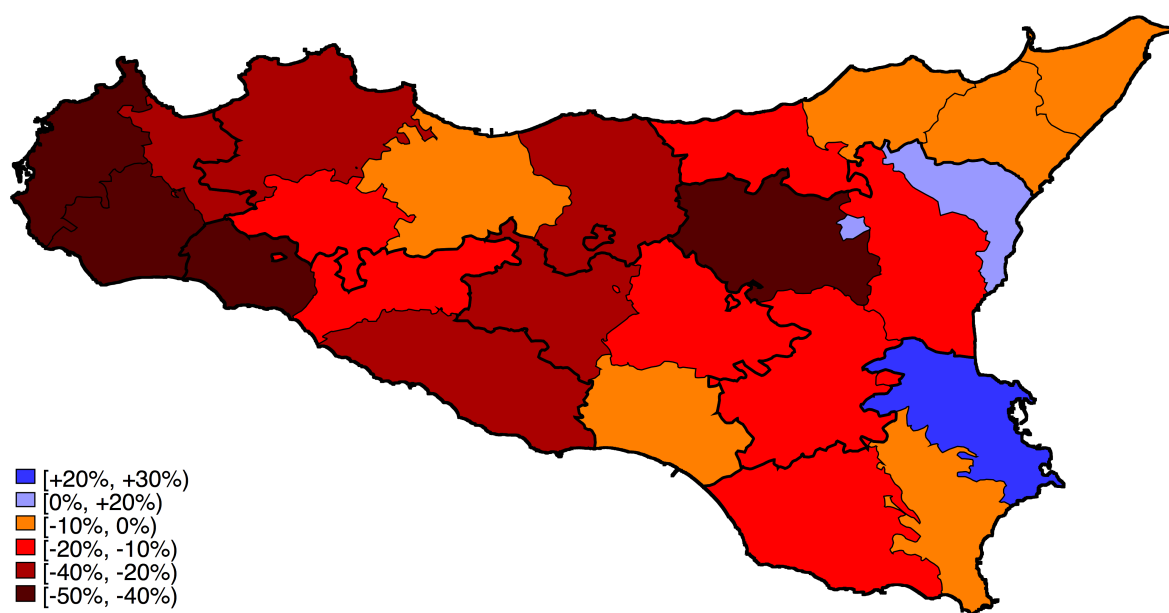# ONLINE APPENDIX A

Figure A1: Change in agricultural production per hectare for 20 crops in 1893

Notes: Average change in agricultural production per hectare for 18 crops in 1893 with respect to the average of the years 1885-1895 (excluding 1893) in each of the 24 districts. The average is computed by weighting the average production per hectare of the single crops by the size of the area devoted to each crop in every district. The crops are barley, beans, broad beans, chestnuts, corn, flax, hemp, hay, lemons, oat, olive oil, oranges, other citrus, potatoes, rice, rye, wheat, wine.

Figure A2: Cumulative distributions of betas for Relative rainfall 1900-41
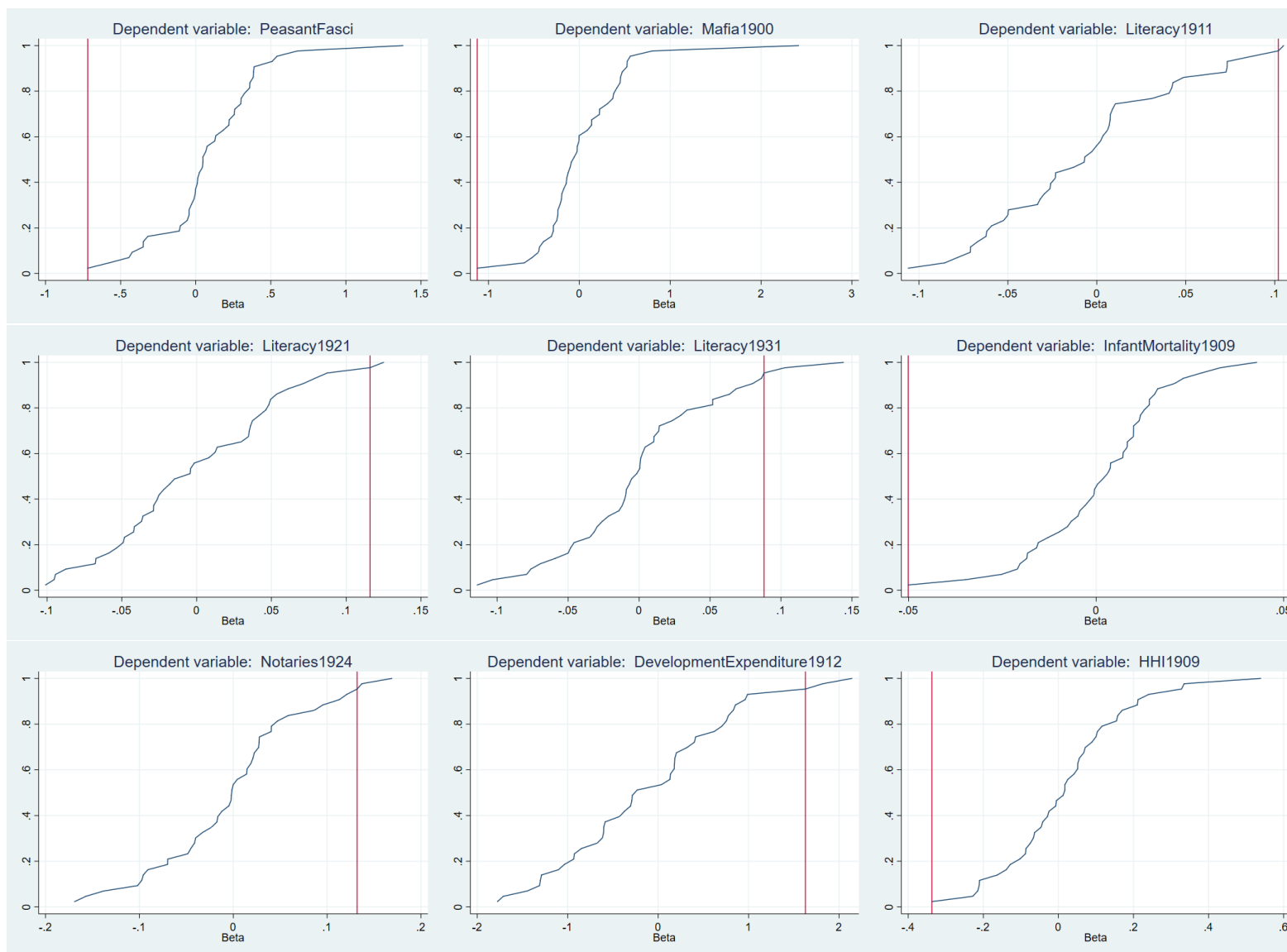
Notes: Red vertical lines identify coefficients of Relative rainfall in 1893

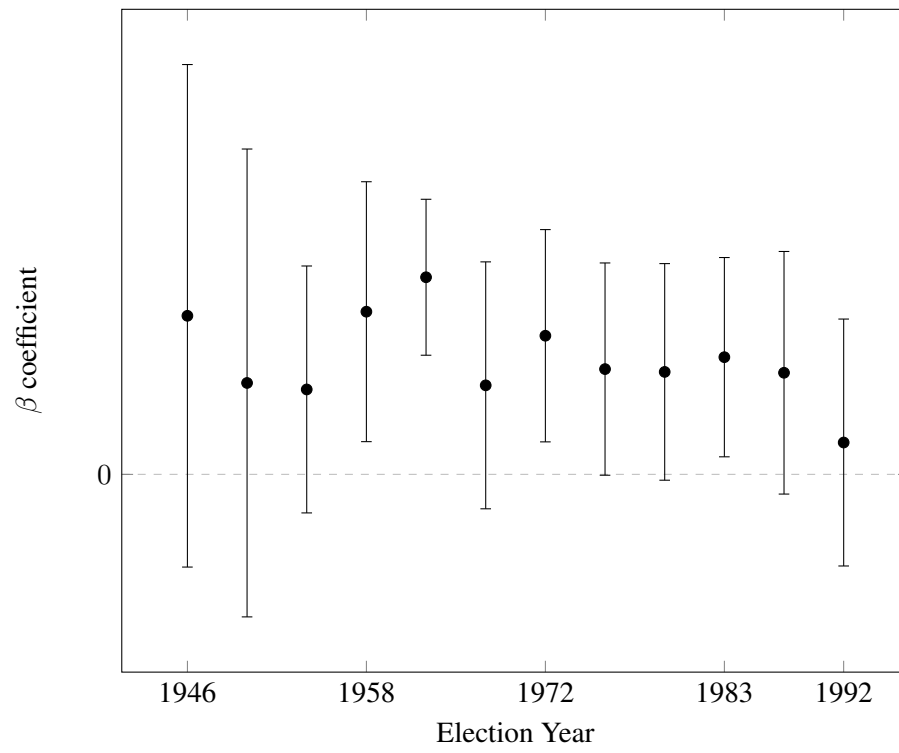Figure A3: The impact of Mafia on HHI in national elections (90% CI)

