

ONLINE APPENDIX

The Dark Side of Infrastructure: Roads, Repression, and Land in Authoritarian Paraguay

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List of Figures

A.1	State-led repression over time in Paraguay	iv
A.2	Descriptive statistics, distance to closest road	v
A.3	Dynamic staggered difference-in-difference based on Borusyak et al. (2024)	vi
A.4	Additional maps	vii
A.5	Robustness, excluding single departments from estimation	viii
A.6	Robustness, excluding single districts from estimation	ix

List of Tables

A.1	Extension of the road network over time by department	x
A.2	Descriptive statistics	xi
A.3	Direct and indirect exposure to the road network	xii
A.4	Two-stage least squares estimation	xiii
A.5	Distance to the network of railroads	xiv
A.6	Other infrastructure projects and Itapúa	xv
A.7	Robustness to specification decisions	xvi
A.8	Robustness to different covariates	xvii
A.9	Robustness to sample composition	xviii
A.10	Difference across events with and without location	xix
A.11	Robustness of results in the 1955-1979 period	xx
A.12	Road construction and state-led repression: Imputations	xxi
A.13	Illegal land allocations and long-term development: Robustness to outliers	xxii

A More details about the data

A.1 Mapping the road network development

For the period of interest, no official road maps providing a distinction between dirt, gravel, and paved roads are available. Similarly, sources on the main road segments generally fail to indicate at which time they were actually paved. In order to reconstruct the evolution of the paved network from the 1940s, we turn to historical national development plan documents for the transport and communications sectors (Secretaria General de Planificación, 1970) as well as economic memorandum from the World Bank (World Bank, 1979, 1981, 1991) and from the Japanese foreign development assistance (Japanese International Cooperation Agency, 1997, 2000).

We establish the extension of the paved road network at different dates in time, crossing information on the total extension of the paved network (World Bank, 1991), on the extension of that network by departments (Secretaria General de Planificación, 1970), as well as additional information from on both realized and planned works on different road segments contained in these different documents, and double-checking resulting figures with both online sources and direct consultations. This allows us to first develop Table A.1, which details the extension of paved roads by departments from 1940 to 1975.

Beyond 1975, information on the extension of paved roads by departments is not available. World Bank (1991) reports the following total extension of roads at the country level: 1,469.4 km in 1980, and 2076.6 km in 1985. In one noteworthy addition to the network, by 1985, road number 6, which links the crossing at km 30 near Ciudad del Este to Encarnación, was constructed. This corresponded to an additional 160 km in the department of Itapúa, and 90 km in the department of Alto Paraná. The remaining newly paved roads mostly correspond to a densification of the asphalt network around Asuncion and in the Central department, and have little incidence on the distance to the roads for the large majority of districts in the analysis. The next big push occurred in the 1990s, with the paving of part of the trans-Chaco road in the West, road 4 to Pilar, and roads 3 and 4 in the North, connecting Concepción and Pedro Juan Caballero. By 2000, the paved network would exceed 3,000 km.

This allows us to identify 6 snapshots (1950-55, 1960, 1965, 1970, 1975, and 1985), which we digitize and georeference. The resulting paved road network at five-year intervals, and the distance of each district to the paved road network in each period, is represented in Figure 1. Figure A.2 shows that the distance to the road network across the sample of 248 districts included in the analysis decreased significantly between 1955 and 1985.

A.2 Land suitability

We use land suitability by district to capture the economic potential of land. Cotton has been a traditional crop in Paraguay. By 1981, almost 140 thousand productive units were dedicated to cotton and it represented 44 percent of the country's exports (Palau, 1986). Cotton suitability was therefore likely to be an important criteria in establishing the value of plots to be allocated. Soybean became important for Paraguayan agriculture later, with small areas being cultivated until

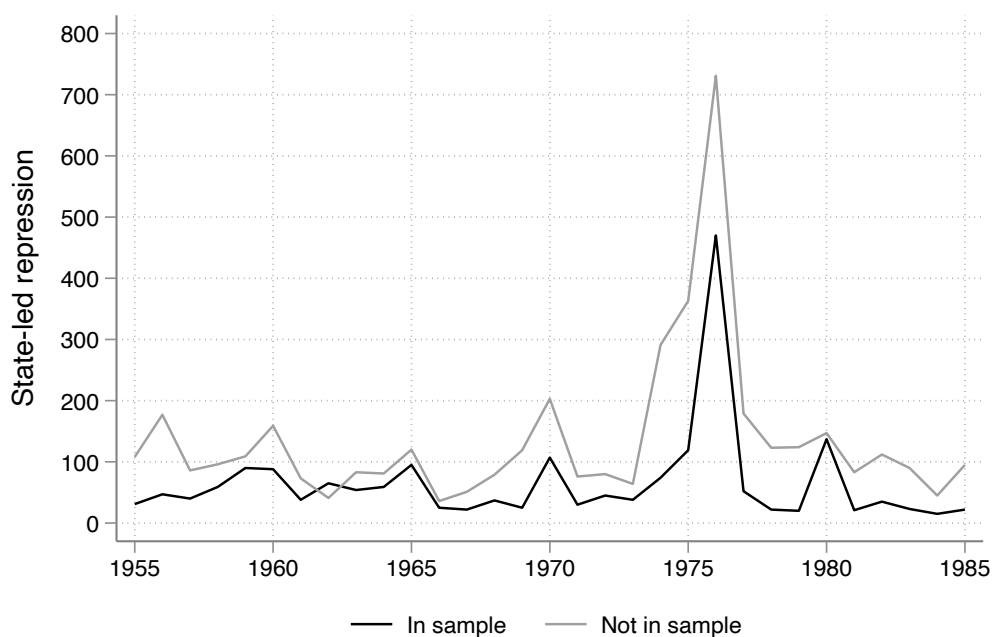
the 1970s. Since then, there has been an expansion of cultivated areas.¹⁷ Soybean suitability could have been relevant for land allocation, but it should have mattered less than cotton given the characteristics of the cultivation process. We measure cotton and soybean suitability (rain-fed) by district using data from the well-known FAO Global Agro-Ecological Zones (GAEZ).

