Origins of Latin American Inequality: LACIR Chapter

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April 20, 2023

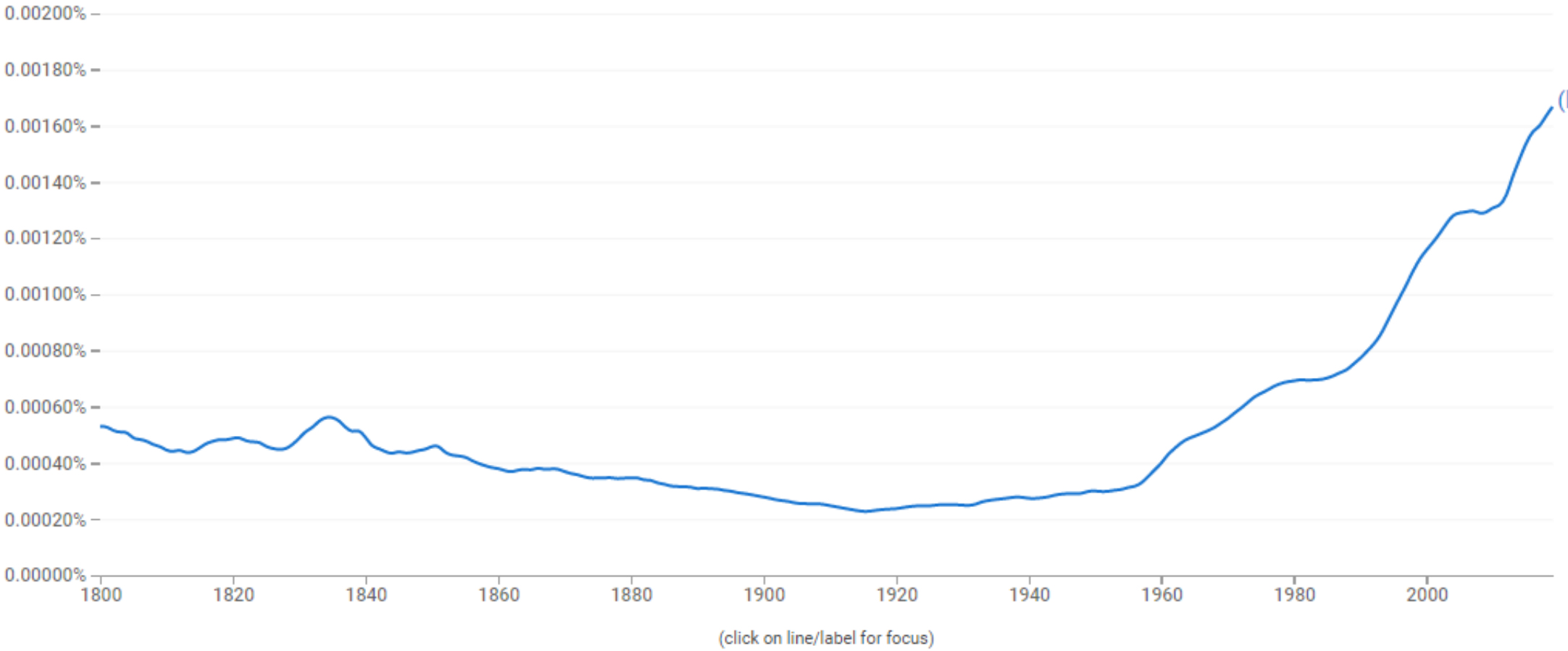
This Chapter / Outline

- Survey of the existing literature: origins of Latin American economic inequality / economic inequality in the history of the region
- Seminal papers and more modern contributions
- National differences between countries and sub-national differences within countries, along with empirics and identification techniques
- Key topics: **land reform, slavery and education**
- Other mechanisms: elites, health and wages
- Replications focusing on inequality (instead of income): colonial origins

Google Books Ngram Viewer

latin america+inequality

1800 - 2019 | English (2019) | Case-Insensitive | Smoothing

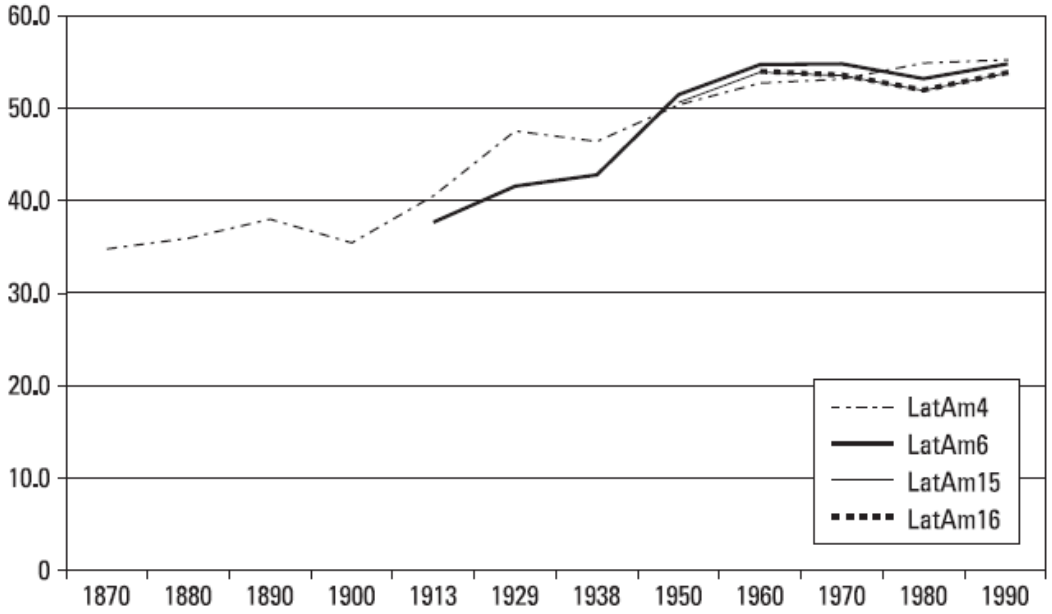


COVID-19

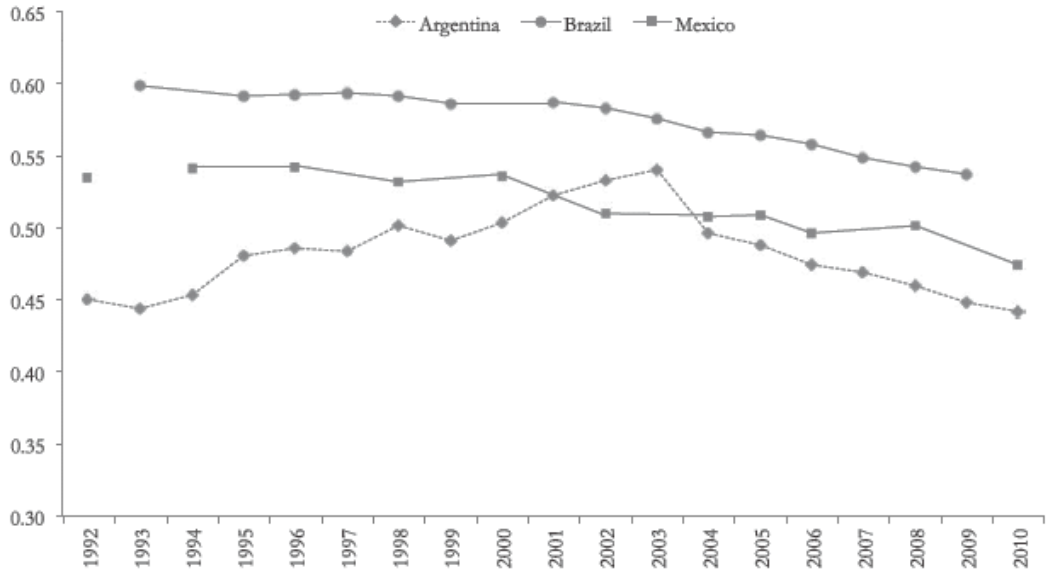
(latin america + inequality)

Prados de la Escosura (2007) and Lustig et al. (2012): Historical Inequality in Latin America

Secular increase during the XXth C.

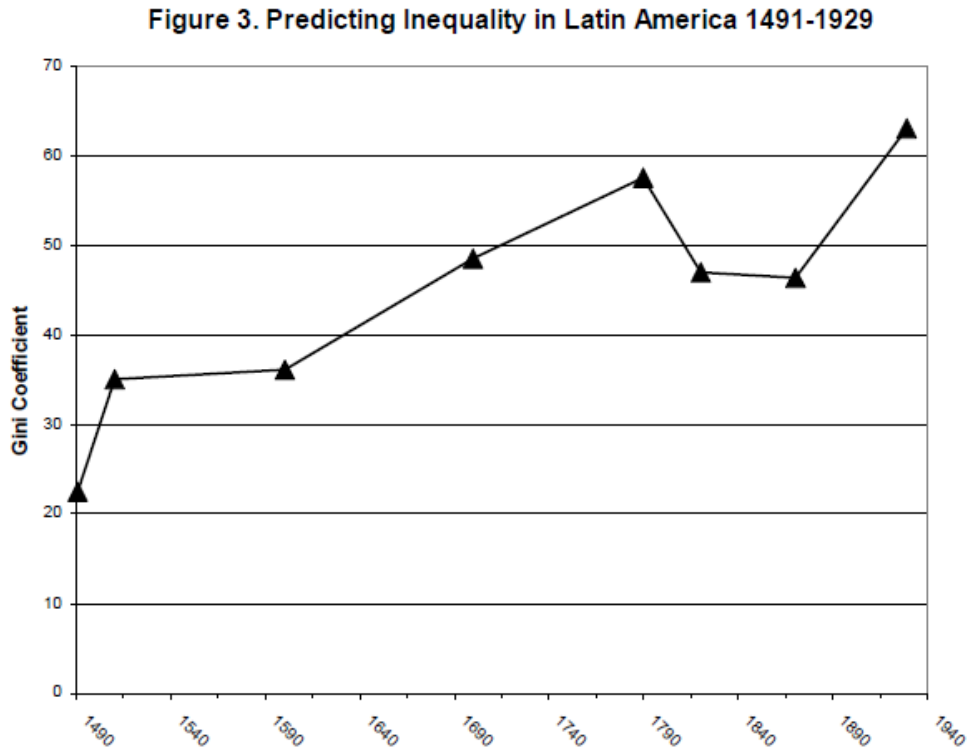


Decline during the 2000s

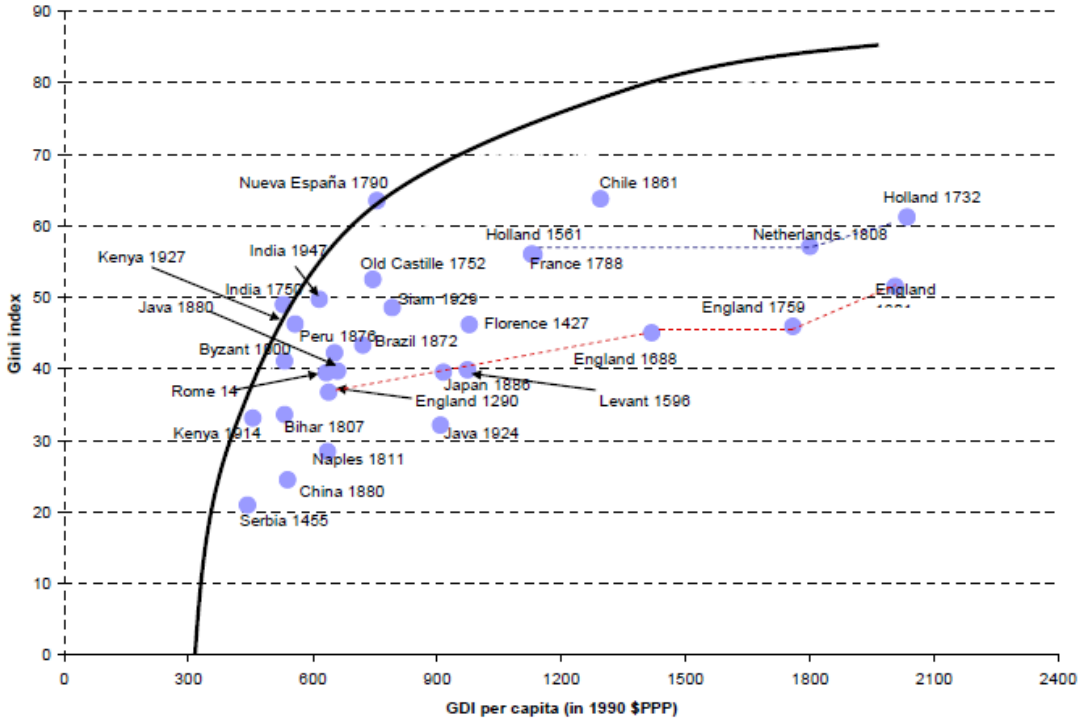


Williamson (2009, 2015): Historically High vs. Commodity Boom during the *Belle Epoque*

