

SUPPLEMENTARY MATERIAL

WHEN COETHNICITY FAILS

By Giuliana Pardelli and Alexander Kustov

World Politics

doi: 10.1017/S0043887121000241

Replication data are available at:

Pardelli, Giuliana, and Alexander Kustov 2022. "Replication data for: When Coethnicity Fails."
Harvard Dataverse, V 1. doi: 10.7910/DVN/LBJOAN.

Appendix A

Table A1: Summary Statistics

Statistic	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Afro-descendants % (2000)	0.46	0.25	0.004	0.23	0.68	0.99
Afro-descendants % (1980)	0.48	0.29	0.001	0.19	0.75	1.00
Afro-descendants % (1940)	0.36	0.25	0.005	0.12	0.57	0.93
Tax Revenues PC (logged, 2000)	2.55	1.16	0.00	1.66	3.35	8.90
Education Quality (2000)	4.93	2.07	0.11	3.03	6.77	10.00
Healthcare Quality (2000)	5.49	1.02	1.78	4.80	6.16	9.27
Access to Electricity (2000)	86.64	17.02	10.30	80.18	98.92	100.00
Access to Piped Water (2000)	66.75	29.14	0.04	41.69	93.54	100.00
Access to Garbage Collection (2000)	80.91	23.04	0.19	73.35	97.07	100.00
Tax Revenues PC (logged, 1923)	1.24	0.79	0	0.6	1.7	7
Number of Quilombos (logged)	1.11	1.38	0.00	0.00	1.95	5.79
Railroads Number (logged)	0.25	0.47	0.00	0.00	0.32	4.68
Geographic Remoteness (logged)	3.99	1.01	0.00	3.47	4.53	8.28
Area Size (logged)	6.20	1.28	1.06	5.32	6.94	11.99
Altitude	4.12	2.93	0.00	1.53	6.32	16.28
Rainfall	12.80	3.96	3.00	12.00	15.00	33.00
Sunshine	21.33	3.26	12.00	18.00	24.00	30.00
Distance to Coast (logged)	5.37	1.33	0.003	4.76	6.24	7.91
Distance to Capital (logged)	5.27	0.87	0.00	4.81	5.88	7.30
Longitude	-46.17	6.40	-72.90	-50.79	-41.35	-34.81
Latitude	-16.40	8.27	-33.69	-22.80	-8.43	4.60

Full Sample (n = 5505)

Table A2: Present Public Outcomes and Racial Demography as a Function of Past State Capacity (Accounting for Municipal Income Per Capita in 1920)

	Fiscal Capacity, 2000			Public Goods, 2000			Afro-descendants %, 2000		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Fiscal Capacity, 1923	0.592*** (0.085)	0.177*** (0.025)	0.214*** (0.028)	0.770*** (0.121)	0.144*** (0.038)	0.128** (0.040)	-0.937*** (0.026)	-0.115*** (0.019)	-0.095*** (0.022)
State FE	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Geographic controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
GDP PC, 1920 (log)	No	No	Yes	No	No	Yes	No	No	Yes
Observations	5,304	4,803	4,803	5,417	4,932	4,932	5,457	4,928	4,928
Adjusted R ²	0.271	0.612	0.614	0.221	0.804	0.804	0.189	0.785	0.785

All models are OLS regressions. For variable descriptions, see Appendix. Clustered standard errors are given in parentheses, ⁺p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table A3: Present Public Goods Outcomes and Afro-descendant Shares of Population

	Education, 2000		Health, 2000		Access to Basic Goods, 2000	
	(1)	(2)	(3)	(4)	(5)	(6)
Afro-descendants %, 2000	-0.617*** (0.021)	-0.255*** (0.019)	-0.222*** (0.016)	-0.100*** (0.020)	-0.628*** (0.016)	-0.257*** (0.020)
State FE	No	Yes	No	Yes	No	Yes
Geographic controls	No	Yes	No	Yes	No	Yes
Observations	5,457	4,928	5,457	4,928	5,369	4,889
Adjusted R ²	0.547	0.744	0.172	0.321	0.480	0.750

All models are OLS regressions. For variable descriptions, see Appendix. Clustered standard errors are given in parentheses, ⁺p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table A4: Present Public Goods Outcomes and Past State Capacity

