

Public Finance in Developing Countries

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Why public finance in *developing countries*?

- ▶ 85% of world population lives in developing countries.
- ▶ Public finance is at the heart of the development process.
 - ▶ Health, education etc key to growth, must be funded.
 - ▶ Efficient and equitable tax systems key characteristic of 'developed' countries.
- ▶ Huge demand from policy practitioners
- ▶ Massively under-studied in PF until recently.
 - ▶ \approx 15% of papers in this Congress.

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What's specific about these countries?

Why not use findings from rich countries to inform policy?

- ▶ Increasing tax/GDP ratio is an aim in itself.
 - ▶ Growing body of work on tax capacity (eg Carrillo etl 2017, Gadenne 2017, Jensen 2019, Weigel 2020, Okunogbe and Pouliquen 2021 ...)
- ▶ Developing countries' economy differ in many ways ⇒ different optimal tax policy?
 - ▶ Exciting work questioning 'received wisdom' in developing contexts.
- ▶ First order difference: tax compliance.

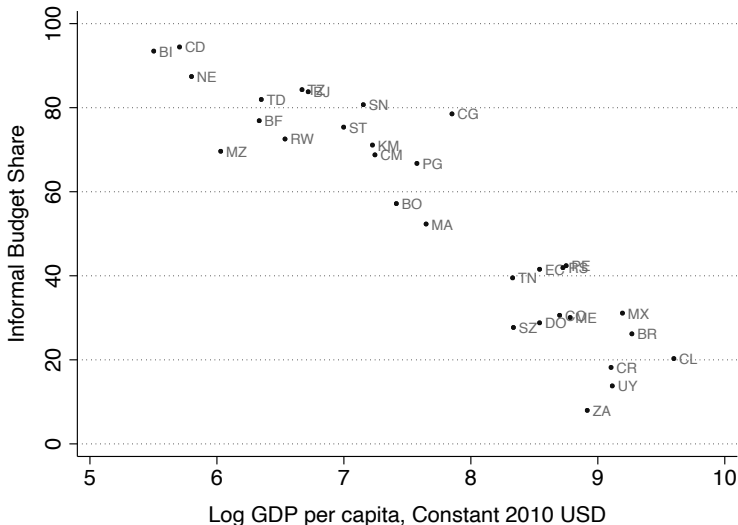
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Tax compliance and development

The informal sector shrinks with development



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- ▶ Developing countries' economy differ in many ways \Rightarrow different optimal tax policy?
- ▶ First order difference: tax compliance.
- ▶ Today: examples of efficiency and equity implications of large informal sectors.

Efficiency: how good is the VAT?

Received wisdom: VAT is the 'Rolls-Royce' of taxes

- ▶ Production efficiency: no cascading taxes.
- ▶ Revenue/compliance efficiency: third-party incentives limit evasion (Pomeranz 2015) - better than retail sales taxes.
 - ▶ VAT is single biggest source of revenue in developing countries.
- ▶ But VAT's structure may distort firm's production decisions when some firms do not pay VAT: Gadenne et al 2022 'Taxation and supplier networks'.

'Taxation and supplier networks' - theory

- ▶ Firms pay VAT on sales minus input purchases, if VAT was paid on these purchases.
- ▶ When all firms pay VAT: tax system doesn't affect sourcing decisions.
- ▶ When only some firms pay VAT:
 - ▶ Supply chain distortions: tax paid on trade between VAT and non-VAT paying firms \Rightarrow lower production.
 - ▶ Strategic complementarities in VAT choice: firms more likely to pay VAT when their trading partners do.
 - ▶ Both mechanisms lead to market segmentation.