A.3 Long-run development outcomes

We examine long-run development by using several measures that point towards both the productive nature of districts and the prevalence of intense extractive activities at the local level. To measure economic activity, we use nighttime lights (Henderson et al., 2012; Li et al., 2020) and gridded datasets with information about population density (WorldPop) and agricultural production (Wood-Sichra et al., 2016; Yu et al., 2020). The gridded dataset has a granularity of 10×10 kilometers, information by crop, and is available for the years 2000, 2005, and 2010. We use agricultural production (measured in metric tons, per hectare) of the following crops: cassava, groundnuts, cotton, maize, rice, sorghum, soybean, sugarcane, wheat, sesame, and sunflower. To measure the extractive activities, we use pollution from van Donkelaar et al. (2021), wildfires from NASA's Earth Observing System Data and Information System (EOSDIS), deforestation from Hansen et al. (2013), and mining activity. Information on mines comes from the Catastro Minero conducted by the Ministry of Mines and Energy of Paraguay. The *catastro* contains information on all the licenses given by 2022. Paraguay's diverse geology offers a great variety of soils and resources, and the most important minerals exploited are gold, copper, cobalt, iron, precious minerals, and aluminum. Finally, we shed light on the relationship between the dictatorship's land policies, development, and rural conflict in the 2000s by examining land occupations between 1990 and 2019 documented by Kretschmer et al. (2019).

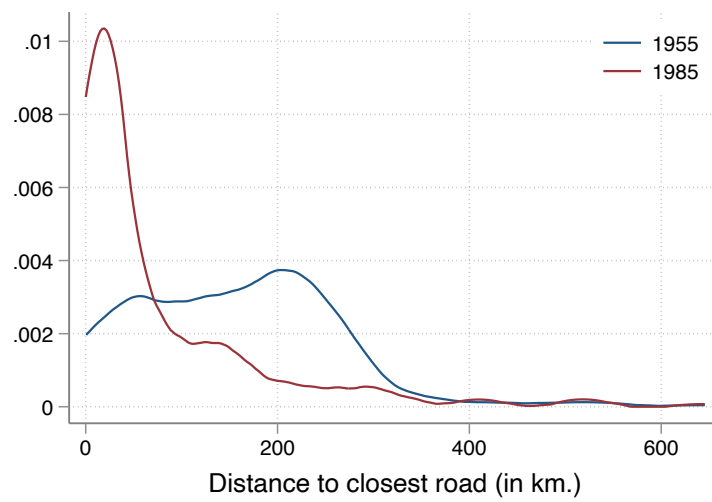
¹⁷According to the Paraguayan Chamber of Oleaginosas exporters (CAPECO), Paraguay is nowadays the third-world exporter of soy and the sixth-world producer. Soy production represents around 18 percent of GDP.

Figure A.1: State-led repression over time in Paraguay



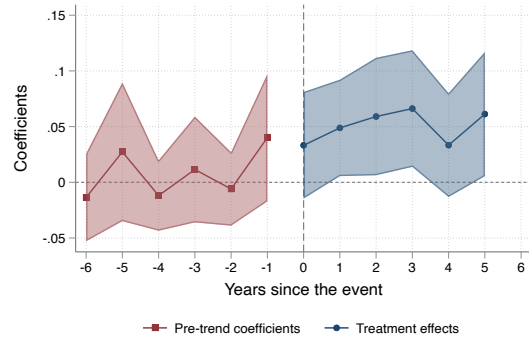
Notes: This figure shows the number of state-led repression events per year as revealed by the *Truth and Justice Commission* in Paraguay. The black line represent the total number of events for which we have information about the district where they took place. The gray line represents the number of events without district information.

Figure A.2: Descriptive statistics, distance to closest road

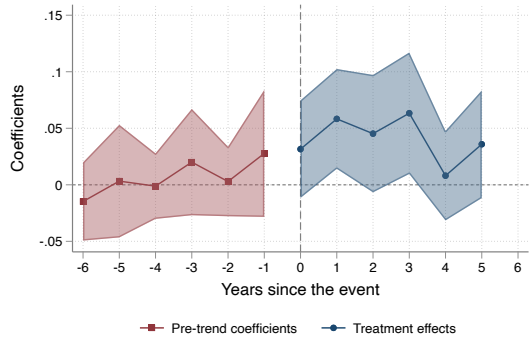


Notes: This figure shows the distribution of distance to the closest paved road across 248 districts in Paraguay. The blue lines shows the distribution in 1955 and the red line in 1985.

