#### **Globalization and Factor Income Taxation**

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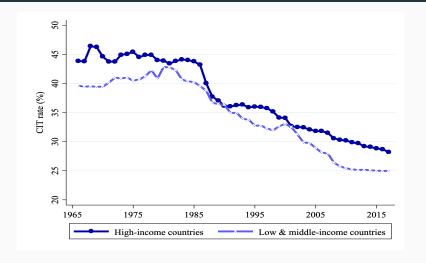
Gabriel Zucman (UC Berkeley, NBER)

EEA conference – August 2022

### Globalization & the Taxation of Capital vs Labor

 Has cross-border integration eroded the ability to tax capital and shifted the burden onto workers?

### Trends in Statutory Corporate Income Tax Rates



Plot of year fixed effects from unweighted OLS regression of CIT rate on country and year f.e. The inclusion of country f.e. eliminates the influence of changing sample composition. f.e. are normalized to equal the CIT rate level in 1965.

#### Globalization & the Taxation of Capital vs Labor

- Has cross-border integration eroded the ability to tax capital and shifted the burden onto workers?
- Lack of global & homogeneous series on effective taxation of capital and labor:
  - Limited evidence for non-OECD countries
  - Limited credible evidence on mechanisms via which globalization might impact taxation of factor incomes

#### This Paper

- 1. Constructs a new global dataset of macroeconomic effective tax rates on capital  $(ETR_K)$  and labor  $(ETR_L)$ 
  - Covering > 150 countries and > 50 years (1965-2018)
- 2. Establishes novel stylized facts:
  - Global trends: effective taxation of capital & labor converged
  - Development trends: ETR<sub>K</sub> fell in high-income countries but rose in developing countries since 1990s
- 3. Studies role of trade globalization:
  - trade integration ↑ ETR<sub>L</sub> everywhere
  - ↑ ETR<sub>K</sub> in developing countries but not in OECD
  - Tax capacity channel: trade broadens enforceable capital tax base by ↑ its visibility ⇒ effect dominates race-to-bottom in LMICs

#### Literature

#### **Globalization & Taxation**

- Increased openness pushes governments to reduce taxation of mobile factor (Wilson 1999; Bates, Da-Hsiang, and Lien 1985), compensates on immobile factor (Rodrik 1997)
- Closest: Egger, Nigai, and Strecker 2019 ⇒ in OECD countries since mid-1990s globalization led to ↑ in labor tax for the middle class and a decline for top 1%.
- Trade liberalization and tariff revenue (Baunsgaard and Keen 2009; Cage and Gadenne 2018; Buettner and Madzharova 2018)

#### Tax Capacity & Enforcement

- Long-term growth and openness improve tax capacity (Besley and Persson 2014; Goldberg and Pavcnik 2016)
- Importance of firm size and third-party info. for tax collection & enforcement (Pomeranz 2015; Kleven, Kreiner, and Saez 2016; Basri et al. 2019)
- Trade impact on informality (Dix-Carneiro et al. 2021; McCaig and Pavcnik 2018; Attanasio, Goldberg, and Pavcnik 2004)

#### Data

- Factor shares: Gollin (2002), Karabarbounis and Neiman (2014), and Guerriero (2019)
- Long-term revenue (Cogneau, Dupraz, and Mesple-Somps 2021; Albers, Jerven, and Suesse 2020)
- ETRs (Mendoza, Razin, and Tesar 1994; Carey and Rabesona 2004; McDaniel 2007)

### Methodology: construction of effective tax rates

Effective tax rate on factor f (=L,K),  $ETR_f$ , relates total tax revenue ( $T_f$ ) raised from each factor, to its national income share ( $Y_f$ ):

$$ETR_f = \frac{T_f}{Y_f} = \frac{T_f}{\theta_f Y}$$

- $T_K = \text{CIT}$ , wealth and property taxes,  $\alpha*\text{PIT}$ ,
- ullet  $Y_K=$  corporate profits, rental income, mixed income from capital
- $T_L = \text{payroll taxes}, (1 \alpha) * \text{PIT}$
- $Y_L$  = employee compensation and mixed income from labor

Note: Indirect taxes excluded (assumed proportional)

 $ETR_f$  captures the macro-economic effective taxation of factors, based on realized tax revenues ('backward-looking'). • details • allocation