	Education, 2000		Health, 2000		Access to Basic Goods, 2000	
	(1)	(2)	(3)	(4)	(5)	(6)
Fiscal Capacity, 1923	0.766*** (0.092)	0.073** (0.025)	0.079+ (0.041)	-0.097*** (0.027)	0.906*** (0.094)	0.249*** (0.035)
State FE	No	Yes	No	Yes	No	Yes
Geographic controls	No	Yes	No	Yes	No	Yes
Observations	5,505	4,971	5,505	4,971	5,417	4,932
Adjusted R ²	0.180	0.726	0.004	0.320	0.217	0.741

All models are OLS regressions. For variable descriptions, see Appendix. Clustered standard errors are given in parentheses, ⁺p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table A5: Present Public Goods Outcomes and Racial Demography as a Function of Past State Capacity (Alternative Measures)

	Public Goods, 2000		Afro-descendants %, 2000	
	(1)	(2)	(3)	(4)
<i>Panel A</i>				
Public Admin. Officials, 1920	0.063 (0.087)	0.109*** (0.019)	-0.061 (0.105)	-0.137*** (0.029)
Observations	5,417	4,932	5,457	4,928
Adjusted R ²	0.001	0.802	0.001	0.786
<i>Panel B</i>				
Railroads, 1920	0.467*** (0.064)	0.118*** (0.018)	-0.385*** (0.093)	-0.074* (0.030)
Observations	5,417	4,932	5,457	4,928
Adjusted R ²	0.061	0.803	0.024	0.784
<i>Panel C</i>				
Geographic Remoteness (Reverse Coded)	0.782*** (0.057)	0.242*** (0.030)	-0.763*** (0.073)	-0.095* (0.043)
Observations	5,135	4,683	5,162	4,670
Adjusted R ²	0.255	0.805	0.142	0.778
State FE	No	Yes	No	Yes
Geographic controls	No	Yes	No	Yes

All models are OLS regressions. For variable descriptions, see Appendix. Clustered standard errors are given in parentheses, ⁺p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table A6: Quilombos, Past State Capacity and Share of Afro-descendants

	Bureaucracy Presence 1872		Afro-descendants % 1872	
	(1)	(2)	(3)	(4)
Quilombo Presence	0.122 (0.074)	-0.092* (0.036)	0.131** (0.047)	0.109*** (0.029)
State FE	No	Yes	No	Yes
Geographic controls	No	Yes	No	Yes
Observations	5,465	4,935	5,461	4,933
Adjusted R ²	0.002	0.337	0.006	0.231

All models are OLS regressions. For variable descriptions, see Appendix. Clustered standard errors are given in parentheses, ⁺p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table A7: Public Outcomes and Racial Demography as a Function of Past State Capacity (excluding *Quilombo* Municipalities)

	Public Goods, 2000		Afro-descendants %, 2000	
	(1)	(2)	(3)	(4)
Fiscal Capacity, 1923	0.758*** (0.088)	0.129*** (0.027)	-0.926*** (0.123)	-0.115** (0.042)
State FE	No	Yes	No	Yes
Geographic controls	No	Yes	No	Yes
Observations	4,656	4,223	4,675	4,209
Adjusted R ²	0.219	0.804	0.187	0.776

All models are OLS regressions. For variable descriptions, see Appendix. Clustered standard errors are given in parentheses, *p<0.05; **p<0.01; ***p<0.001.

Table A8: Past and Present State Capacity

	Fiscal Capacity, 2000		Cadastral Map (binary), 2000	
	(1)	(2)	(3)	(4)
Fiscal Capacity, 1923	0.592*** (0.045)	0.177*** (0.031)	0.365*** (0.028)	0.106** (0.034)
State FE	No	Yes	No	Yes
Geographic controls	No	Yes	No	Yes
Observations	5,304	4,803	5,503	4,969
Adjusted R ²	0.271	0.612	0.030	0.140

All models are OLS regressions. For variable descriptions, see Appendix. Clustered standard errors are given in parentheses, +p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table A9: Present Public Outcomes and Racial Demography as a Function of Past State Capacity (1985-1991)

	Fiscal Capacity, 1985		Access to Basic Goods, 1991		Afro-descendants %, 1991	
	(1)	(2)	(3)	(4)	(5)	(6)
Fiscal Capacity, 1923	0.713*** (0.069)	0.235*** (0.043)	1.174*** (0.115)	0.375*** (0.059)	-1.049*** (0.124)	-0.123** (0.045)
State FE	No	Yes	No	Yes	No	Yes
Geographic controls	No	Yes	No	Yes	No	Yes
Observations	5,505	4,971	4,592	4,435	4,442	4,441
Adjusted R ²	0.284	0.658	0.273	0.684	0.188	0.775

