Pre-Reformation Roots of the Protestant Ethic: Supplementary Material

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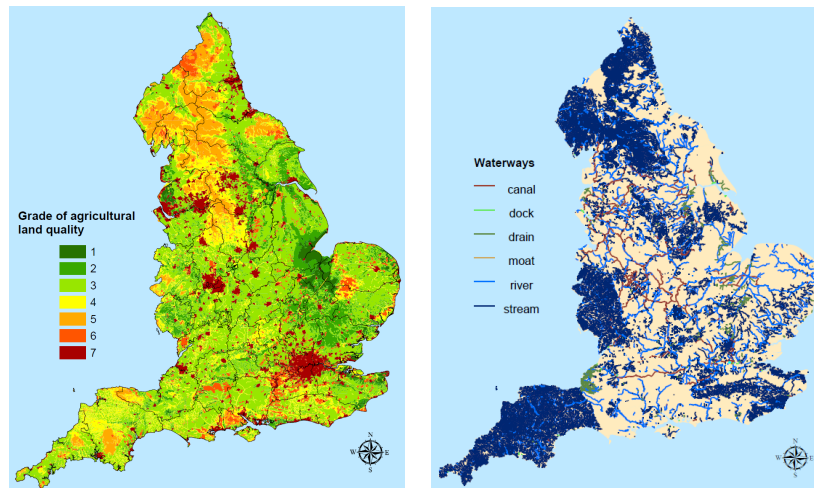# 1 Data

1.1 Regional analysis for England

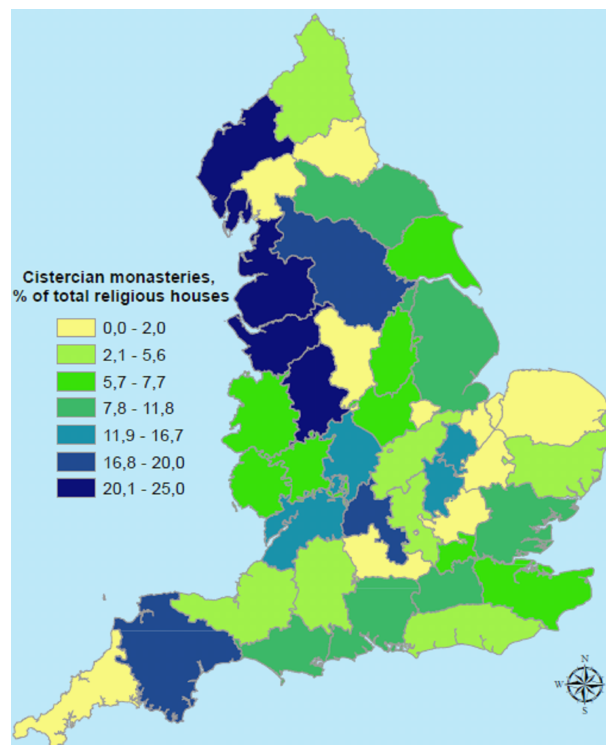Figure S1. The figure shows the data on land quality (left panel) and on waterways (right panel) discussed below.

Figure S2. The figure shows the density of Cistercian monasteries in England.

Access to Water. The German company Geofabrik freely provides shapefiles on various geographic features.[1] Of our interest is their data on waterways in Great Britain, where waterways are divided into canal, dock, drain, moat, river, and stream. These data are available online at: http://download.geofabrik.de/osm/europe/great_britain/. As with the data on agricultural land quality, we merge the shapefile describing waterways with the shapefile describing the county borders of England. The outcome of interest from this procedure is the total length of rivers as a share of the total area in a county (*rivershare*). In addition *oceandummy* equals one if the county borders the ocean, zero otherwise.

Coal. Allen (2009) and Pomeranz (2000) argue that proximity to coal production was critical for British industrialization because it supplied an inexhaustible supply of cheap energy. We therefore construct a variable called *coalshare*, measured as the surface area of coalfields to total area in 1871.[2] The map of coalfields is taken from Redmayne (1903).