#### **Database construction**

We build two new databases, which allows us to measure ETRs for  $>\!150$  countries since 1965 (or independence / post-conflict)

#### Harmonized national accounts database:

- Compiled from UN SNA 2008 & UN SNA 1968 archives ⇒ increase in coverage over time & space compared to Karabarbounis and Neiman 2014
- Known difficulties to measure labor share of mixed income: adjust with latest method using X's of self-employed (Gollin 2002, ILO 2019).
- Complete and balance panel using imputations à la Blanchet-Chancel (2016)

#### Harmonized tax revenue database:

- Compiled from OECD, ICTD + archival records
- Separates PIT from CIT, includes social security & decentralized revenue
- Website with full dataset (http://globaltaxation.world) & working on country case-studies

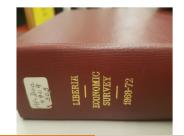
#### Tax revenue data: Historical archives (40% of obs)

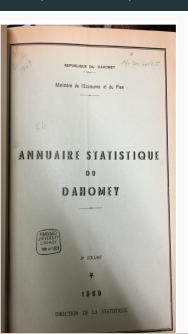
Table 8 44 -- CONSULIDATED RECEIPS OF THE SUBMAN OF INTERNAL SEVENCE AND THE SUBMAN OF CONTONS: 1958 TO 1960 (In thousand perce)

Period	Total 1/	Import dutiess/	Rezise tax	Rusiness texas	Income tax war profits tax	Other texes_1/	Ascunt appor- tioned to local government	Other receipts
998	738,365 827,229 94,268 1,066,370 1,313,456 1,461,313 1,603,166 1,978,175,688 2,992,313 3,356,899	164,308 204,468 231,506 285,364 329,558 396,461 409,394 3110,374 509,799 605,587	257,805 260,823 275,675 286,876 312,810 351,677 362,990 334,739 381,348 401,663 ,663 ,98	160,652 179,713 215,925 270,767 319,719 391,841 459,813 456,263 518,915 625,862 683,753	163,149 194,309 265,697 277,008 324,669 397,929 4495,990 482,829 611,926 362,988	33,716 40,241 39,150 39,156 53,002 61,880 70,573 79,360 87,639 96,635	(69,286) (69,282) (95,806) (119,687) (138,733) (179,952) (215,168) (227,161) (220,734) (303,495) (376,712)	28, 23, 26, 26, 38, 77, 121, 118, 159,

Includes rectand of prior year's income.

Source: Costral Bank of the Philippines; Statistical Pallatin, December 1968, Vol. II. No. 4.



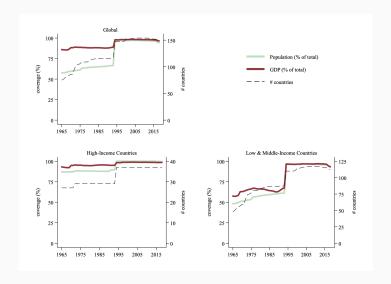


<sup>2/</sup> Includes fines and forfeitures.

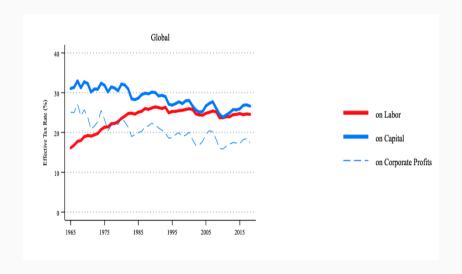
<sup>3/</sup> Consist of franchise tax; documentary stemp tax; towage dues; residence tax; estate, inheritance and gift taxes; revenue from public formet; up to December 31, 1963, of temmes dues.

