

ECON 326: Economics of Developing Countries

TA Session 8

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May 2025

Today's Agenda

- ▶ Fujiwara (2015)
- ▶ Gulzar and Khan (2025)
- ▶ Burgess et al. (2019)
- ▶ The Curse of Natural Resources

What is political economy?

- ▶ When traditional approaches in economics are not enough to explain economic development
- ▶ What are some themes in political economy?
 - ▷ Context matters - where and when
 - ▷ Role of culture and institutions
 - ▷ Role of the state
 - ▷ Conflict and cooperation

Fujiwara (2015)

Voting Technology, Political Responsiveness, and Infant
Health: Evidence from Brazil

This Paper

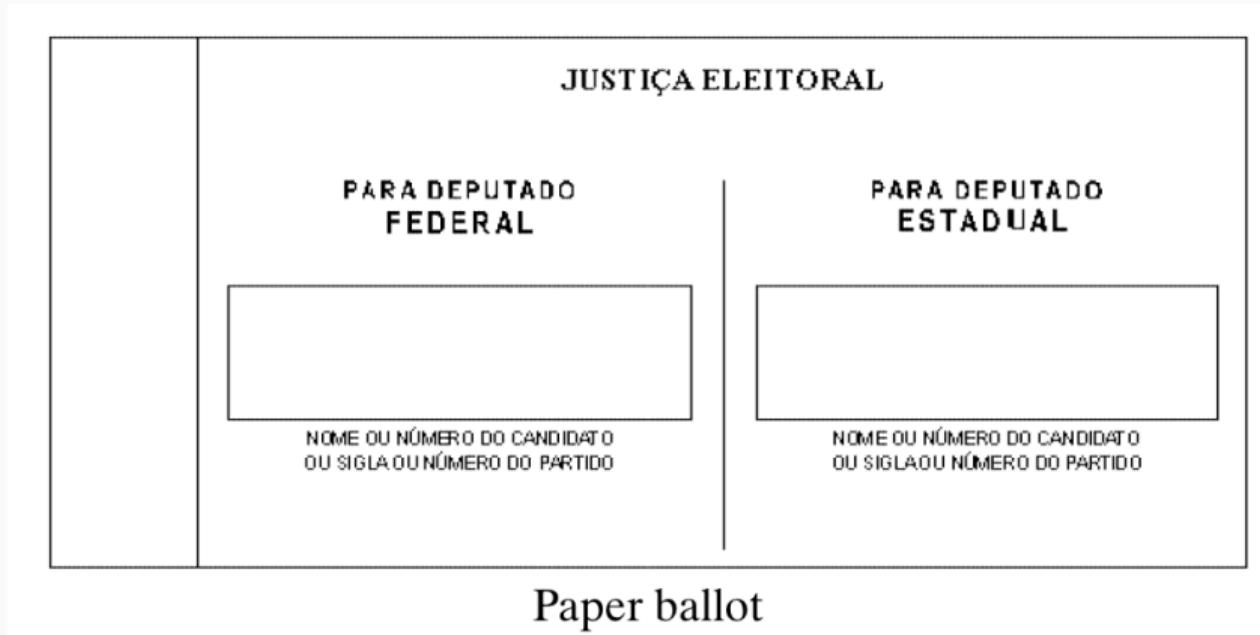
- ▶ Political process can affect public goods provision and redistribution
- ▶ This paper provides evidence on how improved political participation of poorer voters can enable targeted policies
- ▶ Uses the introduction of the Electronic Voting Machine in Brazil
- ▶ Affects who gets elected, public health care spending, utilisation, infant health outcomes
- ▶ Focus: the intensive margin - universal suffrage already exists

Background

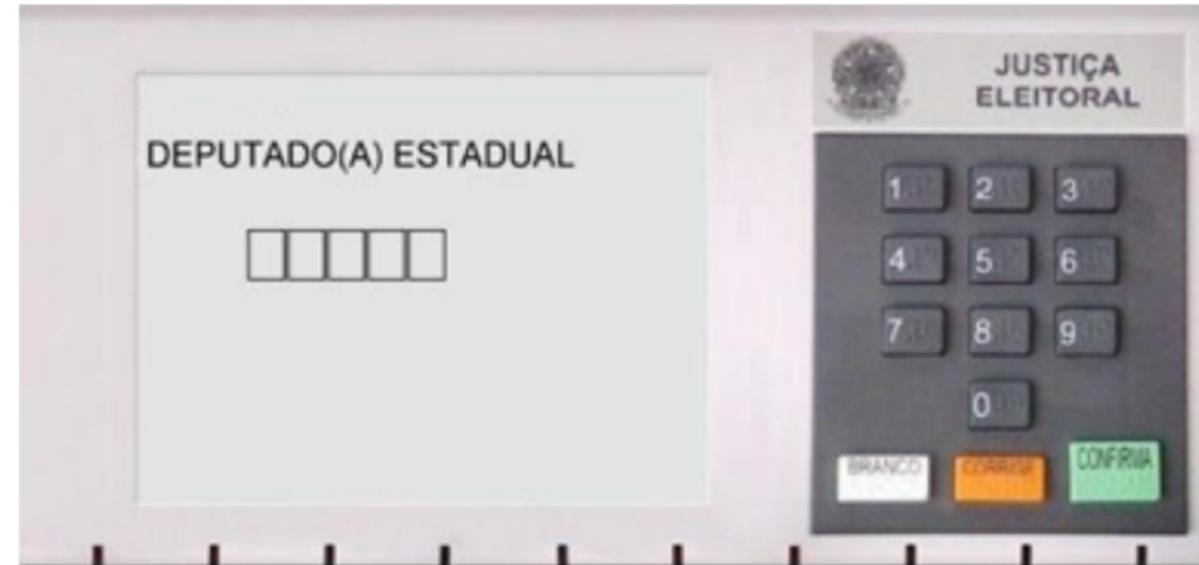
- ▶ Electoral systems can de facto disenfranchise certain groups
- ▶ In Brazil, filling a ballot was not so trivial
 - ▷ 23% of adults cannot read or write a simple note
 - ▷ Paper ballots required voters to write down their vote and read instructions
- ▶ Substantial error-ridden and blank votes (*residual votes*) as a result
- ▶ EV technology introduced in 1990s as a substitute for paper ballots
- ▶ Reduced residual votes was a spillover effect

Why does EV make voting easier?