Table A1: Main Results. White Noise and Conley Standard Errors

Dependent variables:	(1)	(2)	(3)	Dependent variables:	(4)	(5)	(6)
Panel A: The Impact of 1893 Relative Rainfall on Mafia and Peasant Fasci (First Stage)							
Peasant Fasci	-0.81	-0.74	-0.72	Mafia 1900	-0.83	-0.99	-1.12
	(0.13)	(0.13)	(0.16)		(0.30)	(0.30)	(0.34)
	[0.16]	[0.16]	[0.17]		[0.26]	[0.28]	[0.26]
Panel B: The Impact of Peasant Fasci on Mafia (Second Stage)							
Mafia 1900	1.03	1.34	1.56				
	(0.39)	(0.43)	(0.52)				
	[0.36]	[0.45]	[0.53]				
Panel C: Medium- and Long-Term Impacts of Mafia (Second Stage)							
Literacy 1911	-0.07	-0.06	-0.09	Literacy 1921	-0.10	-0.09	-0.10
	(0.04)	(0.04)	(0.04)		(0.05)	(0.04)	(0.04)
	[0.04]	[0.03]	[0.04]		[0.04]	[0.04]	[0.05]
Literacy 1931	-0.07	-0.06	-0.08	Literacy 1961	-0.04	-0.03	-0.04
	(0.04)	(0.03)	(0.03)		(0.02)	(0.02)	(0.02)
	[0.03]	[0.03]	[0.04]		[0.02]	[0.01]	[0.02]
Literacy 1971	-0.03	-0.02	-0.03	Literacy 1981	-0.02	-0.01	-0.01
	(0.02)	(0.01)	(0.02)		(0.01)	(0.01)	(0.01)
	[0.01]	[0.01]	[0.01]		[0.01]	[0.01]	[0.01]
High school 1961	-0.02	-0.02	-0.01	High school 1971	-0.03	-0.02	-0.02
	(0.01)	(0.01)	(0.00)		(0.01)	(0.01)	(0.01)
	[0.01]	[0.01]	[0.00]		[0.01]	[0.01]	[0.01]
High school 1981	-0.04	-0.03	-0.02	Infant mortality 1909	0.04	0.04	0.05
	(0.02)	(0.01)	(0.01)		(0.02)	(0.02)	(0.02)
	[0.02]	[0.01]	[0.01]		[0 .02]	[0.02]	[0.02]]
Infant mortality 1969-70	0.00	0.00	0.00	Infant mortality 1982	-0.01	-0.01	-0.01
	(0.01)	(0.01)	(0.01)		(0.01)	(0.01)	(0.01)
	[0.01]	[0.01]	[0.01]		[0.01]	[0.00]	[0.01]
Development Expenditure 1912	-2.40	-2.08	-1.45	Development Expenditure 1957	-0.56	-0.50	-0.02
	(1.23)	(0.96)	(0.83)		(0.45)	(0.37)	(0.33)
	[0.85]	[0.61]	[0.59]		[0.43]	[0.33]	[0.21]
Notaries 1924	-0.12	-0.11	-0.12	Aqueduct coverage 1961	-0.13	-0.12	-0.17
	(0.07)	(0.06)	(0.06)		(0.09)	(0.08)	(0.08)
	[0.06]	[0.05]	[0.05]		[0.09]	[0.07]	[0.07]
Aqueduct coverage 1971	-0.13	-0.10	-0.07	Aqueduct coverage 1981	-0.14	-0.12	-0.09
	(0.07)	(0.05)	(0.04)		(0.07)	(0.06)	(0.05)
	[0.07]	[0.06]	[0.03]		[0.08]	[0.07]	[0.05]
HHI 1909	0.41	0.34	0.31	HHI 1963	0.10	0.08	0.09
	(0.16)	(0.12)	(0.11)		(0.04)	(0.03)	(0.03)
	[0.15]	[0.12]	[0.11]		[0.03]	[0.02]	[0.03]
HHI 1972	0.08	0.07	0.06	HHI 1983	0.09	0.07	0.05
	(0.04)	(0.03)	(0.03)		(0.04)	(0.03)	(0.02)
	[0.03]	[0.02]	[0.03]		[0.03]	[0.02]	[0.02]
Province FE	✓	✓	✓		✓	✓	✓
Determinants of Fasci	✓	✓	✓		✓	✓	✓
Determinants of Mafia		✓	✓			✓	✓
Geographic controls			✓				✓

Notes: OLS and 2SLS estimates of the main results of the paper reporting white noise standard errors (in round brackets) and spatially-corrected standard errors computed following Conley's procedure (in square brackets) with a cutoff of 0.4 degree for latitude and 0.75 degree for longitude, which represent roughly half of the height and width of the Sicilian island. Panel A reports the coefficients of relative rainfall in the spring of 1893 in our two first stage regressions (as in Tables 3 and 5); Panel B reports the coefficient of Peasant Fasci in the second stage (Table 4); Panel C reports the coefficients of Mafia 1900 in the second stage for all medium- and long-term economic outcomes, public goods, and politics. The dependent variables are listed on the left of the Table. Relative rainfall is measured at weather station level and interpolated at municipality level using the inverse of the distances as weights with a cutoff of 30km. The specifications in columns 1 and 4 include province dummies and other determinants of the presence of the Peasant Fasci. The specifications in columns 2 and 5 also include various determinants of the presence of the Mafia. Finally, in columns 3 and 6 we add a range of geographic controls.

Table A2: The Impact of Relative Rainfall 1893 on Peasant Fasci: District level analysis

Dependent variable: Peasant Fasci				
	(1)	(2)	(3)	(4)
Panel A: without province fixed effects				
Relative Rainfall 1893	-1.04	-0.85	-0.90	-0.97
	(0.13)	(0.16)	(0.16)	(0.38)
R-squared	0.69	0.90	0.95	0.84
Panel B: with province fixed effects				
Relative Rainfall 1893	-0.96	-0.53	-0.49	-1.36
	(0.24)	(0.25)	(0.37)	(0.31)
R-squared	0.81	0.95	0.97	0.97
Determinants of Fasci		✓	✓	
Determinants of Mafia			✓	
Geographic controls				✓
Observations	23	23	23	23

Notes: OLS estimates of the impact of relative rainfall in the spring of 1893 on the emergence of Peasant Fasci organizations, district level analysis. All the variables have been averaged at district level from the municipality level data. Panel A does not include province fixed effects which are included in all the specifications of Panel B. The specifications in column 1 includes only relative rainfall in the spring of 1893. The specifications in column 2 also include other determinants of the presence of the Peasant Fasci (a dummy indicating whether a Peasant Fasci was present before March 1893, a dummy for the municipality being an agro-town, the levels of rural rents and urban rents in 1853, the share of total cultivated land, and the share of land devoted to grains). The specifications in column 3 also include various determinants of the presence of the Mafia (sulfur production in 1868-70, the share of land devoted to citrus groves, vineyards and olive trees, and a measure of the presence of the Mafia in 1885). Finally, in column 4 we add to relative rainfall in the spring of 1893 a range of geographic controls (log population in 1861, log area of the municipality, elevation of the town center, maximum altitude, average altitude, distance to Palermo, distance to the closest port, the access to a postal road, average temperature, average rainfall and variance of relative rainfall). The small number of observations does not allow to control at the same time for the three sets of controls, as we do in the rest of the paper. We report robust standard errors.

Table A3: Relative Rainfall 1893 and Mafia: District level analysis

Dependent variable: Mafia 1900				
	(1)	(2)	(3)	(4)
Panel A: without province fixed effects				
Relative Rainfall 1893	-2.15	-1.72	-1.68	-1.50
	(0.40)	(0.54)	(0.52)	(0.80)
R-squared	0.47	0.62	0.85	0.86
Panel B: with province fixed effects				
Relative Rainfall 1893	-0.88	-0.30	-0.16	-2.35
	(0.57)	(0.99)	(1.48)	(1.11)
R-squared	0.75	0.83	0.96	0.94
Determinants of Fasci			✓	✓
Determinants of Mafia				✓
Geographic controls				✓
Observations	23	23	23	23

Notes: OLS estimates of the impact of relative rainfall in the spring of 1893 on the presence of the Mafia in 1900, district level analysis. All the variables have been averaged at district level from the municipality level data. Panel A does not include province fixed effects which are included in all the specifications of Panel B. The specifications in column 1 includes only relative rainfall in the spring of 1893. The specifications in column 2 also include other determinants of the presence of the Peasant Fasci (a dummy indicating whether a Peasant Fasci was present before March 1893, a dummy for the municipality being an agro-town, the levels of rural rents and urban rents in 1853, the share of total cultivated land, and the share of land devoted to grains). The specifications in column 3 also include various determinants of the presence of the Mafia (sulfur production in 1868-70, the share of land devoted to citrus groves, vineyards and olive trees, and a measure of the presence of the Mafia in 1885). Finally, in column 4 we add to relative rainfall in the spring of 1893 a range of geographic controls (log population in 1861, log area of the municipality, elevation of the town center, maximum altitude, average altitude, distance to Palermo, distance to the closest port, the access to a postal road, average temperature, average rainfall and variance of relative rainfall). The small number of observations does not allow to control at the same time for the three sets of controls, as we do in the rest of the paper. We report robust standard errors.