<sup>a Consist of incidental revenue and other credits, receipts estenatically appropriated and receipts of the special fund, other
than excess taxes; and starting from January 1, 196; of tecnage does.</sup> 

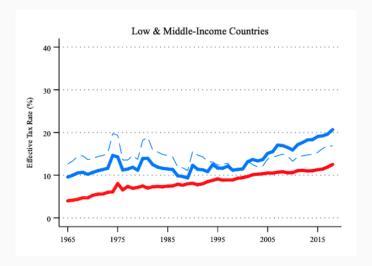
## **Data Coverage of Effective Tax Rates**



#### Global trends in ETRs, 1965 - 2018



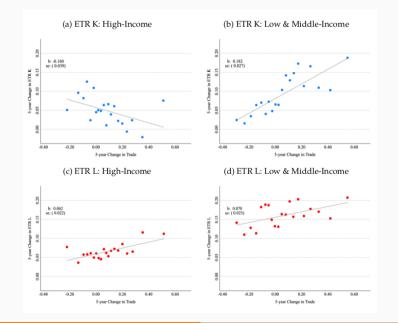
# Global trends in ETRs, 1965 - 2018 (LMICs)



## Role of trade openness in determining trends

- In high-income countries, changes in factor taxation are consistent with cross-border mobility
  - Trade integration limits the taxation of the mobile factor
- In developing countries, trends are starkly different, &  $ETR_K$  rises simultaneous to the 1990s "hyper-globalization" wave:
  - Motivates the analysis of trade openness on factor taxation
- Implement three distinct empirical strategies:
  - (1) Times series correlations
  - (2) Event-studies centered around trade liberalization reforms
  - (3) Instruments for trade following Egger, Nigai, and Strecker 2019
  - + study of capital liberalization events

# Panel OLS: Heterogeneity by development level



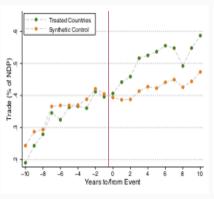
### **Event studies around large tariff cuts**

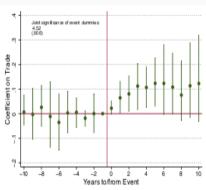
- Focus on large trade liberalization events in key dev. countries
- Choice of events based on Goldberg and Pavcnik (2006, 2016) + China's WTO accession (Brandt et al., 2017).
  - Colombia 1985; Mexico 1985; Brazil 1988; Argentina 1989; India 1991; Vietnam 2001; China 2001
  - Characterized by large reductions in tariff rates:
    - Brazil 59% to 15%; India 80% to 39%; China 48% to 20%
- Construct synthetic control country for each country-event and each outcome (Abadie et al., 2010)
  - Estimate dynamic regression model

$$Y_{it} = \sum_{j=-10, j \neq -1}^{10} \mu_j * \mathbb{1}(j=t)_t * D_i + \theta_t + \kappa_i + \pi_{Year(it)} + \epsilon_{it}$$

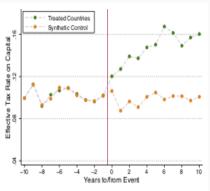
Robustness: match on all outcomes simultaneously

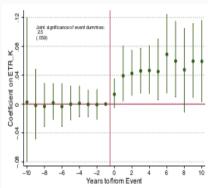
# **Event study impact on trade openness**



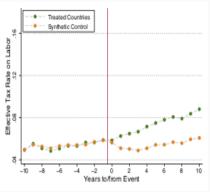


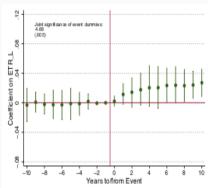
# Event study: impact on effective tax rate on capital





# Event study: impact on effective tax rate on labor



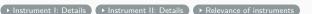


### Instrumenting for trade

- Event-studies in specific developing countries, & magnitude of impacts not solely trade related (events don't occur in vacuum)
  - Motivates more general estimation
- We estimate versions of the regression model

$$y_{ct} = \mu * trade_{ct} + \Theta * X_{ct} + \beta_c + \pi_t + \epsilon_{ct}$$

- Use the 2 instruments from Egger, Nigai, and Strecker 2019
  - 1. Instrument I: Quantitative trade model; uses variation in average bilateral trade frictions between country-pairs
  - 2. Instrument II: Time-series variation in global oil prices interacted with country-specific geographical features