All models are OLS regressions. For variable descriptions, see Appendix. Clustered standard errors are given in parentheses, +p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table A10: Present Public Outcomes and Racial Demography as a Function of Past State Capacity (2010)

	Fiscal Capacity, 2010		Public Goods, 2010		Afro-descendants %, 2010	
	(1)	(2)	(3)	(4)	(5)	(6)
Fiscal Capacity, 1923	0.382*** (0.039)	0.103*** (0.026)	0.429*** (0.054)	0.062*** (0.016)	-0.898*** (0.126)	-0.119** (0.037)
State FE	No	Yes	No	Yes	No	Yes
Geographic controls	No	Yes	No	Yes	No	Yes
Observations	5,437	4,911	5,501	4,970	5,502	4,970
Adjusted R ²	0.169	0.489	0.146	0.739	0.194	0.812

All models are OLS regressions. For variable descriptions, see Appendix. Clustered standard errors are given in parentheses, ⁺p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table A11: Past Fiscal Capacity, Contemporary Attitudes Toward Taxation and Reported Confidence in the Local Government

	Attitudes toward Taxation		Confidence in the Local Government	
	(1)	(2)	(3)	(4)
Fiscal capacity, 1923	0.944 (0.766)	1.125* (0.555)	0.665** (0.225)	0.623* (0.317)
State FE	No	Yes	No	Yes
Additional controls	Yes	Yes	Yes	Yes
Observations	1,116	1,116	1,124	1,124
Adjusted R ²	0.026	0.111	0.024	0.042

All models are OLS regressions and include the following controls: education, economic status and age of the respondent, municipal population, and basic local geographic characteristics (rainfall and sun). Attitudes toward taxation include five response categories going from “too high” (1) to “too low” (5); confidence in the local government includes four response categories going from “no confidence at all” (1) to “a lot of confidence” (4). Municipality-clustered standard errors in parentheses, ⁺p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table A12: Racial Demographic Change as a Function of Past State Capacity (1940-1980)

	Abs. Δ (1940-1980)			Rel. Δ (1940-1980)		
	(1)	(2)	(3)	(4)	(5)	(6)
Fiscal capacity, 1923	-0.365*** (0.049)	-0.070 (0.052)	-0.111* (0.045)	-0.618+ (0.326)	-0.842** (0.327)	-1.062** (0.333)
Afro-descendants %, 1940			-0.633*** (0.028)			-3.358*** (0.240)
State FE	No	Yes	Yes	No	Yes	Yes
Geographic controls	No	Yes	Yes	No	Yes	Yes
Observations	5,503	4,970	4,970	5,503	4,970	4,970
Adjusted R ²	0.051	0.324	0.524	0.004	0.182	0.332

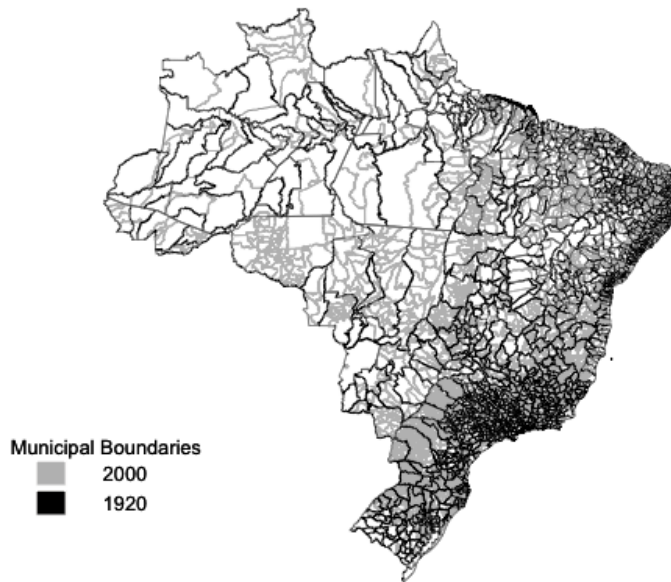
All models are OLS regressions. For variable descriptions, see Appendix. Clustered standard errors are given in parentheses, +p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table A13: Past Racial Demography (1872) and Quilombos

