

# Employment Structure and the Rise of the Modern Tax System (2019)

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# Motivation

- What explains long run growth in income tax capacity as economies develop?
  - Income tax base in US is 45 times larger than that in India
  - Large variation in base contrasts with lack of variation in rates
- Potential answer: transitions in employment structure
  - Existence of information trails boosts tax compliance
    - Kleven et al. (2011, 2016), Best (2014, 2015), Pomeranz (2015)...
    - Division in work-types based on generation of relevant information trails: self employment vs. employee-jobs
  - Employee-share as proxy for enforceable income tax base
- Contribution to literature on supply side determinants of government growth over development

# Approach

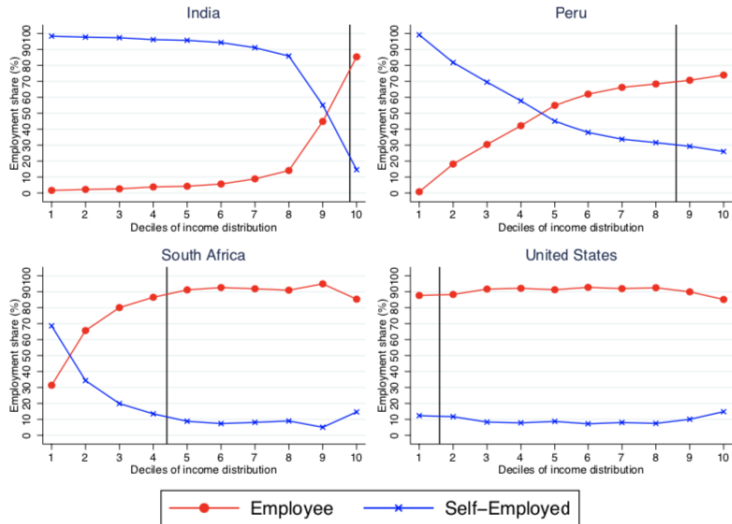
- Terminology
  - Employee vs. self-employed: former hold jobs that generate derivative information trails useful for income tax enforcement
  - Tax base: share of economically active population whose gross income lies above income tax exemption threshold
- Descriptive evidence
  - Construction of internationally comparable micro database on 100 countries from nationally representative household surveys
  - Used to characterize changes to employment and tax structure along development path
- Causal identification
  - Exploit variation in effective implementation date of IDB program before 1980 in the US, which serves as employee-share level shifter
  - Use state government finance publications and BEA series to estimate employment structure's impact on tax structure

# Stylized Facts

- ① Within country employee share increases over the income distribution, and at all levels of income as a country develops
- ② Over development, the tax exemption threshold moves down the income distribution in co-movement with increases in employee share
- ③ Location of tax exemption threshold systematically maximizes the employee-share on the income tax base
- ④ Changes in income tax base account for variation in income tax collection across development

# Stylized Facts: Illustration

**Panel A: cross country**



# IDB Program: Identification Strategy

- Center program impact around court upholding event and estimate

$$y_{st} = \beta + \alpha \mathbf{1}(\text{Vote-in})_{st} + \theta \mathbf{1}(\text{Upheld})_{st} + \lambda \mathbf{X}_{st} + \mu_s + \gamma_t + \varepsilon_{st}$$

where  $y_{st}$  represents the outcomes of interest (IDB issuance, employee-share, and tax reform) and  $\theta$  captures the impact of IDB being upheld by the state court

- Identifying assumption: timing of court decision is uncorrelated with outcome variable, i.e. groups with differing length of lag between vote-in and upholding are on parallel trends before the upholding
- Testing channel in which employment structure impacts decision to expand base by changing fiscal enforcement cost
  - Eol acts between states and IRS decrease state's cost of enforcement
  - Add  $\sigma \mathbf{1}(\text{Upheld})_{st} \times \mathbf{1}(\text{Eol})_{st}$  term above and estimate impact on employee-share and expansion of tax base

# IDB Program: Results

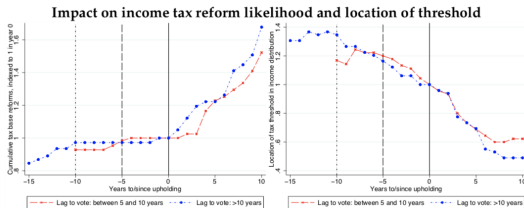


TABLE 2: EFFECTS OF IDB PROGRAM ON EMPLOYMENT AND INCOME TAX OUTCOMES

	(E-share)		(K/y)		Log(PIT /GDP)
	(1)	(2)	(3)	(4)	(5)
I(Vote)	.003 (.005)	.003 (.235)	-.357 (.232)	-.343 (.232)	.027 (.039)
I(Uphold)	.017 (.005)***	.015 (.006)***	-.639 (.278)**	-.794 (.334)**	.176 (.083)**
I(Uphold)x1(EoI)		.003 (.007)		.356 (.197)*	-.244 (.137)*
F-test: I(Uphold) + I(Uphold)x1(EoI) (p-value)		10.17 (.003)		1.50 (.230)	0.51 (.481)
Mean outcome variable	0.771	0.771	7.084	7.084	.972

# Model and Conclusion

- Characterization for revenue maximizing location of threshold:

$$\frac{K^{Rev}}{\bar{z}} = \frac{1}{\left[1 + \left[\frac{M}{B}\right] \cdot [\varepsilon_{\bar{z}, K} \phi_K]^{-1}\right]}$$

where  $M$  is increase in revenue from inframarginal agents,  $B$  is loss from behavioral responses of marginal agents, and  $\varepsilon$  denotes elasticity of marginal buncher w.r.t. exemption threshold

- Paper provides evidence and theory to show transitions into employee jobs over development explains rise in tax capacity
  - Heightens significance of building on Alstadsæter et al. (2018) to study curbing of evasion and avoidance by wealthy in developing countries