#### IV: Trade Impacts on Factor Share and Factor Taxation

	Capi	tal Share	Et	Effective Tax Rate			
	overall	corp. sector	labor	capital	corp. profit		
Panel A: OLS							
Trade	0.0195*	0.0217	0.0246**	0.0168	0.0120		
riade	(0.0109)	(0.0148)	(0.0101)	(0.0302)	(0.0220)		
Panel B: IV estima	ate (NDP-w	eighted)					
Trade	0.151**	0.184**	0.163***	0.375*	0.342***		
	(0.0698)	(0.0800)	(0.0538)	(0.213)	(0.121)		
First-stage F-statistic	26.07	26.07	26.07	26.07	26.07		
Panel C: IV estima	ate (unweigl	nted)					
Trade	0.118*	0.122	0.133**	0.250**	0.359***		
	(0.0681)	(0.0826)	(0.0526)	(0.105)	(0.0870)		
First-stage F-statistic	8.42	8.42	8.42	8.42	8.42		
Panel D: IV estim	ate (NDP-w	eighted, with cor	ntrols)				
Trade	0.115**	0.142**	0.226***	0.400***	0.205*		
	(0.0475)	(0.0546)	(0.0551)	(0.112)	(0.129)		
First-stage F-statistic	19.02	19.02	19.02	19.02	19.02		
N	4518	4518	4518	4518	4518		

#### IV Results and mechanisms

- An increase in trade openness causes both the capital share of national income and  $ETR_K$  to increase
  - Positive but less pronounced effect on ETR<sub>L</sub>
  - Consistent with findings from first two research designs
  - Results are robust to a battery of checks
- Mechanisms: stylized setting to fix ideas:

$$ETR_f = \frac{T_f}{Y_f} = \frac{\tau_f * Y_f^{Enforce}}{Y_f} = \tau_f * \theta_f^{Enforce}$$

- Efficiency hypothesis  $\mathcal{T}_f$ : Cross-border integration makes capital relatively more mobile than labor
  - To prevent its flight, government limits  $\mathcal{T}_{\mathcal{K}}$  (race-to-the-bottom)
  - ullet To balance the budget, government increases  $au_L$

# Mechanism: Tax Capacity Hypothesis ( $\theta_f^{Enforce}$ )

Tax capacity hypothesis  $\theta_f^{Enforce}$ : Openness changes firms and labor market structures thus relaxing enforcement constraints

 Trade induces adoption of modern accounting practices, extends value chains, ↑ firm size ⇒ makes the tax base enforceable

Motivated by two distinct strands of research:

- PF/Development lit. shows that enforcement is only successful in larger firms with complex operations & many employees
- Trade lit. finds that openness can cause a rise in firm size within the formal sector (but debates on overall worker informality).

## IV: Mechanisms

	OLS	IV	
	(1)	Weighted Unweighted (2) (3)	Controls (4)
CIT rate	-0.002	-0.064*** -0.051*	-0.061***
	(0.003)	(0.017) (0.028)	(0.017)
Self-employment	-0.0117	-0.220* -0.185***	-0.174***
	(0.0145)	(0.126) (0.0460)	(0.0560)
Corporate profits	0.0339***	0.175** 0.124***	0.206***
	(0.0128)	(0.0767) (0.0321)	(0.0726)
Employee compensation	0.00848	-0.0749 -0.0964	0.0485
	(0.0175)	(0.0904) (0.0669)	(0.0785)
Mixed income	-0.0231	-0.0685 -0.0391	-0.202**
	(0.0182)	(0.105) (0.0301)	(0.0816)

## IV: Mechanisms

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	(0.0182)	(0.105)	(0.0301)	(0.0816)