Table A4: Peasant Fasci and Mafia in 1885

Dependent variable: Peasant Fasci				
	(1)	(2)	(3)	(4)
Mafia 1885	-0.05	-0.06	-0.05	-0.05
	(0.02)	(0.02)	(0.02)	(0.03)
Province FE	✓	✓	✓	✓
Determinants of Fasci		✓	✓	✓
Determinants of Mafia			✓	✓
Geographic controls				✓
R-squared	0.32	0.36	0.41	0.44
Observations	245	245	245	245

Notes: OLS estimates of the impact of the Mafia presence in 1885 on the emergence of Peasant Fasci organizations. Mafia presence is derived from Damiani (1885) and, as in Buonanno et al. (2015), takes a value of 0, 1, 2, or 3, progressively indicating the strength of the Mafia in a municipality with 0 denoting no presence of Mafia organizations and 3 highest density of the Mafia. The dependent variable is a dummy indicating the presence in the municipality of a Peasant Fasci organization. The specification in column 1 includes only Mafia strength in 1885 and province fixed effects. The specification in column 2 also includes other determinants of the presence of the Peasant Fasci (a dummy indicating whether a Peasant Fasci was present before March 1893, a dummy for the municipality being an agro-town, the levels of rural rents and urban rents in 1853, the share of total cultivated land, and the share of land devoted to grains). The specification in column 3 also add various determinants of the presence of the Mafia (sulfur production in 1868-70, the share of land devoted to citrus groves, vineyards and olive trees, and a measure of the presence of the Mafia in 1885). Finally, in column 4 we include a range of geographic controls (log population in 1861, log area of the municipality, elevation of the town center, maximum altitude, average altitude, distance to Palermo, distance to the closest port, the access to a postal road, average temperature, average rainfall and variance of relative rainfall). We report bootstrapped standard errors allowing for two-way clustering conditional on the district in which the municipality is located and the closest weather station to the municipality.

Table A5: Simultaneous equations system to analyze the effect of Mafia presence on Peasant Fasci and of Peasant Fasci on Mafia.

	Panel A: Dependent variable: Mafia1900							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Peasants' Fasci	1.06	1.20	1.34	1.56	0.99	1.17	1.34	1.56
	(0.42)	(0.37)	(0.39)	(0.54)	(0.41)	(0.32)	(0.39)	(0.54)
Sulfur production in 1868-70	0.01	0.01	0.01	0.01				
	(0.00)	(0.00)	(0.00)	(0.00)				
Mafia1885					0.22	0.22	0.19	0.21
					(0.08)	(0.08)	(0.08)	(0.09)

	Panel B: Dependent variable: Peasants fasci							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mafia1900	-0.39	-0.43	-0.46	-0.47	-0.24	-0.27	-0.25	-0.25
	(0.20)	(0.20)	(0.21)	(0.20)	(0.08)	(0.10)	(0.12)	(0.15)
Relative Spring Rainfall 1893	-1.02	-1.18	-1.19	-1.25	-0.92	-1.04	-0.98	-1.00
	(0.28)	(0.31)	(0.33)	(0.37)	(0.22)	(0.23)	(0.25)	(0.31)
Determinants of Fasci		✓	✓	✓		✓	✓	✓
Determinants of Mafia			✓	✓			✓	✓
Geographic controls				✓				✓
Province FE	✓	✓	✓	✓	✓	✓	✓	✓
Observations	245	245	245	245	245	245	245	245

Notes: Three-stage least square estimation of a system of simultaneous equations to analyze the effect of Mafia presence on Peasant Fasci and of Peasant Fasci on Mafia. We use relative rainfall in the spring of 1893 as excluded instrument for Peasant Fasci while the excluded instrument for Mafia 1900 is sulfur production in 1868-70 in the specifications of columns 1-4 and Mafia 1885 in the specifications of columns 5-8. In Panel A we report the coefficient estimates for the equation with Mafia 1900 as dependent variable, while in panel B we report the coefficient estimates for the equation with Peasant Fasci as dependent variable. In Columns 1 and 5 we include only the province fixed effects as additional controls to the endogenous regressors and the relative excluded instruments. The specification in columns 2 and 6 also includes other determinants of the presence of the Peasant Fasci. The specification in columns 3 and 7 adds the other determinants of the presence of the Mafia. Finally, in columns 4 and 8 we include a range of geographic controls. We report bootstrapped standard errors allowing for two-way clustering conditional on the district in which the municipality is located and the closest weather station to the municipality.

Table A6: Mafia supply. Mafia presence in the neighborhood in 1885 on Peasant Fasci and Mafia1900.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Dependent variable: Peasant Fasci									
Relative Rainfall 1893	-0.71	-0.66	-0.55	-0.66	-0.62	-0.47	-0.76	-0.71	-0.64
	(0.22)	(0.23)	(0.29)	(0.23)	(0.24)	(0.30)	(0.23)	(0.23)	(0.29)
Mafia in 1885	-0.06	-0.06	-0.05	-0.06	-0.06	-0.05	-0.05	-0.05	-0.04
	(0.07)	(0.07)	(0.08)	(0.06)	(0.07)	(0.07)	(0.06)	(0.07)	(0.07)
Mafia in 1885 × Relative Rainfall 1893	0.03	0.05	0.03	0.04	0.05	0.03	0.02	0.03	0.01
	(0.11)	(0.11)	(0.13)	(0.11)	(0.11)	(0.13)	(0.10)	(0.10)	(0.12)
neighboring Mafia in 1885 (average)	0.04	0.07	0.11						
	(0.12)	(0.12)	(0.12)						
neighboring Mafia in 1885 (average) × Relative Rainfall 1893	-0.16	-0.18	-0.25						
	(0.20)	(0.22)	(0.21)						
neighboring Mafia in 1885 (max)				0.04	0.05	0.08			
				(0.07)	(0.07)	(0.07)			
neighboring Mafia in 1885 (max) × Relative Rainfall 1893				-0.10	-0.10	-0.15			
				(0.11)	(0.13)	(0.12)			
neighboring Mafia in 1885 (max dummy)							0.05	0.08	0.12
							(0.21)	(0.21)	(0.21)
neighboring Mafia in 1885 (max dummy) × Relative Rainfall 1893							-0.12	-0.08	-0.16
							(0.35)	(0.46)	(0.44)
	243	243	243	243	243	243	245	245	245
Panel B: Dependent variable: Mafia in 1900									
Relative Rainfall 1893	-0.79	-0.93	-1.29	-0.90	-0.98	-1.39	-0.96	-1.03	-1.31
	(0.38)	(0.40)	(0.56)	(0.44)	(0.44)	(0.59)	(0.31)	(0.30)	(0.41)
Mafia in 1885	0.12	0.11	0.05	0.14	0.10	0.04	0.14	0.11	0.03
	(0.15)	(0.18)	(0.17)	(0.14)	(0.17)	(0.16)	(0.14)	(0.17)	(0.16)
Mafia in 1885 × Relative Rainfall 1893	0.07	0.06	0.21	0.03	0.06	0.21	0.03	0.05	0.23
	(0.21)	(0.24)	(0.23)	(0.19)	(0.22)	(0.21)	(0.19)	(0.21)	(0.21)
neighboring Mafia in 1885 (average)	0.11	0.03	-0.05						
	(0.21)	(0.20)	(0.23)						
neighboring Mafia in 1885 (average) × Relative Rainfall 1893	-0.25	-0.17	0.02						
	(0.46)	(0.41)	(0.52)						
neighboring Mafia in 1885 (max)				0.04	0.03	-0.03			
				(0.09)	(0.11)	(0.12)			
neighboring Mafia in 1885 (max) × Relative Rainfall 1893				-0.02	-0.03	0.06			
				(0.20)	(0.21)	(0.24)			
neighboring Mafia in 1885 (max dummy)							0.15	0.10	0.07
							(0.35)	(0.33)	(0.33)
neighboring Mafia in 1885 (max dummy) × Relative Rainfall 1893							0.31	0.25	0.22
							(0.54)	(0.50)	(0.49)
Observations	243	243	243	243	243	243	245	245	245
Province FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Determinants of Fasci	✓	✓	✓	✓	✓	✓	✓	✓	✓
Determinants of Mafia		✓	✓		✓	✓		✓	✓
Geographic controls			✓			✓			✓

Notes: OLS estimates of the impact of the presence of Mafia in 1885 in the municipality and in its neighborhood on the emergence of Peasant Fasci in 1893-4 and on the presence of the Mafia in 1900. In this table we report the estimates of the baseline equations (2) and (3) including the pre-existing presence of Mafia in the municipality and in the neighborhood in 1885 and their interaction with relative rainfall in the spring of 1893. Mafia presence in 1885 is derived from Damiani (1885) and, as in Buonanno et al. (2015), takes a value of 0, 1, 2, or 3, progressively indicating the strength of the Mafia in a municipality with 0 denoting no presence of Mafia organizations and 3 highest density of the Mafia. In columns 1-3 the Mafia presence in the neighborhood is measured as the average level in the neighboring municipalities, while in column 4-6 it is measured by the maximum level in the neighboring municipalities, while in columns 7-9 it is a dummy that takes on value 1 if there is at least one neighboring municipality with highest density of the Mafia. Panel A reports the coefficient estimates when the dependent variable is Peasant Fasci, while Panel B reports the coefficient estimates when Mafia in 1900 is the dependent variable. The specification in columns 1, 4, and 7 also include relative rainfall in the spring of 1893, province fixed effects and other determinants of the presence of the Peasant Fasci. The specification in columns 2, 5, and 8 adds various determinants of the presence of the Mafia. Finally, in columns 3, 6 and 9 we include a range of geographic controls. We report bootstrapped standard errors allowing for two-way clustering conditional on the district in which the municipality is located and the closest weather station to the municipality.