- ▶ Provides visual aids - photos of candidates
- ▶ Guides the user through the several votes that need to be cast
- ▶ Machine provides feedback
- ▶ Number based interface

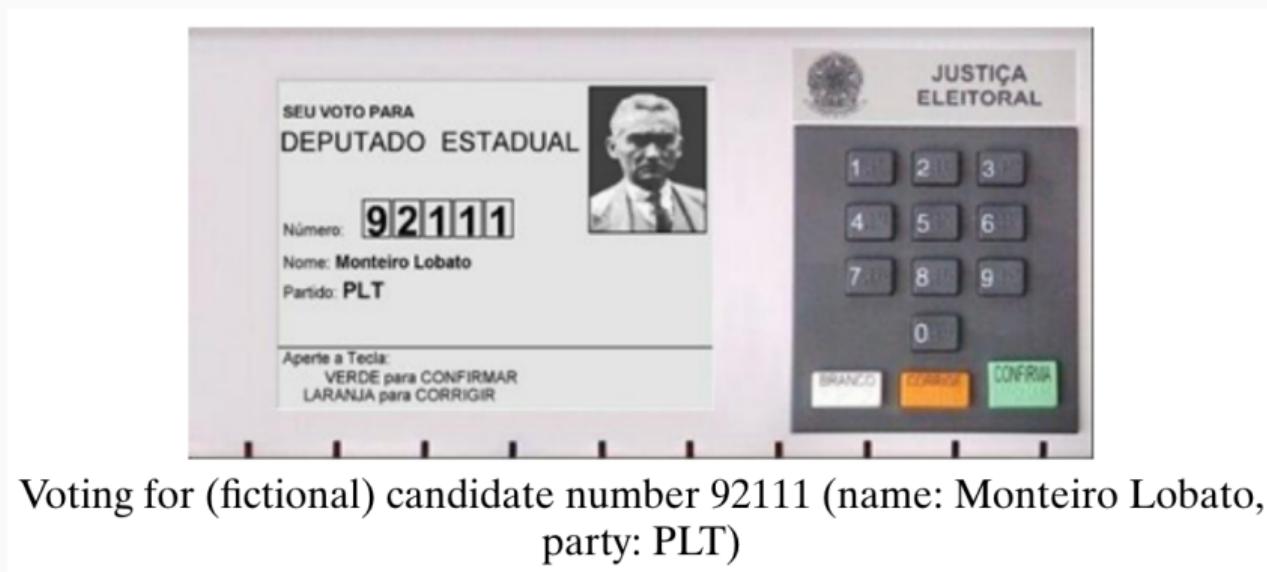


Post-reform



Initial screen of the voting technology

Post-reform



Voting for (fictional) candidate number 92111 (name: Monteiro Lobato,
party: PLT)

Post-reform



Empirical Strategy

- ▶ In 1990 and 1994 elections, only paper ballots were used
- ▶ In 1998 election, EV introduced
 - ▷ Production capacity constraints
 - ▷ So only municipalities with $\geq 40,550$ voters got EV
 - ▷ Threshold rule - naturally leads to ...?
- ▶ In 2002, only EV used in all municipalities

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- ▶ RDD in 1998 election: compare municipalities just above/below 40,500 voters
- ▶ Use 1994 and 2002 elections for placebo tests

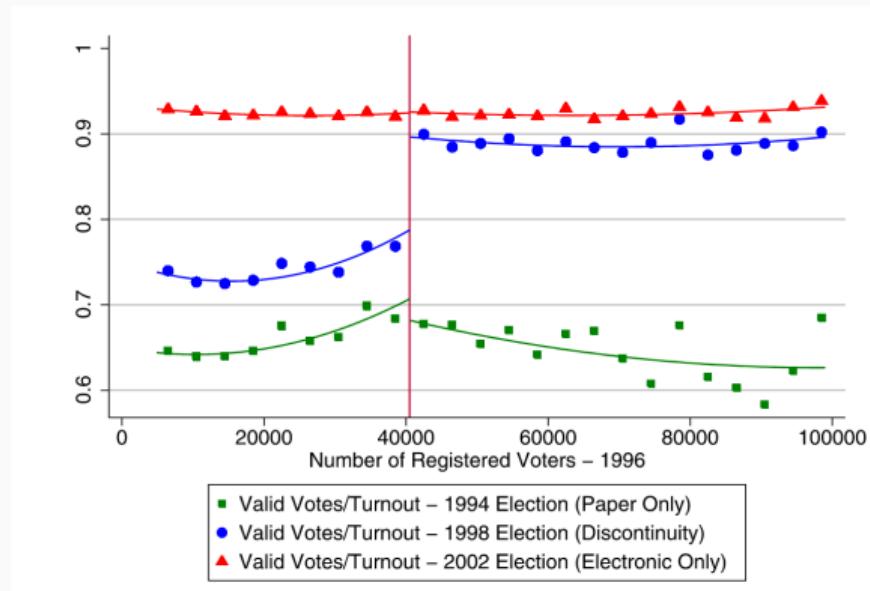
Estimation Framework

- ▶ $TE = \lim_{v_m \downarrow 40,500} E[y_m | v_m] - \lim_{v_m \uparrow 40,500} E[y_m | v_m]$
- ▶ Estimated effects are “local” - apply only to municipalities right around the threshold
- ▶ The regression is equivalent to an OLS regression using only observations with $v_m \in [40,500 - h, 40,500 + h]$:

