INR  $\approx$  55k GBP) firms can choose to pay a 0.25% turnover tax instead of VAT.
  - ▶ Turnover tax returns: 2 pages.

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# West Bengal's ultra-simplified tax scheme

## Introduction of 'ultra-simplified' lump-sum scheme in 2013

- ▶ Small firms can choose to pay a lump-sum tax once a year.
- ▶ Lump-sum scheme tax returns: 0.5 pages, simplified tax registration.
- ▶ Lump-sum amounts: 7000 Rps if turnover < 3 mill., 12000 Rps otherwise (Equal to turnover tax payments for median firm).

# Pros and cons of simplified tax schemes

- ▶ VAT compliance costs likely very high, turnover tax compliance costs probably still too high for many firms  $\Rightarrow$  firms remain informal because high compliance cost?
- ▶ Advantage of simplified tax scheme: induces registration with tax authorities and small tax payments of otherwise informal firms.
- ▶ Potential cost: otherwise compliant firms choose simplified tax scheme, pay less taxes and provide less information to tax authorities.
- ▶ Effects on supply chains?

# Impact of 'ultra-simplified' scheme

10,000 firms join the new scheme from 2010 onwards

- ▶ 9642 are 'new': never paid taxes before. 13% increase in the number of tax-registered small firms.
- ▶ 481 are 'old': use to pay turnover tax before. Loss in tax revenues? No! On average pay more under the new scheme.
  - ▶ Great for policy, puzzle for researchers: most existing firms eligible to join new scheme didn't, but some were willing to pay more taxes to do so  $\Rightarrow$  (very) heterogeneous compliance costs?
- ▶ Impact on tax revenues? Very small - increase of less than 0.2% in total tax collected.
- ▶ Medium-run impact could be higher if 'new' firms grow and remain in the tax system + effects on tax morale.

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# VAT and supply chains in developing countries

- ▶ VAT levied on sales minus purchases, *if VAT was paid on those purchases*.
- ▶ If VAT and non-VAT registered firms co-exist: **market segmentation** (VAT firms will prefer sourcing inputs from other VAT firms).
- ▶ Why do we care?
  - ▶ Supply chain distortions: tax system may induce firms to source inputs from worse supplier  $\Rightarrow$  efficiency loss.
  - ▶ Complementarities in tax status choice: tax shocks to some firms may affect their entire supply chains  $\Rightarrow$  useful for policy?
- ▶ West Bengal data: observe VAT and non-VAT registered firms, and transactions between them  $\Rightarrow$  can look for these effects.

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# Market segmentation: correlations

Dependent variable: In VAT scheme

	(1)	(2)	(3)	(4)
Share sales to VAT clients	0.242*** (0.002)	0.242*** (0.002)	0.201*** (0.002)	0.167* (0.002)
Share inputs from VAT suppliers	0.053*** (0.002)	0.054*** (0.002)	0.066*** (0.002)	0.063* (0.002)
Year FE	No	Yes	Yes	Yes
Good FE	No	No	Yes	Yes
Location FE	No	No	No	Yes
Firm FE	No	No	No	No
<i>N</i>	362,854	362,854	362,854	362,854

Mean dependent variable: 0.72. Standard errors clustered at the firm level in parentheses. Significance levels: \* $p < 0.1$ ;

# Establishing causal effects

Correlation  $\neq$  causation...

- ▶ From 2014 onwards: reform increases the VAT rate on some goods, no other changes in tax system.
- ▶ Theory predicts this should change firm's sourcing and tax status decisions.
- ▶ Can compare impact of reform on firms i) whose own VAT rate changes ii) whose suppliers' rate changes iii) whose clients' rate change iv) who are not affected at all.

# Impact of an increase in tax rates

## Key results:

- ▶ VAT (turnover) firms facing a higher VAT rate have lower (higher) sales because of reform.
- ▶ These firms are less likely to choose to be VAT because of reform.
- ▶ And so are their suppliers  $\Rightarrow$  tax shock spreads throughout supply chains.
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# Next steps

- ▶ How big are supply chain distortions? Try to quantify effect in GDP points.
- ▶ What does this mean for the optimal form of VAT/simplified tax schemes? Work-in-progress (preview: it's complicated).
- ▶ What else spreads through supply chains? 'Multiplier' effects of audits.
- ▶ Implications for India's GST reform.

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