Table A7: Mafia Supply. Analysis of the effect of the presence of some determinants of Mafia on Peasant Fasci and Mafia1900

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Dependent variable: Peasant Fasci									
Relative Rainfall 1893	-0.83	-0.80	-0.78	-0.88	-0.80	-0.78	-0.38	-0.21	-0.18
	(0.25)	(0.24)	(0.30)	(0.22)	(0.24)	(0.27)	(0.17)	(0.19)	(0.19)
Sulfur Production 1868-70	-0.01	-0.01	-0.01						
	(0.02)	(0.02)	(0.02)						
Sulfur Production 1868-70 × Relative Rainfall 1893	0.01	0.01	0.00						
	(0.09)	(0.09)	(0.09)						
Citrus groves (share in 1830s)				-6.92	-5.80	-6.53			
				(17.08)	(18.20)	(18.50)			
Citrus groves (share in 1830s) × Relative Rainfall 1893				10.76	10.78	12.77			
				(22.93)	(24.05)	(24.39)			
Relative Rainfall 1893 in the neighborhood							-0.57	-0.70	-0.76
							(0.28)	(0.31)	(0.38)
Observations	245	245	245	245	245	245	243	243	243
Panel B: Dependent variable: Mafia in 1900									
Relative Rainfall 1893	-0.90	-0.97	-1.11	-0.72	-0.88	-1.06	-0.73	-1.08	-1.12
	(0.26)	(0.27)	(0.39)	(0.25)	(0.31)	(0.40)	(0.16)	(0.47)	(0.55)
Sulfur Production 1868-70	0.01	0.01	0.01						
	(0.03)	(0.02)	(0.03)						
Sulfur Production 1868-70 × Relative Rainfall 1893	-0.00	-0.00	-0.00						
	(0.13)	(0.07)	(0.09)						
Citrus groves (share in 1830s)				14.53	13.43	10.72			
				(51.01)	(44.38)	(47.77)			
Citrus groves (share in 1830s) × Relative Rainfall 1893				-21.05	-17.21	-13.14			
				(65.97)	(58.23)	(62.44)			
Relative Rainfall 1893 in the neighborhood							-0.13	0.12	0.01
							(0.46)	(0.60)	(0.52)
Observations	245	245	245	245	245	245	243	243	243
Province FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Determinants of Fasci	✓	✓	✓	✓	✓	✓	✓	✓	✓
Determinants of Mafia		✓	✓		✓	✓		✓	✓
Geographic controls			✓			✓			✓

Notes: OLS estimates of the impact of the presence of Mafia in 1885 in the municipality and in its neighborhood on the emergence of Peasant Fasci in 1893-4 and on the presence of the Mafia in 1900. In this table we report the estimates of the baseline equations (2) and (3) including the interaction with relative rainfall in the spring of 1893 of some Mafia determinants in the municipality. In columns 1-3 we include the interaction of sulfur production with relative rainfall in spring 1893, while in column 4-6 we include the interaction of citrus groves instead. Finally in columns 7-9 we include the average level of rainfall in the neighborhood. Panel A reports the coefficient estimates when the dependent variable is Peasant Fasci, while Panel B reports the coefficient estimates when Mafia in 1900 is the dependent variable. The specification in columns 1, 4, and 7 also include relative rainfall in the spring of 1893, province fixed effects and other determinants of the presence of the Peasant Fasci. The specification in columns 2, 5, and 8 adds various determinants of the presence of the Mafia. Finally, in columns 3, 6 and 9 we include a range of geographic controls. We report bootstrapped standard errors allowing for two-way clustering conditional on the district in which the municipality is located and the closest weather station to the municipality.

Table A8: Robustness Tests on Relative Rainfall

	(1)	(2)	(3)
Panel A: Dependent variable: Peasant Fasci			
Relative Spring Rainfall 1892	-0.26	-0.21	
	(0.17)	(0.16)	
Relative Spring Rainfall 1893		-0.53	-0.70
		(0.29)	(0.36)
Relative Winter Rainfall 1892-3			0.04
			(0.25)
Relative Summer Rainfall 1893			0.00
			(0.07)
Relative Fall Rainfall 1892			0.08
			(0.27)
R-squared	0.44	0.46	0.53
Panel B: Dependent variable: Mafia 1900			
Relative Spring Rainfall 1892	-0.16	0.02	
	(0.40)	(0.49)	
Relative Spring Rainfall 1893		-1.12	-1.27
		(0.55)	(0.43)
Relative Winter Rainfall 1892-3			-0.78
			(0.82)
Relative Summer Rainfall 1893			-0.01
			(0.17)
Relative Fall Rainfall 1892			0.04
			(0.54)
R-squared	0.58	0.61	0.67
Full set of controls	✓	✓	✓
Observations	210	205	208

Notes: Estimates of the impact of relative rainfall in several seasons of 1892 and 1893 on the Peasant Fasci and the Mafia in 1900. Relative rainfall is measured at weather station level and interpolated at municipality level using the inverse of the distances as weights with a cutoff of 30km. Panel A reports the estimates for Peasant Fasci while Panel B reports the estimated for the Mafia. All specifications include the full set of controls (Determinants of Fasci, Determinants of Mafia, and Geographic controls) and province fixed effects. The specifications in column 1 control for relative rainfall in the spring of 1892. The specifications in column 2 also include relative rainfall in the spring of 1893. The specifications in column 3 also include relative rainfall in the fall of 1892, the winter of 1892-3, and the summer of 1893. We report bootstrapped standard errors allowing for two-way clustering conditional on the district in which the municipality is located and the closest weather station to the municipality.

Table A9: Alternative Measures for Relative Rainfall 1893

	(1)	(2)	(3)	(4)	(5)
Panel A:					
Dependent variable: Peasant Fasci					
Relative Rainfall 1893	-0.36	-0.78	-0.57	-0.63	-0.71
	(0.14)	(0.31)	(0.30)	(0.33)	(0.32)
R-squared	0.50	0.50	0.52	0.51	0.49
Panel B:					
Dependent variable: Mafia 1900					
Relative Rainfall 1893	-0.46	-1.16	-1.43	-0.94	-0.98
	(0.22)	(0.41)	(0.47)	(0.48)	(0.39)
R-squared	0.59	0.59	0.69	0.59	0.57
Measure of Relative Rainfall 1893:					
Log of relative rainfall	✓				
Relative rainfall capped at 1		✓			
Interpolation using:					
Minimum two stations			✓		
Stations within 25 km				✓	
Stations within 35 km					✓
Full set of controls	✓	✓	✓	✓	✓
Observations	245	245	155	216	251

Notes: Estimates of the impact of alternative measures of relative rainfall in the spring of 1893 on the Peasant Fasci and the Mafia in 1900. In panel A we report the estimates of the effects on the Peasant Fasci while in panel B the effect on the Mafia. All specifications include the full set of controls (Determinants of Fasci, Determinants of Mafia, and Geographic controls) and province fixed effects. The specifications in column 1 include the natural logarithm of relative rainfall measured at weather station level and interpolated at municipality level using the inverse of the distances as weights with a cutoff of 30km. The specifications in column 2 include instead the relative rainfall interpolated as above, but capped at 1. The specifications in column 3 include the relative rainfall for the municipalities where at least two weather stations where used to compute the interpolated measure of relative rainfall within the 30km cutoff. The specifications in column 4 include the relative rainfall interpolated at municipality level using the inverse of the distances as weights with a cutoff of 25km. Finally, the specifications in column 5 include the relative rainfall interpolated at municipality level using the inverse of the distances as weights with a cutoff of 35km. We report bootstrapped standard errors allowing for two-way clustering conditional on the district in which the municipality is located and the closest weather station to the municipality.

Table A10: Alternative interpolation method

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Peasant Fasci and the Mafia							
Dependent Variable	Peasant Fasci			Mafia1900			
Alternative interpolation for	-0.76	-0.70				-1.24	-1.06
Relative Rainfall 1893	(0.19)	(0.28)				(0.35)	(0.40)
Peasant Fasci				1.63	1.51		
				(0.47)	(0.56)		
F-statistic	15.45	6.14				12.30	7.12
IV				✓	✓		
province FE		✓			✓		✓
Full set of controls	✓	✓		✓	✓	✓	✓

Panel B: Medium Term Outcomes							
Dependent variable:	Literacy in 1911	Literacy in 1921	Literacy in 1931	Infant Mortality in 1909	Notaries in 1924	Development Expenditure in 1912	HHI in 1909
Mafia 1900	-0.10	-0.12	-0.08	0.05	-0.13	-1.60	0.35
	(0.05)	(0.05)	(0.04)	(0.02)	(0.06)	(0.93)	(0.15)
IV	✓	✓	✓	✓	✓	✓	✓
Full set of controls	✓	✓	✓	✓	✓	✓	✓

Panel C: Long Term Outcome						
Dependent variable:	High School	Literacy	Infant Mortality	Aqueduct Availability	Development Expenditure	HHI
a) 1961: Mafia 1900	-0.01	-0.04		-0.17	-0.05	0.10
	(0.01)	(0.02)		(0.10)	(0.37)	(0.02)
b) 1971: Mafia 1900	-0.02	-0.03	0.00	-0.07		0.07
	(0.01)	(0.02)	(0.01)	(0.04)		(0.03)
c) 1981: Mafia 1900	-0.02	-0.01	-0.09	-0.01		0.06
	(0.02)	(0.01)	(0.08)	(0.01)		(0.03)
IV	✓	✓	✓	✓	✓	✓
Full set of controls	✓	✓	✓	✓	✓	✓

Notes: This table provides a summary of the main results of the paper when the relative rainfall in the spring of 1893 is measured using an alternative interpolation. In particular we first interpolate the absolute level of the rainfall in the spring of 1893 at station level, then the average spring rainfall at station level and finally take the ratio of the two interpolated measures at municipality level. The interpolation is performed using the inverse of the distances as weights with a cutoff of 30km. Panel A reports the coefficients of the most demanding specification of the OLS and IV regressions of Tables 3-5. Panel B reports the coefficients of the most demanding specifications of the IV regressions of Tables 9 and 10. Panel C reports the coefficient of the most demanding specifications of the IV regressions in Table 11.

