Yale

Causal Inference for IR and IPE with Substantive Applications

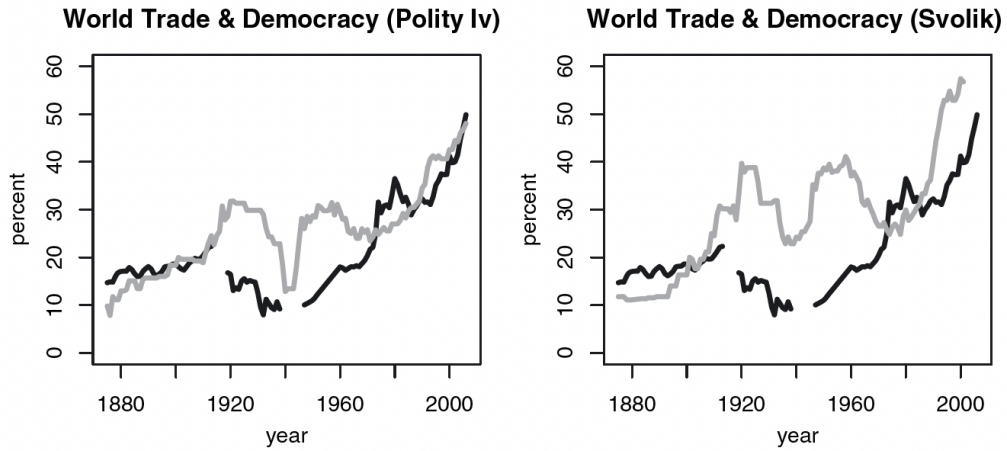
Carlos Felipe Balcazar

MacMillan Center

February, 2024

Does trade cause democratization?

Trade and democracy in IPE: Modernazation Theory



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  - Diffusion of culture and values.
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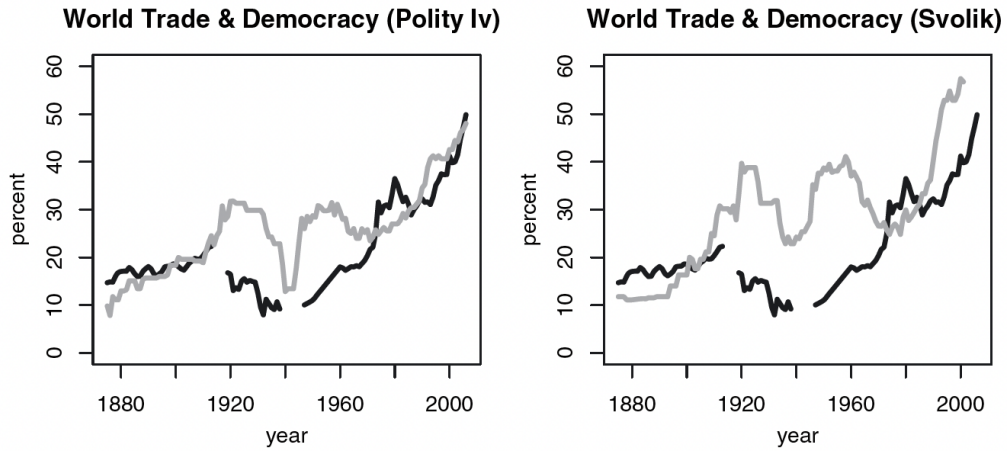