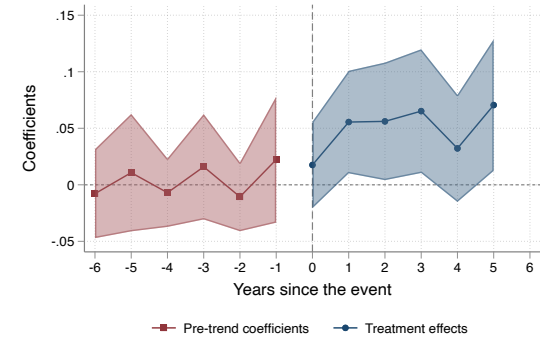
Figure A.3: Dynamic staggered difference-in-difference based on Borusyak et al. (2024)



(a) Indicator: Repression

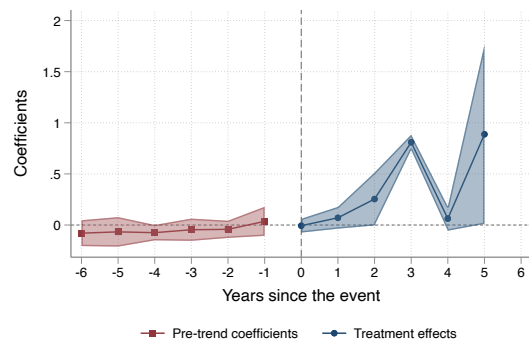


(b) Indicator: Torture

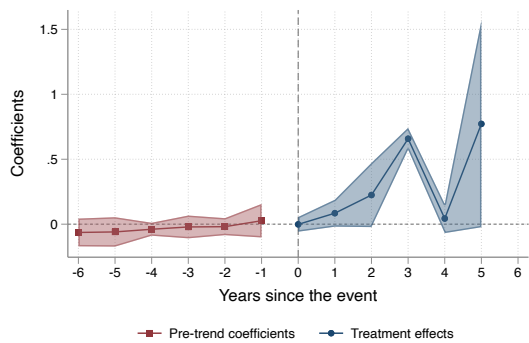


(c) Indicator: Detention

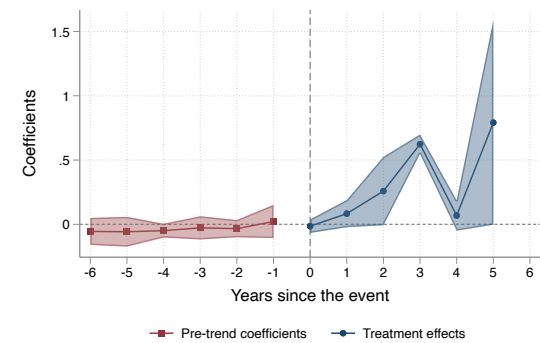
VI.



(d) Level: Repression



(e) Level: Torture

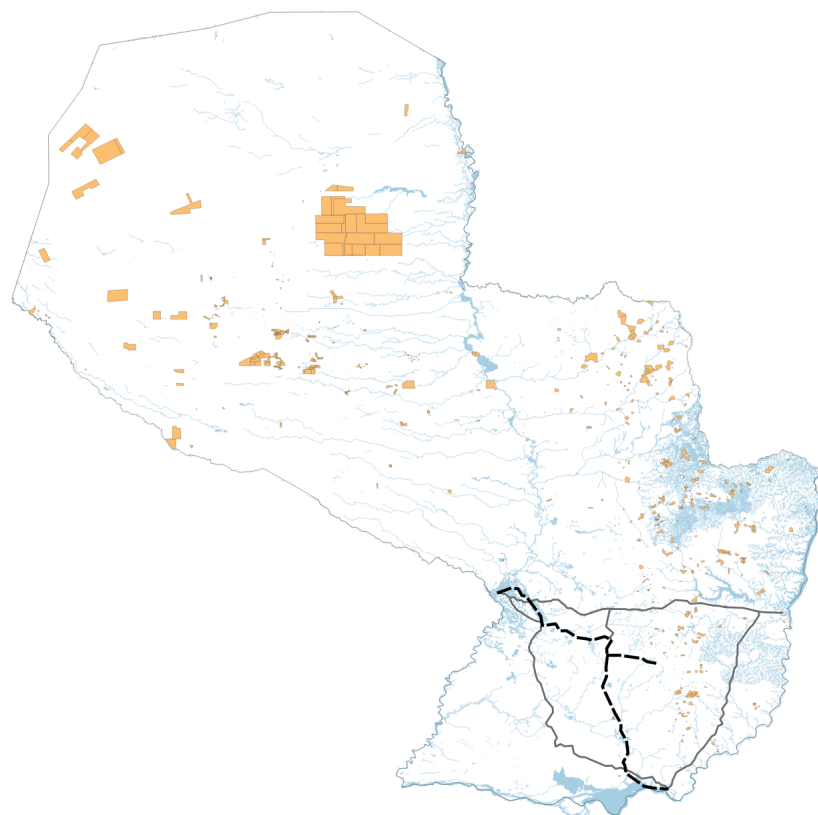


(f) Level: Detention

Notes: Estimates from a dynamic difference-in-differences estimation. The event indicator equals one if a district gets closer than 30 kilometers from the road network. Circles represent point estimates and colored areas the 95 percent confidence interval. The p-values for the differential pre-trends test suggested by the authors using ten pre-treatment periods are 0.43, 0.53, 0.65, 0.14, 0.09, and 0.15, respectively.

Figure A.4: Additional maps

vii



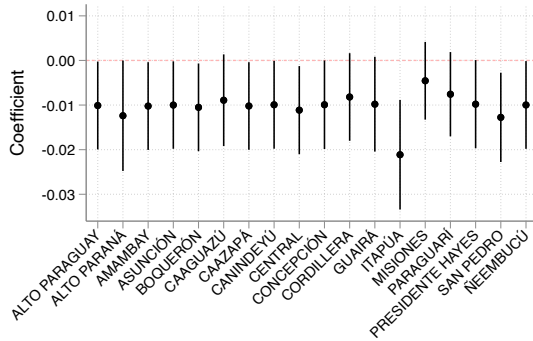
(a) Railroads, water, and indigenous communities



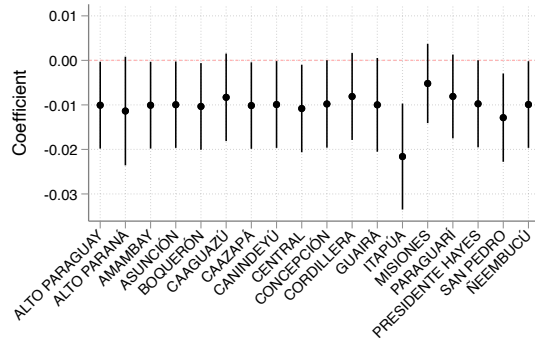
(b) Straight lines strategy

Notes: Panel (a) shows a map of Paraguay with the railroad network (dash black), road network (solid grey), rivers and lakes (light blue), and the location of indigenous communities (orange polygons) in the 2010s. The location of indigenous communities comes from a recent study conducted by the Federation for the Autonomy of Indigenous Populations (FAPI) in Paraguay Panel (b) shows the straight lines used in an alternative instrumental variables strategy.