Table A11: Mafia dummy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)

Panel A: Peasant Fasci and the Mafia

Dependent Variable			Mafia1900				
Relative Rainfall 1893			-0.37	-0.49			
			(0.12)	(0.17)			
Peasant Fasci	0.48	0.69					
	(0.16)	(0.24)					
F-statistic			9.21	8.38			
IV	✓	✓					
province FE		✓		✓			

Panel B: Medium Term Outcomes

Dependent variable:	Literacy in 1911	Literacy in 1921	Literacy in 1931	Infant Mortality in 1909	Notaries in 1924	Development Expenditure in 1912	HHI in 1909
Mafia 1900	-0.21	-0.23	-0.18	0.11	-0.27	-3.30	0.71
	(0.11)	(0.12)	(0.09)	(0.05)	(0.14)	(1.91)	(0.33)
IV	✓	✓	✓	✓	✓	✓	✓
Full set of controls	✓	✓	✓	✓	✓	✓	✓

Panel C: Long Term Outcome

Dependent variable:	High School	Literacy	Infant Mortality	Aqueduct Availability	Development Expenditure	HHI	
a) 1961: Mafia 1900	-0.02	-0.09		-0.39	-0.05	0.21	
	(0.01)	(0.05)		(0.21)	(0.81)	(0.05)	
b) 1971: Mafia 1900	-0.04	-0.06	0.00	-0.16		0.15	
	(0.02)	(0.03)	(0.03)	(0.10)		(0.07)	
c) 1981: Mafia 1900	-0.04	-0.03	-0.20	-0.02		0.12	
	(0.04)	(0.03)	(0.17)	(0.02)		(0.06)	
IV	✓	✓	✓	✓	✓	✓	
Full set of controls	✓	✓	✓	✓	✓	✓	

Notes: This table provides a summary of the main results of the paper when we use a dummy for Mafia in 1900 which takes up value one when Mafia in 1900 has the highest density according to Cutrera (1900), and zero otherwise. Panel A reports the coefficients of the most demanding specification of the OLS and IV regressions of Tables 4 and 5. Panel B reports the coefficients of the most demanding specifications of the IV regressions of Tables 9 and 10. Panel C reports the coefficient of the most demanding specifications of the IV regressions in Table 11.

Table A12: Falsification Exercise: Relative Rainfall 1900-41

Drought variable: Relative Rainfall 19XX:	Original		Logged		Capped	
Share of coefficients significant at 10%	+	-	+	-	+	-
Dependent variables:						
Mafia 1900	0.02	0.02	0.02	0.01	0.03	0.02
Peasant Fasci	0.12	0.04	0.11	0.04	0.12	0.04
Literacy 1911	0	0.02	0.01	0.08	0.01	0.08
Literacy 1921	0	0.06	0.01	0.10	0	0.09
Literacy 1931	0.02	0.06	0.02	0.10	0.04	0.06
Literacy 1961	0.01	0.07	0.01	0.08	0.01	0.07
Literacy 1971	0.02	0.05	0.01	0.06	0.02	0.03
Literacy 1981	0	0	0.01	0.01	0	0.02
High school 1961	0.03	0.06	0.02	0.13	0.02	0.10
High school 1971	0.02	0.10	0.02	0.11	0.02	0.08
High school 1981	0.04	0.07	0.01	0.07	0.02	0.06
Infant mortality 1909	0.02	0	0.04	0.01	0.05	0.02
Infant mortality 1969-70	0.05	0.02	0.06	0	0.02	0.03
Infant mortality 1982	0.02	0.02	0.01	0.05	0.02	0.02
Development Expenditure 1912	0.03	0.06	0.01	0.04	0.02	0.01
Development Expenditure 1957	0.02	0.03	0	0.02	0	0.02
Aqueduct coverage 1961	0.04	0.02	0.04	0.02	0.05	0.02
Aqueduct coverage 1971	0.03	0.05	0.04	0.03	0.02	0.05
Aqueduct coverage 1981	0.04	0.02	0.05	0.02	0.06	0.01
Notaries 1924	0.04	0.14	0	0.12	0.05	0.06
HHI 1909	0.06	0.06	0.06	0.06	0.06	0.02
HHI 1963	0.02	0.02	0.06	0.03	0.02	0.02
HHI 1972	0.02	0.05	0.01	0.05	0.02	0.06
HHI 1983	0	0.02	0	0.2	0.02	0.02

Notes: Relationship between relative rainfall in the spring of the years 1900-1941, the Peasant Fasci, the Mafia in 1900, economic outcomes, and state capacity measures. We report the share of positive and negative coefficients for relative rainfall which are significant at 10% in the three specifications in columns 2-4 of Tables 3-5 including provincial fixed effects. As in the main specifications, we consider bootstrapped standard errors allowing for two-way clustering conditional on the district in which the municipality is located and the closest weather station to the municipality. In the first and second columns we report the share of positive and negative coefficients for the baseline rainfall variable which are significant at 10%. In the third and forth columns we report the share of positive and negative coefficients for the log relative rainfall (as used in column 1 of Table A8) which are significant at 10%. Finally in columns 5 and 6 we report the share of positive and negative coefficients for the capped rainfall variable (as used in column 2 of Table A8) which are significant at 10%.

Table A13: The role of state capacity on the emergence of Mafia in 1900: first stage regressions

	(1)	(2)	(4)	(5)
	Measure of state capacity is soldiers over population		Measure of state capacity is civil courts efficiency	
Panel A. Dependent Variable: Peasant Fasci.				
Relative Rainfall 1893	-0.75	-0.70	-0.36	-0.27
	(0.23)	(0.28)	(0.44)	(0.51)
State capacity	0.00	0.00	0.70	0.79
	(0.01)	(0.01)	(0.65)	(0.71)
State capacity ×	0.00	-0.01	-0.88	-1.03
Relative Rainfall 1893	(0.02)	(0.02)	(0.83)	(0.90)
F-test on excluded instruments:	5.33	3.10	4.84	3.78
R-squared	0.48	0.49	0.49	0.50
Panel B. Dependent Variable: State capacity × Peasant Fasci.				
Relative Rainfall 1893	0.65	1.15	0.31	0.36
	(0.84)	(1.13)	(0.18)	(0.21)
State capacity	0.99	1.01	1.29	1.34
	(0.29)	(0.29)	(0.31)	(0.34)
State capacity ×	-0.98	-1.05	-1.44	-1.53
Relative Rainfall 1893	(0.38)	(0.38)	(0.38)	(0.42)
F-test on excluded instruments:	4.09	4.30	8.86	8.48
R-squared	0.62	0.65	0.51	0.53
Province FE	✓	✓	✓	✓
Determinants of Fasci and Mafia	✓	✓	✓	✓
Geographic controls		✓		✓
Observations	245	245	245	245

Notes: First stages of the estimations reported in Table 8. In panel A we report the coefficients of the excluded instruments in estimates for the endogenous variable Peasant Fasci, while in panel B we report the same coefficients for the endogenous variable Peasant Fasci interacted with a measure of state capacity. The excluded instruments are relative rainfall in the spring of 1893 and the interaction between relative rainfall and the measure of state capacity. Relative rainfall is measured at weather station level and interpolated at municipality level using the inverse of the distances as weights with a cutoff of 30km. In columns 1-3 we report the coefficients of the estimate where the measure of state capacity is the number of soldiers deployed for policing activities in 1875 in the Sicilian municipalities. In this estimate we assume that the number of soldiers per squad is 10 and the number of soldiers per platoon is 30. In columns 4-6 we report the coefficients of the estimate where the measure of state capacity is civil court efficiency measured as the ratio of final sentences over the total civil and commercial cases dealt with by local civil courts in 1875. The specifications in column 1 and 4 include province dummies and other determinants of the presence of the Peasant Fasci. The specifications in columns 2 and 5 also include various determinants of the presence of the Mafia. Finally, in columns 3 and 6 we include a range of geographic controls. We report bootstrapped standard errors allowing for two-way clustering conditional on the district in which the municipality is located and the closest weather station to the municipality.

Table A14: The role of state capacity - 2SLS estimates using alternative measures of state capacity.