	Quilombo Presence		
	(1)	(2)	(3)
Total Afro-descendants %, 1872	0.044*** (0.012)		
Free Afro-descendants %, 1872		0.056*** (0.013)	
Enslaved Afro-descendants %, 1872			-0.094* (0.038)
State FE	Yes	Yes	Yes
Geographic controls	Yes	Yes	Yes
Observations	4,955	4,955	4,955
Adjusted R ²	0.161	0.165	0.162

All models are OLS regressions. For variable descriptions, see Appendix. Clustered standard errors are given in parentheses, +p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Figure 1: **Municipal Boundaries, 1920 and 2000**



Appendix B

Explanatory and Outcome Variables

Racial Demography. All demographic variables were constructed using microdata and municipal-level data from the 2000, 2010, 1991, 1980, 1940, and 1872 Censuses from the Instituto Brasileiro de Geografia e Estatística (IBGE).

Public Goods. Our composite measure of public goods is an average of municipal public (education and healthcare) service quality and access to basic public goods. The quality indices come from a comprehensive study conducted by Arretche, Fusaro, and Vaughan in the Centro de Estudos da Metrópole (CEM) and take into account a set of more than 10 indicators to build two overall measures of education and healthcare quality at the municipal level.⁸⁹ Our measures of access to

⁸⁹For instance, the health index comprises, among other variables, infant mortality rate, hospitalization rate

basic public goods reflect the percentage of the local population that has access to garbage collection, electricity, and piped water. These variables are built using microlevel data available in the 2000, 2010 and 1991 Censuses.

State Capacity. The data on local fiscal capacity across municipalities in 1923 were entered from Brazil’s 1926 statistical yearbook of public finances (Pardelli, 2019). The number of public administrative and law enforcement officials in 1920, as well as the data on the presence of public officials (binary) in 1872 were obtained from the respective censuses.

Geographic remoteness is defined as the average travel time required to reach the nearest city (>50000 people) via surface transport in a particular municipality. For details on methodology and calculations, see Poyart et al. (2018). The number of railroad stations within each municipality in 1920 was collected from IPEA.

Contemporary measures of taxation per capita (1985, 2000, 2010), were compiled from *Finanças do Brasil* (FINBRA) and from the *Sistema de Informações Contábeis e Fiscais do Setor Público Brasileiro* (SICONFI). We use the existence of cadaster maps across municipalities (from *Pesquisa de Informações Básicas Municipais* 2004) as a measure of contemporary information capacity, given the importance of these instruments for land registration and property tax collection.

To estimate the past levels of state capacity within modern-day administrative boundaries, we adopt the approach used by Archarya et al. (2016) to address changes in U.S. county boundaries between 1860 and 2000. Following this method, the total amount of taxes per capita collected in 1923 is divided among the relevant municipalities in 2000 such that the proportion of taxes from 1923 municipality i that is assigned to 2000 municipality j is based on the size of their overlapping areas (see Figure 1).

Geographic controls. The data come from the National Institute of Geology (INGEO) and include *Area size (logged)*, *Altitude*, *Distance to Coast (logged)*, *Distance from the Capital (logged)*, *Rainfall*, *Sunshine*, *Latitude* and *Longitude*. For details, see Naritomi et al. (2012).

and vaccine coverage. The education index consists of coverage below 6 years of age, failure and abandonment rates, proportion of municipal schools with below-average grades on the national standardized test, etc. For more detailed information, see <http://web.fflch.usp.br/centrodametropole>.

Appendix C

Race-Based Selection Mechanisms Beyond *Quilombos*

This section elaborates on three additional mechanisms through which higher local state capacity in the past may have led to lower shares of Afro-descendants in the present across Brazilian municipalities. The first mechanism behind the gradual displacement of Afro-descendants to more peripheral areas focuses on the role of labor market discrimination and increased competition with European immigrants. The proclamation of the Republic in the year after abolition was accompanied by a national campaign in which the “whitening” of the national population through the promotion of immigration assumed a prominent role. Because foreign workers generally enjoyed preference in hiring, scholars have shown that their presence in large numbers displaced and marginalized Afro-Brazilian workers, forcing them to retreat to more depressed areas in the country (Holloway, 2017). However, black-white labor market competition was not prevalent everywhere, as immigrant workers were sometimes insufficient to satisfy the local labor demand. Notably, the location of foreign laborers was itself not random. It depended, first, on the ability of state governments to actively sponsor and finance immigration.⁹⁰ Second, immigrants tended to concentrate in the most attractive areas of each state (Andrews, 1991). In this sense, the prevalence of this mechanism itself cannot be dissociated from the reach of the state and its capacity to implement political decisions across space.