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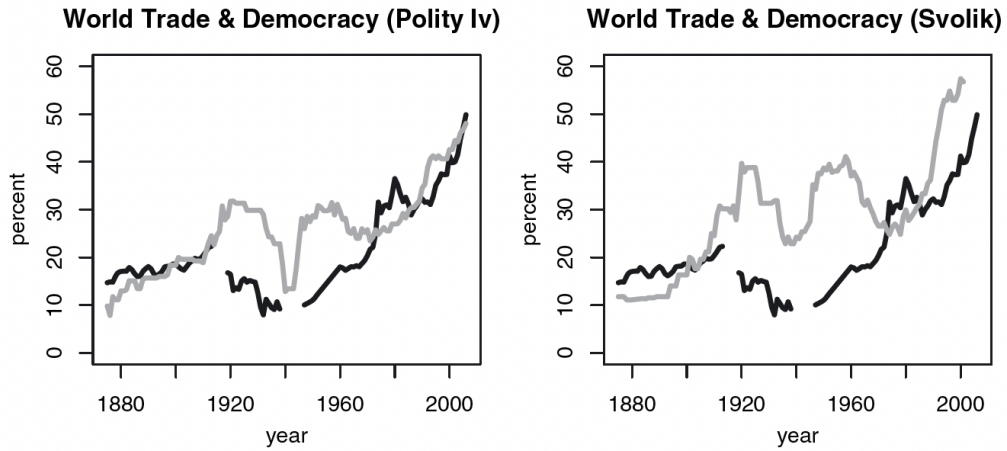

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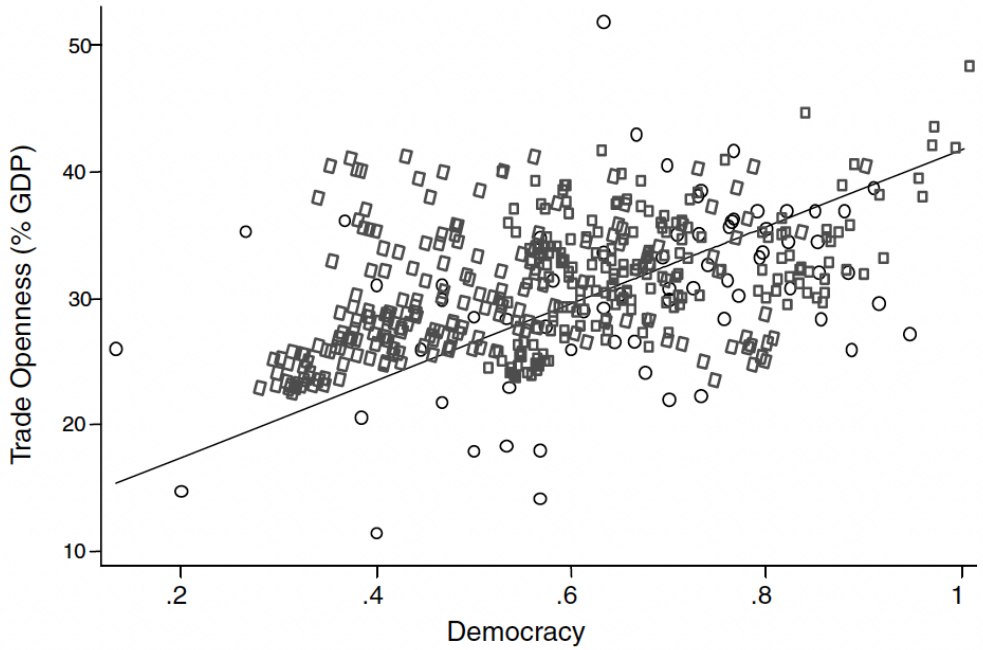