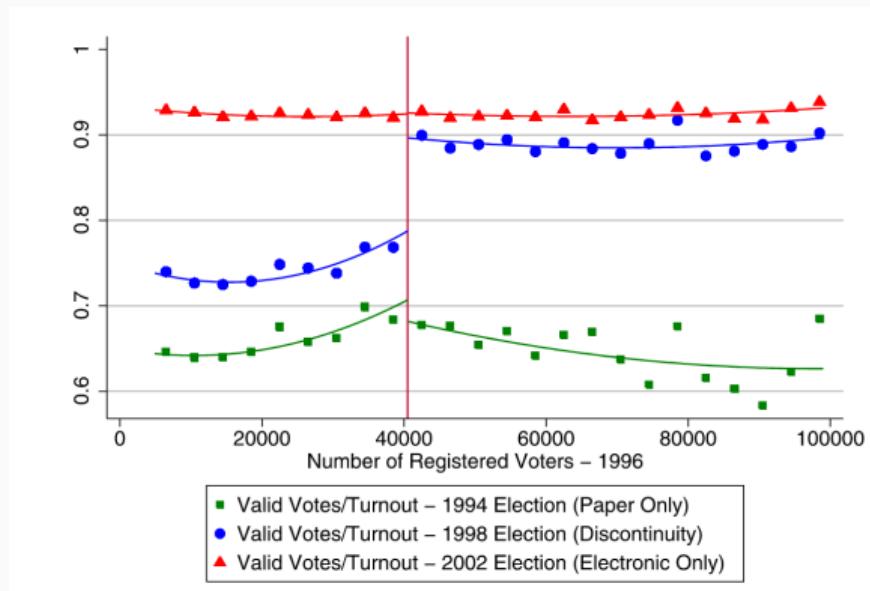
$$y_m = \alpha + \beta 1\{v_m \geq 40,500\} + \gamma v_m + \delta v_m 1\{v_m \geq 40,500\} + \epsilon_m$$

- ▶ β is the treatment effect

RDD in Pictures

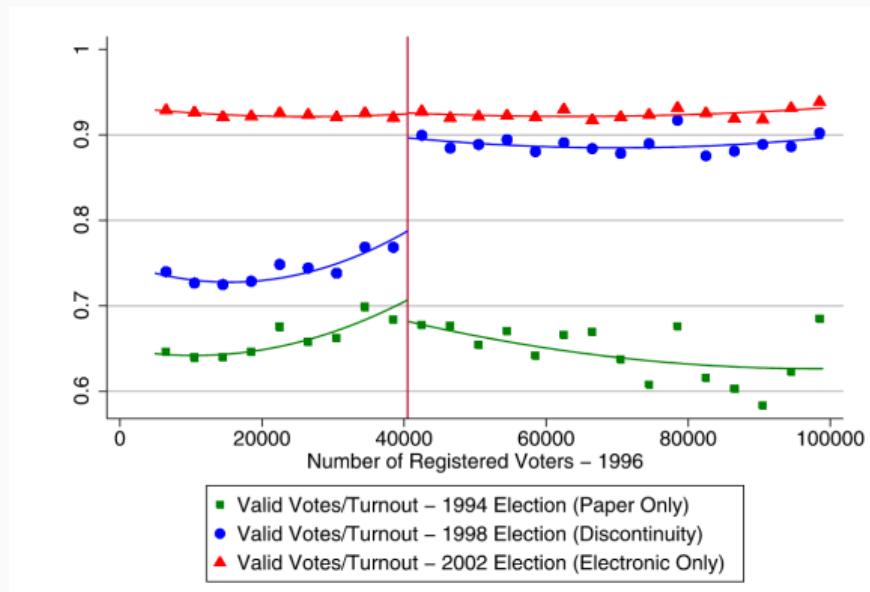


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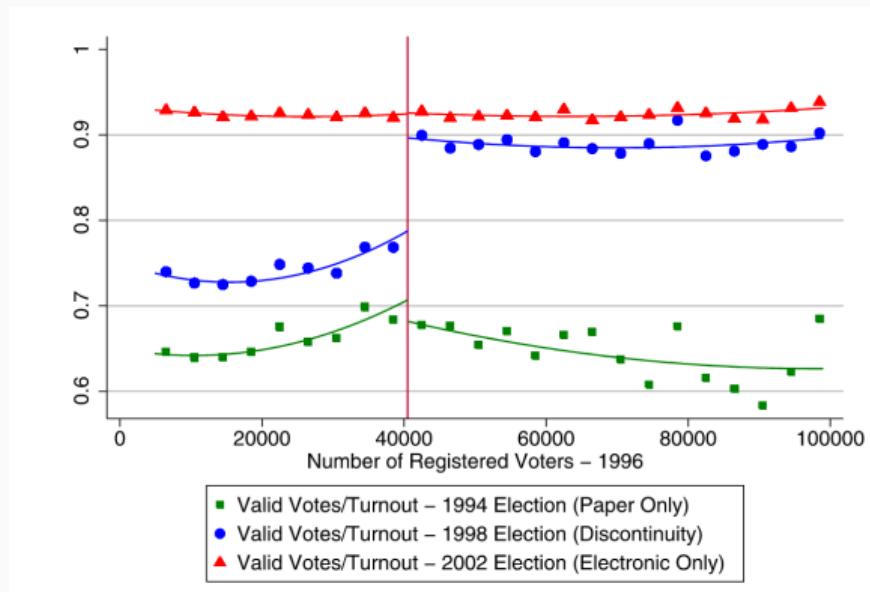
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RDD in Pictures



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RDD in Pictures



- ▶ Jump from 75% to 95% upon crossing the cutoff
- ▶ No such jumps in 1994 and 2002 - valid treatment and control groups
- ▶ Such large shares are probably erroneous votes, not just abstentions

Who benefits?

TABLE III
TREATMENT EFFECTS OF ELECTRONIC VOTING, BY ILLITERACY RATE^a

	Pre-Treat. Mean	IKBW {Obs.}	(1)	(2)	(3)	(4)
<i>Panel A: Municipalities With Above-Median Illiteracy</i>						
Valid Votes/Turnout	0.759 (0.017)	11,873	0.147 (0.019)	0.150 (0.015)	0.152 (0.020)	0.176 (0.031)
N	—	—	116	279	103	49
<i>Panel B: Municipalities With Below-Median Illiteracy</i>						
Valid Votes/Turnout	0.799 (0.018)	11,873	0.092 (0.020)	0.113 (0.016)	0.096 (0.022)	0.089 (0.032)
N	—	—	149	279	126	67
Test of Equality in TEs (<i>p</i> -Value)	—	—	0.049	0.090	0.056	0.054
Bandwidth	—	—	IKBW	20,000	10,000	5000

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- ▶ Split sample based on illiteracy
- ▶ Consistent narrative that less educated people had more difficulty with paper ballots

