

Appendices

A The Model

A.1 Factor Prices and Aggregate Labor Allocation

The markets for labor and the production of the final good are perfectly competitive. Workers in the agricultural sector receive their average product, given that there are no property rights to land, and therefore the return to land is zero. Given (3), the wage rate of agricultural labor in time t , w_t^A , is

$$w_t^A \equiv \frac{Y_t^A}{\theta_t L_t} = \left[\frac{\xi A_t^A}{\theta_t L_t} + \frac{1}{\xi} z_t \right]^a (1 - z_t)^{1-a} = v \xi^{1-a} \left[\frac{\xi A_t^A}{\theta_t L_t} + \frac{1}{\xi} \right], \quad (\text{A.1})$$

where $v \equiv a^a(1-a)^{(1-a)} \in (0, 1)$.

The inverse demand for labor in the industrial sector, given by (4), is

$$w_t^I = A_t^I, \quad (\text{A.2})$$

where w_t^I is the wage rate of the industrial labor in period t .

From (A.1) and (A.2) it is evident that as employment in the agricultural sector decreases, the demand for labor increases without bound, while productivity in the industrial sector remains finite. Hence, the agricultural sector will be operative in every period, whereas the industrial sector will be operative if and only if labor productivity in this sector exceeds the marginal productivity of labor in the agricultural sector, under the assumption that the entire labor force is employed in the agricultural sector. Upon the activation of both sector, equalization of wages across the two sectors is the outcome of the assumption on perfect mobility of labor.

The conditions on the level of industrial productivity and the size of the working population that renders the industrial sector viable, are described in the following Lemma and the associated corollary.

Lemma A.1 (*Condition for the Activation of the Industrial Sector*) *The industrial sector becomes economically viable and thus operative in period t if and only if industrial productivity A_t^I , exceeds a critical threshold level given by*

$$A_t^I \geq v \xi^{1-a} \left[\frac{\xi A_t^A}{L_t} + \frac{1}{\xi} \right] \equiv \hat{A}^I(\xi, A_t^A, L_t) \equiv \hat{A}_t^I.$$

Proof. Follows from (A.1)-(A.2) and the perfect mobility of labor between sectors. \square

The threshold level of productivity, \hat{A}_t^I , reflects the fact that workers will start being employed in the industrial sector if their productivity in that sector, A_t^I , is equal to or exceeds the marginal productivity in the agricultural sector, w_t^A , as long as the entire labor force, L_t , is employed in the agricultural sector (i.e. $\theta_t = 1$).

Corollary A.1 (*Condition on the Population Threshold for the Activation of the Industrial Sector*) *The industrial sector is economically viable and thus operative in period t if and only if total population L_t , exceeds a critical level given by*

$$L_t \geq \frac{v \xi^{2-a} A_t^A}{A_t^I - v \xi^{-a}} = \hat{L}(A_t^A, A_t^I) \equiv \hat{L}_t.$$

To ensure the emergence of the industrial sector, additional restrictions must be imposed on the initial value of the industrial productivity, i.e. $A_0^I > v \xi^{-a}$.

The fraction of the total labor force that is employed in the agricultural sector in period t , is denoted by $\theta_t \equiv L_t^A/L_t$, where $\theta_t \in (0, 1]$. According to Lemma A.1, if industrial productivity is sufficiently low, i.e. if $A_t^I < \hat{A}_t^I$, the industrial sector is not economically viable and thus the economy operates only in the agricultural sector, implying as well that the total labor force is employed in the agricultural sector (See Figure A.1). In this stage of development, the wage rate of the economy w_t , will be exactly identified with the wage rate in agriculture w_t^I . As the economy grows however driven by population growth, industrial productivity surpasses the critical level $A_t^I \geq \hat{A}_t^I$, thereby rendering the industrial sector economically viable. As suggested by the perfect mobility assumption, wages