The second mechanism emphasizes the use of the repressive apparatus of the state. In areas where immigration did not provide an expanded pool of workers, other forms of planter-state cooperation emerged to resolve the problem of labor recruitment and social control. One of the central aspects of this partnership consisted in “planters’ increased reliance on criminal law and other state enforcement mechanisms” (Huggins, 1984, 53) as a means of generating cheap labor and controlling the newly emancipated black population. Much like the Black Codes in the post-bellum U.S., this response offered a way of “fixing blacks into a subordinate social status” and providing for a “manageable and inexpensive labor force through the use of vague criminal statutes

⁹⁰As underlined by Andrews (1991, 59): “São Paulo’s labor market in the years immediately following the abolition of slavery was one shaped by an unusual [...] degree of state direction and intervention. This was intervention seemingly devoid of any racial content, but in fact by choosing to invest funds in European workers, [...] the province’s planters, and the state apparatus which they controlled, had made their ethnic and racial preferences in workers crystal clear.”

prohibiting vagrancy and loitering.”⁹¹ Idleness thus came to be equated with crime and associated with dangerous threats to order, public safety, and private property. These ideas were then utilized to justify increased state regulation, policing, and repression. However, the ability of the state to arrest, impose sanctions, and enforce vagrancy statutes was not everywhere equal. Therefore, coercive capacity – bound as it was to disproportionately target Afro-descendant populations – likely discouraged black and mixed-race individuals from settling in the places where it was strongest.

Finally, a third possible mechanism emphasizes uneven access to land. Scholars focusing on postemancipation experiences have underscored how the aspirations of the formerly enslaved populations were essentially peasant in nature: access to land, the formation of families, and a certain degree of autonomy in everyday life (Slenes, 1999). In line with the mechanisms highlighted earlier, “free Brazilians and Africans preferred to remain in the subsistence sector, working their own plots of land” (Andrews, 1991, 54). However, the acquisition and occupation of land was not a trivial matter. Because it provided workers with an independent survival alternative, planters sought to limit land access through legal and extra-legal means as much as possible (Dean, 1971; Mangonnet, 2021). Land evictions, seizures, and encroachment were common (Huggins, 1984; Levine, 1978), making migration to ever more remote, unoccupied areas a continuing necessity. Access to land in high state capacity areas was more difficult for at least two reasons: first, their closeness to valuable state infrastructure (i.e., roads, bridges, etc.) made acreage more expensive in these regions; second, the chances that squatters would eventually be displaced by the speculative interests of neighboring landowners were greater. As a result, many Afro-descendants sought out peripheral regions to gain access to land. According to Marques (2009), who studies the case of Paraná, although many decided to settle in or close to urban centers, most of the migrants of direct descent from former enslaved people have settled in unclaimed areas on the frontier of agricultural expansion.

The literature suggests that these dynamics of freedmen seeking out more remote areas are not confined to the case of Brazil. In Jamaica, for example, according to Holt (1992), the postemancipation peasantry migrated to peripheral areas and bought small properties where they relied on subsistence agriculture and the sale of surplus production in nearby markets. While Afro-Jamaican peasants initially established their settlements near large estates, over time “the search for available land took settlers further and further into the interior of parishes.” (Holt, 1992, 166). In the case of Cuba, the eastern side of the island seems to have attracted most migrants after full emancipation. According to (Scott, 2000, 247), “a major shift eastward in the population of color can be discerned

⁹¹Shelden (1981, 365), on late-nineteenth-century Tennessee. Quoted in Huggins (1984).

in the pattern of population distribution at different census dates between 1862 and 1899.” The east offered greater access to land in part due to its mountainous interior, which was not conducive to large-scale sugar production, leaving room for the development of a nonplantation sector.

