

Political Power, Elite Control, and Long-Run Development: Evidence from Brazil

Ferraz, Finan, and Martinez-Bravo (2020)

Presented by Alper Sukru Gencer

New York University

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Overview

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 - mechanisms: voting system and state-sponsored credits

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- When political power is narrowly distributed, the political elites use extractive institutions to concentrate economic rents and sustain their power.
- Changes in the distribution of political power can alter the political equilibrium and affect long-run economic development.
- However, substantiating these predictions empirically has been challenging.

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- Political competition increased at the local level both during and after the dictatorship.
- This paper exploits the dictatorship as a shock to the political power of traditional elites to examine the impact of changes in political power on long-run development.

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- The reversal reflects changes in local-level political competition that occurred when the military tried to centralize authority out of the hands of the traditional elites.
- Higher levels of initial political concentration are associated with better governance, higher provision of local public goods, lower levels of corruption, and higher incomes.

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- Weakened power of traditional political families in favor of new local entrants supported by the military.

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- Traditional families dominated politics at the local level, controlling economic resources and supplanting political parties.

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- Military reforms increased local competition and challenged traditional elites.

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 - Institutional Acts expanded executive power, abolished existing parties, and introduced a two-party system.
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- Brazil's transition back to democracy led to more political contestation, less corruption, better public goods provision, and higher income levels.

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- Main Independent Variable: Herfindahl index to measure political concentration before the military dictatorship

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- Average political concentration prior to the dictatorship was 0.325, implying that the effective number of traditional elites was 3.08 families

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 - In 73% of municipalities, at least one traditional family survived the transition to a dictatorship
 - In 44% of our municipalities, a family was able to survive both transitions in and out of the dictatorship

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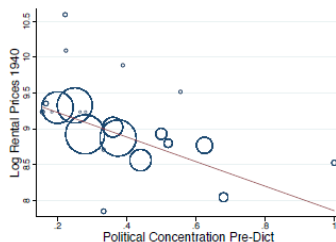
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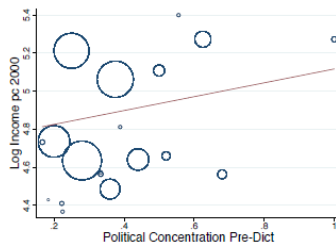
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Descriptive Evidence



(a) Income Proxy in 1940 and Pre-Dictatorship Political Concentration



(b) Income per capita in 2000 and Pre-Dictatorship Political Concentration

Results

Table 3: Political Concentration and Long-Run Development

	Contemporaneous Relationships			Reversal Results	
	(1) Log Rental Prices 1940	(2) Share of Workers Non-Agric. 1940	(3) Log Income pc 2000	(4) Log Income pc 2000	(5) Log Income pc 2000
Political Concentration:					
Pre-dictatorship	-0.637*** (0.220)	-0.056* (0.034)		0.117* (0.070)	0.182*** (0.067)
Post-dictatorship			-0.257*** (0.057)		
Number of observations	1072	998	1072	1072	1072
R ²	0.69	0.38	0.73	0.72	0.74
Mean of Dep. Var	9.013	.615	4.868	4.868	4.868
Geographic Controls	✓	✓	✓	✓	✓
Demographic Controls 1940	✓	✓	✓	✓	✓
State FE	✓	✓	✓	✓	✓
Socio-Economic Char. 1940					✓

Notes: The unit of observation is the municipality. Each column corresponds to a separate regression where dependent variable is displayed in the column heading. All specifications include the following controls: geographic controls (longitude, latitude and distance to the state capital); demographic controls in 1940 (log population, share of protestants, share of black population, and share of foreigners); and state fixed effects. Column 5 additionally controls for socio-economic characteristics in 1940 (share of non-agricultural population and a quartic on log rental prices). Standard errors clustered at the municipalities in existence in 1940 shown in parenthesis. There are 688 clusters. *** p<0.01, ** p<0.05, *p<0.1.