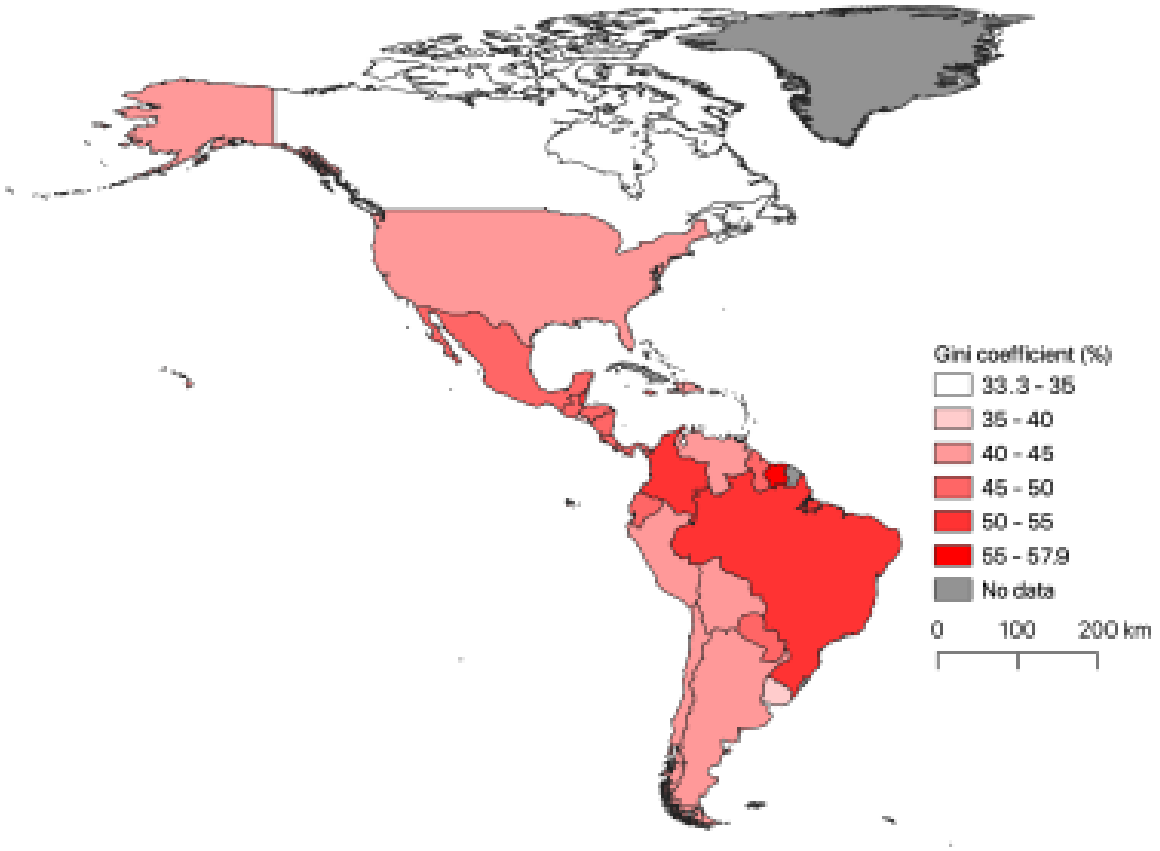
Latin American Inequality in History

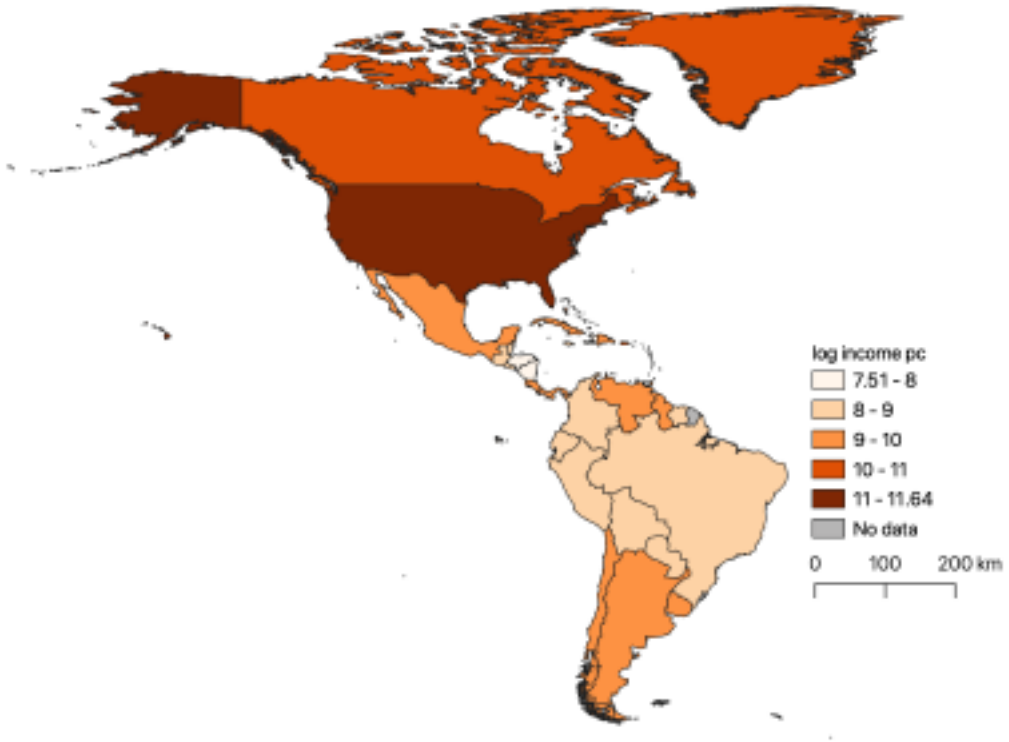


Inequality Possibility Frontier



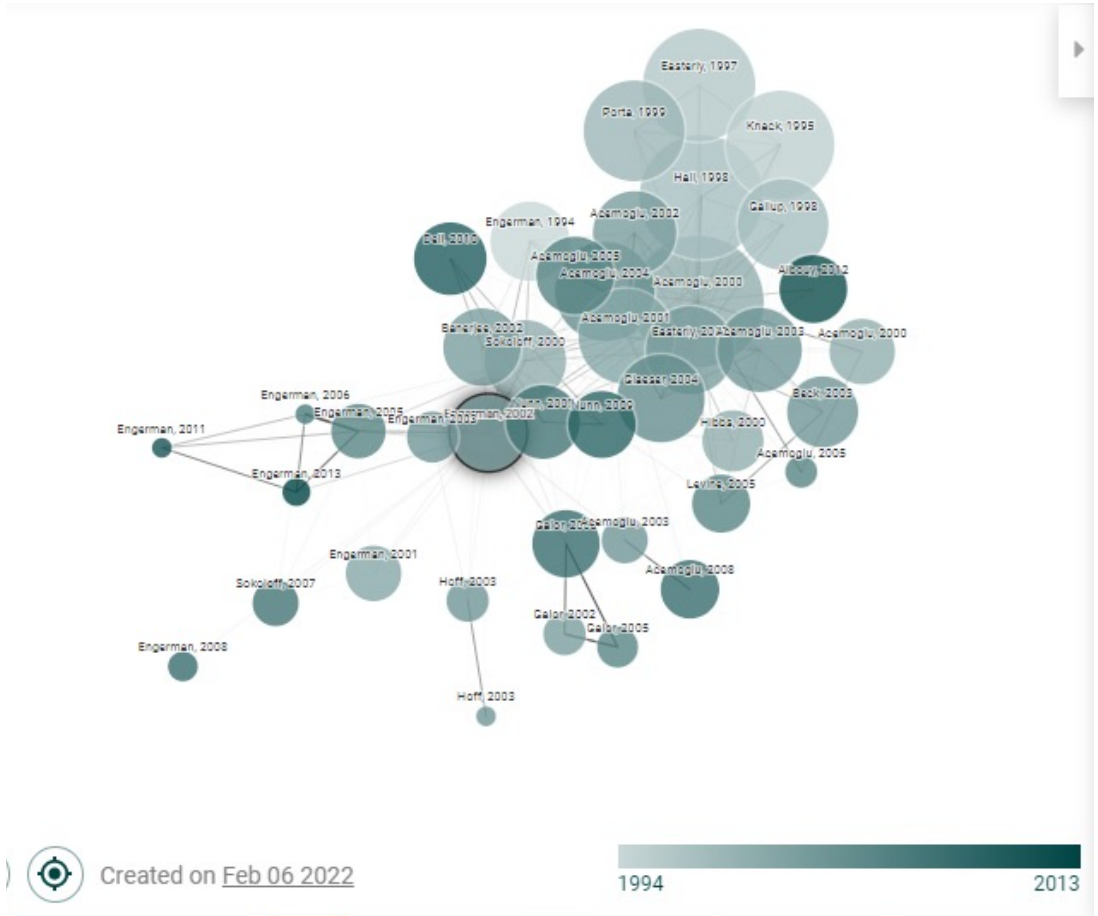
Inequality and Income in the 2000s



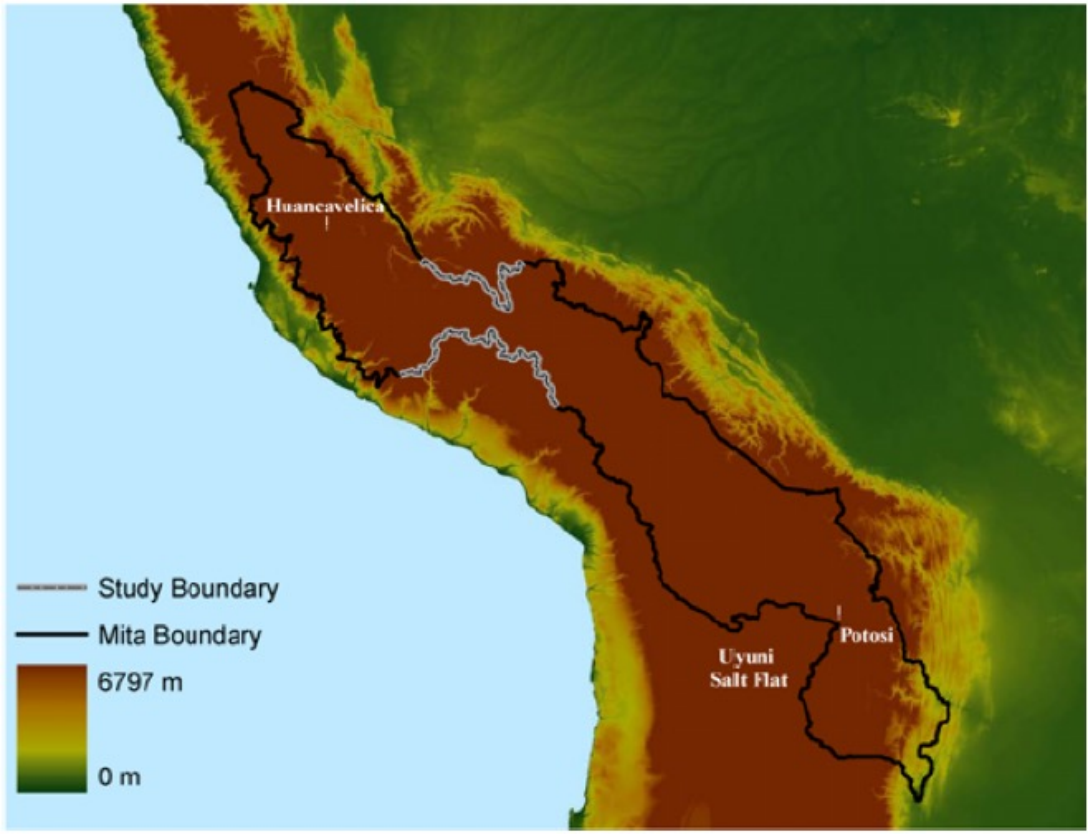


Engerman and Sokoloff (1997, 2000, 2002)

- Natural Endowments
  - Americas
  - Qualitative
- Endowments →Institutions → Economic Performance
- Through inequality
  - Higher inequality → Lower growth (?)
  - Slavery
  - Caribbean



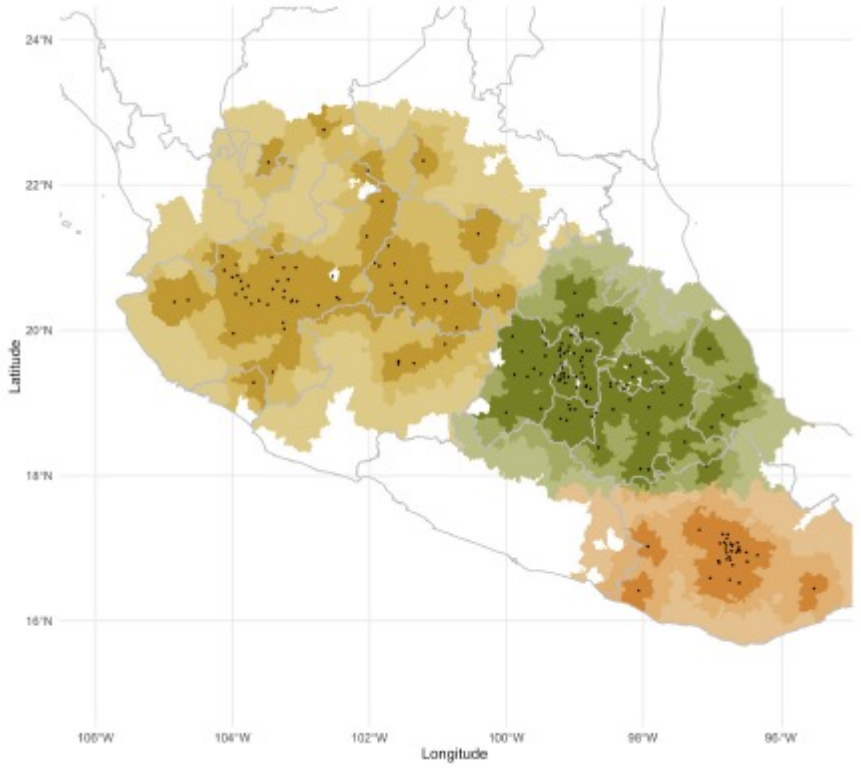
Melissa Dell (2010)



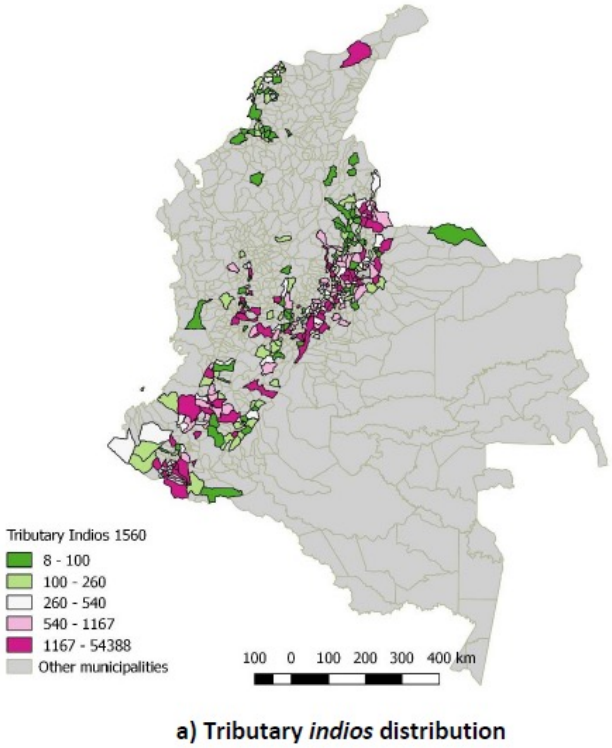
- Long-term impact of the *mita* labor system on economic development in Peru / Bolivia
- Using a geographic regression discontinuity design
- Negative effects on consumption and higher stunting
- Through a decrease in *haciendas*, public goods and sectoral composition