Political Participation and Policy

TABLE IV
MAIN OUTCOMES AND THE SIGN-SWITCH PATTERN^a

Parameter:	θ^{98}	θ^{02}	Linear Combinations		
	(1994–1998) (Paper–Disc.)	(1998–2002) (Disc.–Electr.)	$(\theta^{98} - \theta^{02})/2$	$(\theta^{98} + \theta^{02})/2$	
Sample (Terms):	Sample Avg.	(1)	(2)	(3)	(4)
<i>Panel A: Electoral Outcomes</i>					
Valid Votes/Turnout	0.829 [0.112]	0.092 (0.033) {0.102}	-0.111 (0.010) {0.002}	0.102 (0.017) {0.008}	-0.009 (0.018) {0.630}
Seat-Weighted Policy Position	4.623 [0.601]	-0.112 (0.641) {0.842}	0.299 (0.167) {0.154}	-0.206 (0.350) {0.574}	0.094 (0.302) {0.800}

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- θ_{98} is an estimate of the impact of EV on outcome y_{i98}
- Think of the dependent variable as the share of voters that EV affected in a state
- Sign-switch is interpreted as evidence of the effect of EV

Political Participation and Policy

<i>Panel B: Fiscal Outcomes (Health Care Spending)</i>					
log(Total Spending)	—	-0.004 (0.093) {0.946}	-0.257 (0.156) {0.274}	0.127 (0.097) {0.254}	-0.131 (0.082) {0.228}
Share of Spending in Health Care	0.099 [0.037]	0.039 (0.017) {0.104}	-0.029 (0.013) {0.044}	0.034 (0.008) {0.000}	0.005 (0.013) {0.678}
log(Health Spending p.c.)	—	0.428 (0.264) {0.200}	-0.677 (0.262) {0.034}	0.552 (0.096) {0.000}	-0.125 (0.242) {0.628}
<i>Panel C: Birth Outcomes (Mothers Without Primary Schooling)</i>					
Share With 7+ Visits	0.362 [0.123]	0.122 (0.065) {0.154}	-0.023 (0.033) {0.558}	0.069 (0.040) {0.182}	0.047 (0.039) {0.320}
Share With Low-Weight Births ($\times 100$)	7.721 [1.110]	-0.370 (0.304) {0.266}	0.528 (0.269) {0.104}	-0.529 (0.246) {0.044}	0.201 (0.236) {0.450}
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- ▶ Total spending seems unchanged
- ▶ But share of spending increases
- ▶ Increased prenatal visits, birth weight

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- ▶ Also increased utilisation and health outcomes
- ▶ So enfranchisement of poor voters matters for policy
- ▶ Enables democracy to work as intended

Gulzar and Khan (2025)

Good Politicians: Experimental Evidence on Motivations
for Political Candidacy and Government Performance

This Paper

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- ▶ In theory, it's ambiguous:
 - ▷ Could encourage prosocial individuals to run
 - ▷ But may give selfish politicians a cover to run
 - ▷ And may crowd out competent, but personally-driven individuals

Setting

- ▶ Setting: Pakistan's 2015 local government reform
- ▶ Local level political entry decisions which could help understand the composition of the political class
- ▶ Village council elections - party affiliations not allowed
- ▶ So centralised parties could not play a role in candidate selection

The Experiment

- ▶ 192 randomly selected villages, 9,310 people randomly selected
- ▶ Enumerators had private meetings and public meetings
- ▶ Treatments:
 - ▷ Neutral Script
 - ▷ Social Benefits Script
 - ▷ Personal Benefits Script

Meetings



FIGURE 3
Private one-on-one meetings



FIGURE 4
Public meetings in villages

The Scripts

- ▶ Neutral Script: “You may be aware that for the first time elections on May 30th will elect a 10–15 member council at the village level. People above the age of 21 can contest these elections. There is not even an education requirement to contest. All you have to do is collect papers from the district office of the Election Commission, and submit them along with two references.”

The Scripts

- ▶ Social Benefits Script: Neutral Script and “People who are elected to the village election will be given an excellent opportunity to do their part for the development of their area. Members of the village council will play an important role in improving the quality of government services in the village. They will work towards securing the welfare and rights of the poor. Working together with the district governments, they will improve village school and health facilities. An elected councillor will have a unique opportunity to address the problems of his neighbourhood, and this will make him the standard-bearer of social development for the village”

The Scripts

- ▶ Personal Benefits Script: Neutral Script and “People who are elected to the village election will be given a excellent opportunity to move forward in politics, and gain respect and influence in the area. Members of the village council will be able to build connections with tehsil and district level politicians, which will open avenues for advancing in politics. Besides this, council members will also be able to enhance their influence in the village. They will be known as leaders in their neighbourhoods, and this get them more recognition. Their children will be able to build a network in the area, which will make their entry into politics easier.”