Dependent variable: Mafia 1900						
	(1)	(2)	(3)	(4)	(5)	(6)
	Measure of state capacity is soldiers over population				Measure of state capacity is civil courts efficiency	
Peasant Fasci	1.87	1.86	1.90	1.89	3.08	3.25
	(0.60)	(0.60)	(0.62)	(0.61)	(1.22)	(1.32)
State capacity	0.06	0.06	0.06	0.06	1.10	0.84
	(0.02)	(0.02)	(0.02)	(0.02)	(0.80)	(0.73)
State capacity $\times$ Peasant Fasci	-0.10	-0.09	-0.10	-0.11	-3.70	-4.11
	(0.05)	(0.05)	(0.05)	(0.05)	(1.77)	(1.95)
R-squared	0.60	0.60	0.60	0.60	0.60	0.60
Soldiers per squad	7	10	15	10		
Soldiers per platoon	30	20	30	40		
Civil sentences over total cases					✓	
Civil sentences ($< 1,000$ liras) over total cases						✓
Full set of controls	✓	✓	✓	✓	✓	✓
Observations	245	245	245	245	245	245

Notes: Estimate of the impact of weak state and its interaction with the presence of Peasant Fasci organizations on the emergence of the Mafia. The dependent variable is an index that takes a value of 0, 1, 2, or 3, progressively indicating the strength of the Mafia in a municipality with 0 denoting no presence of Mafia organizations and 3 highest density of the Mafia according to Cutrera (1900). We report the IV estimates of the impact on Mafia in 1900 of Peasant Fasci, a measure of state capacity, and the interaction between Peasant Fasci and state capacity. For the two endogenous variables Peasant Fasci and the interaction between Peasant Fasci and state capacity we use relative rainfall in the spring of 1893 and the interaction between relative rainfall and the state capacity measure as excluded instruments. Relative rainfall is measured at weather station level and interpolated at municipality level using the inverse of the distances as weights with a cutoff of 30km. In columns 1-4 we report the coefficients of the estimate where the measure of state capacity is the number of soldiers deployed for policing activities in 1875 in the Sicilian municipalities. In this estimate we assume different numbers of soldiers per squad and per platoon:7 and 30 respectively in the estimates in column 1, 10 and 20 respectively in column 2, 15 and 30 in column 3, and 10 and 40 in column 4. In columns 5 and 6 we report the coefficients of the estimate where the measure of state capacity is civil court efficiency. The alternative measures used in this table are: the ratio of civil sentences over civil cases in column 5 and the ratio of sentences over cases worth less than 1000 Lire. All the specification include the full set of controls (Determinants of Fasci, Determinants of Mafia, and Geographic controls) and province fixed effects. We report bootstrapped standard errors allowing for two-way clustering conditional on the district in which the municipality is located and the closest weather station to the municipality.

Table A15: AR Weak Instrument Robust CIs

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Medium Term Outcomes							
Dependent variable:	Literacy in 1911	Literacy in 1921	Literacy in 1931	Infant Mortality in 1909	Notaries in 1924	Development Expenditure in 1912	HHI in 1909
Mafia 1900	-0.09	-0.10	-0.08	0.05	-0.12	-1.45	0.31
	[-0.31, -0.03]	[-0.39, -0.03]	[-0.27, -0.03]	[0.01, 0.15]	[-0.27, -0.05]	[-4.50, -0.36]	[0.11, 0.80]
Full set of controls	✓	✓	✓	✓	✓	✓	✓
Panel B: Long Term Outcome							
Dependent variable:	High School	Literacy	Infant Mortality	Aqueduct Availability	Development Expenditure	HHI	
a) 1961: Mafia 1900	-0.01	-0.04		-0.17	-0.02	0.09	
	[-0.05, -0.00]	[-0.12, -0.01]		[-0.52, -0.05]	[-0.22, 0.22]	[0.05, 0.27]	
b) 1971: Mafia 1900	-0.02	-0.03	0.00	-0.07		0.06	
	[-0.07, -0.00]	[-0.09, -0.01]	[-0.02, 0.02]	[-0.15, 0.02]		[0.03, 0.18]	
c) 1981: Mafia 1900	-0.02	-0.01	-0.01	-0.09		0.05	
	[-0.08, -0.00]	[-0.05, 0.00]	[-0.02, 0.01]	[-0.29, 0.01]		[0.02, 0.14]	
Full set of controls	✓	✓	✓	✓	✓	✓	

Notes: Summary of the main results of the paper with the Anderson-Rubin weak-instrument robust 95% confidence intervals reported in the squared brackets. Panel A reports the estimates of the effect of the Mafia on the different medium term dependent variables, where Mafia 1900 is instrumented by relative rainfall in the spring of 1893. Relative rainfall is measured at weather station level and interpolated at municipality level using the inverse of the distances as weights with a cutoff of 30km. Panel B reports the estimates of the effect of Mafia 1900 on the different long term dependent variables for 1961 (a), 1971 (b), and 1981 (c), respectively. All the specifications in the present table include the full set of controls (Determinants of Fasci, Determinants of Mafia, and Geographic controls) and province fixed effects.

Table A16: The Impact of Mafia on Medium- and Long-Term Outcomes. Maximum Likelihood Estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Medium Term Outcomes							
Dependent variable:	Literacy in 1911	Literacy in 1921	Literacy in 1931	Infant Mortality in 1909	Development Expenditure in 1912	Notaries in 1924	HHI in 1909
Mafia 1900	-0.09	-0.10	-0.07	0.04	-1.45	-0.12	0.36
	(0.04)	(0.03)	(0.03)	(0.01)	(0.75)	(0.07)	(0.12)
Panel B: Long Term Outcomes							
Dependent variable:	High School	Literacy		Infant Mortality	Development Expenditure	Aqueduct Availability	HHI
a) 1961: Mafia 1900	-0.01	-0.04			-0.02	-0.17	0.09
	(0.01)	(0.02)			(0.21)	(0.07)	(0.04)
b) 1971: Mafia 1900	-0.02	-0.03		0.00		-0.04	0.06
	(0.01)	(0.01)		(0.01)		(0.05)	(0.03)
c) 1981: Mafia 1900	-0.02	-0.01		-0.01		-0.09	0.05
	(0.01)	(0.01)		(0.01)		(0.06)	(0.03)
IV	✓	✓	✓	✓	✓	✓	✓
Full set of controls	✓	✓	✓	✓	✓	✓	✓

Notes: Maximum likelihood estimates of the impact of the Mafia on medium- and long-term economic outcomes, state capacity, and politics. Panel A reports the estimates of the effect of Mafia 1900 on the different medium term dependent variables, where Mafia 1900 is instrumented by relative rainfall in 1893. Relative rainfall is measured as the relative spring rainfall measured at weather station level and interpolated at municipality level using the inverse of the distances as weights with a cutoff of 30km. The first stage is therefore reported in Table 5. Panel B reports the estimates of the effect of Mafia 1900 on the different long term dependent variables for 1961 (a), 1971 (b), and 1981 (c), respectively. All the specifications in the present table include the full set of controls (Determinants of Fasci, Determinants of Mafia, and Geographic controls) and province fixed effects. We report bootstrapped standard errors allowing for two-way clustering conditional on the district in which the municipality is located and the closest weather station to the municipality.

Table A17: Testing the selection effect in OLS and IV.

Dependent variables:	OLS	IV	$\hat{\rho}_{uz}$	$\hat{\beta}$
Literacy 1911	0.00	-0.09	0.03	-0.08
	(0.01)	(0.04)	[-0.16, 0.20]	[-0.19, 0.00]
Literacy 1921	0.00	-0.10	0.07	-0.06
	(0.01)	(0.05)	[-0.13, 0.25]	[-0.17, 0.00]
Literacy 1931	0.00	-0.08	0.04	-0.06
	(0.01)	(0.03)	[-0.15, 0.22]	[-0.15, 0.00]
Infant mortality 1909	0.00	0.05	-0.05	0.03
	(0.00)	(0.02)	[-0.23, 0.14]	[0.00, 0.08]
Development Expenditure 1912	0.02	-1.45	-0.01	-1.58
	(0.15)	(0.77)	[-0.19, 0.16]	[-4.14, -0.04]
Notaries in 1924	-0.02	-0.12	-0.03	-0.14
	(0.01)	(0.05)	[-0.21, 0.14]	[-0.33, -0.02]
HHI 1909	0.03	0.31	-0.08	0.20
	(0.01)	(0.12)	[-0.25, 0.13]	[0.04, 0.46]
Literacy 1961	0.00	-0.04	0.04	-0.03
	(0.00)	(0.02)	[-0.15, 0.22]	[-0.08, 0.00]
Literacy 1971	0.00	-0.03	0.02	-0.02
	(0.00)	(0.01)	[-0.17, 0.19]	[-0.07, 0.00]
Literacy 1981	0.00	-0.01	-0.02	-0.01
	(0.00)	(0.01)	[-0.19, 0.15]	[-0.04, 0.00]
High school 1961	0.00	-0.01	0.01	-0.01
	(0.00)	(0.00)	[-0.17, 0.19]	[-0.02, 0.00]
High school 1971	0.00	-0.02	0.05	-0.01
	(0.00)	(0.01)	[-0.14, 0.23]	[-0.03, 0.00]
High school 1981	0.00	-0.02	-0.03	-0.02
	(0.00)	(0.01)	[-0.20, 0.14]	[-0.05, 0.00]
Infant mortality 1969-70	0.00	0.00	0.11	0.01
	(0.00)	(0.01)	[-0.04, 0.27]	[0.00, 0.04]
Infant mortality 1982	0.00	-0.01	0.19	0.01
	(0.00)	(0.01)	[0.05, 0.33]	[0.00, 0.03]
Development Expenditure 1957	0.05	-0.02	-0.12	-0.70
	(0.08)	(0.30)	[-0.27, 0.04]	[-1.89, 0.02]
Aqueduct coverage 1961	0.00	-0.17	0.01	-0.15
	(0.02)	(0.07)	[-0.17, 0.19]	[-0.40, 0.00]
Aqueduct coverage 1971	0.01	-0.07	-0.01	-0.08
	(0.01)	(0.04)	[-0.20, 0.16]	[-0.22, 0.01]
Aqueduct coverage 1981	0.01	-0.09	0.00	-0.08
	(0.01)	(0.05)	[-0.18, 0.17]	[-0.24, 0.01]
HHI 1963	0.01	0.09	-0.08	0.06
	(0.00)	(0.04)	[-0.27, 0.13]	[0.01, 0.14]
HHI 1972	0.00	0.06	-0.01	0.06
	(0.00)	(0.03)	[-0.18, 0.18]	[0.01, 0.14]
HHI 1983	0.01	0.05	0.01	0.06
	(0.00)	(0.03)	[-0.16, 0.19]	[0.01, 0.13]

Notes: This table reports the fully Bayesian estimates using the methodology developed by DiTraglia and García-Jimeno (2016) to investigate the difference between OLS and IV estimates of the effect of the Mafia on economic outcomes, public goods and politics reported in Tables 9, 10, and 11. The first two columns report our OLS and IV estimates from the specification including the full set of controls (Determinants of Fasci, Determinants of Mafia, and Geographic controls) and province fixed effects. For all outcomes, we assume that the signal-to-noise ratio in the regressor is in the range $\kappa \in (0.5, 1]$, while the correlation coefficient between the error term in the second-stage equation in the regressor, ρ_{T^*u} is in the interval $[0.1, 0.9]$ or $[-0.1, -0.9]$ depending on whether the outcome in question is negatively or positively correlated with economic development. The third column reports the estimate of the correlation between the error term in the second-stage equation and the endogenous regressor, $\hat{\rho}_{ux}$, while the fourth column gives the Bayesian estimate for our coefficient of interest, $\hat{\beta}$. See Section 5.1 and DiTraglia and García-Jimeno (2016) for details.