Colonial Institutions: Haciendas, Encomiendas and Conciertos in Mexico, Colombia and Ecuador

Mexico: Arias and Flores (2021)



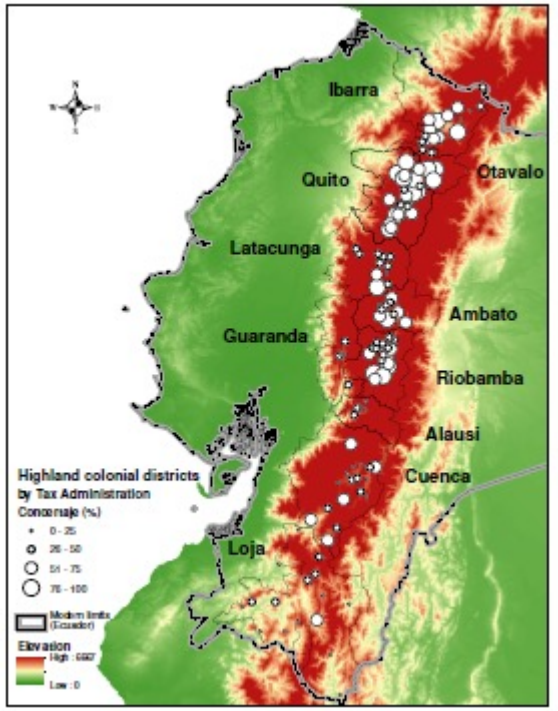
Colombia: Faguet et al. (2017)



a) Tributary *indios* distribution

Ecuador: Rivadeneira (2021)

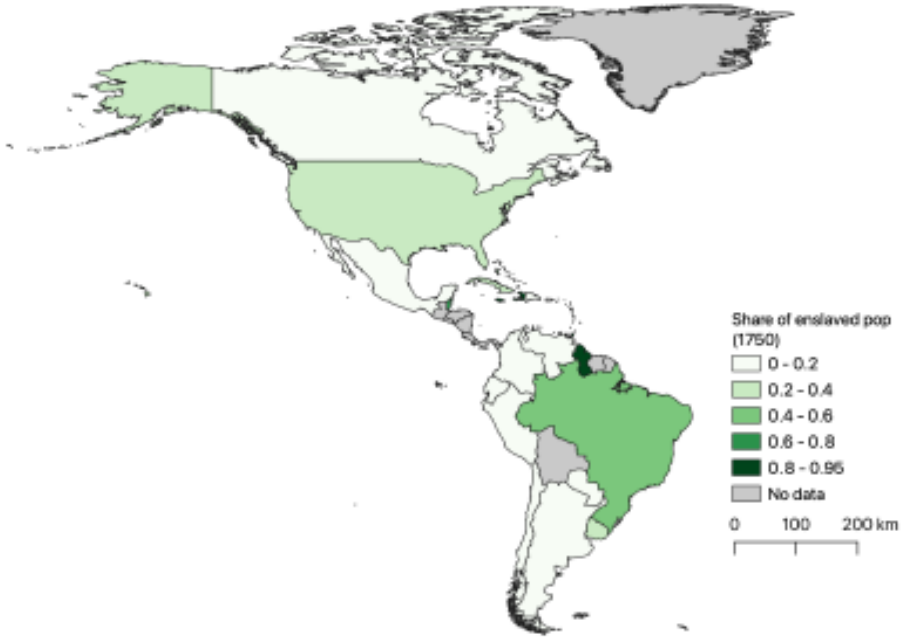
Figure 3: Map of the studied region with its Colonial Tax Administrations.



Natural Endowments and Slavery

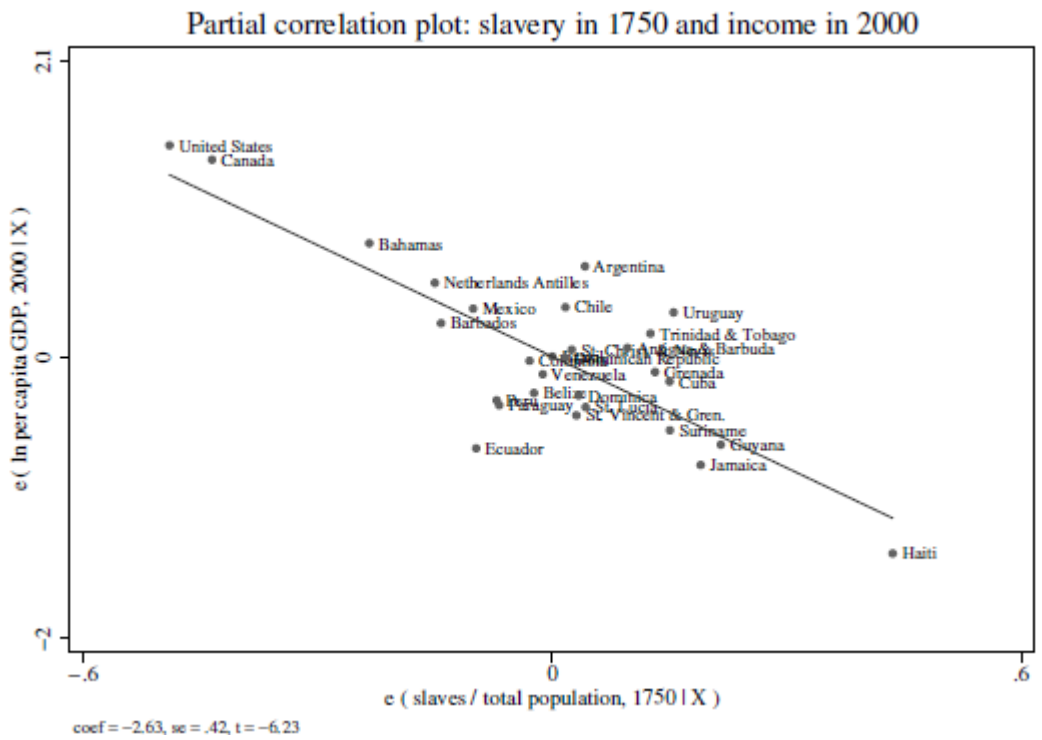
Plantations in Brazil

Slavery in the 18th Century

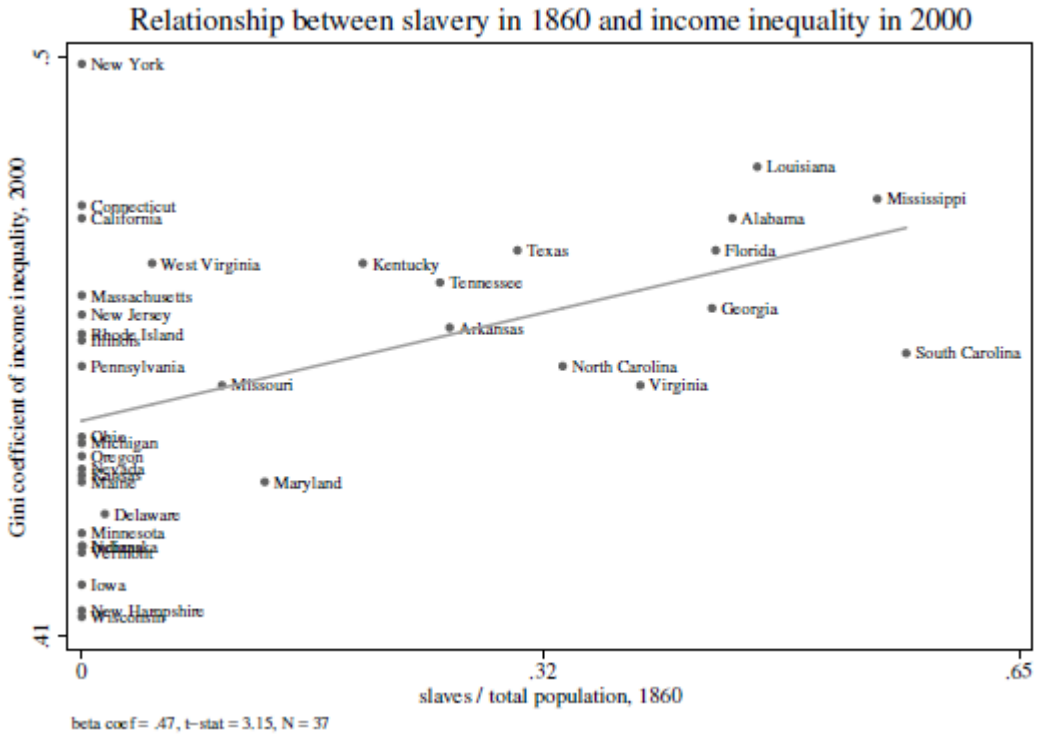


Nunn (2007): Slavery, Inequality and Income, testing the Engerman and Sokoloff Hypothesis

Country Level

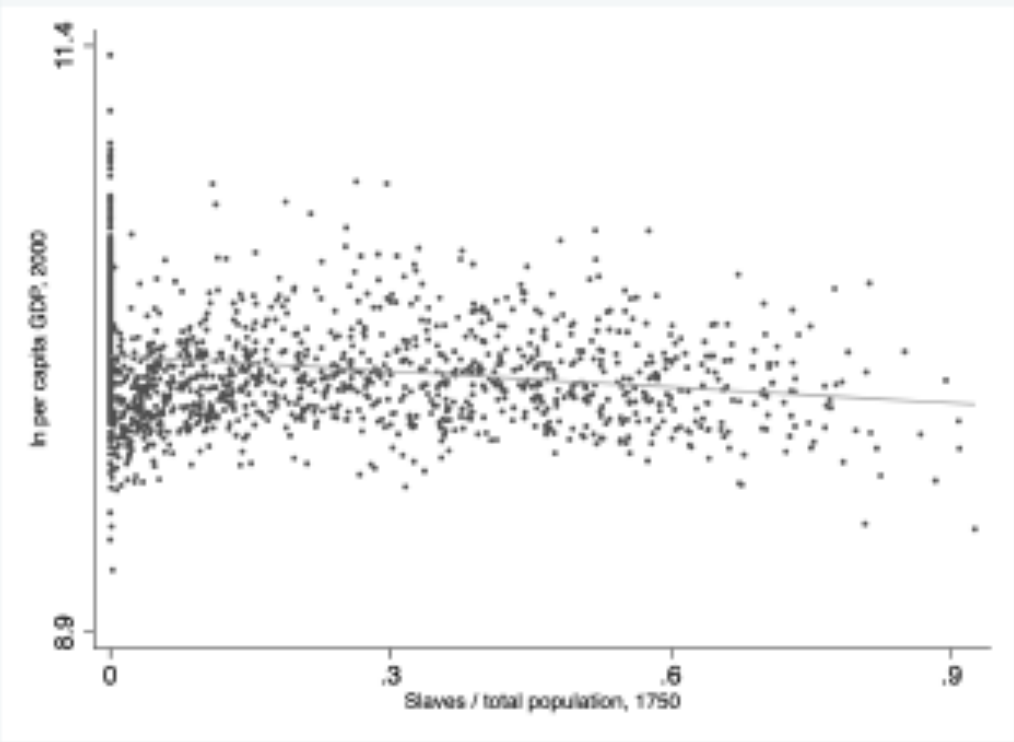


State level: US

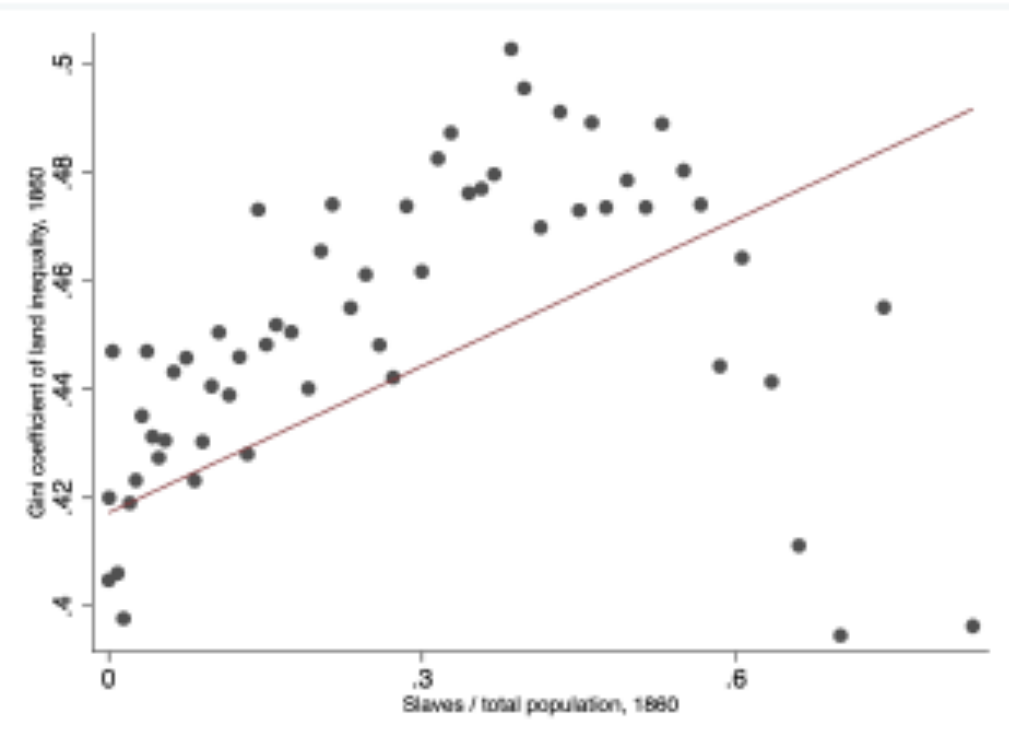


Nunn (2007), Bertocchi and Dimico (2014) at the County level, along with Human Capital