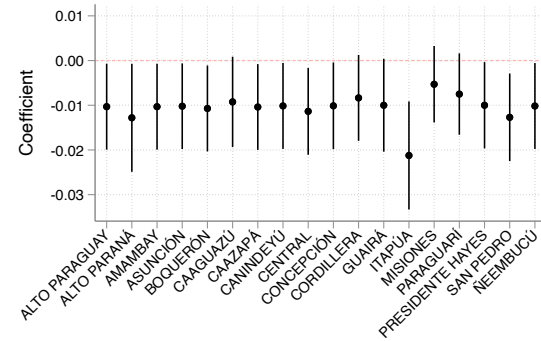
Figure A.5: Robustness, excluding single departments from estimation



(a) Indicator for repression event

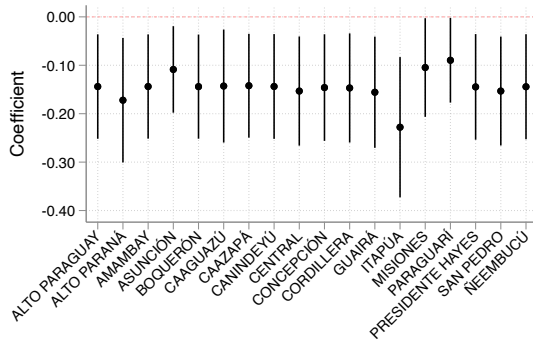


(b) Indicator for torture event

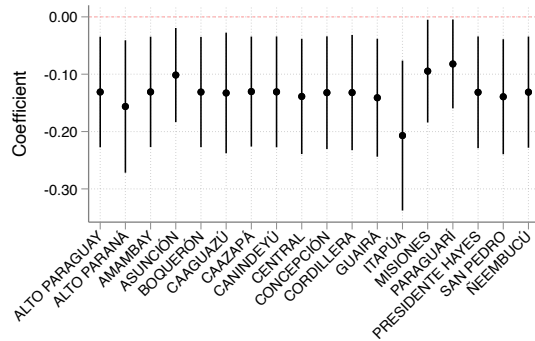


(c) Indicator for detention event

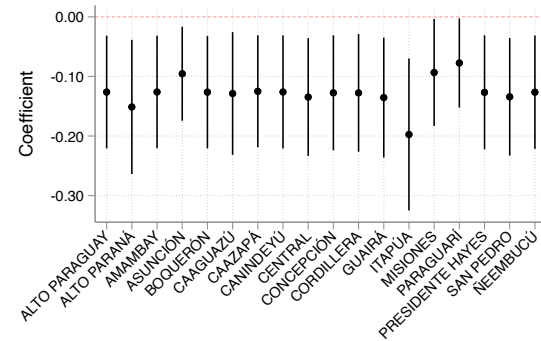
III



(d) Number of repression events



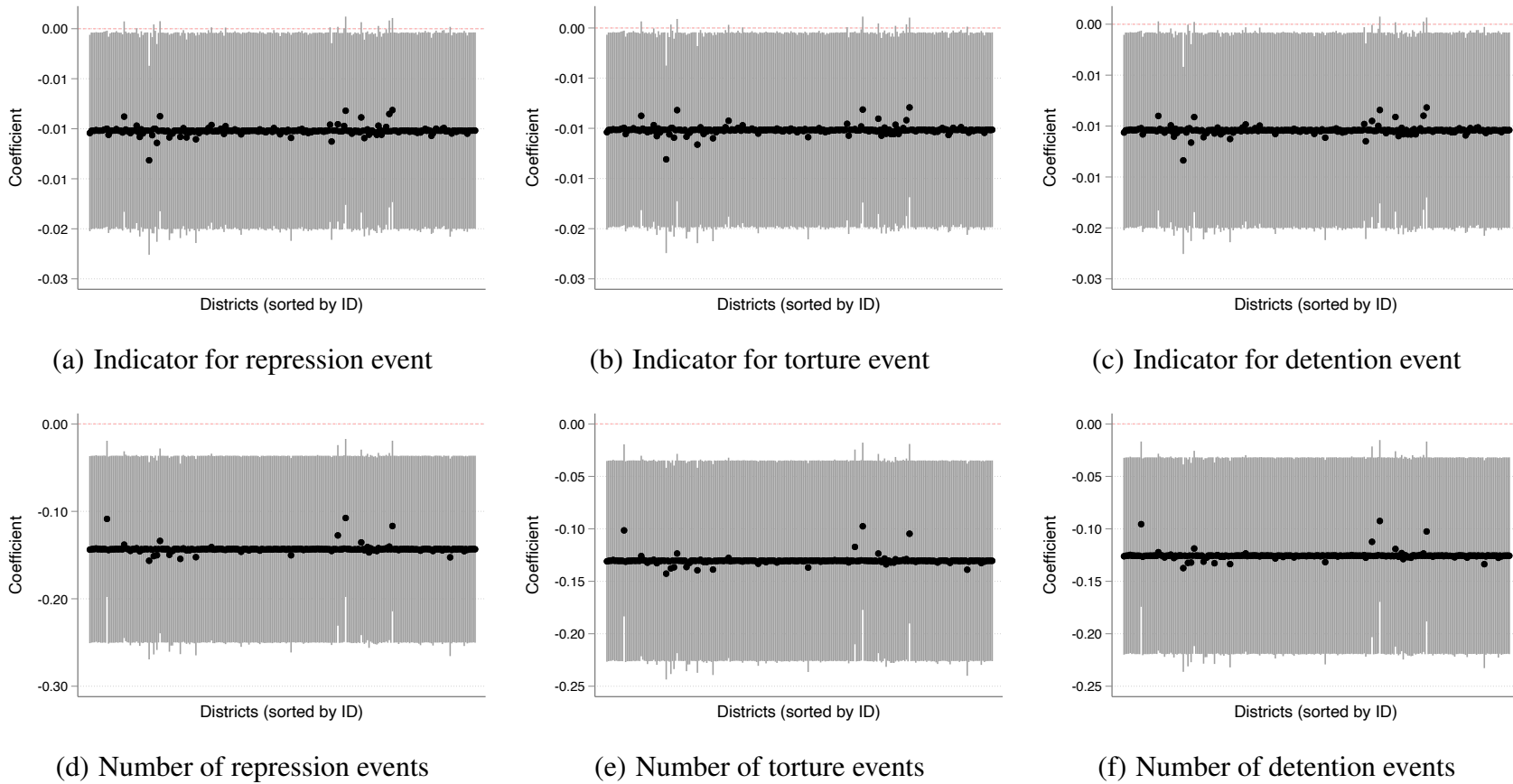
(e) Number of torture events



(f) Number of detention events

Notes: This figure shows the robustness of the empirical relationship between roads and state-led repression to dropping different departments (groups of contiguous districts) from the estimation. Each figure corresponds to a dependent variable. The y-axis measures the coefficient and the x-axis specifies which group of districts were dropped from the estimation. Black dots correspond to point estimates and vertical lines denote 90 percent confidence intervals.

Figure A.6: Robustness, excluding single districts from estimation



x1

Notes: This figure shows the robustness of the empirical relationship between roads and state-led repression to dropping each one of the 248 districts. Black dots correspond to point estimates and vertical lines denote 90 percent confidence intervals.

Table A.1: Extension of the road network over time by department

	1940	1950	1955	1960	1965	1969	1975	1985
Región Central								
Central XI	12	88.5	95	114.5	150.8	232.7	232.7	248.7
Cordillera III	0	0	0	60	60.4	64.3	64.3	109.3
Guairá IV	0	0	0	0	0	40	40	108
Paraguarí IX	0	0	0	20	23.9	28.6	123.6	152.6
Caazapá VI	0	0	0	0	0	0	0	0
Región Itapúa								
Itapúa VII	0	0	0	0	0	94.1	94.1	281.1
Región Alto Paraná								
Caaguazú V	0	0	0	0	151	151.5	151.5	167.5
Alto Paraná X	0	0	0	0	84.5	84.5	84.5	204.5
Amambay XIII	0	0	0	0	0	0	0	0
Región Misiones								
Misiones VIII	0	0	0	0	0	114.3	114.3	164.3
Ñeembucú XII	0	0	0	0	0	0	0	0
Región Concepción - San Pedro								
Concepción I	0	0	0	0	0	0	0	0
San Pedro II	0	0	0	0	0	0	0	38
Región Bajo Chaco								
Pte. Hayes XIV	0	0	0	0	0	0	0	56
Región Chaco Norte								
Boquerón XV	0	0	0	0	0	0	0	0