# IV: Heterogeneity by Development Level

$ETR_K$ (1)	$ETR_L$ (2)	CIT-rate (3)	K-share (4)	SE-share (5)	Corp-Share (6)
0.444**	0.145	-0.043*	0.182**	-0.252**	0.219***
(0.181)	(0.093)	(0.024)	(0.077)	(0.107)	(0.063)
-0.441	0.120	-0.032	-0.219	0.232	-0.298
(0.347)	(0.194)	(0.047)	(0.137)	(0.209)	(0.143)
0.003	0.265**	-0.075***	-0.036	-0.021	-0.079
(0.231)	(0.122)	(0.457)	(0.083)	(0.151)	(0.102)
				·	·
4518	4518	3810	4518	4518	4518
	0.444** (0.181) -0.441 (0.347) 0.003 (0.231)	(1) (2)  0.444** 0.145 (0.181) (0.093) -0.441 0.120 (0.347) (0.194)  0.003 0.265** (0.231) (0.122)	(1) (2) (3)  0.444** 0.145 -0.043* (0.181) (0.093) (0.024) -0.441 0.120 -0.032 (0.347) (0.194) (0.047)  0.003 0.265** -0.075*** (0.231) (0.122) (0.457)	(1)       (2)       (3)       (4)         0.444**       0.145       -0.043*       0.182**         (0.181)       (0.093)       (0.024)       (0.077)         -0.441       0.120       -0.032       -0.219         (0.347)       (0.194)       (0.047)       (0.137)         0.003       0.265**       -0.075***       -0.036         (0.231)       (0.122)       (0.457)       (0.083)	(1)       (2)       (3)       (4)       (5)         0.444**       0.145       -0.043*       0.182**       -0.252**         (0.181)       (0.093)       (0.024)       (0.077)       (0.107)         -0.441       0.120       -0.032       -0.219       0.232         (0.347)       (0.194)       (0.047)       (0.137)       (0.209)         0.003       0.265**       -0.075***       -0.036       -0.021         (0.231)       (0.122)       (0.457)       (0.083)       (0.151)

## IV: Impacts on Tax Revenue

### Trade Impacts by Tax Source (% of GDP) and Development Levels

	CIT	Prop. & Wealth	Total Capital Taxes	PIT	Payroll Taxes	Total Labor Taxes	Total Taxes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Trade	0.102***	0.025	0.168***	0.010	0.054	0.086	0.241**
	(0.028)	(0.024)	(0.061)	(0.024)	(0.045)	(0.060)	(0.117)
Trade*1(High-Inc)	-0.127**	-0.012	-0.188	-0.060	0.089	0.063	-0.281
	(0.060)	(0.042)	(0.121)	(0.061)	(0.092)	(0.133)	(0.267)
Implied coef. for	-0.025	0.012	-0.019	-0.050	0.144**	0.150*	-0.039
Trade in High-Inc	(0.035)	(0.026)	(0.077)	(0.041)	(0.056)	(0.090)	(0.200)
N	4518	4518	4518	4518	4518	4518	4518

## Summary of trade impact on factor taxation

- Three distinct empirical designs point to robust patterns:
  - Positive effect of trade on K-taxation in developing countries
  - Stronger shift to *L*-taxation in rich countries
- Trade impacts factor taxation through countervailing forces:
  - Statutory CIT rates fall everywhere ("race-to-the-bottom")
  - But base expansion dominates in dev. countries (only)
  - ullet Helps rationalize differential trends in  $ETR_{K}$  by dev-level
- Back-of-the-envelope role of trade in explaining stylised facts
  - The long-run increase in trade openness can account for a 35% of the rise in  $ETR_K$  in developing countries

# Conclusion: Nuanced Impacts of Globalization

New global database documents long-run trends in factor taxation

- ullet Globally convergence of  $ETR_K$  and  $ETR_L$
- Heterogeneity in capital taxation in rich vs LMICs

Study effects of trade globalization on ETRs:

- Both  $ETR_K$  and  $ETR_L \uparrow$
- Race-to-the bottom in statutory tax rates
- We highlight new channel: expansion of base via tax capacity effect, which empirically dominates in dev. countries

Globalization thus has nuanced effects on taxation of capital & labor

- ↑ K-shares ⇒ more unequal market income distribution?
- In developed countries, burden borne by labor taxes
- But in developing countries trade openness has not led to the erosion of capital taxation

# **Appendix**

#### Methodology: ETR Formulas

$$Y = Y_L + Y_K = CE + OS_{PUE} + OS_{HH} + OS_{CORP}$$
 (1)

$$T_f = \sum [\lambda_{if} \cdot \tau_i] \tag{2}$$

$$ETR_f = \frac{T_f}{Y_f} \tag{3}$$

where:

- $Y_L = CE + \alpha OS_{PUE}$
- $Y_K = (1 \alpha)OS_{PUE} + OS_{HH} + OS_{CORP}$
- $T_f$  = factor tax revenue from taxes  $\tau_i$  with factor incidence  $\lambda_{if}$
- ETR<sub>f</sub> is the effective tax rate on each factor