Income: County Level

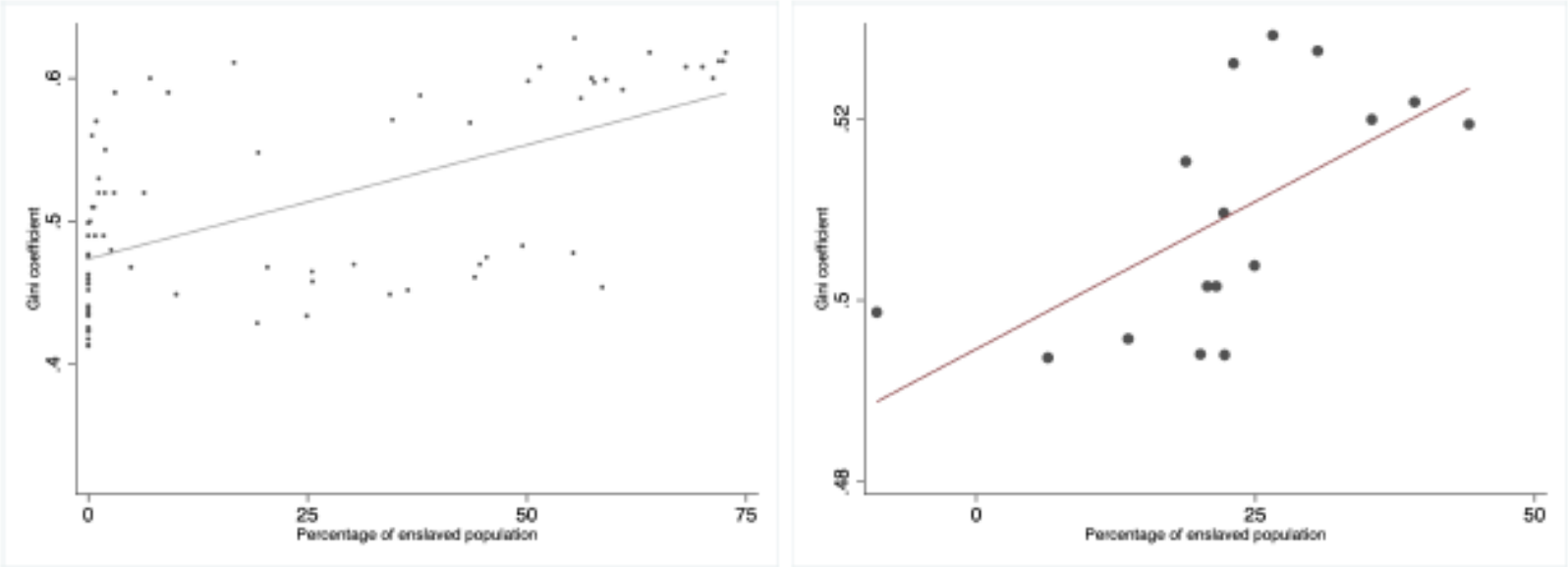


Inequality: County Level



Maloney and Valencia (2016): Slavery and Inequality, sub-national level

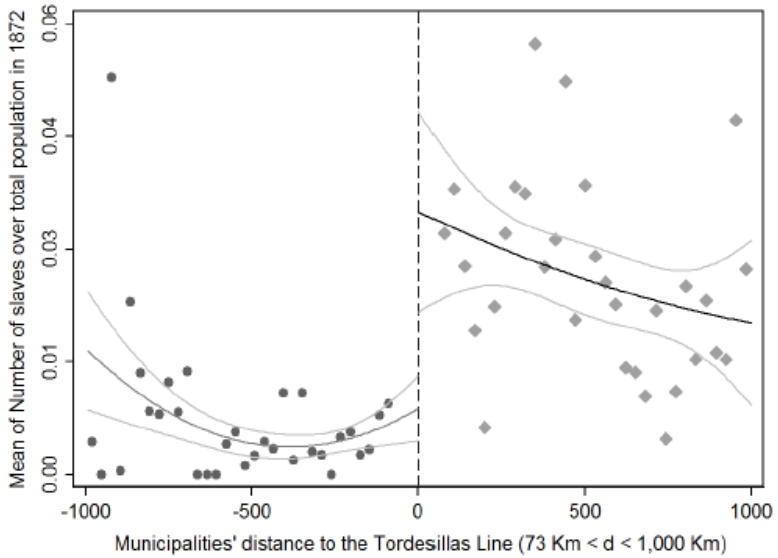
Figure 4: Slavery and Inequality (GINI)



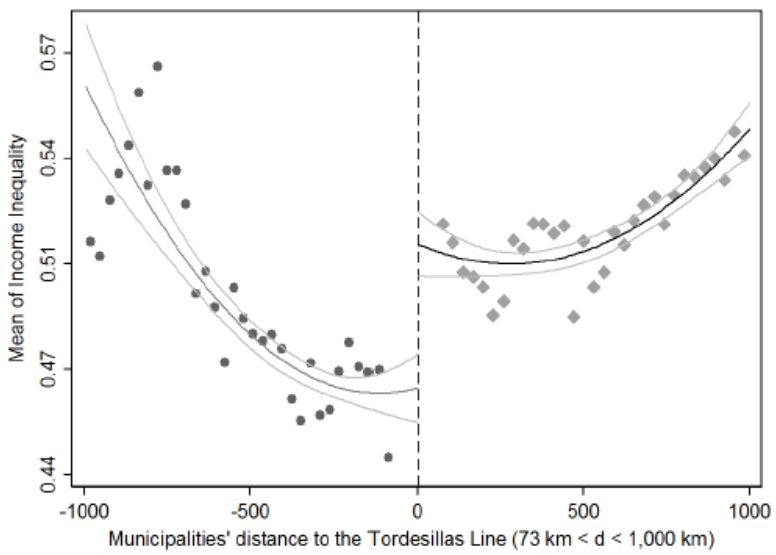
(a) Raw correlation (b) Including controls (column 3)

Laudares and Valencia (2022): Donut RD for Tordesillas line on Slavery and Inequality

Figure: Donut RD plots - Relative number of slaves (1872) and current income inequality (2010)

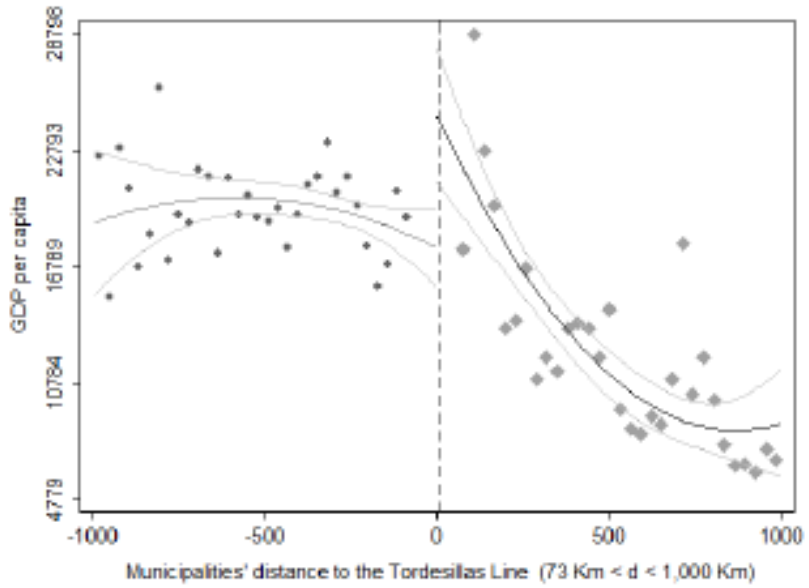


(a) Slaves/Total Population (1872)

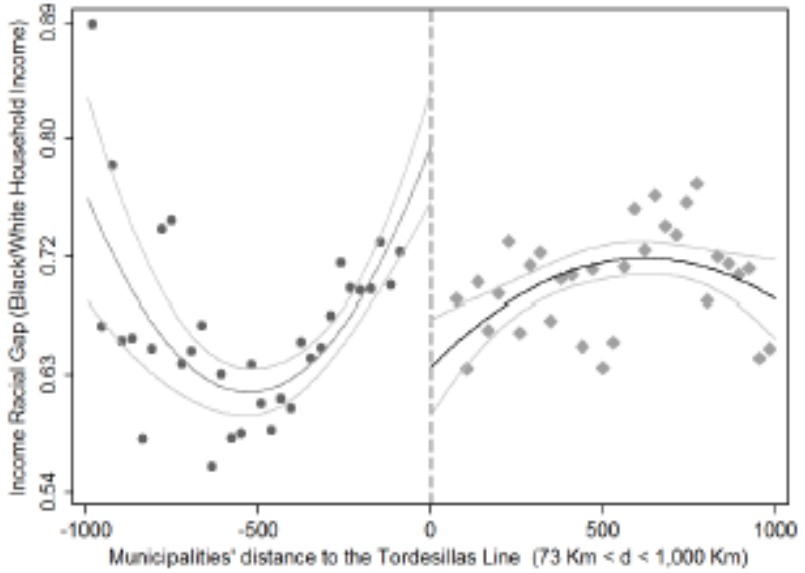


(b) Income Inequality (2010)

Laudares and Valencia (2022): Donut RD for Tordesillas line on Slavery and Income

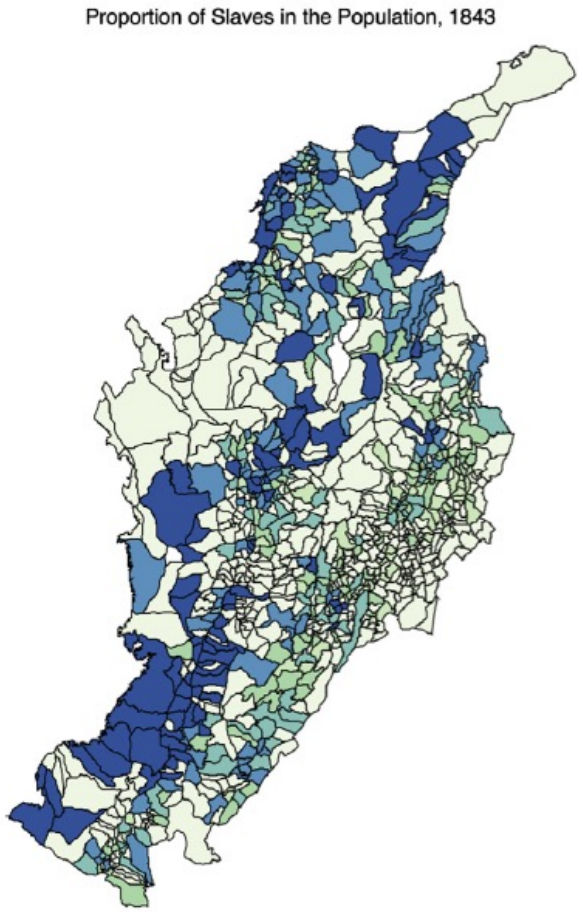


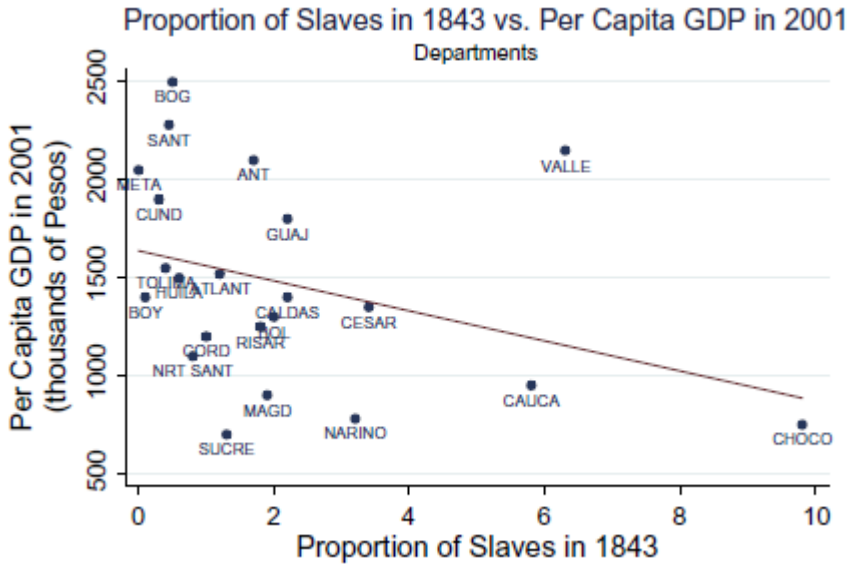
(a) GDP per capita (2012)



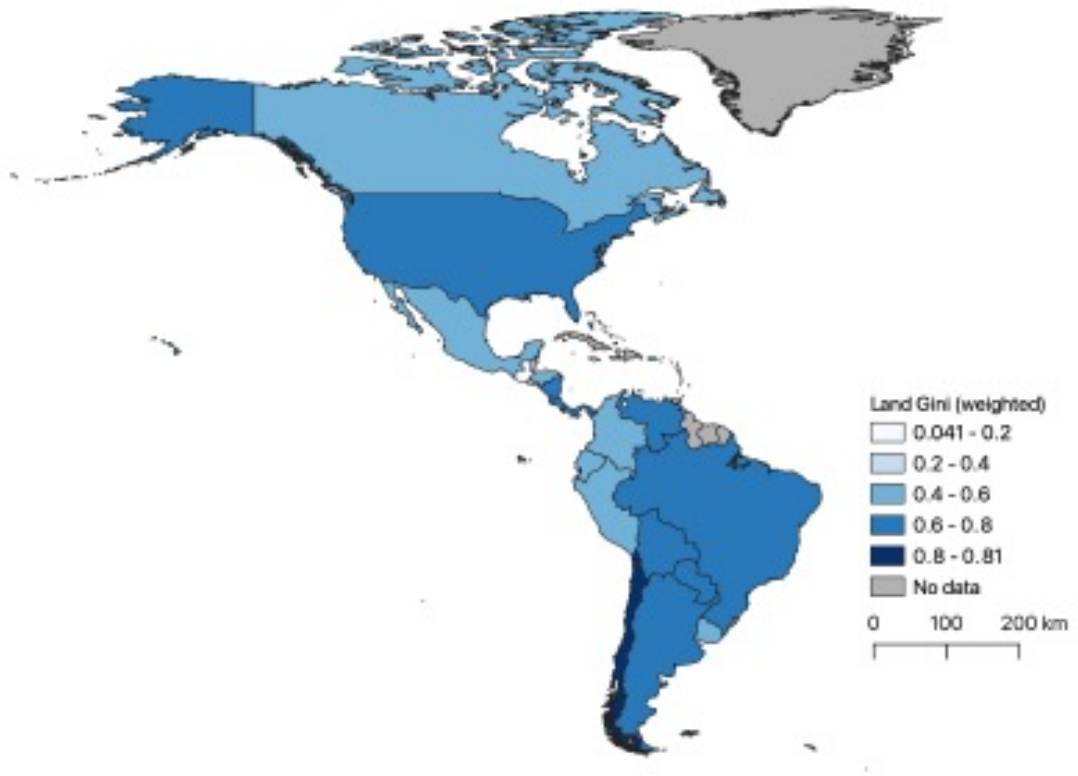
(b) Income Racial Imbalance (Black / White, 2010)