Olimpo XVI	0	0	0	0	0	0	0	0
Total	12	88.5	95	194.5	470.6	810	905	1530

Notes: This table presents the evolution of the kilometers of paved roads by department from 1940 to 1985. Departments are grouped by region, according to the pre-1992 division, which comprises 16 departments in 7 regions. The Capital district Asunción, which does not belong to any region, is not included. For 1985, urban roads in Asunción and the Central department are not included as no detailed record are available, explaining the difference with the total of over 2,000 km stated above.

Table A.2: Descriptive statistics

	Mean	Median	St. Dev	Min	Max	Observations
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A – State-led repression						
Indicator repression	0.05	0.00	0.22	0.00	1.00	7,688
Indicator torture	0.05	0.00	0.21	0.00	1.00	7,688
Indicator detention	0.05	0.00	0.21	0.00	1.00	7,688
Number of repression events	0.23	0.00	2.32	0.00	75.00	7,688
Number of torture events	0.20	0.00	2.01	0.00	64.00	7,688
Number of detention events	0.20	0.00	2.06	0.00	70.00	7,688
Panel B – Distance to closest road (in kms)						
In year 1955	155	157	105	0.55	645	248
In year 1960	139	138	105	0.54	645	248
In year 1965	106	77	105	0.46	645	248
In year 1970	79	40	103	0.11	645	248
In year 1975	79	39	103	0.11	645	248
In year 1985	73	30	105	0.11	645	248
Panel C – Illegal land allocations						
Years 1954-1959	1224.88	400	2643.35	0.00	16500	50
Years 1960-1964	2094.44	400	4783.38	0.00	52233	154
Years 1965-1969	1561.04	225	4107.59	0.00	56246	368
Years 1970-1974	1409.25	532	4144.49	0.00	85732	533
Years 1975-1984	3825.86	624	12598.63	0.00	148499	1437
Years 1985-1989	4449.29	4000	12592.65	0.00	143683	398

Notes: This table presents descriptive statistics for the main variables used in the analysis. Panel A describes state-led repression in the panel data of 248 districts observed yearly between 1955 and 1985. Panel B describes the distance (in kilometers) to the closest paved road in each of 6 years in the period 1955-1985. Panel C describes the illegal land allocations showing the average area (in Hectares) of the illegally allocated plots.