Table A18: Falsification Exercise: Relative Rainfall 1882-1891 and Medium-Term Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Reduced form	Falsification tests									
Literacy 1911	0.10	-0.04	-0.04	0.00	0.16	0.04	0.04	0.04	-0.05	-0.08	-0.04
	(0.05)	(0.08)	(0.11)	(0.10)	(0.06)	(0.07)	(0.06)	(0.12)	(0.08)	(0.04)	(0.07)
Literacy 1921	0.12	-0.07	-0.04	-0.03	0.03	0.01	0.05	0.03	-0.05	-0.03	-0.02
	(0.06)	(0.06)	(0.10)	(0.09)	(0.08)	(0.07)	(0.05)	(0.11)	(0.06)	(0.04)	(0.07)
Literacy 1931	0.09	0.01	-0.04	-0.03	0.10	0.02	0.05	-0.02	-0.05	-0.08	-0.08
	(0.04)	(0.07)	(0.06)	(0.08)	(0.06)	(0.05)	(0.05)	(0.08)	(0.06)	(0.04)	(0.06)
Development Expenditure 1912	1.63	-1.75	-0.02	-1.11	-0.99	-0.05	0.44	-1.01	-0.19	0.06	0.84
	(0.94)	(1.22)	(1.49)	(0.97)	(1.40)	(1.13)	(0.90)	(1.66)	(1.06)	(0.82)	(1.35)
Infant mortality 1909	-0.05	0.04	0.01	0.01	0.00	-0.01	-0.00	-0.00	0.02	0.01	-0.00
	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.04)	(0.02)	(0.02)	(0.03)
Notaries in 1924	0.13	-0.06	-0.04	-0.03	0.03	-0.02	-0.08	-0.06	-0.01	-0.07	-0.07
	(0.07)	(0.08)	(0.08)	(0.07)	(0.08)	(0.09)	(0.03)	(0.09)	(0.07)	(0.06)	(0.11)
HHI 1909	-0.34	0.07	0.08	-0.00	0.14	0.41	-0.03	-0.23	0.07	0.03	0.06
	(0.15)	(0.14)	(0.14)	(0.19)	(0.26)	(0.15)	(0.11)	(0.22)	(0.13)	(0.16)	(0.22)
Year	1893	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891
Full set of controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes: OLS estimates of the relationship between relative rainfall in the spring of the years between 1882 and 1891 and medium-term economic outcomes, state capacity measures, and political competition. Relative rainfall is measured at weather station level and interpolated at municipality level using the inverse of the distances as weights with a cutoff of 30km. In column 1 we report the relationship in 1893 for reference. All the specifications in the present table include the full set of controls (Determinants of Fasci, Determinants of Mafia, and Geographic controls) and province fixed effects. We report bootstrapped standard errors allowing for two-way clustering conditional on the district in which the municipality is located and the closest weather station to the municipality.

Table A19: Reduced form with Relative Rainfall for 1893 and later drought years

Coefficient of Relative Rainfall	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Reduced form	Falsification tests						
Dependent variables:								
Literacy 1911	0.10	-0.11	0.07	0.00	-0.06	-0.01	-0.06	-0.03
	(0.05)	(0.12)	(0.10)	(0.09)	(0.06)	(0.08)	(0.08)	(0.05)
Literacy 1921	0.12	-0.09	0.12	0.05	-0.09	-0.03	-0.10	0.01
	(0.06)	(0.11)	(0.08)	(0.09)	(0.08)	(0.10)	(0.08)	(0.05)
Literacy 1931	0.09	-0.08	0.10	0.09	-0.10	-0.01	-0.05	-0.00
	(0.04)	(0.08)	(0.10)	(0.08)	(0.07)	(0.09)	(0.05)	(0.07)
Literacy 1961	0.04	0.00	0.07	0.05	-0.03	0.01	-0.02	0.01
	(0.02)	(0.05)	(0.05)	(0.05)	(0.04)	(0.05)	(0.03)	(0.03)
Literacy 1971	0.03	0.02	0.06	0.04	-0.03	0.02	-0.01	0.02
	(0.02)	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.02)
Literacy 1981	0.01	0.03	0.05	0.03	-0.01	0.02	-0.01	0.01
	(0.01)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)
High school 1961	0.01	-0.00	-0.00	0.02	-0.00	0.00	0.00	-0.01
	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)
High school 1971	0.02	-0.01	-0.00	0.03	-0.01	0.02	0.00	-0.00
	(0.01)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
High school 1981	0.02	0.01	-0.00	0.04	-0.02	0.02	-0.00	0.00
	(0.02)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Infant mortality 1909	-0.05	0.04	-0.02	-0.02	-0.00	0.01	0.02	0.01
	(0.02)	(0.06)	(0.03)	(0.04)	(0.02)	(0.03)	(0.02)	(0.03)
Infant mortality 1969-70	-0.00	-0.00	-0.00	-0.01	0.00	0.02	0.01	0.00
	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)	(0.01)
Infant mortality 1982	0.01	-0.01	0.01	0.01	0.00	0.00	0.01	-0.01
	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Development Expenditure 1912	1.63	-1.78	-0.67	0.99	0.32	-1.31	2.14	0.75
	(0.94)	(1.70)	(2.36)	(1.64)	(1.14)	(2.14)	(1.22)	(1.46)
Development Expenditure 1957	0.02	0.74	0.06	-0.03	0.08	-0.09	-0.19	-0.39
	(0.40)	(0.98)	(1.04)	(0.97)	(0.43)	(0.67)	(0.56)	(0.59)
Aqueduct coverage 1961	0.19	-0.15	-0.17	0.04	-0.11	-0.07	-0.07	-0.14
	(0.10)	(0.25)	(0.17)	(0.19)	(0.11)	(0.13)	(0.15)	(0.15)
Aqueduct coverage 1971	0.08	-0.08	-0.04	-0.06	0.01	0.04	-0.16	0.00
	(0.05)	(0.11)	(0.09)	(0.09)	(0.06)	(0.10)	(0.08)	(0.06)
Aqueduct coverage 1981	0.10	-0.23	0.10	-0.03	0.03	0.15	-0.18	0.05
	(0.08)	(0.17)	(0.12)	(0.13)	(0.07)	(0.10)	(0.11)	(0.09)
Notaries in 1924	0.13	-0.16	0.11	0.17	0.03	-0.02	-0.10	0.02
	(0.07)	(0.17)	(0.14)	(0.16)	(0.06)	(0.11)	(0.08)	(0.09)
HHI 1909	-0.34	0.33	-0.21	0.33	-0.05	0.54	0.02	-0.09
	(0.15)	(0.22)	(0.39)	(0.28)	(0.18)	(0.26)	(0.16)	(0.17)
HHI 1963	-0.10	0.21	0.03	0.02	-0.05	0.04	-0.01	-0.02
	(0.02)	(0.06)	(0.05)	(0.07)	(0.03)	(0.07)	(0.04)	(0.04)
HHI 1972	-0.07	0.15	0.04	0.01	-0.07	-0.04	0.01	-0.04
	(0.03)	(0.08)	(0.05)	(0.07)	(0.03)	(0.07)	(0.04)	(0.04)
HHI 1983	-0.06	0.01	0.00	0.01	-0.04	0.01	-0.04	-0.02
	(0.03)	(0.06)	(0.04)	(0.04)	(0.03)	(0.07)	(0.04)	(0.05)
Year	1893	1906	1913	1914	1920	1922	1924	1927
Full set of controls	✓	✓	✓	✓	✓	✓	✓	✓

Notes: OLS estimates of the impact of relative rainfall in the spring of 1893 and later drought years (1909, 1913, 1914, 1920, 1922, 1924, 1927) on medium- and long-term economic outcomes, public goods, and politics. The dependent variables are listed on the left of the Table. We report only the coefficients of relative rainfall in the various years. Relative rainfall is measured at weather station level and interpolated at municipality level using the inverse of the distances as weights with a cutoff of 30km. The specification used for all the years include the full set of controls (Determinants of Fasci, Determinants of Mafia, and Geographic controls) and province fixed effects. We report bootstrapped standard errors allowing for two-way clustering conditional on the district in which the municipality is located and the closest weather station to the municipality.