Figure 4: Results

Robustness with Various Controls

Table 4: Political Concentration and Long-Run Development: Robustness

	Log Income per Capita 2000				
	(1)	(2)	(3)	(4)	(5)
Political Concentration:					
Pre-dictatorship	0.185*** (0.067)	0.176*** (0.066)	0.170** (0.067)	0.188*** (0.066)	0.228*** (0.070)
Number of observations	1059	1059	1059	1059	848
R^2	0.74	0.75	0.74	0.74	0.71
Mean of Dep. Var	4.872	4.872	4.872	4.872	4.988
Baseline controls	✓	✓	✓	✓	✓
State Intercepts	✓	✓	✓	✓	✓
Soil Quality		✓			
Agriculture Production			✓		
Political Controls				✓	
Land Gini					✓

Notes: The unit of observation is the municipality. The dependent variable is log income per capita in 2000. All the specifications include baseline controls, which are those included in specification in Table 3, column 5. Each specification adds additional controls as indicated in the table. Soil quality is measured by the percentage area in a municipality with regular and good soil types. Agricultural Production corresponds to the amount of sugar and cotton produced per farm in 1940. Political Controls correspond to indicators for whether the party of the last mayor before the dictatorship was a member of UDN or PTB (the omitted category corresponds to PSD). Land Gini corresponds to the gini coefficient of land allocation in 1940. Standard errors clustered at the municipalities in existence in 1940 shown in parenthesis. There are 681 clusters in columns 1 to 4 and 608 clusters in column 5. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Figure 5: Robustness

Results: Effects on Political Competition and Share of Non-Traditional Families

Table 5: Effects on Political Competition and Share of Non-Traditional Families

	Political Concentration of Families		Average Family-Level Reelection Rate			Herfindahl Index of Candidate Concentration		Share of Non-Traditional Families	
	Dict (1)	Post-Dict (2)	Pre-Dict (3)	Dict (4)	Post-Dict (5)	Mayor 2000 (6)	Councilor 2000 (7)	Dict (8)	Post-Dict (9)
Political Concentration:									
Pre-dictatorship	0.088*** (0.033)	0.047 (0.040)	0.825*** (0.046)	0.147*** (0.046)	0.073 (0.061)	-0.059** (0.026)	-0.015*** (0.004)	-0.049 (0.065)	0.084 (0.070)
Number of observations	1072	1072	1072	1072	1072	1072	1072	1072	1072
R ²	0.098	0.118	0.473	0.057	0.067	0.069	0.298	0.089	0.093
Mean of Dep. Var.	0.339	0.43	0.089	0.082	0.091	0.495	0.037	0.709	0.807
Baseline controls	✓	✓	✓	✓	✓	✓	✓	✓	✓
State Intercepts	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes: The unit of observation is the municipality. The dependent variable in columns 1 and 2 corresponds to the Herfindahl index of political concentration of families for the dictatorship and post-dictatorship period, respectively. The dependent variable in columns 3, 4 and 5 corresponds to the average reelection rate of incumbent families for the pre-dictatorship, dictatorship, and post-dictatorship period, respectively. The dependent variable in columns 6 and 7 corresponds to the Herfindahl index of concentration computed using the vote shares of different parties in the 2000 election for mayor and local council, respectively. The dependent variables in columns 8 to 9 correspond to the share of non-traditional families as described in the column headings. Standard errors clustered at the municipalities in existence in 1940 shown in parenthesis. There are 688 clusters.

*** p<0.01, ** p<0.05, *p<0.1.

Figure 6: Robustness

Results: Effects on Local Governance

Table 6: Effects on Local Governance

	Literacy Rate 2000 (1)	Infant Mortality 2000 (2)	Num. Corrupt Irregularities (3)
Political Concentration:			
Pre-dictatorship	0.028** (0.012)	-17.479** (7.721)	-0.381** (0.191)
Number of observations	1072	930	172
R^2	0.829	0.023	0.621
Mean of Dep. Var.	0.776	33.738	4.219
Baseline controls	✓	✓	✓
State Intercepts	✓	✓	✓