### Methodology: Tax Allocation

#### Allocation of Taxes to Factor Incomes, by Type of Tax

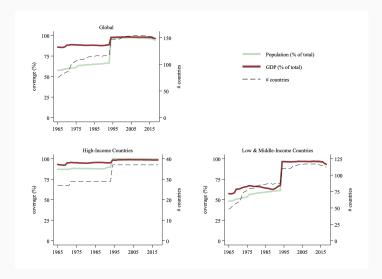
Type of tax, $ au$	Series	Allocation to L, $\lambda_{\tau}$	Notes
Panel A: Direct Taxes			
Personal income tax (PIT)	1100	$\lambda_{i,t}^{PIT} = f(p, \alpha)$	most PIT attributed to $L$
Corporate income tax (CIT)	1200	0%	all CIT attributed to $K$
Other (unallocable) income tax	1300	50% PIT	rare; small magnitude
Social security & payroll taxes	2000	100%	all payroll taxes attributed to $L$
Property & wealth taxes	4000	0%	all asset taxes attributed to ${\it K}$
Panel B: Indirect Taxes &	Other Rev	venues	
Indirect taxes	5000	_	assumed proportional to $\theta_L$
Other taxes	6000	_	minor; assumed proportional
Non-tax revenues	7000	_	excluded

#### **Data Provenance**

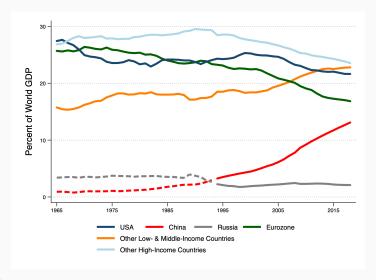
#### Principal Data Sources

country-y	ear obs.	%
Panel A: Factor	Share Dat	:a
SNA2008	2403	34.8%
SNA1968	1484	21.5%
composite/imputed	3016	43.7%
N	6903	100%
Panel B: Tax Re	venue Da	ta
OECD	2881	41.7%
Harvard/archives	2092	30.3%
ICTD	1276	18.5%
IMF historical	654	9.5%
N	6903	100%

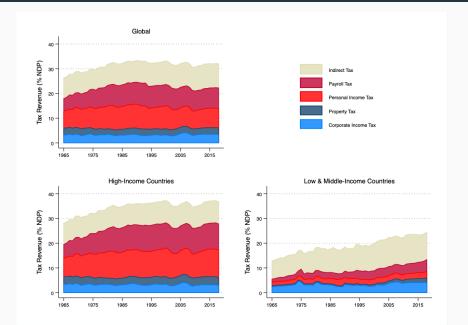
# **Data Coverage: Effective Tax Rates**



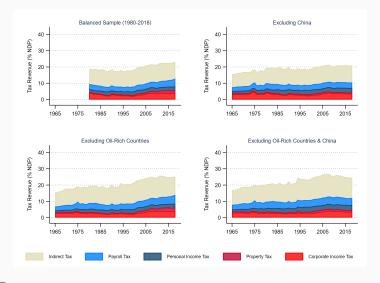
# Share of Global GDP, by Country



#### Global Trends in Tax Revenues, 1965 - 2018

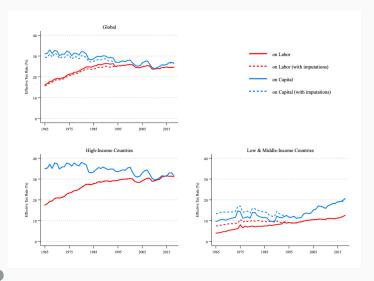


## Robustness: Tax Revenues in Developing Countries



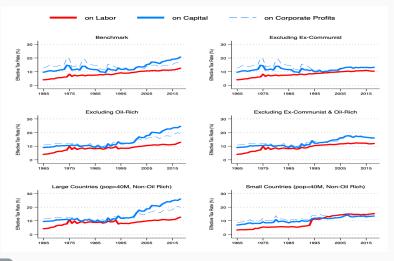


## **Fully Balanced Panel via Imputations**

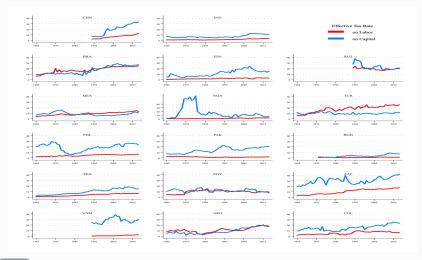




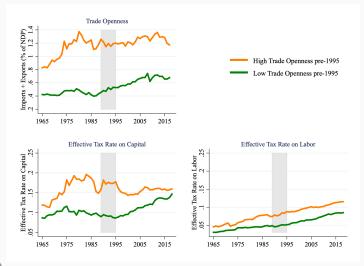
## Robustness: $ETR_K$ and $ETR_L$ in Developing Countries