Design

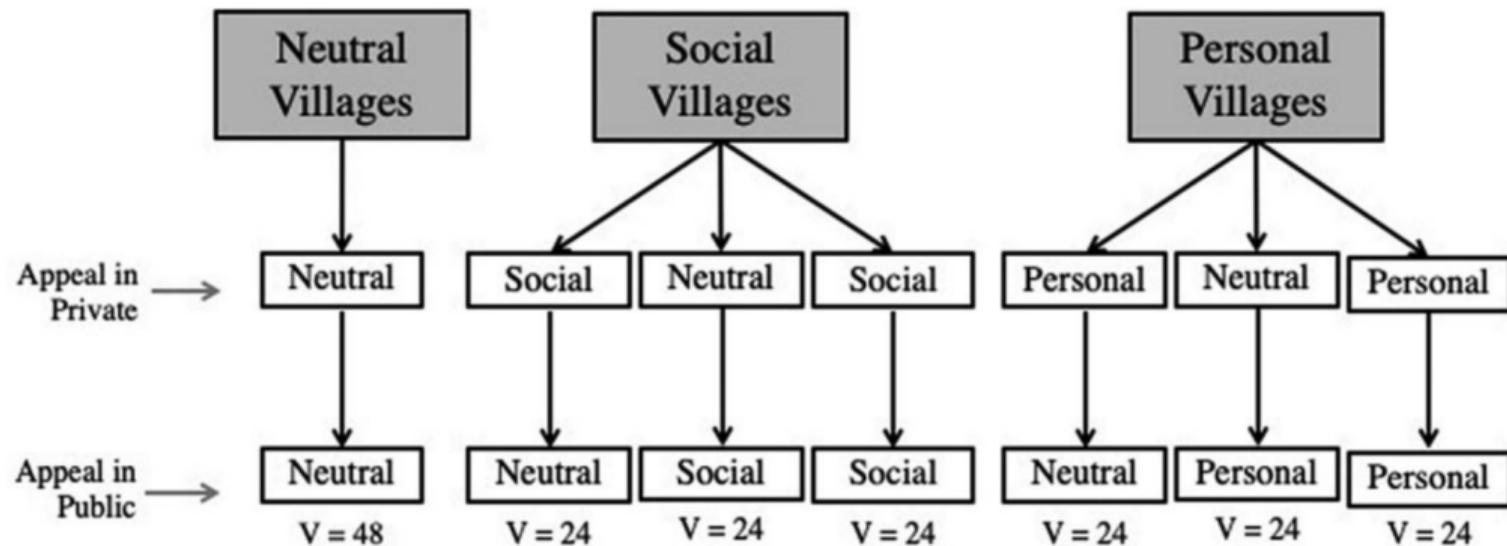


FIGURE 5
Design of field experiment

Notes: This figure shows the randomization scheme. All treatment randomizations are at the village level. V refers to the number of villages in a treatment category. The bottom two layers of the figure show the type of appeal made to a person to run for office. See text for details.

Political Entry Decisions

TABLE 1
Effects on candidacy and election

	Candidate=1 (1)	Elected=1 (2)
Social Treatment	0.010 (0.008) [0.070]	0.005 (0.005) [0.113]
Personal Treatment	-0.009 (0.006) [0.107]	-0.007 (0.003) [0.057]
Neutral Mean	0.030	0.017
# Villages	192	192
# Observations	9310	9310
<u>Linear Restrictions</u>		
Social versus Personal	0.018 (0.007) [0.007]	0.012 (0.004) [0.006]

- ▶ Relative to personal benefits, social benefits increase the probability of candidacy by 1.8 pp
- ▶ An increase of 86%
- ▶ Opposite effects for personal benefits relative to neutral treatment

Do voters care to elect these new politicians?

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- ▶ Probability of people getting elected to office is 1.2 pp higher when social benefits are emphasised

Do these “good” politicians actually perform better?

TABLE 2
Policy effects: distance between citizen preferences and council budgets

	Euclidean Distance (1)	Municipal Services (2)	Infrastructure (3)	Community (4)	Not Primary Responsibility (5)
Social Treatment	-7.039 (5.615) [0.080]	-5.900 (4.318) [0.063]	-5.157 (4.456) [0.104]	0.785 (1.328) [0.261]	0.344 (1.996) [0.427]
Personal Treatment	2.361 (5.212) [0.322]	-0.175 (4.019) [0.480]	1.948 (4.192) [0.313]	0.259 (1.289) [0.413]	3.231 (2.103) [0.062]
Neutral Mean	67.877	42.995	48.555	5.001	7.520
No. Observations	189	189	189	189	189
<u>Linear Restrictions</u>					
Social versus Personal	-9.400 (4.810) [0.040]	-5.725 (3.662) [0.083]	-7.105 (3.864) [0.049]	0.526 (1.161) [0.338]	-2.887 (2.050) [0.097]

- ▶ Elected councils in villages with social message spend their budgets in a manner that's more aligned with citizen preferences

Conclusion

- ▶ This paper presents new evidence on an important channel of improving representative democracy: the *supply* of politicians
- ▶ Non-monetary prosocial incentives can be particularly powerful in mobilising a political class that delivers more responsive policy to the electorate
- ▶ When political office is presented as a means to serve the community, people who would not have otherwise run for office are more likely to do so
- ▶ Prosocial encouragements at the candidacy stage also result in better alignment of downstream policy outcomes
- ▶ Important policy implications: it is possible to improve the supply of politicians

Burgess et al. (2019)

The Brazilian Amazon's Double Reversal of Fortune

Motivation

- ▶ Environmental damage entails an externality - a market failure
- ▶ Requires government involvement to regulate or tax activity to correct this externality
- ▶ State capacity to effectively regulate is weak in many developing countries
- ▶ Political economy can be important

This Paper

- ▶ Explore how national policies can exert regulatory control over conservation
- ▶ Exploit what happens at international borders
- ▶ One of the most important global ecosystems: the Amazon rainforest
 - ▷ The rate of deforestation will affect global warming
 - ▷ The Amazon is a global public good

Strategy

- ▶ Satellite data on deforestation - even across borders, from 2000 - 2018
 - ▷ High resolution - can zoom in for precise effects
- ▶ In 2006, Brazil introduced deforestation policies
- ▶ Spatial RDD design - popular strategy using borders for policy effects

Satellite Data

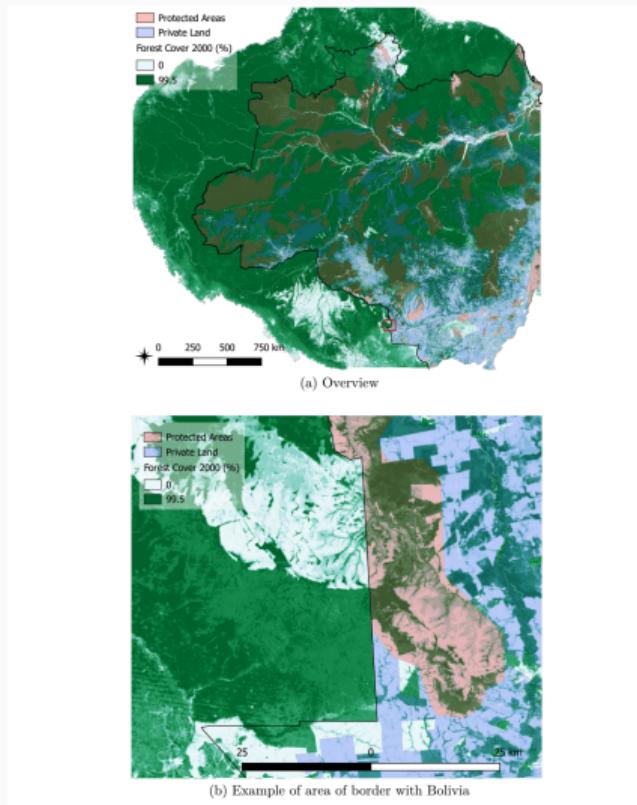


Figure 2: Satellite Image of a Border Segment (Percentage of Forest Cover in 2000)