Notes: The unit of observation is the municipality. The dependent variables in columns 1 to 3 correspond to different measures of quality of governance described in the column headings. The number of observations vary because of missing information in the dependent variable. All the specifications include baseline controls, which are those included in specification in Table 3, column 5. Standard errors clustered at the municipalities in existence in 1940 shown in parenthesis. There are 688 clusters in column 1. There are 647 clusters in column 2 and 155 in column 3. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Figure 7: Robustness

Mechanisms 1: Effects on the Adoption of Sublegenda Voting System

Table 7: Effects on the Adoption of *Sublegenda* Voting System

	During Dictatorship		
	Any Sublegenda (1)	ARENA Sublegenda (2)	MDB Sublegenda (3)
Political Concentration:			
Pre-dictatorship	0.215* (0.121)	0.263** (0.128)	0.087 (0.082)
Number of observations	1045	1045	1045
R^2	0.036	0.038	0.076
Mean of Dep. Var.	0.734	0.676	0.107
Baseline controls	✓	✓	✓
State Intercepts	✓	✓	✓

Notes: The unit of observation is the municipality. The dependent variables are indicators for whether municipalities adopted the sublegenda system in the 1972 or 1976 elections. The dependent variable in column 1 takes value 1 if a sublegenda was adopted, regardless of the party that adopted it. The dependent variable in column 2 (3) takes value 1 if the ARENA (MDB) party adopted a sublegenda in the 1972 or 1976 election. The number of observations vary because of missing information in the dependent variable. All the specifications include baseline controls, which are those included in specification in Table 3, column 5. Standard errors clustered at the municipalities in existence in 1940 shown in parenthesis. There are 667 clusters. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Mechanisms 1: Sublegenda and ARENA's Vote Share

Table A5: Sublegenda and ARENA's Vote Share

	ARENA vote share 1972		ARENA vote share 1976		
	(1)	(2)	(3)	(4)	(5)
Sublegenda	0.119*** (0.027)		0.182*** (0.030)		
ARENA Sublegenda		0.198*** (0.021)		0.218*** (0.023)	0.200*** (0.022)
MDB Sublegenda		-0.319*** (0.033)		-0.196*** (0.026)	-0.142*** (0.026)
ARENA vote share in 1972					0.345*** (0.059)
Number of observations	277	277	277	277	274
R ²	0.187	0.461	0.220	0.455	0.553
Mean of Dep. Var.	0.722	0.722	0.731	0.731	0.733
Baseline controls	✓	✓	✓	✓	✓
State Intercepts	✓	✓	✓	✓	✓

Notes: The unit of observation is the municipality. The sample is restricted to the municipalities in Ceará and Paraíba, for which we have information on vote shares of all contestants. The dependent variable in columns 1 and 2 is the vote share of the ARENA party in the 1972 election. The dependent variable in columns 3 and 4 is the vote share of the ARENA party in the 1976 election. This information was only available for 277 municipalities. All the specifications include baseline controls, which are those included in specification in Table 3, column 5. Standard errors clustered at the municipalities in existence in 1940 shown in parenthesis. There are 183 clusters. *** p<0.01, ** p<0.05, *p<0.1.

Figure 9: Robustness

Mechanisms 1: Effects on Type of Political Contestation

Table A6: Effects on Type of Political Contestation

	Type of Contestants in ARENA party 1976 Election		
	Only traditional elites (1)	Only non-traditional elites (2)	Traditional and Non-traditional elites (3)
Panel A. All Elections			
Political Concentration	-0.393**	-0.110	0.502*
Pre-dictatorship	[0.184]	[0.326]	[0.298]
Observations	340	340	340
R-squared	0.050	0.111	0.088
Mean	0.144	0.529	0.326
Panel B. Elections with ARENA sublegenda			
Political Concentration	-0.560***	-0.122	0.682*
Pre-dictatorship	[0.196]	[0.379]	[0.370]
Observations	256	256	256
R-squared	0.124	0.170	0.099
Mean	0.129	0.465	0.406
Panel C. Elections without ARENA sublegenda			
Political Concentration	0.186	-0.026	
Pre-dictatorship	[0.536]	[0.575]	
Observations	84	84	
R-squared	0.188	0.207	
Mean	0.190	0.726	