## Time-series in Largest Developing Countries

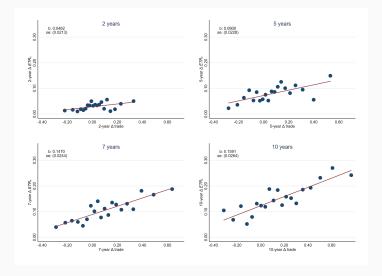


# Trends in factor taxes by initial trade openness (Dev. countries)

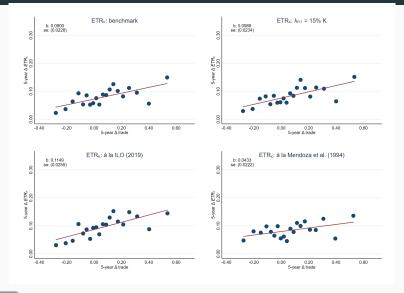




## OLS (binscatter): Robustness to Alternative Time Horizons



## **OLS** (binscatter): Robustness to Alternative Measurements



#### Details about instrument I

 Instrument relies on model structure of quantitative general equilibrium models of trade

$$\pi_{ijt} = e_{jt} \times \iota_{it} \times \beta_{ijt}$$

 Under gravity model assumptions, the instrument uses average bilateral trade frictions between I-X pairs as source of variation

$$Z_{it}^{gravity} = \sum [\beta_{ijt} \cdot \beta_{jit}]$$

Exogeneity condition: Trade costs distribution (not level) among
 I-X pairs is orthogonal to factor shares and factor taxation

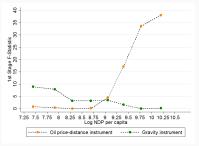
#### Details about instrument II

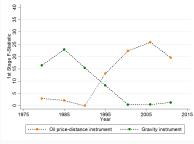
- Exploit time-series variation in global oil prices interacted with country-specific measure of access to intl markets
- Construct access as variance of distance from three most populous cities to closest maritime port

$$Z_{it}^{pricedist} = \frac{1}{2} \sum_{k=1}^{3} [(p_t d_i^k - p_t \overline{d_i})^2]$$

- Exogeneity condition: Country-specific trade costs induced by global oil prices are orthogonal to factor shares and taxation
  - Robustness: Allow oil-rich countries to be on independent time-path

## **Two Instruments: Strength Across Subsamples**





back
 back
 back

#### IV Results: Robustness to Alternative Trade Measurements

	Capit	al Share	Effective	Effective Tax Rate		
	overall	corp. sector	on capital	on labor		
Trade in G&S (%NDP)	0.154**	0.192**	0.516**	0.189***		
	(0.0707)	(0.0817)	(0.208)	(0.0568)		
First-stage F-statistic	32.30	32.30	32.30	32.30		
Trade in G&S (%NDP), winsorized	0.148**	0.185**	0.513**	0.195***		
	(0.0671)	(0.0774)	(0.203)	(0.0537)		
First-stage F-statistic	37.60	37.60	37.60	37.60		
T 1 : 606 (1 1 1)	0.0050***	0.0406***	0.0704*	0.0071.4		
Trade in G&S (log levels)	0.0359***	0.0436***	0.0724*	0.00714		
E E	(0.0117)	(0.0149)	(0.0390)	(0.0171)		
First-stage F-statistic	8.562	8.562	8.562	8.562		
Trade in Goods Only (%NDP)	0.205**	0.253**	0.604**	0.188**		
ridde iir dedda omy (70.121 )	(0.0980)	(0.113)	(0.270)	(0.0887)		
First-stage F-statistic	30.05	30.05	, , ,			
	22.00	22.30	20.00	30.05		
N	4505	4505	4505	4505		

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## IV Results: Robustness to Alternative Weights