To assess whether these three channels of influence are empirically pertinent, we carry out two different analyses. First, we examine whether past levels of state capacity are indeed associated with (1) higher proportions of immigrants in the population, which would in turn increase labor market competition and discrimination; (2) stronger coercive capacity, which (if selectively employed) would discourage the settlement of Afro-descendants; and (3) increased land prices, which make land acquisition more difficult and squatting riskier. As Table C1 shows, we find support for each of these hypotheses. Second, we investigate whether these mechanisms (all measured in 1920) are themselves associated with lower shares of Afro-descendants across *municípios* today. The estimates in Table C2 provide suggestive evidence in line with the idea that greater shares of immigrant workers, higher land prices, and larger repressive apparatuses have also hampered the settlement of Afro-Brazilians across localities.

Table C1: Past State Capacity and Average Land Value, Law Enforcement Apparatus, and Share of Immigrants

	Land Value per acre, 1920		Law Enforcement Officials, 1920		Immigrants (%), 1920	
	(1)	(2)	(3)	(4)	(5)	(6)
Fiscal Capacity, 1923	0.709*** (0.060)	0.370*** (0.075)	0.454*** (0.060)	0.480*** (0.075)	0.183*** (0.031)	0.171** (0.053)
State FE	No	Yes	No	Yes	No	Yes
Geographic controls	No	Yes	No	Yes	No	Yes
Observations	5,438	4,917	5,505	4,971	5,505	4,971
Adjusted R ²	0.209	0.721	0.172	0.485	0.221	0.444

All models are OLS regressions. For variable descriptions, see Appendix. Clustered standard errors are given in parentheses, +p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table C2: Past Land Value, Law Enforcement Apparatus, Share of Immigrants and Contemporary Share of Afro-descendants

	Afro-descendants %, 2000					
	(1)	(2)	(3)	(4)	(5)	(6)
Land Value, 1920	-0.582*** (0.077)	-0.222*** (0.033)				
Law Enforcement Officials, 1920			-0.091 (0.093)	-0.090** (0.027)		
Immigrants (%), 1920					-1.998*** (0.439)	-0.095* (0.047)
State FE	No	Yes				
Geographic controls	No	Yes				
Observations	5,390	4,874	5,457	4,928	5,457	4,928
Adjusted R ²	0.171	0.792	0.002	0.784	0.131	0.783

All models are OLS regressions. For variable descriptions, see Appendix. Clustered standard errors are given in parentheses, ⁺p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Appendix D

Slavery Prevalence as a Competing Endogeneity Source

First, in Table D1 we examine whether past local shares of Afro-descendants (1872) are related to contemporary ethnic demography and public goods measures (2000). Although the overall association between the two demographic measures is positive, the correlation coefficient is surprisingly weak (0.28).⁹² At the same time, the correlation between past demographic shares and present public goods is not statistically significant when we include state fixed effects and standard geographic covariates.

Second, in Table D2, we investigate whether racial demography in 1872 is associated with the (temporally more proximate) levels of state capacity in 1923. The raw correlation between Afro-descendant shares and tax revenues per capita 50 years later is -0.23, but it does not hold after including state fixed effects and geographic controls.

Third, in Tables D1 and D2, we further breakdown the Afro-descendant population into free and enslaved revealing two opposing associations. On the one hand, the share of *enslaved* Afro-descendants has a strong *negative* relationship with current Afro-descendant shares and *positive* relationship with past state capacity (although not statically significant) and present public goods.

⁹²Archarya et al. (2016) find, e.g., the U.S. Blacks shares in 1860 and 2000 have a correlation of 0.77.

On the other hand, the proportion of *free* Afro-descendants has a *positive* relationship with current Afro-descendant shares and *negative* relationship with past state capacity and present public goods.

Although at first glance these findings may seem counterintuitive, they are consistent with the series of migratory movements that followed the abolition of slavery. The significant negative association between the intensity of slavery and the current proportion of Afro-descendants may be explained by two concurrent forces. First, as historians have often highlighted, once slavery was abolished, former slaves fled from plantation areas, leaving the estates en masse and occupying frontier lands (Klein and Luna, 2009). Second, this wholesale abandonment of farms by ex-slaves engendered an acute labor shortage, which planters sought to resolve by resorting to European immigration. Consequently, the areas where slavery was more prevalent in the last decades of the nineteenth century were precisely those that tended to become more urbanized in later years. This may explain why the prevalence of slavery in 1872 shows a weak positive association with tax revenues in 1923 (Table D2, column 3) and with contemporary public goods (Table D1, column 6).