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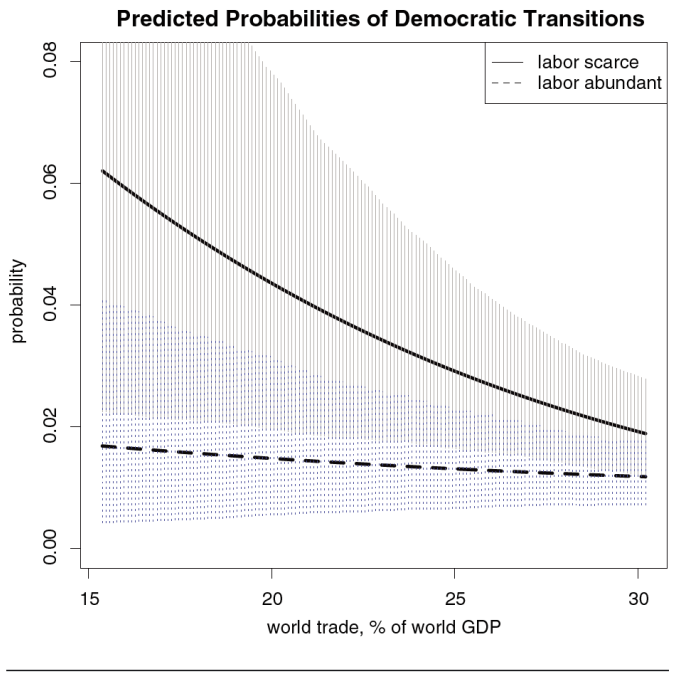

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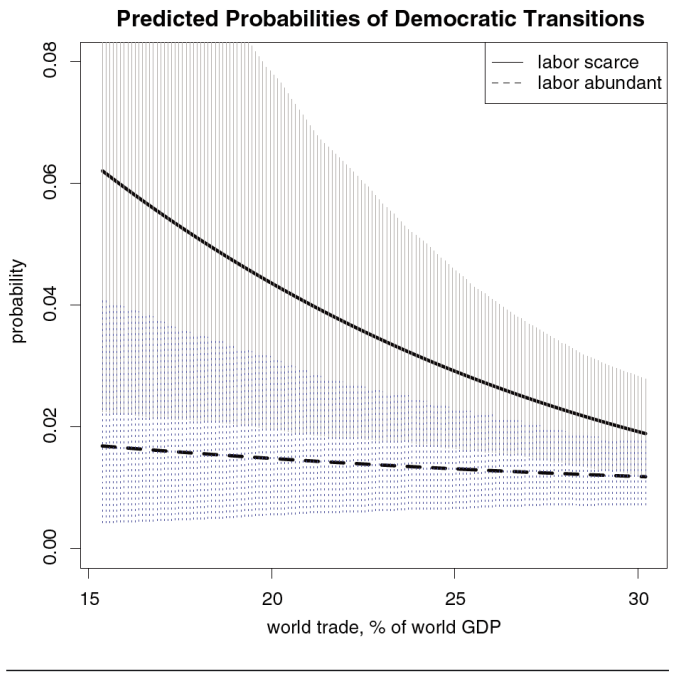

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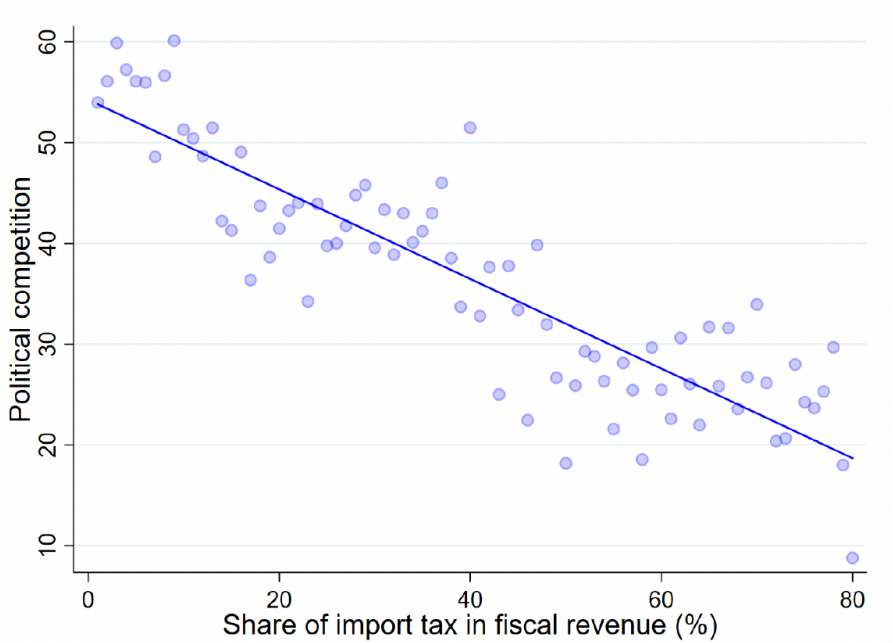