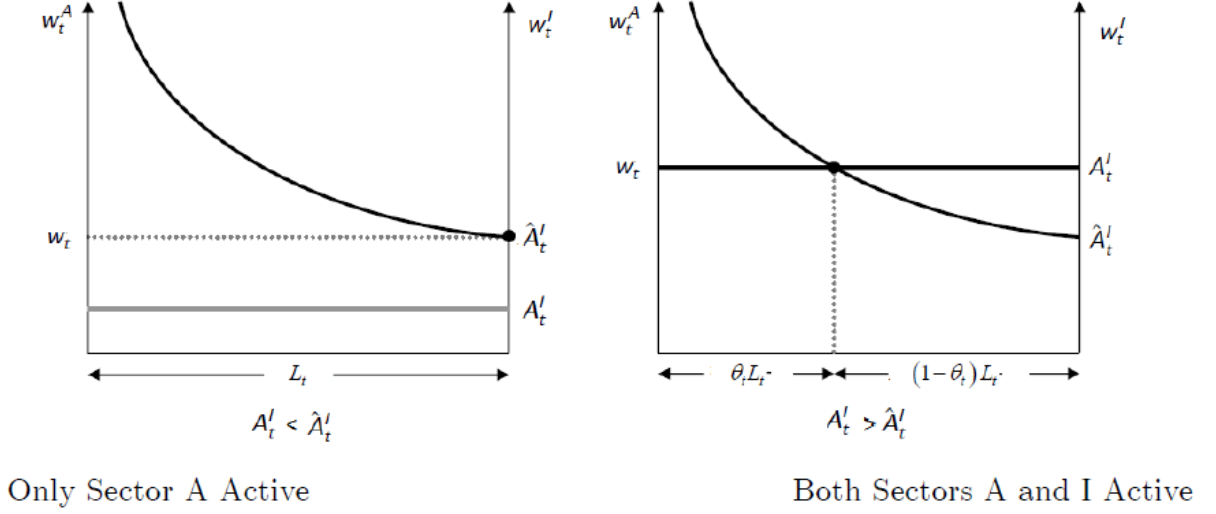


FIGURE A.1: The Labor Market Equilibrium

will be equalized across the two sectors, i.e. $w_t = w_t^A = w_t^I$. Therefore, in equilibrium, the labor forces will be allocated between the two sectors, as described by θ_t ,

$$\theta_t \equiv L_t^A / L_t = \begin{cases} 1 & \text{if } A_t^I < \hat{A}_t^I \\ \frac{v\xi^{2-a}A_t^A}{A_t^I - v\xi^{-a}} \frac{1}{L_t} & \text{if } A_t^I \geq \hat{A}_t^I, \end{cases} \quad (\text{A.3})$$

Given (A.1) and (A.2), the equilibrium wage rate in the economy in period t , w_t , is

$$w_t = \begin{cases} w_t^A = v\xi^{1-a} \left[\frac{\xi A_t^A}{L_t} + \frac{1}{\xi} \right] & \text{if } A_t^I < \hat{A}_t^I \\ w_t^I = A_t^I & \text{if } A_t^I \geq \hat{A}_t^I. \end{cases} \quad (\text{A.4})$$

To ensure that the model is consistent with historical evidence suggesting that at early stages of development the agricultural sector preceded the emergence of the industrial sector, it is assumed that the industrial sector is not economically viable in period 0. Using Lemma A.1, it is assumed that

$$v\xi^{-a} < A_0^I < v\xi^{1-a} \left[\frac{\xi A_0^A}{L_0} + \frac{1}{\xi} \right]. \quad (\text{A1})$$

A.2 The Time Paths of the Macroeconomic Variables

A.2.1 The Dynamical System

To analyze the evolution of the economy from the agricultural to the industrial regime, a series of phase diagrams is employed, that captures the evolution of the system within the Malthusian epoch, as well as the endogenous transition to industrialization. The analysis underlines the role of natural land endowment and cooperation in the development of infrastructure in the agricultural sector, in determining the characteristics of the Malthusian equilibrium and the timing of the take-off to the industrial era.^{A.1}

The phase diagrams, depicted in Figures ??-2, describe the evolution of the system in the (A_t^A, L_t) plane, conditional on the level of A_t^I . The evolution of industrial productivity, A_t^I , driven by knowledge creation and

^{A.1}The analysis is focusing on the transition from a Malthusian regime to an industrialization regime and the forces that led to a faster industrialization. The forces that eventually led to the demographic transition and the emergence of the modern growth regime are not being explored in the context of this research. The underlying assumption behind this approach is the historical observation that a "reversal of fortune" has been observed initially with respect to the timing of industrialization. The model could be expanded to account for the current growth regime however this extension would just increase the complexity of the model without adding new insights.

social capital, triggers a phase transition of the dynamical system and allows for the onset of industrialization and the take-off to an era of sustained economic growth, driven by the evolution of the industrial sector.