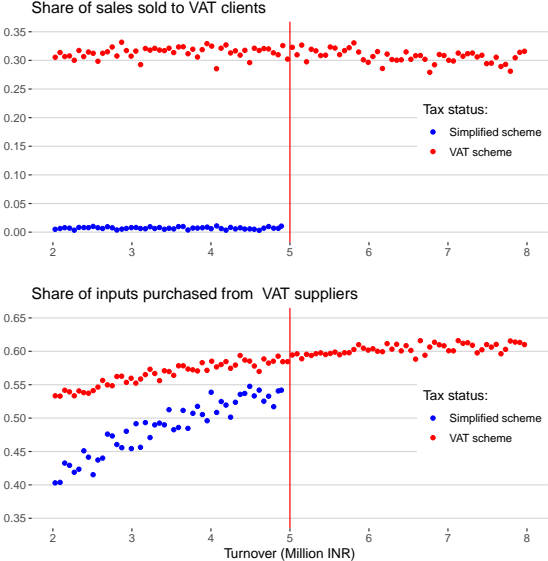
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'Taxation and supplier networks' - empirics

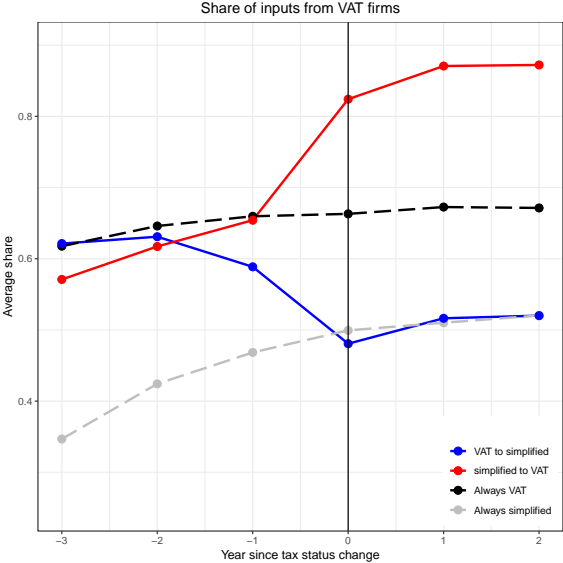
- ▶ West Bengal, India. Small firms choose between VAT and simplified tax scheme.
- ▶ Firms in simplified scheme can't deduct VAT paid by suppliers: outside VAT scope.
- ▶ Administrative data on 180k firms paying taxes, 2010-2016.
 - ▶ 2/3 are 'small': majority pay VAT, 8k change tax scheme over time.
 - ▶ Observe tax liabilities, tax scheme, and transactions between firms.

Market segmentation: cross-section



Market segmentation: within-firm over time

Share of VAT inputs and tax status choice



'Taxation and supplier networks' - results

- ▶ Supply chain distortions
 - ▶ Use within supplier-client pair changes in trade and tax choices.
 - ▶ Paying VAT leads firms to buy 13% more from VAT-paying suppliers.
- ▶ Strategic complementarities
 - ▶ Use entry/exit of trading partners and changes in tax rates.
 - ▶ Proba of paying VAT increases by 12 ppt when all partners pay VAT.

'Taxation and supplier networks' - implications

Counterfactual policy: exempt *all* B2B transactions from VAT?

- ▶ Would lead to 5-7% growth of non-VAT paying firms.
- ▶ Substantially decrease in market segmentation.

Not a policy recommendation!

- ▶ Revenue cost: direct and via complementarities (firms leave VAT scheme).
- ▶ Small in our sample, much larger if included informal firms.

But good news for enforcement policies: will have spillover effects and decrease distortions.

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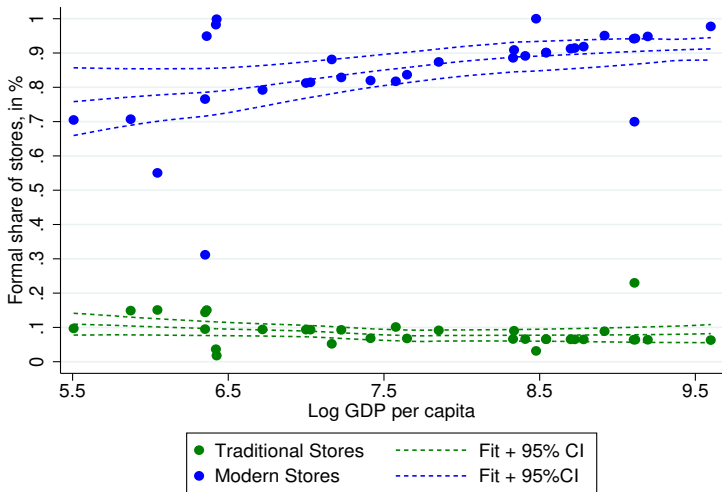
Equity in low compliance environments