Land quality. Natural England provides a measure of agricultural land classified into five grades plus classifications for non-agricultural and urban land. Grade one is best quality and grade five is poorest quality, grade six is non-agricultural land and grade seven is urban. The measure is calculated by Natural England using information on climate (temperature, rainfall, aspect, exposure, frost risk), site (gradient, micro-relief, flood risk) and soil (depth, structure, texture, chemicals, stoniness). The source of the data is Raster Digital mapping with a scale of 1:250,000, which is available online at: http://www.gis.naturalengland.org.uk/pubs/gis/gis_register.asp.[3] The data was gathered with coordinate precision of 1 meter. We used these data to create a measure of agricultural land quality within each county. The earliest digital map of English counties is from 1851. These data were kindly provided to us by the University of Portsmouth and the Great Britain Historical GIS Project. Combining the shapefile including the agricultural land quality and the shapefile including English county borders, we were able to create measures of the area in a county with agricultural land of quality level 1-5, each as a share of total county area; the total county area was here calculated by summing over the land quality variable, since this variable spans the entire area. Our variable "land quality" is the combination of qualities 1 and 2.

Literacy rates 1851. Percentage of population literate in 1851. Provided: by Hechter, M., U.K. County Data, 1851-1966. Colchester, Essex: UK Data Archive, 1976. SN: 430.

Regional fixed effects. The regional classification that we employ is based on Government Office regions: East Midlands, East of England, London, North East, North West, South East, South West, West Midlands, and Yorkshire and the Humber.

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[1] These shapefiles are based on maps created by the OpenStreetMap project using data from portable GPS devices, aerial photography, other free sources, or simply from local knowledge.

[2] A coalfield is an area of certain uniform characteristics where coal is mined.

[3] Additional Data description is also available online at: http://www.magic.gov.uk/datadoc/metadata.asp?dataset=2&x=16&y=10 and http://naturalengland.etraderstores.com/NaturalEnglandShop/ product.aspx?ProductID=88ff926a-3177-4090-aecb-00e6c9030b29.

Religious Houses in England. The data on religious houses is available from: http://www.ucl.ac.uk/history2/englishmonasticarchives/religioushouses/index.php.

Roman roads. Km Roman roads per square km. The Roman roads are from the Barrington Atlas, digitized by McCormick, M., G. Huang, G. Zambotti, J. Lavash (2013), Roman Road Network (version 2008), DARMC Scholarly Data Series, Data Contribution Series #2013-5. Center for Geographic Analysis, Harvard University.

Suitability of the land for pasture. Measures grassland as a share of total county area, using data from the Centre for Ecology and Hydrology (ceh.ac.uk), which provides data on landcover at the 1x1 km grid level, described in http://www.ceh.ac.uk/documents/lcm90_class_des.pdf. Specifically, we have defined grassland as consisting of "pasture / meadow / amenity grass", "marsh / rough grass", "rough pasture / dune grass / grass moor", and "grass / shrub heath". The mean (median) county is covered by 37% (37%) grassland.

1.2 Values and Outcomes across Europe

Cistercian presence. Derives from Donkin (1978). Shapefiles for NUTS regions were obtained from eurostat.com.

Employment, Population and GDP per employed. For the outcomes regressions, employment, population, and total GDP is measured at the NUTS2 level and provided by EuroStat (ec.europa.eu/eurostat). Employed persons is the total number of employed persons aged 15-64. Population is total persons living in the NUTS2 region. GDP is total regional gross domestic product in million PPS.

Values and individual level controls. The data derives from the European Values Survey, which is available online at http://www.europeanvaluesstudy.eu. We focus on the 2008-10 wave as detailed information of the place of residency at age 14 (NUTS2 level) is available. We use whether respondents indicate that they think that valuing "hard work" is an important trait for children to learn at home (variable a030 in EVS) and whether they think "thrift, saving money and things" is an important trait for children to learn at home (variable a038 in EVS). In Appendix tables we also aggregate to the NUTS2 level, which means the variable becomes the fraction of respondents (appropriately weighted) that subscribe to thrift and hard work. The EVS is also the source of the individual level controls highlighted in the text.