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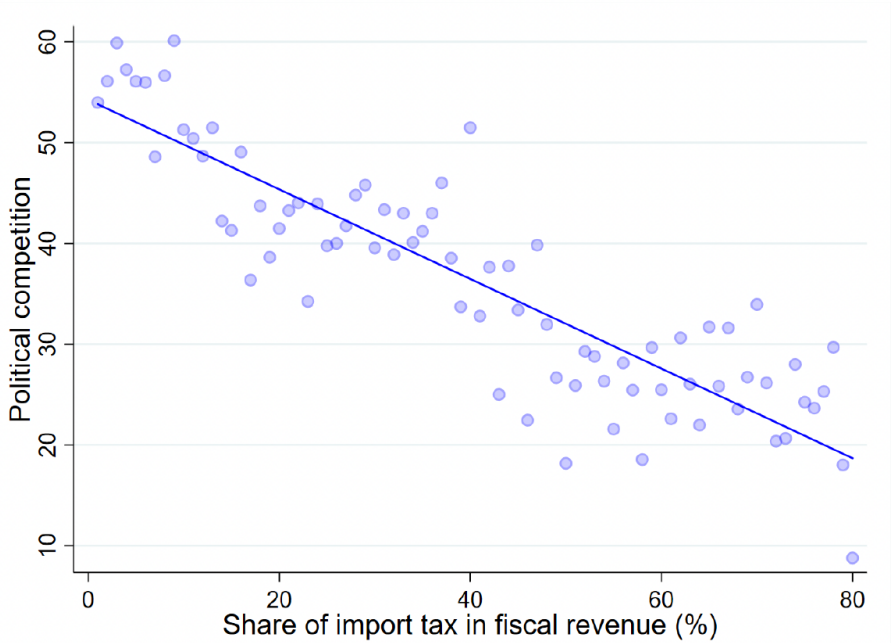

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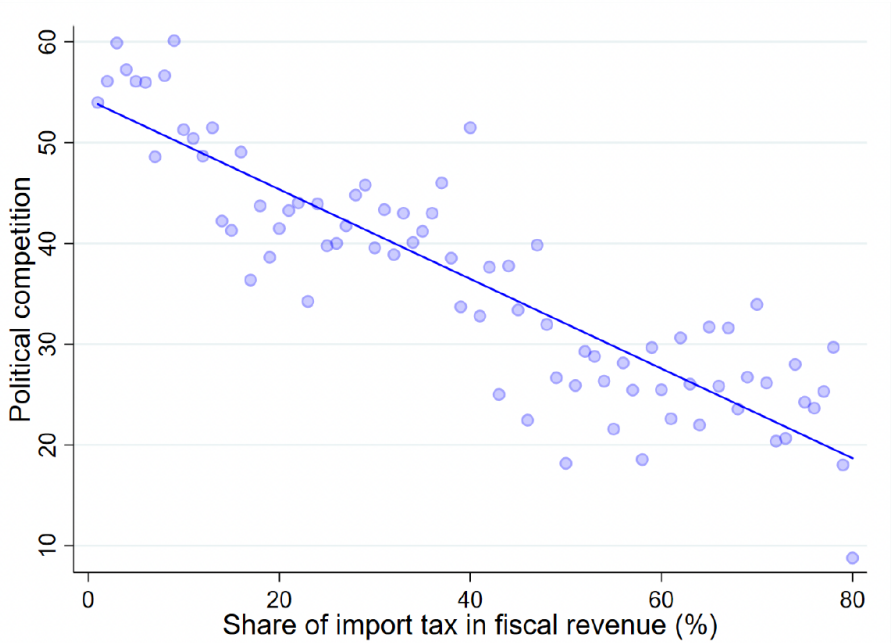

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Does trade reduce violent conflict?