Table A.3: Direct and indirect exposure to the road network

	Indicator for at least one event of:			Total events of:		
	Repression	Torture	Detention	Repression	Torture	Detention
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Based on roads in district and neighbours						
Direct effects (in district)	0.130*** (0.034)	0.118*** (0.034)	0.117*** (0.033)	1.234* (0.737)	1.052* (0.613)	1.068 (0.651)
Spillover effects (neighbours)	0.060*** (0.018)	0.055*** (0.016)	0.058*** (0.017)	0.152** (0.056)	0.137** (0.050)	0.137*** (0.049)
Panel B: Based on distance						
Direct effects (< 20 km)	0.104*** (0.020)	0.093*** (0.019)	0.096*** (0.020)	0.698* (0.377)	0.595* (0.314)	0.608* (0.333)
Spillover effects ($\in (20, 30]$)	0.030 (0.019)	0.031* (0.019)	0.031* (0.019)	0.110 (0.068)	0.104* (0.063)	0.101* (0.061)

ix:

Notes: This table presents the empirical relationship between Stroessner's road network and state-led repression. Panel A examines changes in repression in districts where roads were constructed (direct effects) and geographically contiguous districts (neighbours). Panel B examines the same relationship but in districts closer than 20 kilometers from roads (direct effects) and in districts located 20-30 kilometers from the road network (spillover effects). The distances of 20 and 30 kilometers are supported by a semi-parametric estimation for the effect of distance to roads on repression. In both panels, we measure directly and indirectly exposed districts with indicator variables. Standard errors are clustered at the district level. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.4: Two-stage least squares estimation

	Indicator for at least one event of:			Total events of:		
	Repression	Torture	Detention	Repression	Torture	Detention
	(1)	(2)	(3)	(4)	(5)	(6)
Distance to closest road	-0.009** (0.004)	-0.008* (0.004)	-0.009** (0.004)	-0.102** (0.041)	-0.084** (0.036)	-0.084** (0.036)
Observations	7,688	7,688	7,688	7,688	7,688	7,688
R-squared	0.001	0.001	0.001	0.002	0.002	0.002
District fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Mean dependent variable	0.0535	0.0471	0.0484	0.233	0.197	0.202
Districts	248	248	248	248	248	248

Notes: This table presents the empirical relationship between distance to the closest road and state-led repression in the period 1955-1985. The unit of observation is a district-year. The first stage use as instrument the distance to the straight lines in panel (b) of Figure A.4. The F-statistic on the excluded instrument is 7,169. Standard errors are clustered at the district level. Statistical significance: *** p<0.01, ** p<0.05, * p<0.1.

Table A.5: Distance to the network of railroads

	Indicator for at least one event of:			Total events of:		
	Repression	Torture	Detention	Repression	Torture	Detention
	(1)	(2)	(3)	(4)	(5)	(6)
Log distance to closest road	-0.011* (0.006)	-0.011* (0.006)	-0.011* (0.006)	-0.158** (0.070)	-0.138** (0.062)	-0.143** (0.063)
Log distance to train × 1960s	0.001 (0.005)	-0.002 (0.004)	-0.002 (0.004)	0.082 (0.075)	0.059 (0.064)	0.056 (0.062)
Log distance to train × 1970s	0.005 (0.006)	0.004 (0.005)	0.003 (0.005)	0.107 (0.080)	0.083 (0.071)	0.087 (0.072)
Log distance to train × 1980s	0.014*** (0.004)	0.011*** (0.004)	0.010** (0.004)	0.236 (0.183)	0.197 (0.157)	0.191 (0.148)
Observations	7,688	7,688	7,688	7,688	7,688	7,688
R-squared	0.270	0.257	0.260	0.458	0.451	0.428
District fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Mean dependent variable	0.054	0.047	0.048	0.233	0.202	0.197
Districts	248	248	248	248	248	248

Notes: This table presents the empirical relationship between distance to the closest road and state-led repression in the period 1955-1985. The unit of observation is a district-year. Columns 1-3 use indicators for at least one event of repression as dependent variables. Columns 4-6 use the total number of repression events as dependent variable. Standard errors are clustered by district. *Log distance to train × 1960s (1970s or 1980s)* is the log distance to the closest railroad interacted with a dummy that takes the value one for the 1960 (1970 or 1980) decade. Statistical significance: *** p<0.01, ** p<0.05, * p<0.1.

Table A.6: Other infrastructure projects and Itapúa

Dependent variable: Total number of state-led repression events				
<i>Additional control for:</i>	<i>Log distance to dam after construction</i>			<i>Itapúa 1955-76</i>
Panel A	(1)	(2)	(3)	(4)
Log distance to closest road	-0.156** (0.069)	-0.143** (0.065)	-0.155** (0.069)	-0.167** (0.070)
Itaipú dam	1.888 (1.174)		2.098* (1.232)	
Yacyretá dam		0.019 (1.865)	-1.236 (1.953)	
Indicator Itapúa in 1955–1976				0.346*** (0.122)
Panel B				
Itaipú dam	-0.597 (1.019)		-0.214 (0.965)	
Yacyretá dam		-2.265 (2.178)	-2.117 (2.108)	
Indicator Itapúa in 1955–1976				0.151* (0.081)
Panel C				
Log distance to closest road	-0.156** (0.069)	-0.143** (0.065)	-0.156** (0.070)	-0.191** (0.076)
× Itaipú dam	0.000 (0.008)		-0.006 (0.006)	
× Yacyretá dam		0.031* (0.019)	0.035** (0.017)	
× Indicator Itapúa in 1955–1976				0.141*** (0.050)
Itaipú dam	1.825 (1.829)		3.140* (1.695)	
Yacyretá		-6.612 (5.453)	-8.749 (5.320)	
Indicator Itapúa in 1955–1976				0.264** (0.110)
Observations	7,688	7,688	7,688	7,688
Districts	248	248	248	248
District fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Avg. dependent variable	0.233	0.233	0.233	0.233