Fact 1

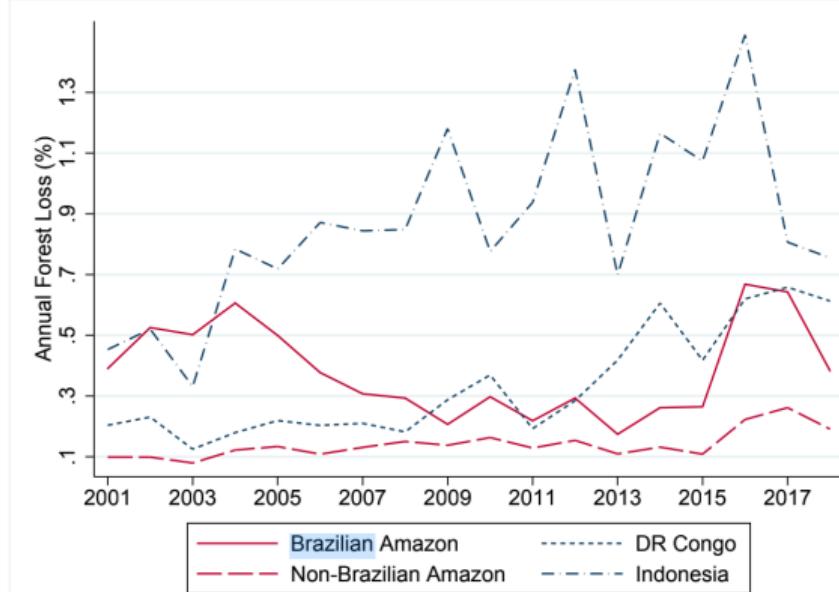


Figure 1: Forest Change in the Amazon, DR Congo and Indonesia, 2001-2018

- ▶ Until 2005, deforestation level and rate significantly higher on the Brazilian side

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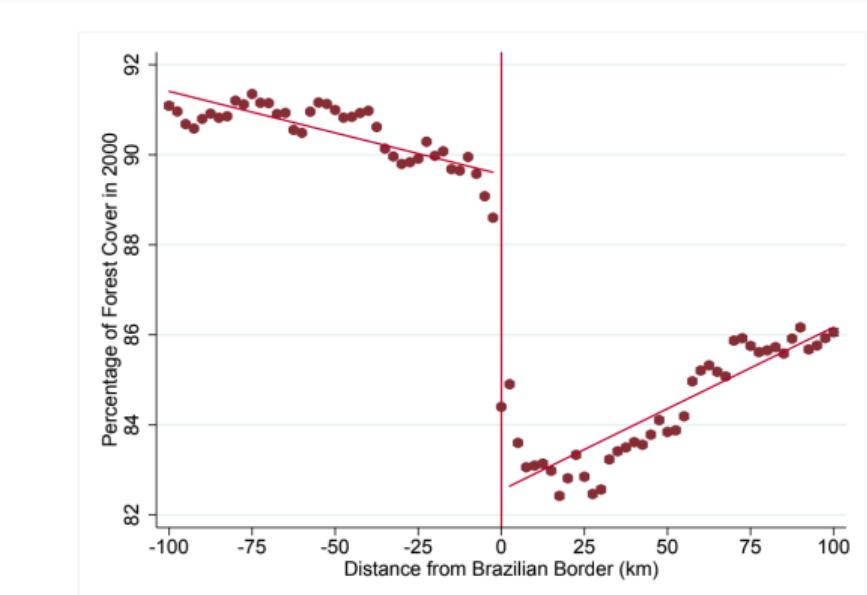
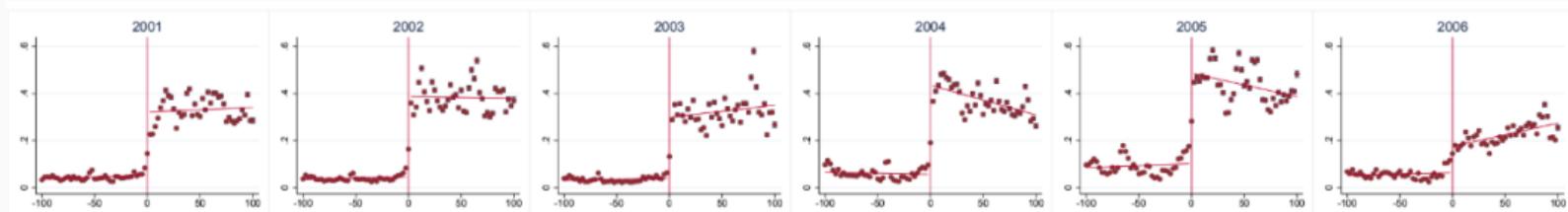


Figure 3: Average Forest Cover in 2000 by Distance from Brazilian Border

- ▶ Deforestation is visually apparent: forest cover drops sharply exactly at the national border.