Acemoglu et al. (2012): Slavery and long-run development in Colombia





Land and Land Reform



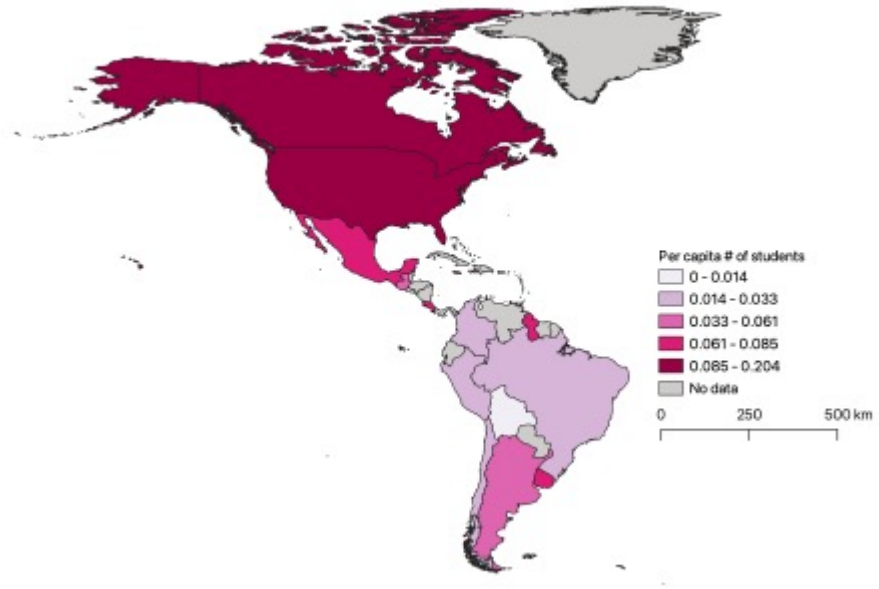
- Dell (2012): Mexican Revolution, land redistribution and path dependence in development
- Montero (2021): Cooperative Property rights in El Salvador
- Albertus (2019): land reform reduced subsequent conflict in Peru
- Albertus et al. (2020): land reform decreased human capital formation in Peru, by lowering demand

Land Reform II

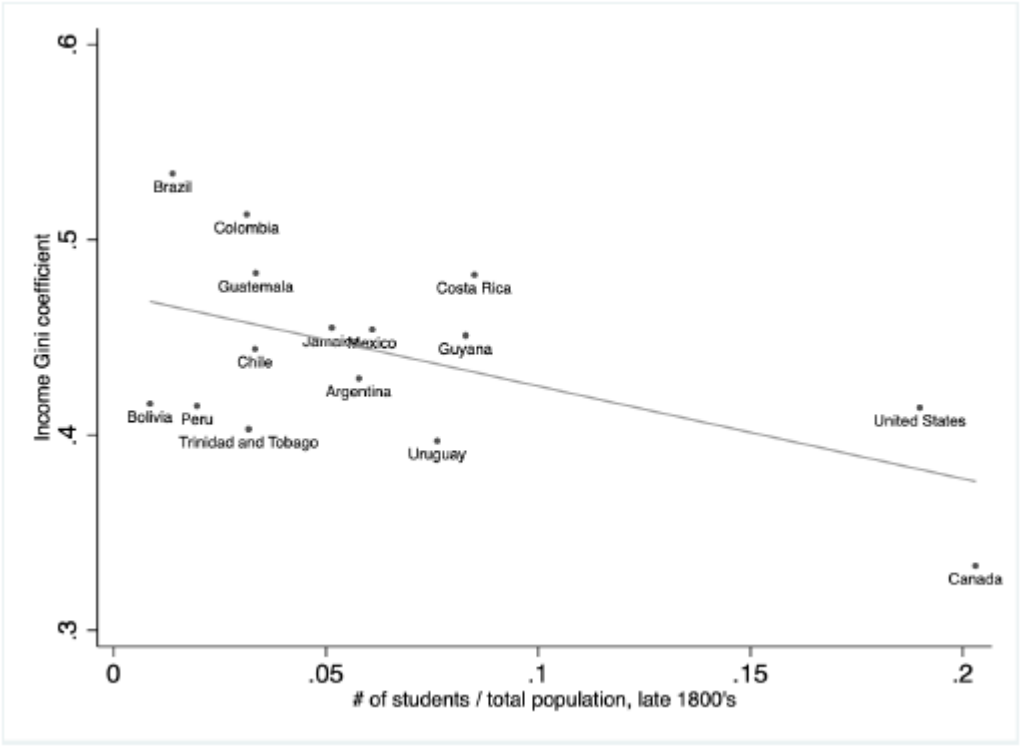
- Albertus (2015): autocracy and redistribution in Latin America
- Galán (2020): land reform and intergenerational mobility in Colombia
- Lopez Uribe (2017): land reform as a strategic political choice in Colombia
- Lillo Bustos (2018): land redistribution, crop choice, reform and counter-reform in Chile
- Jaimovich and Toledo (2018): failed land reform and conflict with the Mapuches in Chile
- Homestead Act in the US: Mattheis and Raz (2021), Smith (2021), Lillo-Bustos (2020). Redistribution, Voting and Clientelism in Italy (Caprettini et al., 2021). Jäger for Germany and Gobbi for France.

Education

Education in the XIXth Century



Early Education and Inequality



Missions and Development in Paraguay: Valencia Caicedo (2019)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Illiteracy		Ln Income		Income	Brazil	
	Argentina, Brazil and Paraguay		Brazil and Paraguay		Inequality	Mortality	Mortality
	Spillovers	Dist. Capital	Spillovers	Dist. Capital	BRA & PAR	Under 5	Infant
Jesuit Mission Distance	0.0270***	0.0220***	-0.00371***	-0.00352***	0.0603***	0.0369***	0.0367***
	(0.0071)	(0.006)	(0.0007)	(0.001)	(0.023)	(0.013)	(0.013)
	{0.0070}	{0.006}	{0.0007}	{0.001}	{0.023}	0.013	0.013
Distance to Capital		0.00989***		-0.0001			
		(0.003)		(0.001)			
		0.003		0.001			
Franciscan Mission Distance					-0.126***	0.013	0.022
					0.038	0.028	0.028
					{0.038}	0.028	0.028
GEO Controls	YES	YES	YES	YES	YES	YES	YES
Fixed Effects	NO	YES	NO	YES	YES	NO	NO
Observations	526	548	492	506	506	466	466
R-squared	0.091	0.092	0.859	0.879	0.448	0.107	0.109

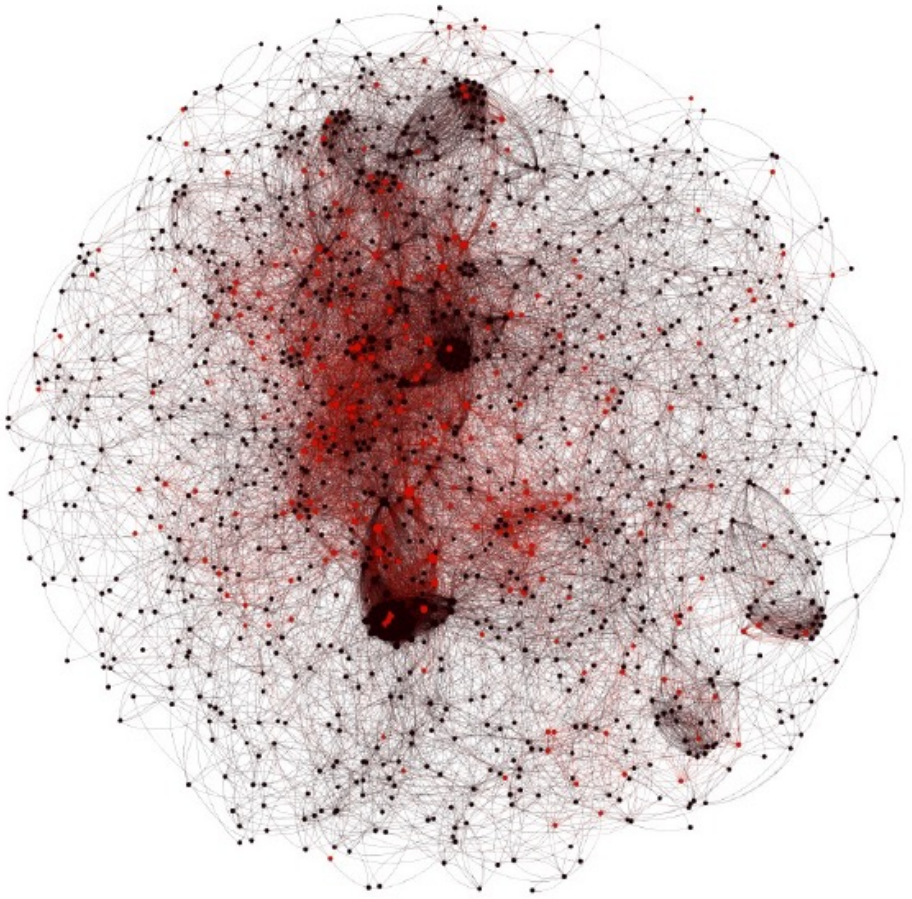
Engineers, Innovation and Inequality in the US

Dependent variable: Gini coefficient	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
# of engineers per 1000 inhabitants	-0.00698	-0.00339	-0.0125	0.0112	-0.00909	-0.0293	-0.0171	-0.0118
	(0.0234)	(0.0233)	(0.0281)	(0.0273)	(0.0275)	(0.0270)	(0.0260)	(0.0260)
# of patents per 1000 inhabitants	0.00280*	0.00339*	0.00863***	0.0101***	0.00863***	0.00829***	0.00849***	0.00862***
	(0.00153)	(0.00184)	(0.00295)	(0.00273)	(0.00287)	(0.00266)	(0.00277)	(0.00255)
Dist. to land grant colleges	0.00354**	0.00312*	0.00355**	0.00367***	0.00339**	0.00342**	0.00363**	0.00283**
	(0.00171)	(0.00167)	(0.00133)	(0.00133)	(0.00134)	(0.00133)	(0.00137)	(0.00127)
Controls:								
Population:	X	X	✓	✓	✓	✓	✓	✓
Education:	X	X	X	✓	✓	X	✓	✓
Tertiary education:	X	X	X	X	X	✓	✓	✓
State FE :	X	X	X	X	X	X	X	✓

All regressions have 1,904 observations except for column 1 that has 2,380. Robust standard errors clustered at the state level in parenthesis. Coefficients in Panel A are to be interpreted "per 1000".

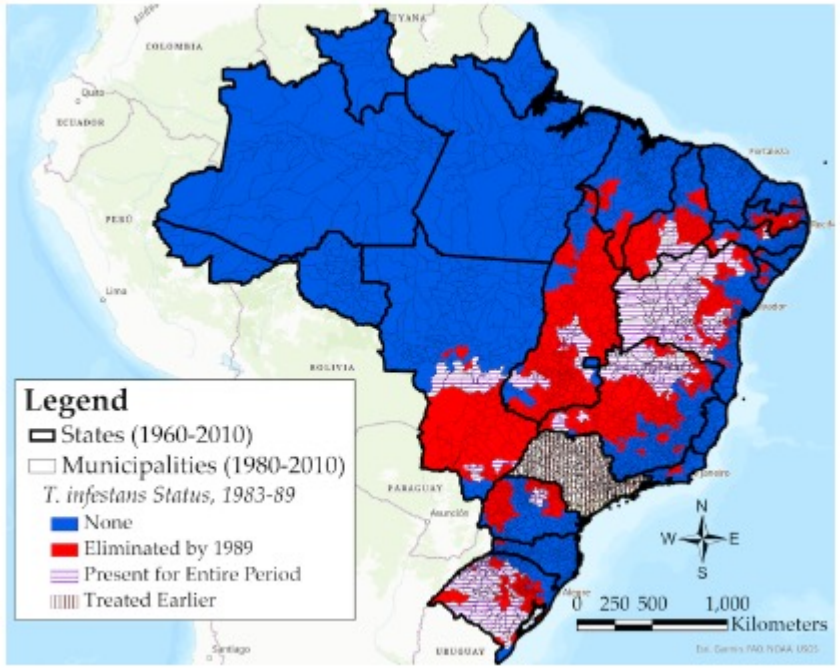
Elite Persistence: Colombia and Venezuela

- Networks of banking and manufacturing elite in Antioquia, Colombia (Mejia, 2022) following Hirschman (1968) and Twinam (1982)
- Conflict and democracy in Colombia (Ferguson and Vargas, 2022)
- Intra-elite conflict in Venezuela (Kronick and Rodriguez, 2022)