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- Is this satisfactory? Why? Why not?
  - Reverse causality maybe?
  - Does realism have bite? If so, how?

Strategic choke points?

Table 2. Regression analysis of the impact of maritime choke point proximity and world trade openness on violent events

	(1)	(2)	(3)	(4)	(5)
	Any violence	State-based	Nonstate	One-sided	ln(deaths + 1)
Proximity	0.0148***	0.0052***	0.0017***	0.0079***	0.0338***
	(0.0010)	(0.0006)	(0.0003)	(0.0006)	(0.0032)
Proximity×	−0.0277***	−0.0087***	−0.0034***	−0.0156***	−0.0711***
World trade open.	(0.008)	(0.0011)	(0.0006)	(0.0010)	(0.0053)
Observations	1,944,540	1,944,540	1,944,540	1,944,540	1,944,540
Adjusted R^2	0.110	0.078	0.025	0.054	0.100
Mean dep. var.	0.015	0.007	0.002	0.006	0.035
Latitude FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
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LPM estimates for model from (1) to (4) and OLS for model (5). Dep. var., dependent variable; FE, fixed effects. ***$p < 0.01$. SEs clustered at the cell level. Proximity is minus the distance in SDs from the nearest choke point (one SD equals 1,100 km). World trade open. is the world trade (exports plus imports) as share of world GDP.

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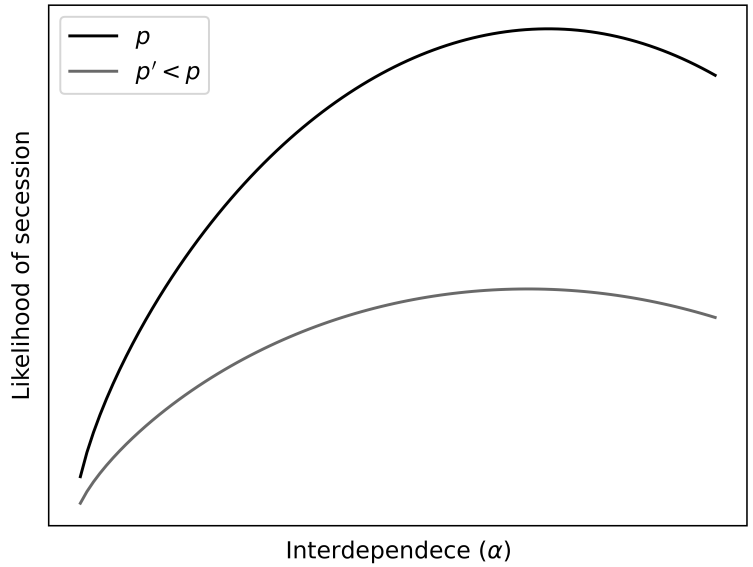