Notes: The unit of observation is a district-year. In panel A, column 1 controls for the log distance to the Itaipu dam interacted with an indicator that takes the value one before 1974 and zero otherwise; column 2 controls for the log distance to the Yacyretá dam interacted with a dummy that takes the value one after 1983; column 3 adds both controls from columns 1 and 2; column 4 adds as a control a dummy for the Itapúa department interacted with a dummy that takes the value one from 1955 to 1975. Panel B repeats these exercises but drops log distance to closest road from the specification. Panel C repeats the exercises from panel A adding interaction terms. Standard errors are clustered by district. Statistical significance: *** p<0.01, ** p<0.05, * p<0.1.

Table A.7: Robustness to specification decisions

<i>Robustness exercise:</i>	Number of events per 1,000 inhab.	Poisson	Negative binomial	Collapse to periods with roads data
	(1)	(2)	(3)	(4)
Panel A – Repression				
Log distance to closest road	-0.016** (0.007)	-0.513** (0.246)	-0.292*** (0.053)	-0.844** (0.403)
Panel B – Torture				
Log distance to closest road	-0.014** (0.007)	-0.562** (0.264)	-0.324*** (0.056)	-0.777** (0.369)
Panel C – Detention				
Log distance to closest road	-0.014** (0.006)	-0.538** (0.246)	-0.305*** (0.056)	-0.736** (0.357)
Observations	7,688	2,852	2,852	1,240
District fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Districts	248	92	92	248

Notes: This table presents robustness exercises for the empirical relationship between roads and state-led repression. The unit of observation is a district-year. Each robustness exercise is described in the header of the corresponding column. Standard errors are clustered by district. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.8: Robustness to different covariates

<i>Covariates:</i>	Demographic	Economic	Development	Geographic	Lat/lon polynomials	Average distance	Moran I	LASSO selected
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A – Repression								
Log distance to closest road	-0.137** (0.062)	-0.137** (0.062)	-0.109** (0.054)	-0.188** (0.083)	-0.179** (0.078)	-0.140** (0.065)	-0.174** (0.083)	-0.182** (0.079)
Panel B – Torture								
Log distance to closest road	-0.127** (0.057)	-0.125** (0.055)	-0.102** (0.050)	-0.166** (0.073)	-0.160** (0.071)	-0.127** (0.058)	-0.155** (0.076)	-0.160** (0.072)
Panel C – Detention								
Log distance to closest road	-0.122** (0.055)	-0.120** (0.054)	-0.097** (0.048)	-0.163** (0.073)	-0.154** (0.069)	-0.123** (0.057)	-0.151** (0.074)	-0.155** (0.070)
Observations	7,688	7,688	7,688	7,688	7,688	7,688	7,688	7,688
Districts	248	248	248	248	248	248	248	248
District fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table presents robustness exercises for the empirical relationship between roads and state-led repression by adding different sets of controls interacted with year fixed effects. The unit of observation is a district-year. Column 1 includes the share of population that lives in rural areas, is female, speaks Guaraní, is illiterate, has at least secondary education, and children that go to school. Column 2 includes the share of population that economically active and works in the agriculture sector, as well as the share of households that mainly depend on agriculture. Column 3 includes the share of home ownership, and the share of houses with electricity and with access to clean water. Characteristics for columns 1 to 3 come from the 1950 Census. Column 4 includes average elevation, average slope, terrain ruggedness, the precipitation average and standard deviation precipitation, the isothermality, and log distance to the closest river. Column 5 includes a second-degree polynomial of latitude and longitude. Column 6 adds the log average distance of the districts to the centroid to all the rest of the districts. Column 7 includes the Moran I eigenvectors with an eigenvalue greater than 0.01 with the aim of capturing spatial autocorrelation among our districts (Bauman et al., 2018). In column 8, we select controls following Belloni et al. (2014) where the treatment to select the covariates is the change in log distance to closest road between 1955 and 1985. Standard errors are clustered by district. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.9: Robustness to sample composition

<i>Robustness exercise:</i>	Districts with less than 50,000 inhab.	Districts with less than 30,000 inhab.	Districts with less than 15,000 inhab.	Drops departments in the north-west region	Drops connecting districts	Drops Asunción from estimation	Only districts with some repression
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A – Repression							
Log distance to closest road	-0.110** (0.054)	-0.118** (0.058)	-0.122** (0.059)	-0.147** (0.068)	-0.110* (0.059)	-0.109** (0.054)	-0.253** (0.123)
Panel B – Torture							
Log distance to closest road	-0.103** (0.050)	-0.111** (0.053)	-0.112** (0.055)	-0.133** (0.060)	-0.102* (0.054)	-0.101** (0.050)	-0.231** (0.110)
Panel C – Detention							
Log distance to closest road	-0.097** (0.048)	-0.103** (0.051)	-0.104** (0.053)	-0.129** (0.059)	-0.094* (0.053)	-0.096** (0.048)	-0.222** (0.108)
Observations	7,626	7,440	6,634	7,223	7,409	7,657	2,976
Districts	246	240	214	233	239	247	96
District fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table presents robustness exercises for the empirical relationship between roads and state-led repression. The unit of observation is a district-year. Each robustness exercise is described in the header of the corresponding column. Standard errors are clustered by district. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.10: Difference across events with and without location