- ▶ Informal sector = large sections of the economy de facto tax exempt: received wisdom on who pays taxes unlikely to hold.
- ▶ Received wisdom on consumption taxes: regressive, rate differentiation could help but inefficient.
- ▶ Bachas et al (2022): consumption taxes are progressive, rate differentiation doesn't help (but may be efficient).

'Informality and consumption taxes' - data and method

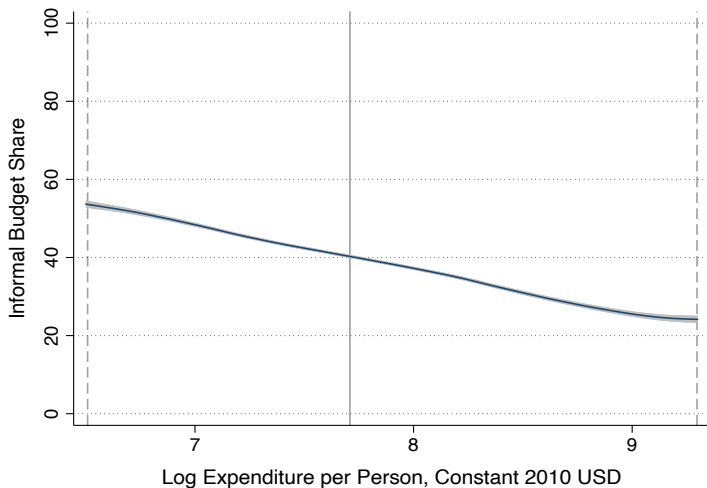
- ▶ Data: household expenditure surveys for 32 countries (Burundi to Chile).
 - ▶ All contain place of purchase information.
- ▶ Method: place of purchase to proxy for informality.
 - ▶ From macro-dev literature: traditional stores (and home production) are informal, modern stores are formal (Lagakos 2016).
- ▶ Obtain informal share of expenditures for each household: Informality Engel Curves.

Formality share by store type



These graphs plot the share of traditional and modern retailers that report being registered with the tax authorities in each country. We use the World Bank Enterprise and Informal Surveys for 35 countries to obtain registration shares as a function of store size, and the reports by Euromonitor International to obtain store size by store type (modern or traditional).

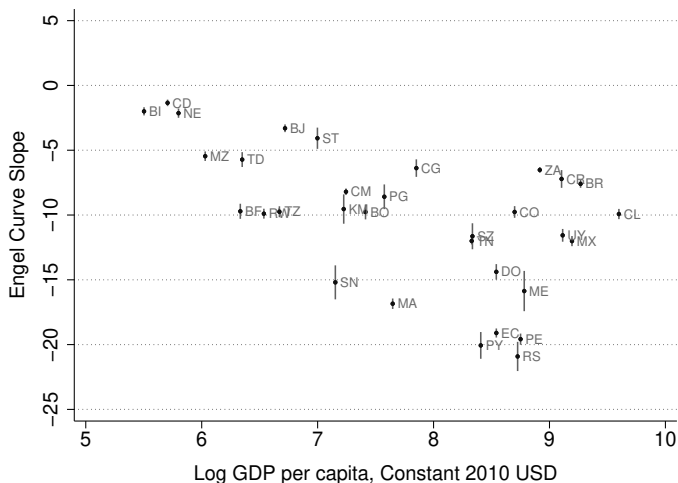
Informality Engel Curve in Mexico



Local polynomial fit of the Informality Engel Curves in Mexico, the shaded area around the polynomial fit corresponds to the 95% confidence interval. The dashed (full) vertical lines indicate the 5th and 95th (50th) percentiles of the distribution of expenditure per capita. Source: authors' computations from household expenditure surveys.