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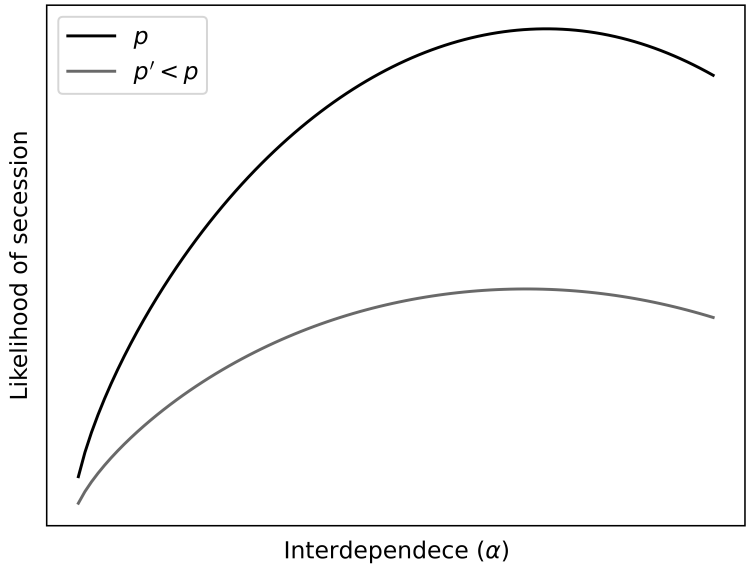
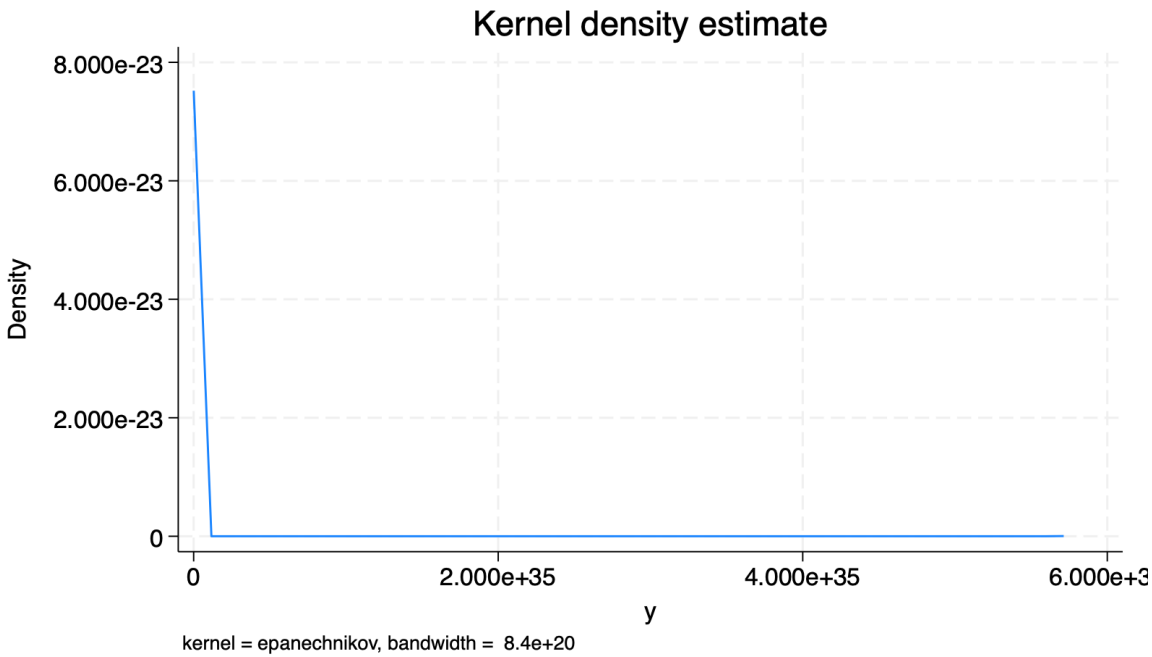


- Higher economic interdependence can increase self-determination.
  - If cost of conflict and state capacity are low.
- International interdependence is relevant for self-determination:
  - Weakens the periphery increasing unity.

The log of gravity and dealing with zeroes

Log of zero



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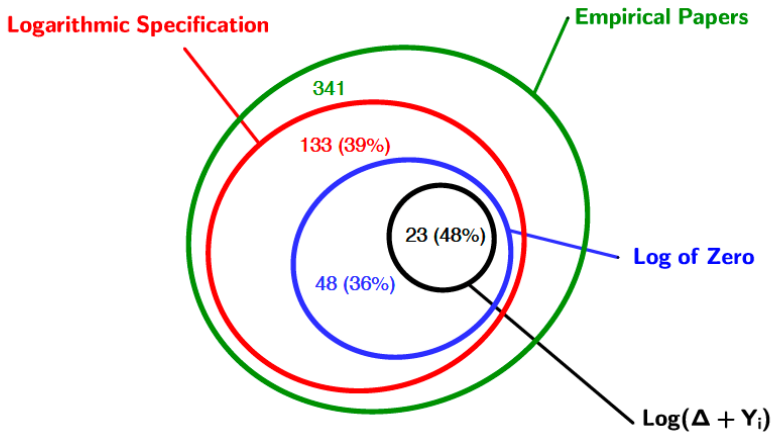