Table A20: Migration and Persistence of Socialist Support

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Migration						
Dependent variable:	Δ population 1881-1901			Δ population 1881-1971		
Relative Rainfall 1893	0.01	-0.00	-0.07	0.13	0.11	-0.03
	(0.07)	(0.09)	(0.09)	(0.26)	(0.26)	(0.27)
R-squared	0.19	0.26	0.38	0.21	0.21	0.47
Observations	245	245	245	245	245	245
Panel B: Socialist Support						
Dependent variable:	Peasant Leagues in 1908			Socialist votes in 1909		
Relative Rainfall 1893	0.00	0.00	-0.00	0.29	0.30	0.22
	(0.01)	(0.01)	(0.02)	(0.19)	(0.18)	(0.22)
R-squared	0.12	0.13	0.20	0.20	0.22	0.31
Observations	245	245	245	242	242	242
Province FE	✓	✓	✓	✓	✓	✓
Determinants of Fasci	✓	✓	✓	✓	✓	✓
Determinants of Mafia		✓	✓		✓	✓
Geographic controls			✓			✓

Notes: OLS estimates of the impact of relative rainfall in the spring of 1893 on medium- and long-term migration, and on the medium-term persistence of Peasant organizations and socialist parties. Relative rainfall is measured at weather station level and interpolated at municipality level using the inverse of the distances as weights with a cutoff of 30km. In panel A we report the impact on migration. The dependent variable in columns 1-3 is the change in population between 1881 and 1901 computed using census data. The dependent variable in columns 4-6 is the change in population between 1881 and 1971 again computed using census data. In panel B we report the impact on the persistence of Peasant and socialist organizations. The dependent variable in columns 1-3 is membership rate of the Peasants' leagues in 1908. It is computed using the number of members of Peasant leagues reported in Lorenzoni (1910b) divided by the population in the previous census of 1901. The dependent variable in columns 4-6 is the vote share for candidates belonging to the Socialist party in the parliamentary elections in 1909. The specifications in column 1 and 4 include province dummies and other determinants of the presence of the Peasant Fasci (a dummy indicating whether a Peasant Fasci was present before March 1893, a dummy for the municipality being an agro-town, the levels of rural rents and urban rents in 1853, the share of total cultivated land, and the share of land devoted to grains). The specifications in column 2 and 5 also include various determinants of the presence of the Mafia (sulfur production in 1868-70, the share of land devoted to citrus groves, vineyards and olive trees, and a measure of the presence of the Mafia in 1885). Finally, in columns 3 and 6 we include a range of geographic controls (log population in 1861, log area of the municipality, elevation of the town center, maximum altitude, average altitude, distance to Palermo, distance to the closest port, the access to a postal road, average temperature, average rainfall and variance of relative rainfall). We report bootstrapped standard errors allowing for two-way clustering conditional on the district in which the municipality is located and the closest weather station to the municipality.

Table A21: The Persistence of Mafia

Dependent variable: Mafia 1987				
	(1)	(2)	(3)	(4)
Panel A: IV results				
Mafia 1900	0.37	0.33	0.28	0.25
	(0.41)	(0.29)	(0.24)	(0.22)
Panel B: OLS results				
Mafia 1900	0.11	0.08	0.08	0.09
	(0.04)	(0.04)	(0.04)	(0.04)
R-squared	0.32	0.37	0.37	0.46
Province FE	✓	✓	✓	✓
Determinants of Fasci		✓	✓	✓
Determinants of Mafia			✓	✓
Geographic controls				✓
Observations	245	245	245	245

Notes: Estimates of the persistence of the Mafia from 1900 to 1987. The dependent variable is a dummy that takes on value 1 for the municipality which is considered a stronghold of the Mafia in a 1987 report by the military police (*Carabinieri*). Panel A reports the IV estimates of the persistence of Mafia presence in 1900 on the 1987 measure, where Mafia 1900 is instrumented by relative rainfall in the spring of 1893. Relative rainfall is measured at weather station level and interpolated at municipality level using the inverse of the distances as weights with a cutoff of 30km. The first stage is therefore reported in in Panel B of Table 5. Panel B reports the OLS estimates of the persistence of Mafia presence in 1900 on the 1987 measure. The specifications in column 1 include only Mafia 1900 and province fixed effects. The specifications in column 2 include also other determinants of the presence of the Peasant Fasci (a dummy indicating whether a Peasant Fasci was present before March 1893, a dummy for the municipality being an agro-town, the levels of rural rents and urban rents in 1853, the share of total cultivated land, and the share of land devoted to grains). The specifications in column 3 adds various determinants of the presence of the Mafia (sulfur production in 1868-70, the share of land devoted to citrus groves, vineyards and olive trees, and a measure of the presence of the Mafia in 1885). Finally, in column 4 we include a range of geographic controls (log population in 1861, log area of the municipality, elevation of the town center, maximum altitude, average altitude, distance to Palermo, distance to the closest port, the access to a postal road, average temperature, average rainfall and variance of relative rainfall). We report bootstrapped standard errors allowing for two-way clustering conditional on the district in which the municipality is located and the closest weather station to the municipality.

Table A22: Falsification Exercise: Relative Rainfall 1882-1891 and Long-Term Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Reduced form	Falsification tests									
Literacy 1961	0.04	-0.02	-0.02	-0.02	0.04	0.03	0.02	-0.04	-0.02	-0.04	-0.01
	(0.02)	(0.03)	(0.05)	(0.05)	(0.04)	(0.03)	(0.03)	(0.05)	(0.03)	(0.03)	(0.03)
Literacy 1971	0.03	-0.01	-0.01	-0.02	0.04	0.03	0.01	-0.03	-0.03	-0.02	-0.01
	(0.02)	(0.02)	(0.04)	(0.03)	(0.03)	(0.02)	(0.02)	(0.04)	(0.02)	(0.02)	(0.02)
Literacy 1981	0.01	-0.02	-0.00	-0.02	0.02	0.01	-0.00	-0.04	-0.01	-0.01	-0.01
	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)	(0.01)	(0.01)	(0.03)	(0.02)	(0.01)	(0.01)
High school 1961	0.01	-0.00	0.00	0.00	0.01	0.02	0.01	-0.00	-0.01	-0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
High school 1971	0.02	-0.01	-0.00	-0.00	0.02	0.03	0.02	0.00	-0.02	-0.01	-0.00
	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
High school 1981	0.02	-0.01	-0.00	-0.00	0.02	0.05	0.02	-0.02	-0.02	-0.01	-0.01
	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
Infant mortality 1969-70	-0.00	0.00	-0.01	-0.01	0.00	-0.00	0.00	-0.00	0.00	0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)
Infant mortality 1982	0.01	-0.02	-0.00	-0.00	0.00	0.00	0.00	0.01	-0.00	-0.01	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Development Expenditure 1957	0.02	-0.16	-0.35	0.18	0.37	-0.17	-0.44	-0.86	0.27	-0.38	-0.26
	(0.40)	(0.59)	(0.57)	(0.70)	(0.58)	(0.49)	(0.40)	(0.62)	(0.51)	(0.40)	(0.59)
Aqueduct coverage 1961	0.19	0.10	-0.12	0.04	0.01	-0.08	0.08	0.21	0.03	-0.06	-0.01
	(0.10)	(0.15)	(0.18)	(0.15)	(0.16)	(0.16)	(0.07)	(0.13)	(0.10)	(0.11)	(0.15)
Aqueduct coverage 1971	0.08	-0.02	0.03	0.01	0.06	-0.02	0.01	0.08	-0.03	-0.07	-0.07
	(0.05)	(0.06)	(0.07)	(0.08)	(0.08)	(0.06)	(0.06)	(0.08)	(0.06)	(0.05)	(0.09)
Aqueduct coverage 1981	0.10	-0.08	-0.01	-0.04	0.01	-0.04	-0.00	0.06	0.01	-0.12	-0.10
	(0.08)	(0.10)	(0.10)	(0.10)	(0.14)	(0.09)	(0.09)	(0.16)	(0.08)	(0.06)	(0.09)
HHI 1963	-0.10	0.04	-0.01	-0.00	0.02	0.01	-0.02	-0.07	0.02	0.02	-0.00
	(0.02)	(0.04)	(0.05)	(0.05)	(0.05)	(0.04)	(0.02)	(0.06)	(0.04)	(0.03)	(0.05)
HHI 1972	-0.07	0.03	-0.02	0.01	0.00	-0.02	0.00	-0.07	-0.01	0.03	-0.01
	(0.03)	(0.04)	(0.06)	(0.05)	(0.05)	(0.04)	(0.03)	(0.05)	(0.03)	(0.03)	(0.06)
HHI 1983	-0.06	0.00	0.02	0.01	0.00	-0.01	-0.01	-0.02	0.01	0.01	-0.05
	(0.03)	(0.05)	(0.05)	(0.04)	(0.04)	(0.04)	(0.02)	(0.05)	(0.03)	(0.03)	(0.04)
year	1893	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891
Full set of controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes: OLS estimates of the relationship between relative rainfall in the spring of the years between 1882 and 1891 and long-term economic outcomes, public goods, and politics. The first column shows the results for the year 1893 for reference. Relative rainfall is measured at weather station level and interpolated at municipality level using the inverse of the distances as weights with a cutoff of 30km. All the specifications in the present table include the full set of controls (Determinants of Fasci, Determinants of Mafia, and Geographic controls) and province fixed effects. We report bootstrapped standard errors allowing for two-way clustering conditional on the district in which the municipality is located and the closest weather station to the municipality.