Three geometric elements are crucial for building the phase diagrams and are instrumental for the determination of motion within the system: the Conditional Malthusian Frontier, which separates the regions in which the economy is exclusively operating in the agricultural sector from those where it operates in both the industrial and the agricultural sector; the AA locus, which denotes the set of all pairs (A_t^A, L_t) for which the acquired productivity in the agricultural sector is constant; and the LL locus, which denotes the set of all pairs for which the size of the workforce is constant, conditional on the latency of the industrial sector.

The Conditional Malthusian Frontier The Conditional Malthusian Frontier is a geometric locus, in (A_t^A, L_t) space, that separates the phase diagram into two regions. Below the Malthusian frontier is the region where the economy operates exclusively on the agricultural sector, whereas above the Malthusian frontier is the region where it operates in both sectors. Once the economy's trajectory crosses this frontier, the industrial sector becomes operative.

The Conditional Malthusian Frontier denotes the set of all pairs (A_t^A, L_t) such that, for a given level of industrial productivity, A_t^I , individuals are indifferent as to whether to work in the industrial sector or in the agricultural sector. Following Corollary A.1, the Conditional Malthusian Frontier, $MM|_{A_t^I}$ (see Figures 3-4), is

$$MM|_{A_t^I} \equiv \left\{ (A_t^A, L_t) : L_t = \hat{L}(A_t^A, A_t^I) \right\}. \quad (\text{A.5})$$

Lemma A.2 (*The Properties of the Conditional Malthusian Frontier*) If $(A_t^A, L_t) \in MM|_{A_t^I}$, then along the $MM|_{A_t^I}$ frontier,

$$L_t = \frac{v\xi^{2-a}A_t^A}{A_t^I - v\xi^{-a}} \equiv \hat{L}(A_t^A, A_t^I),$$

where $\partial \hat{L}(A_t^A, A_t^I) / \partial A_t^A > 0$, and $\partial \hat{L}(A_t^A, A_t^I) / \partial A_t^I < 0$.

Proof. Follows immediately from (A.5), Corollary A.1, and differentiation. \square

The Conditional Malthusian Frontier is therefore an upward sloping ray from the origin in the (A_t^A, L_t) space. From Corollary A.1, it becomes evident that the region strictly below the frontier denotes that production takes place exclusively in the agricultural sector whereas the region (weakly) above the frontier, denotes that the economy operates both in the industrial and the agricultural sector. As A_t^I increases in the process of development, the Conditional Malthusian Frontier rotates clockwise in (A_t^A, L_t) space.

Lemma A.3 (*The Dynamics of Population Size with respect to the Conditional Malthusian Frontier*) Given $A_t^A > 0$ and $A_t^I > 0$, for all $L_t \geq \hat{L}(A_t^A, A_t^I)$,

$$L_{t+1} - L_t \geq 0 \quad \Leftrightarrow \quad A_t^I \geq \frac{\tau}{1-\gamma}$$

Proof. Follows immediately from (17). \square

Hence, if the industrial sector has become economically viable, the evolution of the labor force relies upon the level of A_t^I with respect to the threshold level, $\tau/(1-\gamma)$. More analytically, for a level of industrial productivity being below the critical level, $\tau/(1-\gamma)$, the wage rate in the economy is not sufficiently high to sustain fertility beyond replacement, thereby implying that the size of the workforce declines in size over time. Conversely if A_t^I is above the critical threshold, then the wage rate is sufficiently high to sustain fertility above the replacement level and hence the workforce increases in size over time.

The AA Locus Let the AA locus be the set of all pairs (A_t^A, L_t) such that the level of agricultural productivity, A_t^A , is in a steady state:

$$AA \equiv \left\{ (A_t^A, L_t) : A_{t+1}^A - A_t^A = 0 \right\}. \quad (\text{A.6})$$

Lemma A.4 (*The Properties of the AA Locus*) If $(A_t^A, L_t) \in AA$, then along the AA locus,

$$L_t = (1-\beta)^{1/\lambda} (A_t^A)^{(1-b)/\lambda} \equiv L^{AA}(A_t^A),$$

where $\partial L^{AA}(A_t^A) / \partial A_t^A > 0$ and $\partial^2 L^{AA}(A_t^A) / (\partial A_t^A)^2 > 0$.