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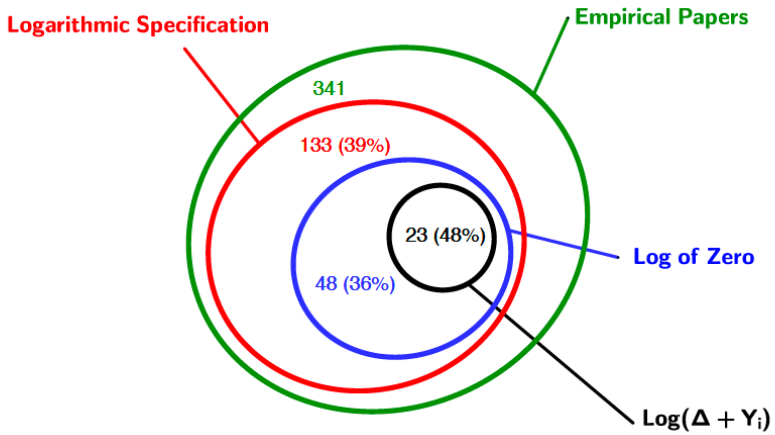

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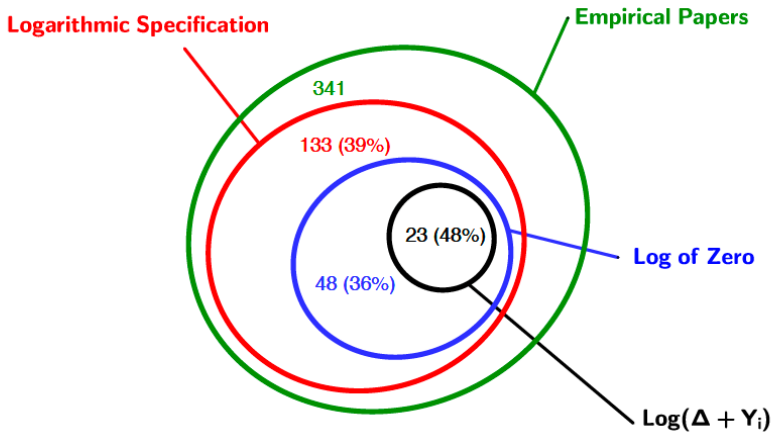

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The log of gravity

- Options: drop zeroes; log: $\ln(y+1)$); IHS: $ln(x+\sqrt{x2+1})$.
  - Exclude zeroes $\Rightarrow$ no generizability; post-treatment bias. Why?
  - Log is isomorphism; is not scale invariant. Why?
  - IHS retains zeroes; is not scale invariant; hard to interpret.
  - Bias due to measurement error is hard to sign.

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- Heteroskedasticity associated to larger values of y.

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- Can clustering the SE address this problem?
- Can instrumental variables help with this issue?
- PPML "weighs properly" to address heteroskedasticity.
- Limitations of PPML:
  - Incidental parameters; non-convergence; not necessarily iid.
  - Unfriendly for FE estimations. Why?
  - Unfriendly for instrumental variables estimation. Why?

Alternatives

- Normalized outcomes on treatment assignment (measurement).
- Drop zeroes and focus on intensive margin (limit scope).
- Drop zeroes and obtain worst case bounds (Manski/Lee).
- Take into account truncation in intensive margin. (Tobit, why?)
- Heckit to evaluate bias due to extensive margin. (Hard, why?)
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