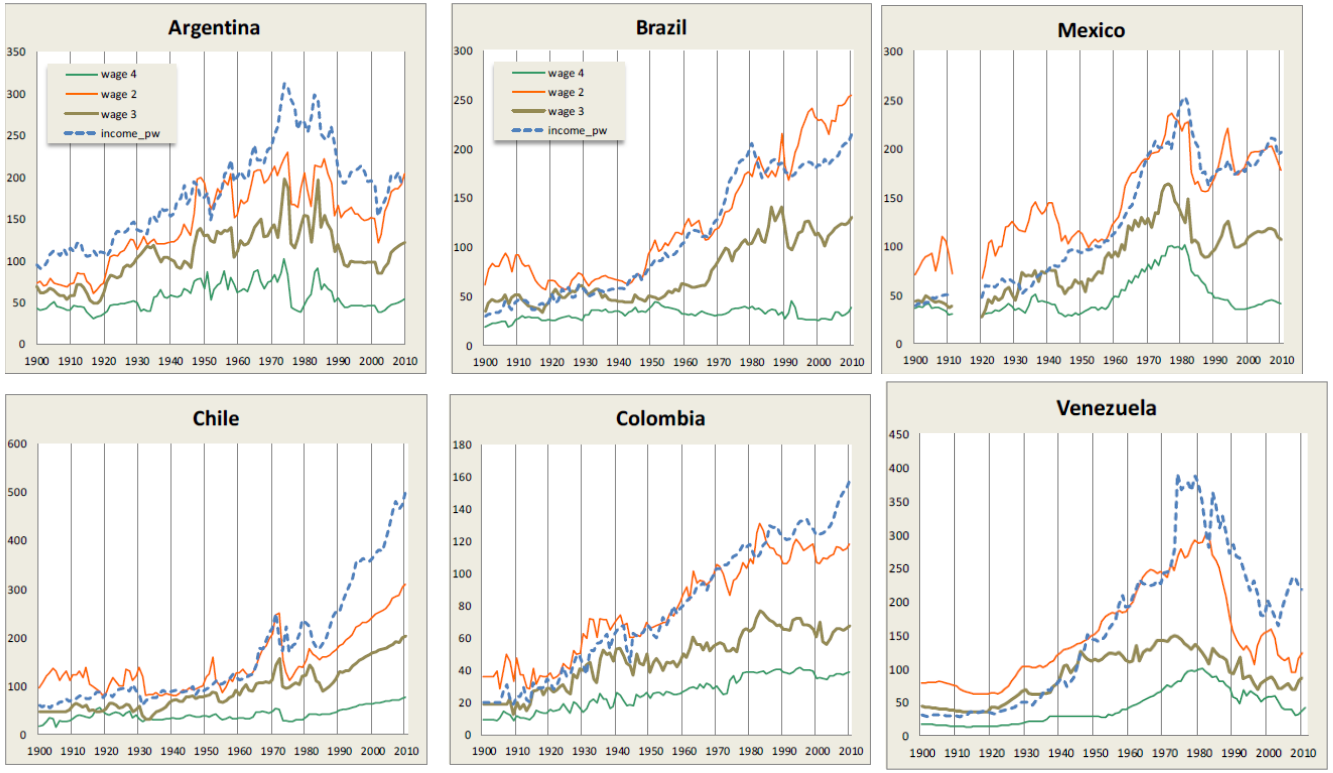


Health Inequality and Wages

Chagas in Brazil: Schneider and Montero (2022)



Wage Dispersion in Latin America: Astorga (2015)



Extensions and Replications

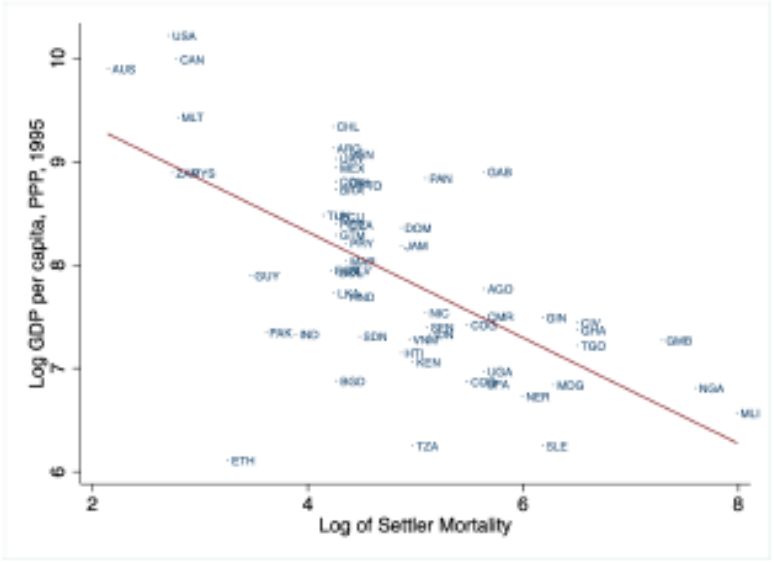
- Acemoglu, Johnson and Robinson (2001): Inequality instead of income, national level, focusing on Latin America
- Bruhn and Gallego (2012): inequality and institutions, sub-national
- Rocha, Ferraz and Soares (2017): inequality and settlements instead of literacy and years of schooling, Sao Paulo
- Maloney and Valencia (2016): inequality and slavery, population density and inequality, sub-national

Settler Mortality, Income and Inequality

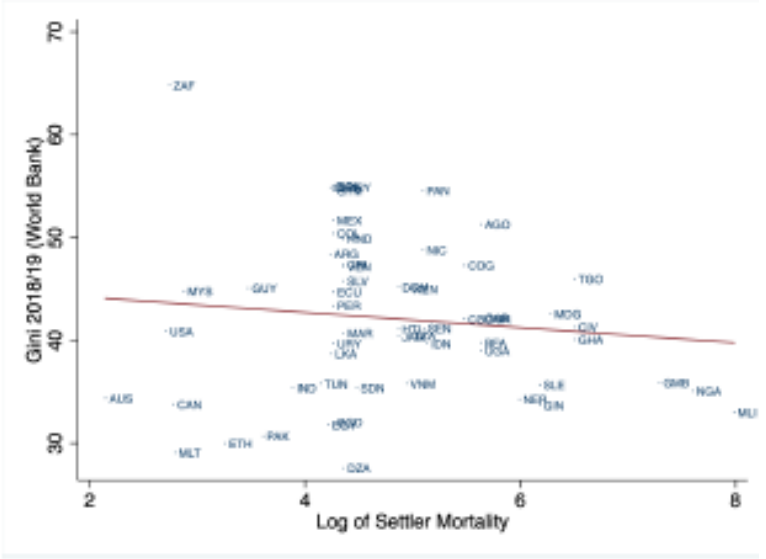
AJR 2001

Figure 1: Log settler mortality and inequality

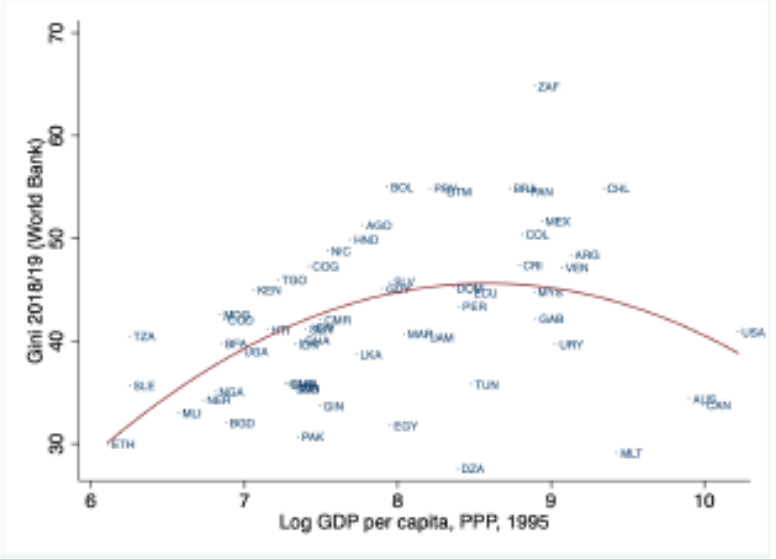
Kuznets



(a) AJR original figure (replicated)



(b) Log settler mortality & GINI coefficient



(c) Income on Inequality (quadratic)

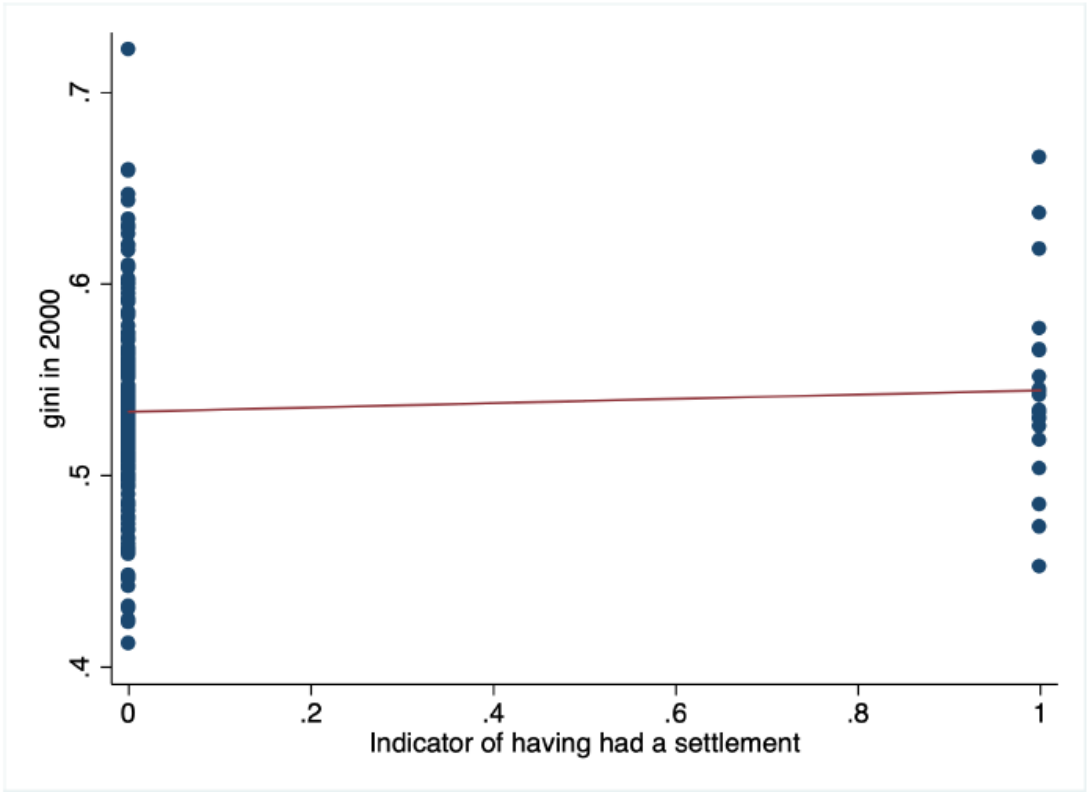
Good, Bad and Ugly Institutions and Inequality: Bruhn and Gallego (2012)

Table 4: "Good, Bad and Ugly" Colonial Activities & Inequality

Dependent variable: log GINI coefficient	(1)	(2)	(3)	(4)	(5)
Good activities dummy	0.00567	0.00265	0.00167	0.000608	0.00306
	(0.0186)	(0.0154)	(0.0145)	(0.0144)	(0.0144)
Bad activities dummy	0.0409*	0.0351**	0.0328*	0.0168	
	(0.0241)	(0.0170)	(0.0178)	(0.0181)	
Ugly activities dummy	0.0156	0.00835	0.00551	-0.00542	-0.00718
	(0.0256)	(0.0191)	(0.0199)	(0.0201)	(0.0208)
Observations	268	268	268	268	268
R-squared	0.724	0.725	0.728	0.738	0.740
Controls:					
Pre-colonial population density:	X	✓	✓	✓	✓
Weather:	X	X	✓	✓	✓
Geographical:	X	X	X	✓	✓
Mining & Plantation dummies :	X	X	X	X	✓

All regressions include country fixed effects and standard errors clustered at the pre-colonial population dummy level. Weather controls are: average temperature and total rainfall (linear and squared). Geographical controls are altitude (linear and squared) and a dummy of being landlocked.

Migration and Inequality in Brazil: Ferraz et al. (2007)



Dependent variable: GINI coefficient				
	(1)	(2)	(3)	(4)
Settlement indicator	0.0112	0.00444	0.0113	0.00601
	(0.0115)	(0.0116)	(0.0119)	(0.0114)
Observations	200	200	200	200
R-squared	0.005	0.186	0.048	0.200
Controls:				
Geography	*X*	✓	*X*	✓
Historic	*X*	*X*	✓	✓

Robust standard errors are in brackets, clustered at the 1872 census boundaries. All columns report the results from OLS regressions. Geographic controls are (distance to the capital, latitude, longitude, elevation, and indicators for different types of soil). Historic controls are (presence of railway, share of foreigners, share of slaves, share of literate population, share of children attending school, population density, total number of workers in public administration and legal professions relative to total population, share of workers in agriculture, manufacturing, services, and retail computed over total number of occupied workers) all measured in 1872. All variables are computed according to the 1920 census boundaries.