	Capit	tal Share	Effective	Effective Tax Rate		
	overall	corp. sector	on capital	on labor		
IV: with NDP weights	0.154**	0.192**	0.516**	0.189***		
	(0.0707)	(0.0817)	(0.208)	(0.0568)		
First-stage F-statistic	32.30	32.30	32.30	32.30		
IV: with population weights	0.241**	0.253*	0.618**	0.161*		
	(0.116)	(0.136)	(0.287)	(0.0857)		
First-stage F-statistic	11.13	11.13	11.13	11.13		
IV: unweighted	0.116*	0.121	0.278**	0.138**		
9	(0.0638)	(0.0781)	(0.108)	(0.0536)		
First-stage F-statistic	9.007	9.007	9.007	9.007		
N	4505	4505	4505	4505		

 $\bullet$  trade  $\bullet$  controls  $\bullet$   $\theta_K$  à la ILO  $\bullet$  ETR

## IV: Robustness to Controls & Oil-Rich\*Time Fixed Effects

	Capit	tal Share	Effective Tax Rate		
	overall	corp. sector	on capital	on labor	
IV: without controls	0.154**	0.192**	0.516**	0.189***	
First-stage F-statistic	(0.0707) 32.30	(0.0817) 32.30	(0.208) 32.30	(0.0568) 32.30	
IV: with controls	0.117*** (0.0418)	0.150*** (0.0488)	0.546*** (0.126)	0.250***	
First-stage F-statistic	21.78	21.78	21.78	21.78	
IV: with oil-rich time FE	0.396* (0.213)	0.460* (0.245)	0.893* (0.503)	0.311** (0.153)	
First-stage F-statistic	3.182	3.182	3.182	3.182	
IV: with controls & oil-rich time FE	0.270** (0.121)	0.294** (0.131)	0.805***	0.429** (0.164)	
First-stage F-statistic	3.830	3.830	3.830	3.830	
N	4505	4505	4505	4505	

## IV Results: Robustness to Estimating $\theta_K$ à la ILO (2019)

	Capital Share	Effective	Effective Tax Rate		
	overall	on capital	on labor		
OLS	-0.00786	0.00388	0.0212**		
	(0.0207)	(0.0336)	(0.0105)		
IV: benchmark specification	0.214	0.314**	0.232***		
	(0.132)	(0.131)	(0.0738)		
First-stage F-statistic	32.30	32.30	32.30		
IV: with controls	0.221**	0.317***	0.300***		
	(0.110)	(0.106)	(0.0638)		
First-stage F-statistic	21.78	21.78	21.78		
IV: unweighted	-0.115	0.262**	0.0910		
3	(0.117)	(0.131)	(0.0606)		
First-stage F-statistic	9.007	9.007	9.007		
N	4505	4505	4505		

### IV Results: Robustness to Alternative ETR Measurements

	OLS (1)					controls 3)		veighted 4)
	$ETR_K$	ETRL	ETR <sub>K</sub>	$ETR_L$	ETRK	$ETR_L$	ETRK	$ETR_L$
à la Mendoza et al. (1994)	-0.00127	0.0123	0.354**	0.161***	0.381***	0.206***	0.180**	0.0785*
	(0.0185)	(0.00907)	(0.157)	(0.0575)	(0.0974)	(0.0467)	(0.0712)	(0.0461)
PIT = 0% on capital	0.0107	0.0284**	0.526***	0.183***	0.553***	0.246***	0.296***	0.129**
	(0.0246)	(0.0109)	(0.194)	(0.0586)	(0.123)	(0.0568)	(0.109)	(0.0541)
PIT = 30% on capital	0.00940	0.0243**	0.541**	0.180***	0.579***	0.236***	0.289**	0.130**
	(0.0313)	(0.00989)	(0.224)	(0.0558)	(0.139)	(0.0517)	(0.113)	(0.0511)
$PIT = 15\% \; on \; capital$	0.0108	0.0264**	0.533**	0.182***	0.565***	0.241***	0.293***	0.130**
	(0.0278)	(0.0104)	(0.208)	(0.0570)	(0.130)	(0.0541)	(0.110)	(0.0525)
First-stage F-statistic N	4505	4505	32.30 4505	32.30 4505	21.78 4505	21.78 4505	9.007 <i>4505</i>	9.007 <i>4505</i>