2 Supplementary Results

2.1. Historical England

Table S1. Table 2 restricted to the monasteries that were not closed down before 1530.

Summary: The table investigates whether restricting the sample to monasteries that stayed open until the eve of the Dissolution has any bearing on the OLS results reported in Table 2. The results reported in the table shows that it does not.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent variable: Population growth 1377-1801									
Population density 1377 (log)	-0.655***	-0.494**	-0.647***	-0.464**	-0.497***	-0.642***	-0.656***	-0.690***	-0.389**
	(0.183)	(0.236)	(0.201)	(0.178)	(0.139)	(0.204)	(0.186)	(0.194)	(0.171)
Cistercian share	1.341**	1.167	1.338**	1.220**	1.381***	1.328**	1.294**	1.344**	1.253**
	(0.625)	(0.861)	(0.647)	(0.549)	(0.478)	(0.607)	(0.631)	(0.629)	(0.459)
Religious Houses (total)	-0.006*	-0.005	-0.006*	-0.017***	-0.005	-0.007*	-0.006*	-0.007*	-0.011**
	(0.004)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)
Land quality	-0.594*	-0.671*	-0.593*	-0.493	-0.490	-0.595*	-0.683**	-0.672*	-0.511
	(0.304)	(0.351)	(0.306)	(0.297)	(0.318)	(0.310)	(0.309)	(0.341)	(0.351)
Rivers (length/area)			0.261						
			(2.013)						
County area (log)				0.321**					0.202*
				(0.119)					(0.117)
Coal					1.700***				1.505**
					(0.565)				(0.603)
Coastal (=1)						0.027			
						(0.135)			
Roman Road density (length/area)							2.992*		2.949*
							(1.530)		(1.655)
Suitability for pasture (% of area)								-0.129	0.027
								(0.290)	(0.355)
Observations	40	40	40	40	40	40	40	40	40
R-squared	0.620	0.654	0.620	0.660	0.702	0.621	0.634	0.622	0.731

Table S2 functional form initial popdens

Summary: The table explores whether the predictive power of Cistercian share is robust to the inclusion of population density squared. The results reported in the table shows that it is.

	(1)	(2)	(3)	(4)	(5)
Dependent variable: Population growth 1377-1801					
Cistercianshare	1.934**	1.822**	1.839**	114.417*	121.173**
	(0.887)	(0.700)	(0.788)	(58.146)	(51.026)
(log)Popdens1377	-0.614***	3.067**			
	(0.171)	(1.374)			
(log) Popdensity 1377 squared		-0.591**			
		(0.217)			
Popdensity 1377			-0.027***	-0.621*	2.308
			(0.005)	(0.367)	(2.043)
Popdensity 1377 squared					-0.049
					(0.032)
Relhouses	-0.007*	-0.006	-0.006	-0.334	-0.306
	(0.004)	(0.004)	(0.004)	(0.212)	(0.238)
Land quality	-0.634*	-0.592**	-0.576**	-32.062	-35.705*
	(0.313)	(0.281)	(0.274)	(19.739)	(20.335)
Observations	40	40	40	40	40
R-squared	0.641	0.704	0.684	0.354	0.407