Fact 2

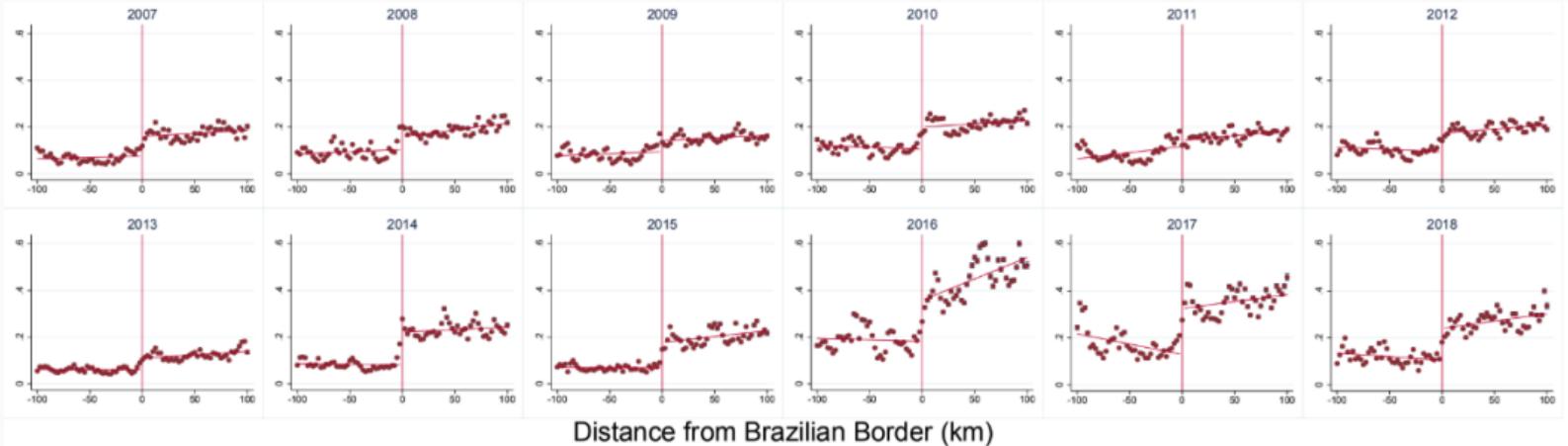


- Discontinuity in deforestation rates disappears in 2006 - the first reversal

What happened in 2006?

- ▶ In 2003, in the Lula government, Marina Silva appointed as Minister of Environment
- ▶ She was from the Amazon, and had a strong environmentalist stance
- ▶ Law that allowed satellite-based deforestation detection system (DETER) to become a key tool
- ▶ Sent in federal police and troops to arrest illegal loggers and confiscate their machinery

Fact 3

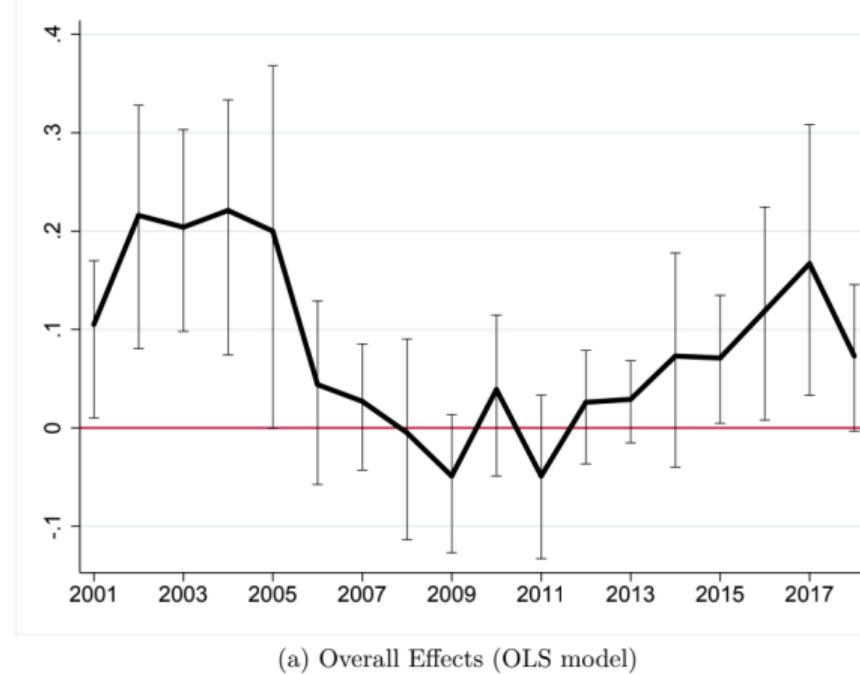


- ▶ Positive effects relatively short-lived
- ▶ Deforestation resumes growing in 2014 - the second reversal

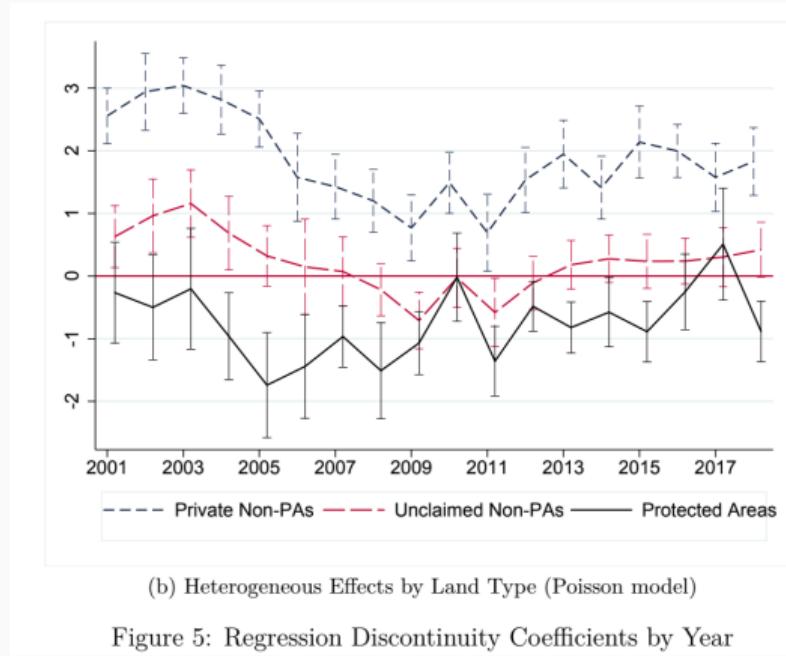
What changed?

- ▶ New government - gave amnesty to those engaged in illegal deforestation before 2008
- ▶ 2014 was a politically turbulent year
- ▶ Next president introduced laws that made it incentive-compatible for public land grabs

The Double Reversal



Fact 4



- ▶ Land use restrictions matter
- ▶ Protected areas have always been less deforested

Conclusion

- ▶ Combined, these results demonstrate the reach of the Brazilian state to exploit or conserve its natural resources
- ▶ Suggest that rapid deforestation in early 2000s was a consequence of a pro-exploitation policy environment
- ▶ Policy stance rapidly reversed in 2006-2013 with laws introduced
- ▶ But the position stalled and reversed in the post-2013 period with economic and political crisis collided with weakened forest conservation laws
- ▶ So state capacity does matter!

The Curse of Natural Resources

What is it?