But what about the areas with high shares of free Afro-descendants in 1872? These areas likely include the remote localities in which runaway slaves established their communities and also the rural areas in which Brazil's large freedmen population lived. Although the latter were not subject to the same necessity of runaway slaves to self-select into hidden, hard-to-reach regions, free Afro-descendants were also constrained in their choices of where to settle (see Appendix C) . This is reflected in the negative association between this variable and the level of state capacity in the early twentieth century (Table D2, column 2) and in the fact that these communities are more likely to have remained majority-black to this day (Table D1, column 2). This interpretation is further corroborated by the results shown in Table A13, where we examine the relationship between the 1872 demographic variables and the concentration of *quilombos*. Namely, localities with a greater share of free Afro-descendants have a larger number of quilombos, whereas those where slavery was more prevalent have a lower number of such communities.

In summary, while the institution of slavery has undoubtedly had a strong and lasting detrimental impact on the nation as a whole, its role as a common antecedent factor of both contemporary *local* demographic structures and public goods outcomes is more ambiguous. In particular, the local prevalence of slavery is not only deeply intertwined with subsequent inflows of immigrants—which made localities more diverse—but it also coincides spatially with some of the zones that received the largest amounts of investment in subsequent decades. We hope future work will help elucidate the long-term consequences of these countervailing forces.

Table D1: Past Racial Demography, Present Racial Demography, and Public Goods

	Afro-descendants % 2000			Public Goods 2000		
	(1)	(2)	(3)	(4)	(5)	(6)
Total Afro-descendants %, 1872	0.062* (0.027)			-0.021 (0.015)		
Free Afro-descendants %, 1872		0.086*** (0.021)			-0.032* (0.014)	
Enslaved Afro-descendants %, 1872			-0.171*** (0.044)			0.068** (0.024)
State FE	Yes	Yes	Yes	Yes	Yes	Yes
Geographic controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,913	4,913	4,913	4,919	4,919	4,919
Adjusted R ²	0.784	0.787	0.786	0.800	0.800	0.800

All models control for the set of geographic variables mentioned in the text, and for the size of the local population. Clustered standard errors are given in parentheses, ⁺p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Table D2: Past Racial Demography and Fiscal Capacity

	Fiscal Capacity, 1923		
	(1)	(2)	(3)
Total Afro-descendants %, 1872	0.001 (0.024)		
Free Afro-descendants %, 1872		-0.011 (0.019)	
Enslaved Afro-descendants %, 1872			0.056 (0.036)
State FE	Yes	Yes	Yes
Geographic controls	Yes	Yes	Yes
Observations	4,955	4,955	4,955
Adjusted R ²	0.464	0.465	0.466

All models are OLS regressions. For variable descriptions, see Appendix. Clustered standard errors are given in parentheses, ⁺p<0.1; *p<0.05; **p<0.01; ***p<0.001.

Appendix E

Past Levels of State Capacity and Present Racial Self-Identification

Previous research has underlined that racial and ethnic boundaries in Brazil are more fluid and that individuals can move more freely across groups when compared to countries like the United States (Degler, 1986). This feature of the Brazilian case raises questions about a potential alternative explanation to our results. Specifically, if low levels of state capacity and public goods provision exacerbate a sense of exclusion among the inhabitants of remote areas – increasing the likelihood that individuals self-identify as Afro-descendants due to, for example, the enhanced significance of a linked-fate mechanism – then this would suggest a different interpretation for the negative associations we observe.

To investigate whether any systematic biases exist in the way inhabitants of historically less capable municipalities self-identify, we rely on the overall agreement between self- and interviewer classification in a nationally representative survey (Bailey et al., 2013; Telles and Lim, 1998). Using data from the 2002 *Pesquisa Social Brasileira* (PESB), we examine whether past state capacity is in any way associated with the incidence of mismatches in racial classifications across localities (PESB, 2002). Specifically, we look at whether individuals self-identify as black or brown while the interviewer classifies them as white (*black bias*, columns 1 and 2); and, vice versa (*white bias*, columns 3 and 4). The overall disagreement between self- and interviewer classification was 25% in this survey – which coincides with the 21% disagreement found by Telles and Lim (1998) using a national sample from 1995. However, we find no significant association between these mismatches and the state capacity level of the localities where individuals reside. This result provides suggestive evidence that our results are not driven by an increased tendency of individuals to self-identify as Afro-descendant in areas of historically weak state capacity.