Table S3. Population growth and the Benetictine Order

Summary: The table explores whether the Benedictine order--the order from which the Cistercians originated--is positively correlated with population growth. In stark contrast to the results from Table 2, which pertains to the Cistercians, the results reported below show that the Benedictine order is <u>not</u> correlated with population growth. In fact, the slope coefficient is close to zero and sometimes even negative.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent variable					Population growth 1377-1801					
Benedictine share	0.015	-0.246	0.030	0.152	0.131	-0.035	0.014	0.011	-0.114	0.026
	(0.368)	(0.489)	(0.353)	(0.374)	(0.350)	(0.344)	(0.381)	(0.362)	(0.379)	(0.329)
Population density 1377 (log)	-0.709***	-0.464*	-0.695***	-0.492**	-0.555***	-0.678***	-0.708***	-0.741***	-0.894***	-0.619***
	(0.193)	(0.239)	(0.210)	(0.194)	(0.160)	(0.211)	(0.194)	(0.200)	(0.214)	(0.175)
Religious houses (total)	-0.006	-0.004	-0.006	-0.018***	-0.004	-0.007	-0.005	-0.006	-0.002	-0.010***
	(0.004)	(0.003)	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.004)
Land quality	-0.651**	-0.712**	-0.650**	-0.529*	-0.547*	-0.653**	-0.748**	-0.724**	-1.035***	-0.880**
	(0.282)	(0.308)	(0.284)	(0.311)	(0.305)	(0.285)	(0.280)	(0.335)	(0.303)	(0.344)
Rivers (length/area)			0.463							
			(2.114)							
County area (log)				0.362**						0.277**
				(0.152)						(0.115)
Coal					1.699**					1.275*
					(0.707)					(0.624)
Coastal (=1)						0.060				
						(0.150)				
Roman road density (length/area)							3.317**			2.737
							(1.630)			(1.638)
Suitability for pasture (% of total area)								-0.120		
								(0.286)		
Literacy rate 1851									-2.161*	-2.050**
									(1.081)	(0.858)
Regional FE's	No	Yes	No	No	No	No	No	No	No	No
Observations	40	40	40	40	40	40	40	40	37	37
R-squared	0.577	0.631	0.578	0.627	0.658	0.579	0.594	0.579	0.643	0.734

Notes. (i) Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. (ii) All regressions contain a constant.

Table S4. Population growth, Cistercians and other religious orders

Summary: The table explores whether any of the other large monastic orders are positively correlated with population growth. In stark contrast to the results from Table 2, which pertains to the Cistercians, the results reported below show that the no other order is correlated with population growth. In fact, the slope coefficients are often close to zero and sometimes even negative.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable			population growth 1377-1801			
Cistercians (fraction)	1.562**	1.605**	1.530**	1.671**	1.500**	2.018**
	(0.569)	(0.594)	(0.583)	(0.612)	(0.603)	(0.772)
Population density 1377 (log)	-0.550***	-0.542***	-0.639***	-0.573***	-0.561***	-0.638**
	(0.137)	(0.145)	(0.193)	(0.150)	(0.143)	(0.234)
Religious houses (total)	-0.010***	-0.011***	-0.009**	-0.009**	-0.010***	-0.009*
	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.005)
Land quality	-0.844**	-0.836**	-0.807**	-0.798**	-0.844**	-0.701*
	(0.361)	(0.380)	(0.321)	(0.335)	(0.365)	(0.389)
County area (log)	0.246**	0.251**	0.244**	0.193	0.244**	0.209
	(0.101)	(0.103)	(0.101)	(0.144)	(0.104)	(0.160)
Coal	1.311**	1.335**	1.073	1.289**	1.303**	1.054
	(0.509)	(0.517)	(0.648)	(0.537)	(0.522)	(0.643)
Roman road density (length/area)	2.653**	2.669**	3.199**	3.164*	2.759*	3.788*
	(1.289)	(1.228)	(1.448)	(1.711)	(1.388)	(1.915)
Literacy rate 1851	-1.876**	-1.825**	-1.901**	-1.684**	-1.793*	-1.740*
	(0.751)	(0.778)	(0.799)	(0.702)	(0.878)	(0.899)
Benedictine share		0.136				0.590
		(0.335)				(0.487)
Augustinian share			0.542			0.823
			(0.656)			(0.601)
Cluny share				0.932		1.045
				(1.544)		(1.603)
Premon share					-0.184	0.581
					(0.667)	(1.135)
Observations	37	37	37	37	37	37
R-squared	0.777	0.779	0.789	0.781	0.778	0.804

Notes. (i) Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. (ii) All regressions contain a constant

Table S5. Instrument falsification: Royal Forest and other Monastic Orders

Summary: The table explores whether Rforest (the instrument used in the IV exercise in Table 4) predicts the location of other monastic orders, which would render the exclusion restriction in Table 4 invalid. The table shows that Rforest does not predict other monastic orders, which we take as support of the exclusion restriction.