- ▶ The observation that countries rich in natural resources tend to perform badly
- ▶ Also called the paradox of plenty or the resource curse
- ▶ Sachs and Warner maybe the first to document this using econometrics in a paper in 1995

Descriptive Evidence

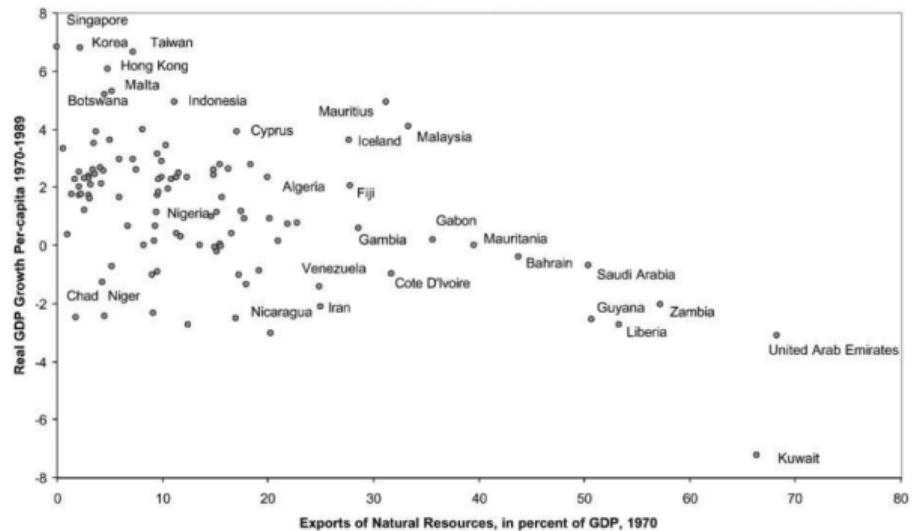
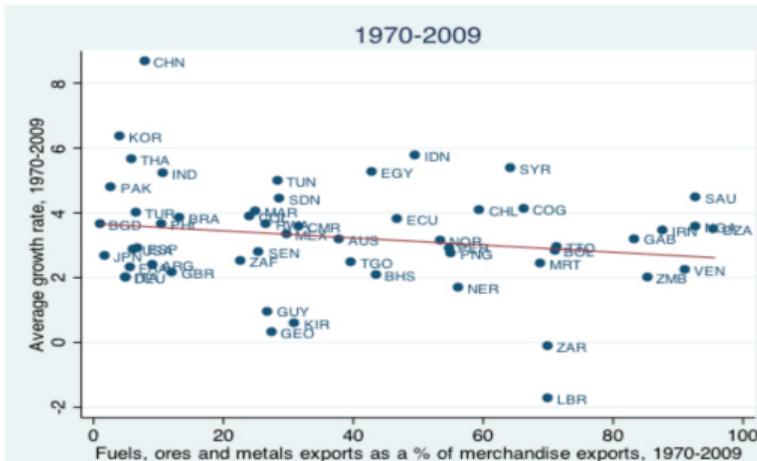


Fig. 1. Growth and natural resource abundance 1970–1989.

- ▶ No countries with extremely abundant natural resources in 1970 grew rapidly for the next 20 years

Descriptive Evidence - Persistence

Figure 1: Statistical relationship between mineral exports and growth.



Data source: *World Development Indicators*, World Bank

- ▶ Conspicuously high growth and low natural resources are China, Korea

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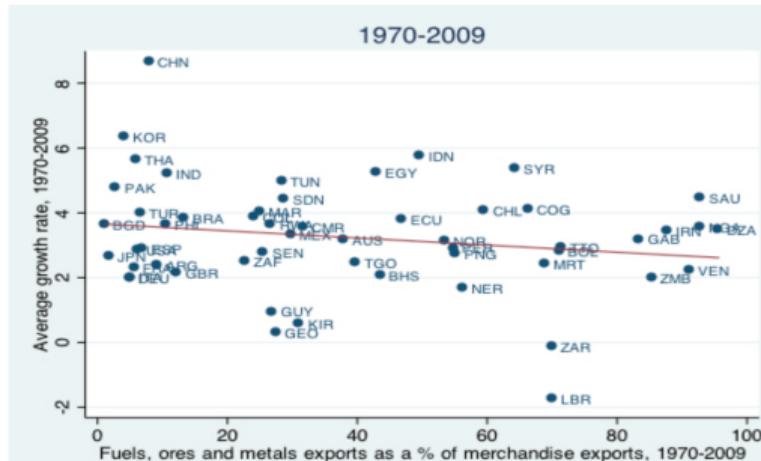


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- ▶ But clearly no positive relationship

Possible Mechanisms I

- ▶ Long run trend of world prices for commodities

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 - ▷ Diversification is desirable - in particular, industrial policy

Crowding out of manufacturing?

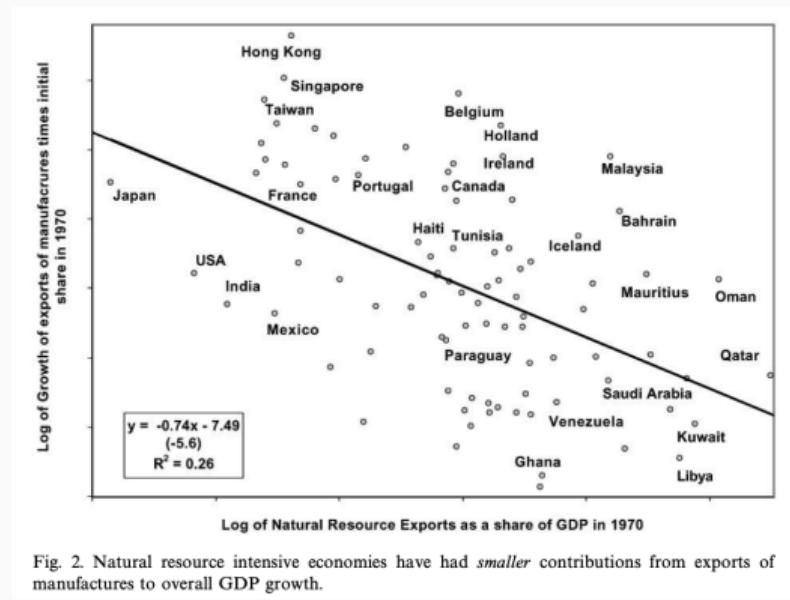


Fig. 2. Natural resource intensive economies have had *smaller* contributions from exports of manufactures to overall GDP growth.

- ▶ Resource abundance tended to render the export sectors uncompetitive
- ▶ So never successfully pursued export-led growth

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 - ▷ Economy more vulnerable to resource-related shocks