Maloney and Valencia (2016): Pre-colonial Population Density and Inequality

Income Distribution (Pooled)

	OLS	Between	Within FE	Within FE	Within FE
Log pre-colonial density	0.006	0.003	0.002	−0.002	−0.003
	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)
Log present density				0.006***	0.003
				(0.00)	(0.00)
Income				−0.03**	−0.02**
				(0.01)	(0.01)
Agriculture					0.02
					(0.01)
Rivers					−0.006
					(0.01)
Distance to coast					−0.02
					(0.06)
Temperature					0.002*
					(0.00)
Altitude					0.01**
					(0.00)
Rainfall					0.003
					(0.01)
Ruggedness					0.0002
					(0.00)
Malaria					−0.004
					(0.00)
Constant	0.5***	0.5***	0.5***	0.7***	0.7***
	(0.03)	(0.05)	(0.01)	(0.12)	(0.10)
N	260	260	260	260	256
R^2	0.023	−0.091	0.002	0.044	0.061

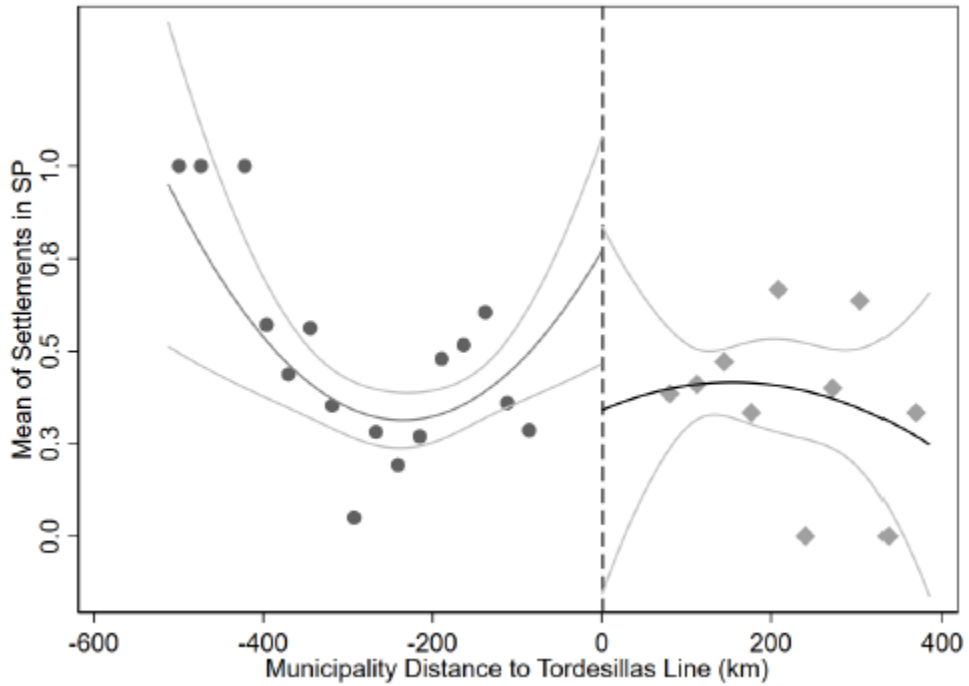
Maloney and Valencia (2016): Pre-colonial Population Density and Slavery

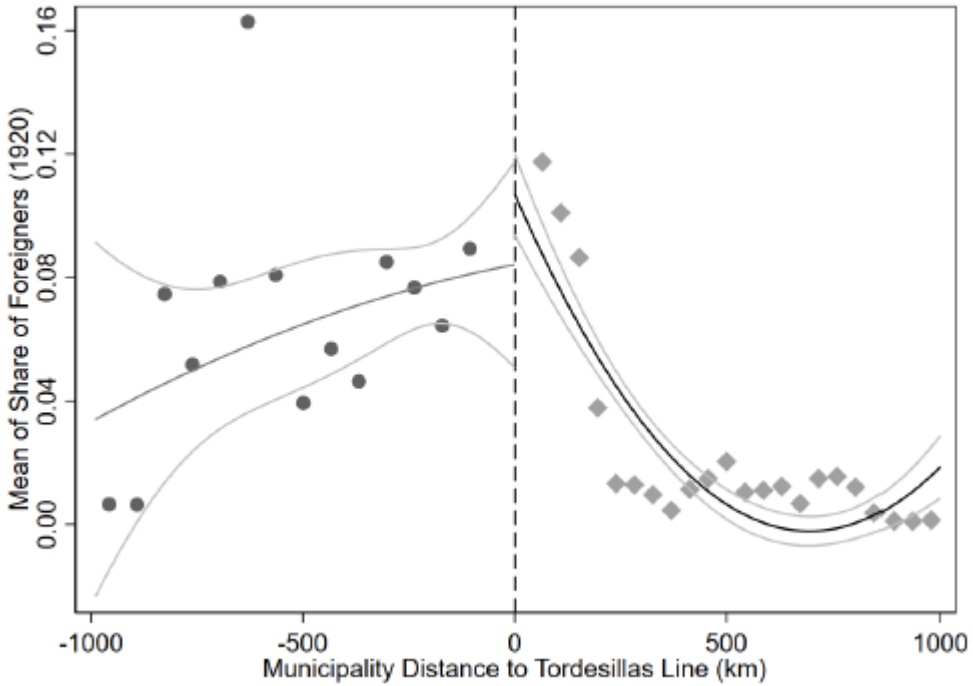
Dependent variable: GINI coefficient						
	(1)	(2)	(3)	(4)	(5)	(6)
Pre-colonial density	0.0584	-0.0746	-0.106	0.0411	-0.174	0.0920
	(0.165)	(0.159)	(0.152)	(0.180)	(0.223)	(0.292)
Brazil	0.153***	0.157***	0.122***	0.0994***	0.122***	0.0996***
	(0.00640)	(0.00790)	(0.0163)	(0.0180)	(0.0162)	(0.0186)
Colombia	0.0814***	0.0906***	0.0906***	0.0405*	0.0937***	0.0372
	(0.0148)	(0.0143)	(0.0140)	(0.0221)	(0.0169)	(0.0281)
South	0.0194***	0.0169***	-0.00538	-0.0129	-0.00386	-0.0136
	(0.00520)	(0.00636)	(0.0106)	(0.0122)	(0.0104)	(0.0125)
Slavery			0.000670***	0.000259	0.000609**	0.000281
			(0.000240)	(0.000272)	(0.000235)	(0.000278)
Slavery × population					0.00287	-0.00184
					(0.00373)	(0.00511)
Agriculture				0.0117		0.0139
				(0.0239)		(0.0252)
Rivers				0.00783		0.00750
				(0.00700)		(0.00720)
Distance to coast				0.0769**		0.0781**
				(0.0380)		(0.0374)
Temperature				0.00185*		0.00189
				(0.00109)		(0.00114)
Altitude				0.00623		0.00628
				(0.00586)		(0.00600)
Rainfall				0.00652**		0.00682**
				(0.00320)		(0.00334)
Ruggedness				-0.000354		-0.000402
				(0.000736)		(0.000705)
Malaria				0.00174		0.00165
				(0.00311)		(0.00314)
Observations	97	75	75	75	75	75

Conclusions

- Historical roots of Latin America's high level of inequality
- Stress colonial origins and factor endowments more than post-independence factors
- Slavery as a determinant of income and inequality
- Central role of land reform, redistribution and education
- Empirical replications: it is hard to shock inequality historically, using some of the common proxies in the literature
- Role for policy in a "deep rooted" continent

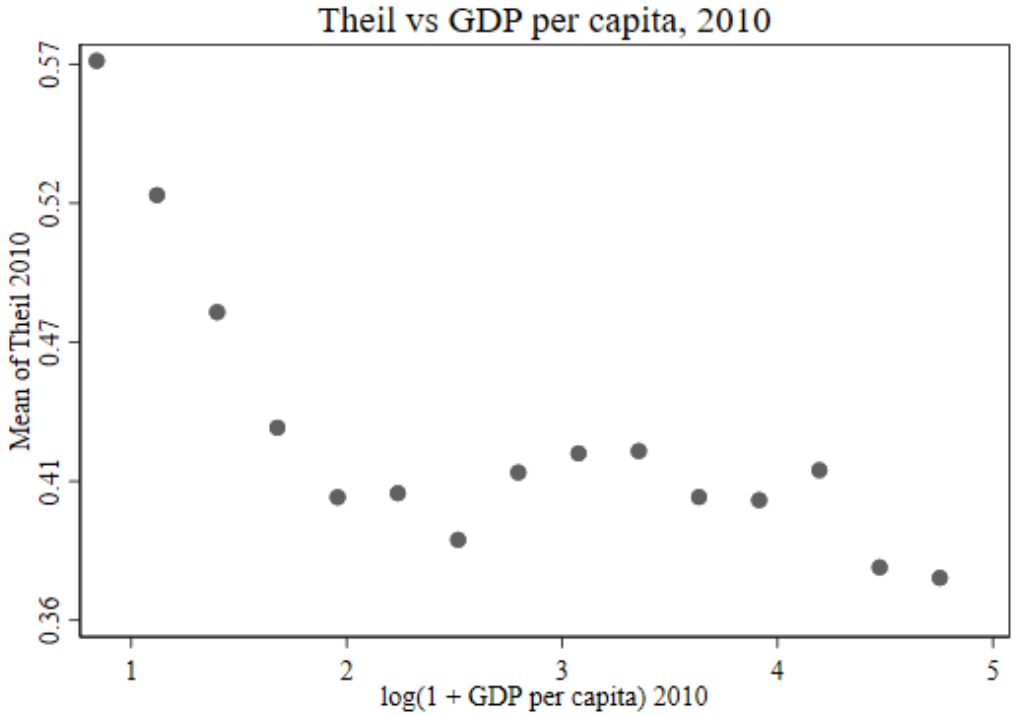
Migration and Slavery in Brazil: Laudares and Valencia (2022)



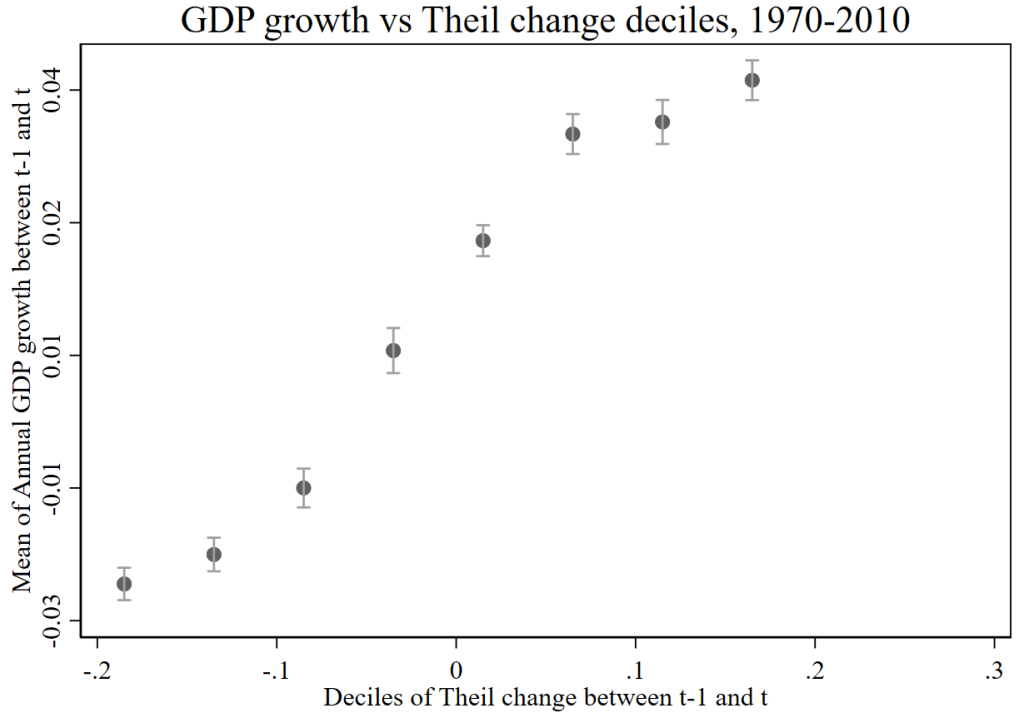


Inequality and Income in Brazil: Laudares and Valencia Caicedo (2022)

2010: Theil vs. GDP



1970-2010 (by Theil change deciles)

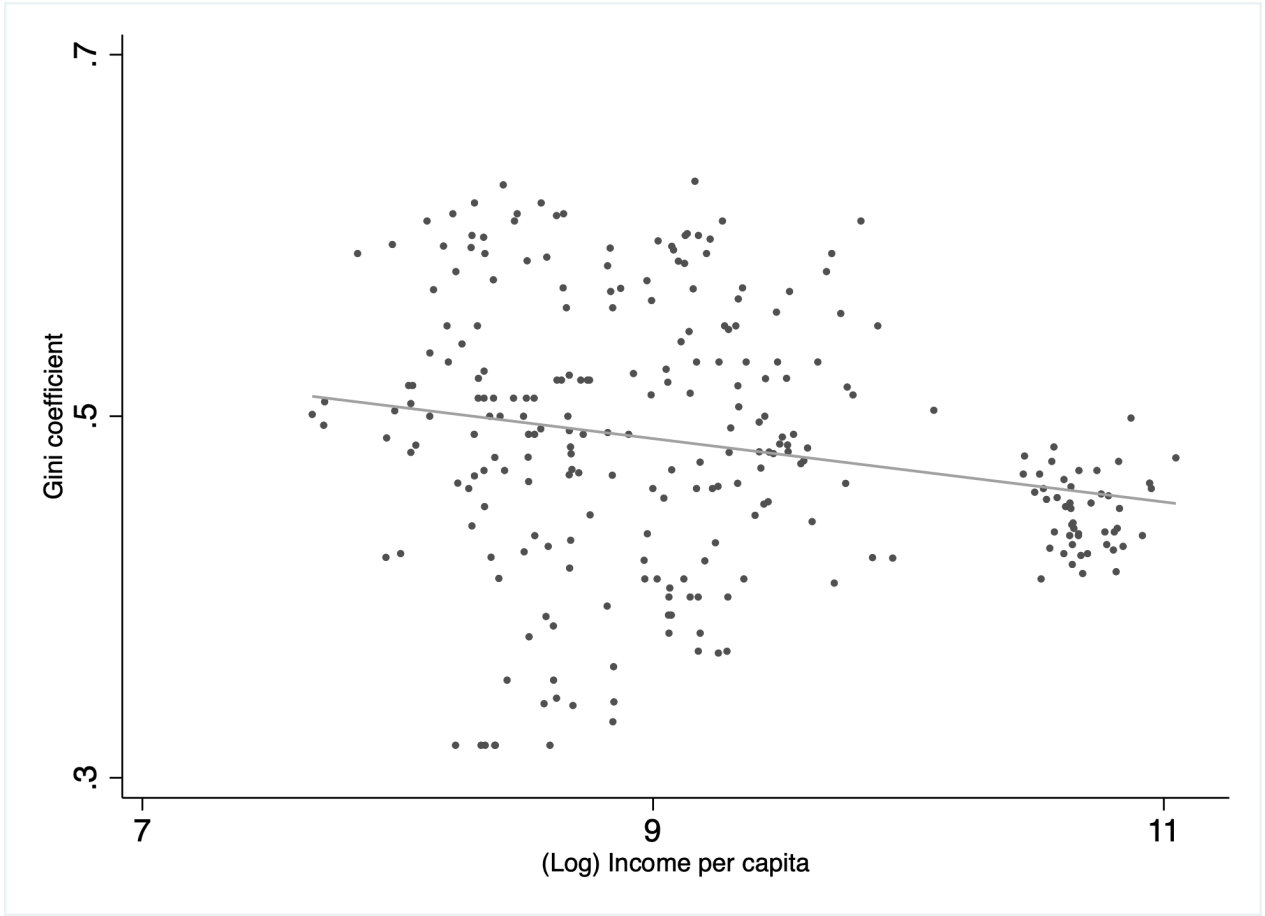


Maloney and Valencia (2016): Pre-colonial population density and slavery

Current Income and Slavery (Brazil, Colombia and US)