Panel A: Intensive margin

	(1)	(2)	(3)	(4)
Dependent variable:	Cluniac share	Benedictine share	Augustinian share	Premon share
Rforest	0.0134	-0.120	0.0260	-0.0804
	(0.0219)	(0.127)	(0.0650)	(0.0950)
Pop dens 1377 (log)	0.00819	0.0251	0.126**	-0.0553
	(0.0193)	(0.0573)	(0.0509)	(0.0354)
Religious houses	0.000498	-7.06e-05	-0.00195	-0.000437
	(0.000640)	(0.00237)	(0.00143)	(0.00152)
Land quality	-0.0601	-0.0223	-0.120	-0.0507
	(0.0414)	(0.160)	(0.119)	(0.0428)
Royal forest share	0.00970	0.176**	-0.00627	-0.0136
	(0.0305)	(0.0766)	(0.0699)	(0.0288)
Observations	40	40	40	40
R-squared	0.051	0.088	0.192	0.235

Panel B: Extensive margin

	(1)	(2)	(3)	(4)
Dependent variable:	Cluniac presence	Benedictine presence	Augustinian presence	Premon presence
Rforest	0.191	0.210	0.207	0.0883
	(0.257)	(0.191)	(0.198)	(0.244)
Pop dens 1377 (log)	0.155	0.0508	0.0104	-0.161
	(0.220)	(0.0652)	(0.0880)	(0.196)
Religious houses	0.00829	0.00530	0.00388	0.0202***
	(0.00779)	(0.00342)	(0.00310)	(0.00490)
Land quality	-0.795	0.0865	0.198	-0.711*
	(0.496)	(0.114)	(0.229)	(0.351)
Royal forest share	0.145	0.0543	0.0172	0.318
	(0.321)	(0.0634)	(0.0392)	(0.258)
Observations	40	40	40	40
R-squared	0.098	0.210	0.158	0.238

Table S6. Robustness: Endogeneity of total religious houses?

Summary: The table exlores total religious houses is predicted by our instrument, Rforest. This is not the case, as demonstrated in the table. The table also shows that Cistercian presence is predicted by the Rforest instrument. Overall, the results in the table support our exclusion restriction.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Relgious houses (total)			Cistercian presence (0/1)		
Rforest	-11.25	-11.69	-10.68	0.442*	0.438*	0.446*
	(10.80)	(10.82)	(11.74)	(0.245)	(0.249)	(0.254)
Pop dens 1290 (log)	7.977**			0.0544		
	(3.491)			(0.153)		
Pop dens 1377 (log)		8.316**			0.0619	
		(4.065)			(0.132)	
Pop dens 1600 (log)			-0.0371			-0.00321
			(8.100)			(0.167)
Land quality	9.246	10.78	21.00	-0.134	-0.130	-0.0528
	(16.25)	(15.48)	(17.92)	(0.625)	(0.615)	(0.573)
Forest share	-7.281	-6.978	-5.576	0.0422	0.0434	0.0538
	(10.60)	(9.505)	(9.560)	(0.263)	(0.259)	(0.265)
Observations	40	40	40	40	40	40
R-squared	0.236	0.236	0.165	0.147	0.148	0.144