	Average [st. dev] among events of repression with observed location	Difference among districts without location information
	(1)	(2)
Detention	0.847 [0.360]	0.119*** (0.008)
Torture	0.798 [0.402]	-0.680*** (0.009)
Execution	0.014 [0.119]	-0.014*** (0.003)
Exile	0.106 [0.308]	-0.097*** (0.007)
Disappeared	0.056 [0.231]	-0.045*** (0.005)
Female	0.172 [0.377]	-0.057*** (0.009)
Missing year	0.023 [0.149]	0.187*** (0.006)
During the 50s	0.127 [0.333]	-0.037*** (0.008)
During the 60s	0.227 [0.419]	-0.103*** (0.010)
During the 70s	0.437 [0.496]	-0.107*** (0.012)
During the 80s	0.184 [0.387]	0.060*** (0.010)
Districts	2,236	8,898

Notes: This table presents differences in observable variables across repression events with and without information on the location where these took place. Column 1 presents the average and standard deviation for districts with location information. Column 2 presents the statistical difference in observable variables among the events without location information. We calculate the difference by estimating a simple cross-sectional regression using as dependent variable the observable variable in each row and as main right-hand side variable an indicator that takes the value of one for events with missing location. Robust standard errors in parentheses. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.11: Robustness of results in the 1955-1979 period

	Indicator for at least one event of:			Total events of:		
	Repression	Torture	Detention	Repression	Torture	Detention
Panel A	(1)	(2)	(3)	(4)	(5)	(6)
Log distance to closest road	-0.011 (0.008)	-0.011 (0.008)	-0.011 (0.007)	-0.186** (0.087)	-0.168** (0.080)	-0.161** (0.077)
Panel B						
Distance to road < 30km	0.050** (0.020)	0.048** (0.018)	0.052*** (0.020)	0.509*** (0.177)	0.456*** (0.159)	0.437*** (0.153)
Observations	6,200	6,200	6,200	6,200	6,200	6,200
Districts	248	248	248	248	248	248
R-squared	0.277	0.268	0.269	0.502	0.494	0.494
District fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Mean dependent variable	0.0556	0.0490	0.0502	0.261	0.222	0.226

Notes: This table presents the empirical relationship between distance to the closest road and state-led repression in the period 1955-1985. The unit of observation is a district-year. Columns 1-3 use indicators for at least one event of repression as dependent variables. Columns 4-6 use the total number of repression events as dependent variable. Standard errors are clustered by district. Statistical significance: *** p<0.01, ** p<0.05, * p<0.1.

Table A.12: Road construction and state-led repression: Imputations

Imputation	Based on overall share:			Based on yearly share:		
	Repression	Torture	Detention	Repression	Torture	Detention
Panel A	(1)	(2)	(3)	(4)	(5)	(6)
Log distance to closest road	-0.159** (0.067)	-0.138** (0.059)	-0.144** (0.062)	-0.297** (0.133)	-0.260** (0.117)	-0.267** (0.117)
Panel B						
Indicator for distance to road < 30km	0.453*** (0.142)	0.389*** (0.122)	0.408*** (0.129)	0.820*** (0.271)	0.709*** (0.234)	0.729*** (0.236)
Observations	7,688	7,688	7,688	7,688	7,688	7,688
R-squared	0.491	0.478	0.461	0.464	0.454	0.429
District fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Mean dependent variable	0.494	0.423	0.411	0.494	0.423	0.411
Districts	248	248	248	248	248	248

Notes: This table presents the empirical relationship between distance to the closest road and state-led repression in the period 1955-1985. The unit of observation is a district-year. All columns use the total number of repression events as dependent variable. In columns 1-3, we impute the repression events without district by using the interaction between the total events in that year and the share of total events that the district experience in the whole period. In columns 4-6, we impute the repression events without district by using the interaction between the total events in that year and the share of total events that the district experience in that particular year. Standard errors are clustered by district. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.13: Illegal land allocations and long-term development: Robustness to outliers

Outcome:	Development				Extractive activities					
	Ln Nighttime lights	Ln Population density	Agricultural production	Score (standardized)	Pollution	Wild fires	Deforestation	Any mine	Score (standardized)	Land invasion
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Winsorized at 1%										
Log hectares	-0.036*** (0.011)	-0.053*** (0.018)	-0.010** (0.004)	-0.050*** (0.015)	0.013 (0.009)	0.015*** (0.006)	-0.000 (0.002)	0.008* (0.004)	0.023** (0.011)	0.009* (0.005)
Panel A: Winsorized at 5%										
Log hectares	-0.034*** (0.011)	-0.042*** (0.016)	-0.009** (0.004)	-0.048*** (0.015)	0.009 (0.009)	0.016*** (0.005)	0.000 (0.002)	0.008* (0.004)	0.026** (0.011)	0.009* (0.005)
Observations	248	248	248	248	248	248	248	248	248	248
Geographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Socio-demographic controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table shows the relationship between land allocations and long-term outcomes. The dependent variables are all computed from 2000 until 2020. Log hectares is the logarithm of the sum of land allocations from 1955 to 1985. Change in roads distance is the change in the log distance to the closest roads in 1985 minus 1955. Robust standard errors are presented in parenthesis. The set of geographic controls include: average elevation, average slope of the terrain, ruggedness, average precipitation and temperature, the standard deviation of temperature, isothermality index, and the log distance to rivers. The socio-demographic controls based on the 1950 Census include: share of rural population, share of female population, share of people that speaks an indigenous language, share of illiterate population, share of children going to school, share of population that finished secondary education, share of households with agriculture as the main income, share of population working in agriculture, share of population that owns a house, share of houses with electricity, and share of houses with running water. Robust standard errors presented in parenthesis. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.