Slopes of Informality Engel Curves across countries

- For each country $\hat{\beta}$: $Share\ Informal_i = \beta \ln(income\ pp)_i + \varepsilon_i$



Each point represents the slope of the Informality Engel Curve for a specific country, the bars indicate the 95% confidence interval. Source: authors' computations from household expenditure surveys.

'Informality and consumption taxes' - results

- ▶ Informality Engel Curves are downward-sloping everywhere.
- ▶ Consumption taxes are progressive: top 20% pay twice as much as bottom (4 times in LICs).
- ▶ Exempting food adds little progressivity
 - ▶ Ignoring informal sector would yield wrong cclns.
- ▶ Consumption taxes have similar effects on inequality as direct income taxes.
- ▶ Optimal policy: in LICs, lower rate on food can't be justified by equity (perhaps efficiency, because informal share of food is large).

'Informality and consumption taxes' - implications

What are the equity implications of enforcement policies?

- ▶ Most 'tax capacity papers' ignore equity aspects.
- ▶ Our paper: enforcement policies could be regressive.
- ▶ Opposite is true for other contexts/taxes (Londono-Velez and Avila-Mahecha 2021).
- ▶ Tax enforcement efforts have redistributive properties, important for welfare and political economy considerations.

Big open questions 1: incidence

Who really pays taxes when there's an informal sector?

- ▶ Bachas et al (2022): baseline assumes full (zero) pass-through to formal (informal) prices.
 - ▶ Do robustness, bring in evidence from Mexico ...
- ▶ Informal sectors in all markets complicate 'full' incidence analysis (Benzarti Carloni 2019).
 - ▶ Eg: how do changes in consumption taxes affect formal and informal workers?
- ▶ Exciting dev literature on GE effects of transfers (Egger et al 2021, Gerard et al 2021) we could learn from.

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Big open questions 2: tax administration

Tax administration is tax policy

- ▶ Old cliché worth a lot of attention (at least) in devo context.
- ▶ Efficiency and equity implications of admin. changes \Rightarrow next generation of tax capacity papers?
 - ▶ Basri et al 2021: creation of MTO has same effect as increasing CIT rate by 8 ppts.
 - ▶ Brockmeyer et al 2022: contrast welfare effects of enforcement and rate changes.

Big open questions 2: tax administration (2)

Technology in tax administration - are there low hanging fruits?

- ▶ Do 'best practice' methods lead to enforcement gains?
 - ▶ Maybe not! Bachas et al 2022: audit algorithm not better than tax inspectors (cf Khan et al 2016).
 - ▶ What makes a good tax inspector? Learn from labor & dev literature (Rasul and Rogger 2018).
- ▶ Do digital payments facilitate tax collection?
 - ▶ In theory yes: lead to paper trail/third party reports.
 - ▶ In practice: mixed evidence (Das et al 2022, Brockmeyer and Saenz-Somarriba 2022).
 - ▶ Information not sufficient for enforcement.

Big open question 3: environmental policy

Fighting climate change is the big challenge of our generation(s)

- ▶ It can't be done without developing countries
 - ▶ China is biggest GHG emitter, India is third.
 - ▶ Carbon leakage concerns, large north-south transfers: rich countries' environmental policy de facto takes place in developing countries.
- ▶ 'Envirodevonomics' is rapidly expanding, could do with a PF approach.
 - ▶ Quantify efficiency trade-offs from new 'environmental pricing schemes' (China, India, South Africa...).
 - ▶ Equity effect of carbon taxes?
- ▶ Huge policy interest + potential impact.

Conclusion

- ▶ IIPF Congress 2032 - 'Public Finance in Mature Economies'?
 - ▶ Arbitrary distinction rich vs developing countries will hopefully become less used.
- ▶ This congress: four 'environmental' sessions with some global/devo papers - IIPF is pushing in the right direction!
- ▶ Huge need for more work in PF & dev (& ev).
- ▶ Plenty opportunities (data, policy collaborations, ...)
- ▶ Looking forward to the field's progress over the next couple decades!

Thank you!