Table S7: Royal Forests and Economic Development across the centuries

Summary: The table explores whether our Rforest instrument predicts (log of) population density in different years. If Rforest predicts early population density, it would indicate that the instruments is picking up pre-Cistercian determinants of productivity growth, in violation of the exclusion restriction. As shown in the table, it does not. It does, however, predict late population density, consistent with the exclusion restriction.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
					log population density in:							
VARIABLES	1290	1377	1600	1801	1290	1377	1600	1801	1290	1377	1600	1801
Royal forest (present = 1)	0.144	0.180	0.101	0.357*	0.049	0.103	0.088	0.411*	0.005	0.067	0.083	0.404**
	(0.379)	(0.286)	(0.085)	(0.198)	(0.431)	(0.347)	(0.106)	(0.215)	(0.186)	(0.235)	(0.097)	(0.197)
Forest area (pct of total)					0.022	0.012	-0.050	-0.214	-0.077	-0.071	-0.060	-0.237
					(0.287)	(0.217)	(0.146)	(0.169)	(0.213)	(0.138)	(0.145)	(0.147)
County area (log)					-0.294**	-0.242*	-0.079	0.012	-0.107	-0.086	-0.056	0.035
					(0.116)	(0.123)	(0.076)	(0.109)	(0.084)	(0.089)	(0.075)	(0.126)
Suitability for pasture (% of area)									-1.466***	-1.210***	-0.146	-0.370
									(0.305)	(0.345)	(0.189)	(0.325)
Land quality									0.020	0.029	0.125	-0.759**
									(0.288)	(0.398)	(0.241)	(0.330)
Observations	40	40	40	40	40	40	40	40	40	40	40	40
R-squared	0.009	0.017	0.020	0.098	0.118	0.100	0.052	0.114	0.613	0.492	0.095	0.176

Table S8. Checking additional channels

Summary: The table explores whether the introduction of various interaction effects and different sample splits have any bearing on the partial correlation between Cistercian share and population growth. Interaction effects could potentially capture different (non-cultural) ways in which Cistercians influenced population growth. The table shows that all interaction effects, regardless of sample split, are insignificant throughout the columns, whereas the slope coefficient of the Cistercian share is largely unchanged and tends to be significant. This suggests that what we are capturing is indeed a cultural effect.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dep. var.				Population growth 1377-1801					
Cistercianshare	1.934**	1.928	2.640**	2.534*	2.320*	2.480	1.895*	2.243*	1.499
	(0.887)	(1.733)	(1.020)	(1.348)	(1.279)	(2.387)	(1.034)	(1.121)	(0.977)
Cistercianshare X Area		-0.000							
		(0.000)							
Cistercianshare X Land quality				-4.326					
				(5.185)					
Cistercianshare X Rivershare						-4.362			
						(15.861)			
Cistercianshare X Ocean								-0.573	
								(1.514)	
Observations	40	40	20	40	20	40	20	40	18
R-squared	0.641	0.653	0.741	0.647	0.518	0.641	0.847	0.642	0.570
Sample	full	full	> median area	full	< median land quality	full	< median rivers	full	landlocked
Baseline controls	Y	Y	Y	Y	Y	Y	Y	Y	Y

Notes: All regressions include a constant and the baseline controls for population density in 1377, total number of religious houses, and land quality. All columns including an interaction term includes also controls for both variables entering the interaction. The sample used is the full sample in most columns, but is restricted in the following columns: column (3) is restricted to the counties with above median area, column (5) is restricted to the counties holding below median agricultural quality, column (7) is restricted to the counties with below median rivershare, and column (9) is restricted to landlocked counties. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

2.2. Contemporary Europe

Table S9. OLS of values on Cistercians across regions in Europe

Summary: The table explores the robustness of the results reported in Table 5 we aggregate to the NUTS2 level and consider the fraction of respondents valuing hard work and thrift. As reported in the table, this has little bearing for hard work but it makes results slightly stronger for thrift, which is significantly predicted in all but one column.

Dependent variable:	(1) hardwork	(2)	(3) hardworkcond	(4)	(5) thrift	(6)	(7) thriftcond	(8)
Cistercian share	58.507	147.329***	72.110	148.805***	61.515**	124.756**	73.352	145.489**
	(41.900)	(31.961)	(52.217)	(40.581)	(27.703)	(45.269)	(54.316)	(67.159)
Area, km2	0.000	-0.000	0.000	-0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	242	174	241	174	242	174	241	174
R-squared	0.858	0.872	0.800	0.846	0.441	0.419	0.368	0.379
Country FE	Y	Y	Y	Y	Y	Y	Y	Y
Regional controls	Y	Y	Y	Y	Y	Y	Y	Y
Sample	full	prot<50%	full	prot<50%	full	prot<50%	full	prot<50%
No. countries	29	26	29	26	29	26	29	26