Table E1: Mismatches in Self- and Interviewer Racial Classification and Local State Capacity

	Mismatch Black Bias		Mismatch White Bias	
	(1)	(2)	(3)	(4)
Fiscal Capacity, 1923	-0.005 (0.034)	0.002 (0.043)	-0.044 (0.042)	-0.013 (0.040)
State FE	No	Yes	No	Yes
Observations	2,246	2,246	2,120	2,120

All models are OLS regressions. Standard errors clustered at the 2000 municipality level given in parentheses, ⁺p<0.1; *p<0.05; **p<0.01; ***p<0.001.

References

- Andrews, G. R. (1991). *Blacks and Whites in São Paulo, Brazil, 1888-1988*. Madison: University of Wisconsin Press.
- Archarya, A., M. Blackwell, and M. Sen (2016). The Political Legacy of American Slavery. *Journal of Politics* 78(3), 621–641.
- Bailey, S. R., M. Loveman, and J. O. Muniz (2013). Measures of “Race” and the Analysis of Racial Inequality in Brazil. *Social Science Research* 42(1), 106–119.
- Dean, W. (1971). Latifundia and Land Policy in Nineteenth-Century Brazil. *The Hispanic American Historical Review* 51(4), 606.
- Degler, C. (1986). *Neither Black Nor White: Slavery and Race Relations in Brazil and the United States*. Madison: University of Wisconsin Press.
- Holloway, T. H. (2017). *Immigrants on the Land: Coffee and Society in São Paulo, 1886-1934*. Chapel Hill: The University of North Carolina Press.
- Holt, T. (1992). *The Problem of Freedom: Race, Labor, and Politics in Jamaica and Britain, 1832-1938*. Baltimore: Johns Hopkins University Press.
- Huggins, M. K. (1984). *From Slavery to Vagrancy in Brazil: Crime and Social Control in the Third World*. New Brunswick: Rutgers University Press.
- Klein, H. S. and F. V. Luna (2009). *Slavery in Brazil*. Cambridge: Cambridge University Press.
- Levine, R. M. (1978). *Pernambuco in the Brazilian Federation, 1889-1937*. Stanford: Stanford University Press.
- Mangonnet, J. (2021). *Property Formation in Weak States: Theory and Evidence from Imperial Brazil*. Ph.d. dissertation, Columbia University.
- Marques, L. (2009). *Por aí e por muito longe: dívidas, migrações e os libertos de 1888*. Rio de Janeiro: Apicuri.
- Naritomi, J., R. R. Soares, and J. J. Assunção (2012). Institutional Development and Colonial Heritage within Brazil. *The Journal of Economic History* 72(2), 393–422.
- Pardelli, G. (2019). *Financing the State: Inequality and Fiscal Capacity in Uneven Territories*. Ph.d. dissertation, Princeton University.
- Poyart, E., S. Bhatt, D. J. Weiss, H. S. Gibson, J. Rozier, B. Mappin, S. Peedell, A. Lieber, S. Y. Kang, W. Temperley, L. S. Tusting, K. E. Battle, E. Cameron, T. C. D. Lucas, M. Hancher, D. Bisanzio, N. Fullman, R. E. Howes, A. Nelson, P. W. Gething, S. Belchior, and U. Dalrymple (2018). A Global Map of Travel Time to Cities to Assess Inequalities in Accessibility in 2015. *Nature* 553(7688), 333–336.
- Scott, R. (2000). *Slave Emancipation in Cuba: The Transition to Free Labor 1860-1899*. Pittsburgh: University of Pittsburgh Press.
- Shelden, R. G. (1981). Convict Leasing: An Application of the Rusche-Kirchheimer Thesis to Penal Changes in Tennessee, 1830-1915. In *Crime and Capitalism*, pp. 358–366. Palo Alto, CA: Mayfield Publishing Co.
- Slenes, R. W. (1999). *Na Senzala, uma Flor: Esperanças e Recordações na Formação da Família Escrava – Brasil Sudeste, século XIX*. Rio de Janeiro: Nova Fronteira.
- Telles, E. E. and N. Lim (1998). Does it Matter Who Answers the Race Question? Racial Classification and Income Inequality in Brazil. *Demography* 35(4), 465–474.