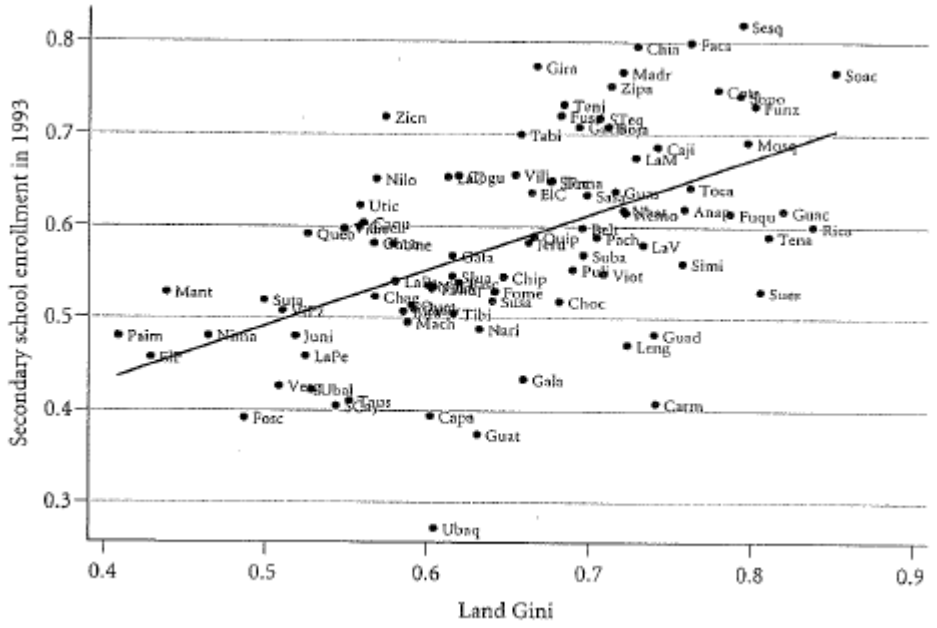
	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS
Pre-colonial density	2.9**	1.9	2.6**	5.5***	4.9***
	(1.16)	(1.33)	(1.27)	(1.45)	(1.65)
Brazil	−1.9***	−2.0***	−1.6***	−1.6***	−1.4***
	(0.09)	(0.11)	(0.21)	(0.20)	(0.21)
Colombia	−2.5***	−2.4***	−2.4***	−2.6***	−2.4***
	(0.07)	(0.09)	(0.08)	(0.08)	(0.19)
South	−0.09**	−0.1***	0.2	0.09	0.07
	(0.04)	(0.04)	(0.13)	(0.13)	(0.11)
Slavery			−0.009**	−0.006	− 0.005
			(0.00)	(0.00)	(0.00)
Slavery × population				−0.1**	−0.1***
				(0.05)	(0.05)
Agriculture					−0.2
					(0.17)
Rivers					−0.02
					(0.05)
Distance to coast					0.05
					(0.41)
Temperature					−0.0008
					(0.01)
Altitude					0.06
					(0.08)
Rainfall					−0.03
					(0.03)
Ruggedness					−0.005
					(0.01)
Malaria					−0.06
					(0.04)
Constant	10.7***	10.7***	10.7***	10.7***	10.9***
	(0.02)	(0.03)	(0.03)	(0.02)	(0.47)
N	105	78	78	78	78
R^2	0.937	0.940	0.947	0.953	0.954

Income and Inequality in the Americas: sub-national (Maloney and Valencia, 2016)

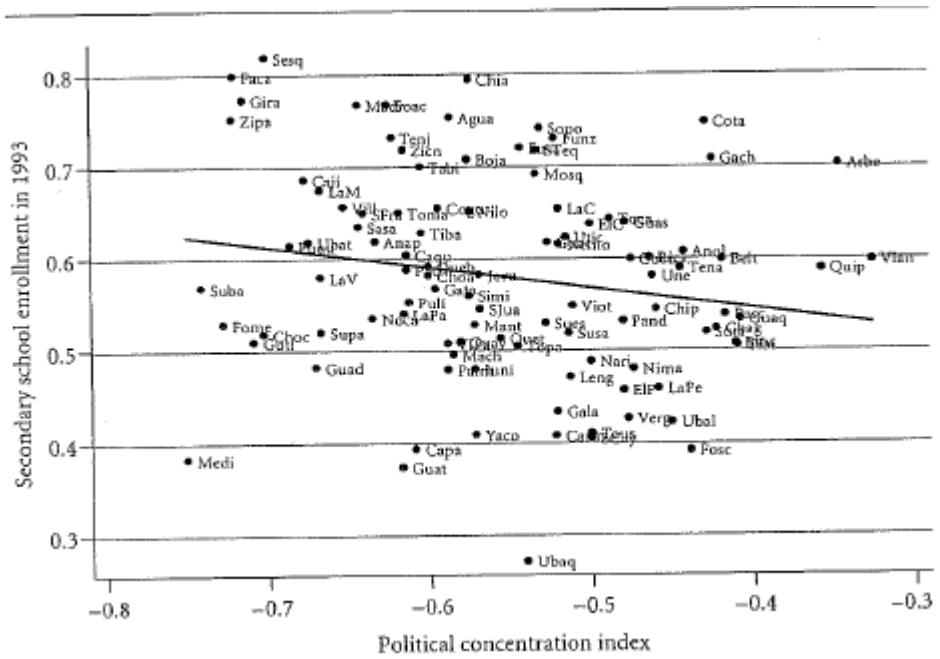


Acemoglu et al. (2007): Cundinamarca, Colombia, Economic vs. Political Inequality

Economic Inequality and Schooling

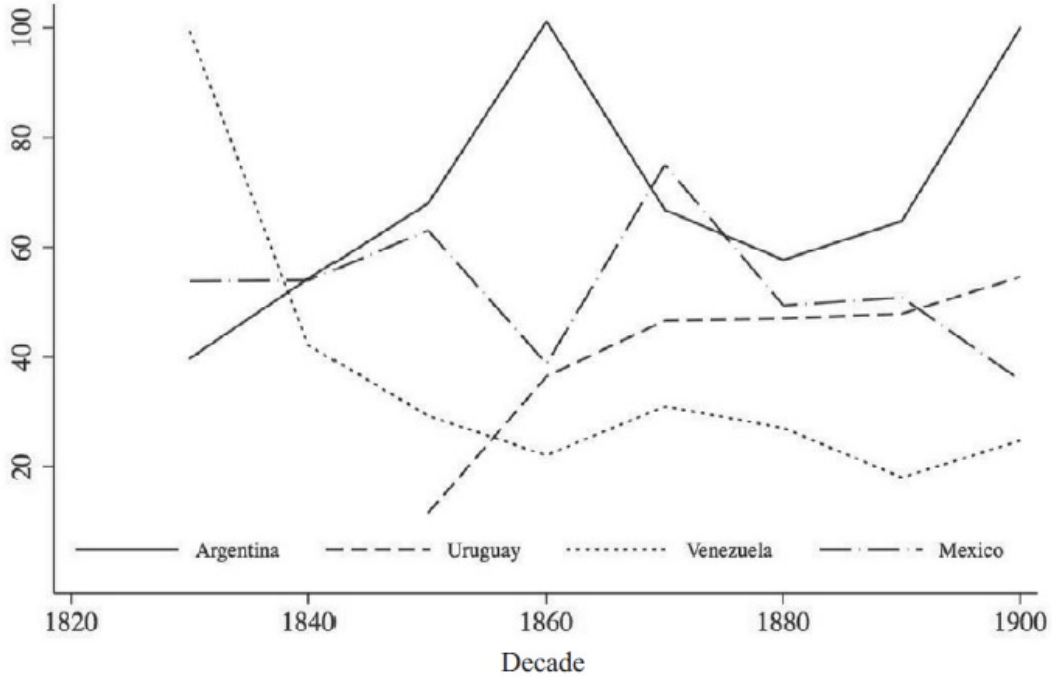


Political Inequality and Schooling



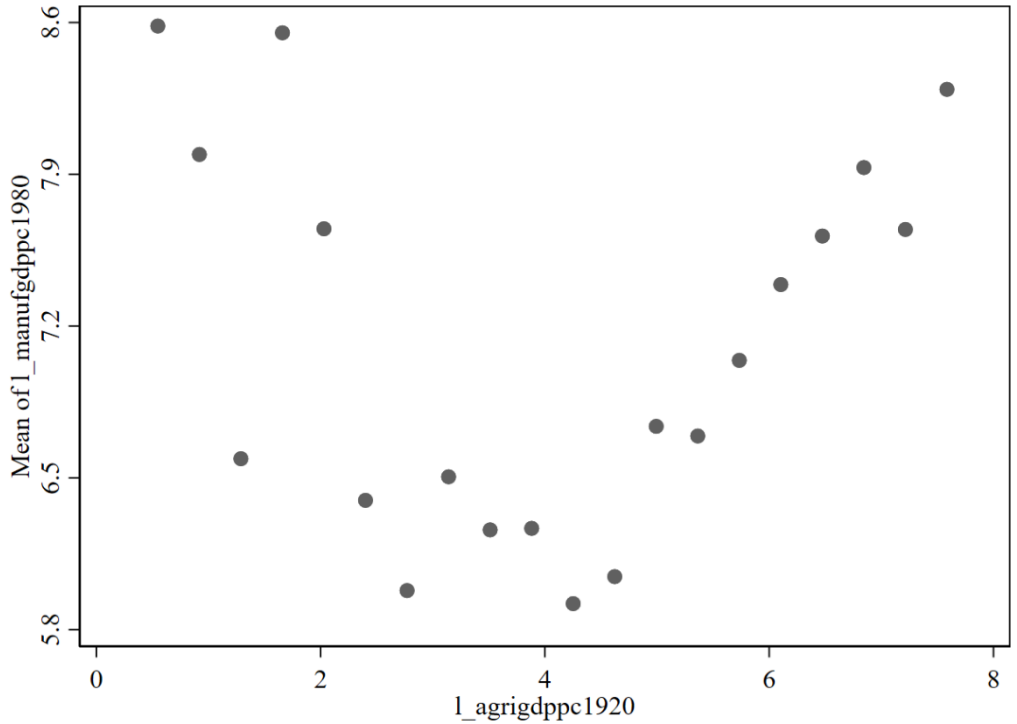
Post-independence Latin America

- Independence: revolutionary change / Persistence?
- Suffrage extension: E&S
- Coatsworth (2008): not enough?
- Trade and commodity booms (Arroyo Abad, 2013)
- Financing education (Musacchio et al., 2014)
- Church wealth expropriation (Uribe Castro, 2019)

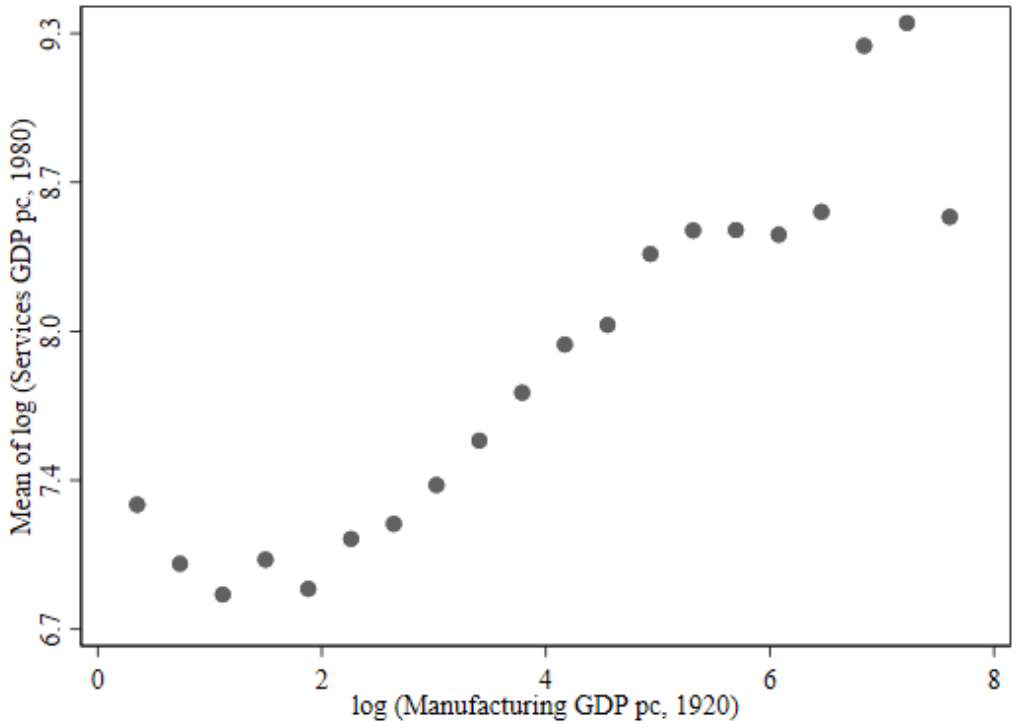


Structural Transformation in Brazil

Manufacturing in 1980 vs. Agriculture in 1920



Services in 1980 vs. Manufacturing in 1920



Mechanisms: Capitanias and Land Inequality

	(1)	(2)	(3)	(4)
Dependent Variable: Land Inequality in 1920				
Number of Slaves over total population	0.0532	0.197*	0.286**	0.286*
	(0.0662)	(0.113)	(0.137)	(0.140)
Observations	767	767	724	724
R-squared	0.001	0.223	0.303	0.303
Capitania Cluster	No	No	No	Yes
State FE	No	Yes	Yes	Yes
Geographic Variables	No	No	Yes	Yes