Notes: Robust standard errors in paranthesis, clustered at the country level. The unit of observation is nuts2 regions. ***,**,* indicates significance at 1, 5, and 10 percent, respectively. All regressions contain a constant term. Sample refers to whether the full sample is included or whether the sample is restricted to include only regions with a maximum of 50% Protestants. Hardworkcond is the residuals aggregated up to the nuts2 level of a regression of hardwork on age, age squared, a dummy for males, married, educational attainment, and religion dummies in the individual sample. Likewise for thrift. Regional controls are latitude and longitude.

Table S10. Restricting Table 5 to individuals with country nationality

Summary: The table re-estimates Table 5 after having excluded the immigrants from the sample. In consistency with a story of culture, three out of four estimates of the impact of Cistercians on hardwork increase, albeit not significantly. In the thrift regressions, where all estimates are insignificant, the change is much smaller and only one out of four estimates increase. Overall, the results are consistent with a culture story.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable:		hardwork				thrift		
Cistercians as share of area	57.750**	60.733**	53.067	110.985**	17.467	17.870	28.246	74.605
	(26.777)	(26.492)	(33.699)	(41.624)	(32.221)	(28.254)	(37.707)	(47.083)
Area, km2	0.000	-0.000	0.000	-0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations								
Pseudo R-squared	31,427	31,036	21,610	15,784	31,025	30,637	21,267	15,478
Country FE	0.316	0.326	0.349	0.283	0.059	0.077	0.092	0.061
Baseline controls	N	Y	Y	Y	N	Y	Y	Y
Religion dummies	N	N	Y	N	N	N	Y	N
Sample	full	full	full	cath	full	full	full	cath

Table S11. Values for catholics in Europe split on agr

Summary: The table estimates the value regressions for urban (columns 3 and 6) and rural (columns 2 and 5) catholic areas. The rural/urban distinction is made on the basis of employment shares in agriculture. There is no difference in the impact of Cistercians on hard work across bins. On thrift, the impact is stronger in the urban areas.

Dep. variable	(1) hardwork	(2) hardwork	(3) hardwork	(4) thrift	(5) thrift	(6) thrift
Cistercian share	116.798***	167.673*	100.728**	71.474	20.930	68.581*
	(35.952)	(82.363)	(46.052)	(56.582)	(124.127)	(34.798)
Area, km2	-0.000	0.000	-0.000	0.000	-0.000	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	10,469	4,978	5,491	10,241	4,804	5,437
R-squared	0.299	0.259	0.325	0.038	0.020	0.062
Country FE	Y	Y	Y	Y	Y	Y
Baseline controls	Y	Y	Y	Y	Y	Y
Sample	full	agr>45	agr<45	full	agr>45	agr<45

Table S12. Horse race (Table 7 regressions)

Summary: The table performs horserace regressions (in the context of Table 7) between the presence of the Cistercians and the cultural values which they may have instilled in the population: hard work and thrift. Both values turn insignificant when inserted alongside Cistercians, which suggests that the effect of the Cistercians did not just run through hard work and thrift, which is perhaps not surprising.

	(1)	(2)	(3)	(4)
Dependent variable: (log) Employment share 2007				
Cistercian share	62.977**			
	(23.011)			
Cistercians		0.004*		
		(0.002)		
(log) Cistercians			0.029***	
			(0.009)	
Cistercian dummy				0.027**
				(0.012)
Hardwork	0.021	0.029	0.024	0.026
	(0.051)	(0.050)	(0.051)	(0.056)
Thrift	-0.137	-0.131	-0.139	-0.131
	(0.087)	(0.087)	(0.088)	(0.088)
(log) Population 2007	0.986***	0.984***	0.982***	0.989***
	(0.012)	(0.013)	(0.013)	(0.014)
Area	0.000	0.000		
	(0.000)	(0.000)		
Latitude	0.014	0.014	0.014	0.013
	(0.015)	(0.014)	(0.015)	(0.013)
Longitude	-0.005	-0.004	-0.003	-0.005
	(0.007)	(0.007)	(0.007)	(0.007)
Age	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
(log) Area			-0.008	-0.002
			(0.019)	(0.019)
Observations	234	234	234	234
R-squared	0.996	0.996	0.996	0.996
NUTS1 FE	Y	Y	Y	Y
No scale effects p value	0.253	0.229	0.193	0.419