Figure 10: Robustness

Mechanisms 2: Effects on Agricultural Credit and Entry of Agricultural Businesses in 1980

Table 8: Effects on Agricultural Credit and Entry of Agricultural Businesses in 1980

	Log Credit per Farm		Number of Farms	Average Farm Size
	Govt (1)	Non-Govt (2)	(3)	(4)
Political Concentration:				
Pre-dictatorship	0.666*** (0.232)	0.464 (0.314)	664.111*** (227.583)	-41.183 (35.607)
Number of observations	1056	1056	1072	1071
R^2	0.311	0.230	0.329	0.261
Mean of Dep. Var.	3.629	1.317	1023.949	102.116
Baseline controls	✓	✓	✓	✓
State Intercepts	✓	✓	✓	✓

Notes: The unit of observation is the municipality. The dependent variables are obtained from the 1980 agricultural census and are described by the column headings. The number of observations vary because of missing information in the dependent variables. All specifications include baseline controls, which are those included in Table 3, column 5. Standard errors clustered at the municipalities in existence in 1940 shown in parenthesis. There are 680 clusters in columns 1 and 2, and 688 clusters in columns 3 and 4. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Figure 11: Robustness

Mechanisms 3: Effects on Agricultural Modernization in 1980

Table 9: Effects on Agricultural Modernization in 1980

	Agricultural Inputs			Sector of Employment			
	Tractors (1)	Electricity (2)	Fertilizer (3)	Agriculture (4)	Manufacturing (5)	Services (6)	Commerce (7)
Political Concentration:							
Pre-dictatorship	0.022 (0.015)	0.018 (0.025)	0.115*** (0.043)	-0.043 (0.042)	0.003 (0.029)	0.016* (0.008)	0.024** (0.011)
Number of observations	1071	1071	1071	957	957	957	957
R ²	0.486	0.431	0.813	0.346	0.295	0.320	0.265
Mean of Dep. Var.	0.057	0.110	0.444	0.870	0.065	0.023	0.042
Baseline controls	✓	✓	✓	✓	✓	✓	✓
State Intercepts	✓	✓	✓	✓	✓	✓	✓

Notes: The unit of observation is the municipality. The dependent variables are obtained from the 1980 agricultural census and are described by the column headings. The number of observations vary because of missing information in the dependent variables. All specifications include baseline controls, which are those included in Table 3, column 5. Standard errors clustered at the municipalities in existence in 1940 shown in parenthesis. There are 688 clusters in columns 1 to 3; and 655 clusters in columns 4 to 7. *** p<0.01, ** p<0.05, *p<0.1.

Figure 12: Robustness

Mechanisms 3: Robustness to Controlling for Agricultural Modernization

Table 10: Robustness to Controlling for Agricultural Modernization

	Log Income Per Capita 2000		
	(1)	(2)	(3)
Political Concentration:			
Pre-dictatorship	0.175*** (0.068)	0.147** (0.066)	0.163** (0.066)
<i>Modernization Variables:</i>			
Δ Fertilizer 1980-1960		0.099* (0.052)	
Δ Tractors 1980-1960		0.782*** (0.183)	
Δ Electricity 1980-1960		0.515*** (0.109)	
Δ Agriculture 1980-1970			-1.159*** (0.148)
Δ Commerce 1980-1970			0.437 (0.617)
Δ Services 1980-1970			1.293* (0.740)
Number of observations	946	946	946
R ²	0.730	0.754	0.765
Mean of Dep. Var.	4.923	4.923	4.923
Baseline controls	✓	✓	✓
State Intercepts	✓	✓	✓

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 - OLS without full description of DGP and DAG

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- Estimates and numbers in the text and on tables sometimes are not the same.

References I

Ferraz, Claudio, Frederico Finan, and Monica Martinez-Bravo.
2020. "Political Power, Elite Control, and Long-Run
Development: Evidence from Brazil." National Bureau of
Economic Research.