Table S13. Table 7 with coal

Summary: The table explores the consequences of adding coal to the regressions of Table 7. The availability of coal could potentially drive intra-country migration due to more jobs in the ressource-rich region. However, the table shows that adding coal has no consequences for our results.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable		(log) Employment 2007				(log) GDP 2007		
Cistercian share	43.146**				27.057			
	(19.739)				(69.137)			
Cistercians		0.003				0.009		
		(0.002)				(0.008)		
(Log) Cistercians			0.022***				0.023	
			(0.007)				(0.038)	
Cistercian presence				0.020*				-0.024
				(0.011)				(0.052)
(Log) Population 2007	0.989***	0.988***	0.988***	0.994***				
	(0.011)	(0.010)	(0.010)	(0.010)				
(Log) Employment 2007					1.091***	1.082***	1.108***	1.118***
					(0.040)	(0.043)	(0.031)	(0.028)
Area, km2	0.000	-0.000			-0.000**	-0.000**		
	(0.000)	(0.000)			(0.000)	(0.000)		
(Log) Area			-0.014	-0.009			-0.174***	-0.161***
			(0.015)	(0.014)			(0.034)	(0.030)
Absolute latitude	0.015	0.015	0.015	0.015	0.008	0.009	0.011	0.011
	(0.016)	(0.015)	(0.016)	(0.015)	(0.031)	(0.031)	(0.029)	(0.028)
Longitude	-0.006	-0.006	-0.005	-0.006	-0.014	-0.013	-0.013	-0.015
	(0.008)	(0.008)	(0.008)	(0.008)	(0.018)	(0.018)	(0.014)	(0.014)
Average age	-0.000	-0.000	-0.000	0.000	-0.006*	-0.007*	-0.005**	-0.005*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)	(0.004)	(0.002)	(0.002)
Proximity to coal fields = -ln(1+distanc	-0.004***	-0.005***	-0.005***	-0.005***	-0.006	-0.005	-0.013***	-0.014***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.006)	(0.006)	(0.003)	(0.004)
Observations	234	234	234	234	234	234	234	234
R-squared	0.996	0.996	0.996	0.996	0.978	0.978	0.984	0.984
NUTS1 FE	Y	Y	Y	Y	Y	Y	Y	Y
No scale effects p value	0.336	0.244	0.268	0.547	0.0304	0.0696	0.00180	0.000216

Table S14. Summary Statistics across European regions

Variable	Obs	Mean	Std. Dev.	Min	Max
Hardwork	242	0.400	0.260	0.000	1.000
Hardworkcond	242	0.382	0.259	0.000	1.000
Thrift	242	0.369	0.145	0.000	0.908
Thriftcond	242	0.460	0.145	0.000	1.000
Cistercian share of total area	242	0.000	0.000	0.000	0.001
Area	242	15323	15266	173	92961
Absolute latitude	242	48.893	5.048	37.589	62.329
Longitude	242	9.023	8.755	-9.046	25.476
Age	242	47.864	4.829	27.000	70.538
Protestants, share	241	0.294	0.356	0.000	1.000
(Log) employment 2007	241	13.383	0.710	10.931	15.462
(Log) Population 2007	242	14.205	0.708	11.735	16.266
(Log) Gross Regional Product 2007	235	10.435	0.808	8.302	13.141

Hardworkcond is the residuals aggregated up to the nuts2 level of a regression of hardwork on age, age squared, a dummy for males, married, educational attainment in the individual sample. Likewise for thrift.