Proof. Noting (A.6), the functional form of $L^{AA}(A_t^A)$ is obtained by algebraically manipulating (16) under $A_{t+1}^A = A_t^A$. The remainder follows directly from differentiation. \square

Corollary A.2 (*The Dynamics of Agricultural Productivity with respect to the AA Locus*) Given $A_t^A > 0$,

$$A_{t+1}^A - A_t^A \begin{matrix} \geq \\ \leq \end{matrix} 0 \quad \text{if and only if} \quad L_t \begin{matrix} \geq \\ \leq \end{matrix} L^{AA}(A_t^A)$$

Hence, the *AA* locus (see Figures 3-4), is a curve originating from the origin in (A_t^A, L_t) space, strictly convex and upward sloping. Above the *AA* locus, A_t^A grows over time, due to the fact that there is a sufficiently large cohort of adults that ensure the advancement of the knowledge frontier to a level that can overcome the erosion effect of imperfect intergenerational transmission of knowledge on A_t^A . Respectively, below the *AA* locus, the advancement of the knowledge frontier is not sufficient to overcome the eroding effects of imperfect intergenerational transmission on A_t^A , and therefore, agricultural productivity diminishes over time.

The LL Locus Let the *LL* locus be the set of all pairs (A_t^A, L_t) such that, conditional on the latency of the industrial sector, the size of the adult population, L_t , is in a steady state:

$$LL \equiv \left\{ (A_t^A, L_t) : L_{t+1} - L_t = 0 \mid L_t < \hat{L}(A_t^A, A_t^I) \right\}. \quad (\text{A.7})$$

Lemma A.5 (*The Properties of the LL Locus*) If $(A_t^A, L_t) \in LL$, then along the *LL* locus,

$$L_t = \frac{(1-\gamma)v\xi^{2-a}A_t^A}{\tau - (1-\gamma)v\xi^{-a}} \equiv L^{LL}(A_t^A),$$

where $\tau > (1-\gamma)v\xi^{-a}$, $dL^{LL}/dA_t^A > 0$, and $d^2L^{LL}/(dA_t^A)^2 = 0$.

Proof. Noting (A.7), $L^{LL}(A_t^A)$ is derived from using eq. (17) under the assumption that $L_{t+1} = L_t$ and upon differentiation. \square

Corollary A.3 (*The Dynamics of Population Size with respect to the LL Locus*) Given $A_t^A > 0$ and $A_t^I > 0$, for all $L_t < \hat{L}(A_t^A, A_t^I)$,

$$L_{t+1} - L_t \begin{matrix} \leq \\ \geq \end{matrix} 0 \quad \text{if and only if} \quad L_t \begin{matrix} \geq \\ \leq \end{matrix} L^{LL}(A_t^A)$$

Hence, the *LL* locus (see Figures 3-4), originates from the origin in (A_t^A, L_t) space, and is an upward sloping ray. Below the *LL* locus, L_t grows over time due to the fact that since population is sufficiently low, it allows for a high wage rate which permits fertility to be above replacement. Reversely, L_t declines over time above the *LL* locus, since the population is higher than its steady state level, thereby implying a sufficiently low wage rate that sustains fertility below the replacement level. The following lemma is setting the conditions that determine the position of the *LL* locus, in (A_t^A, L_t) space, relative to the Conditional Malthusian Frontier, $MM|_{A_t^I}$.

Lemma A.6 (*The Position of the LL Locus relative to the Conditional Malthusian Frontier*) Given $A_t^I > 0$, for all A_t^A such that $(A_t^A, \hat{L}(A_t^A, A_t^I)) \in MM|_{A_t^I}$ and $(A_t^A, L^{LL}(A_t^A)) \in LL$,

$$\hat{L}(A_t^A, A_t^I) \begin{matrix} \geq \\ \leq \end{matrix} L^{LL}(A_t^A) \quad \text{if and only if} \quad A_t^I \begin{matrix} \leq \\ \geq \end{matrix} \frac{\tau}{(1-\gamma)}.$$

Proof. Follows from comparing the functional forms of $\hat{L}(A_t^A, A_t^I)$ and $L^{LL}(A_t^A)$ as specified in Corollary A.1 and Lemma A.5 respectively. \square

Thus, for low levels of industrial productivity, $A_t^I < \tau/(1-\gamma)$, the Conditional Malthusian Frontier, $MM|_{A_t^I}$, is located above the *LL* locus, suggesting that only the agricultural sector is operative. In the process of development though, $MM|_{A_t^I}$ rotates clockwise driven by the growth of A_t^I and ultimately the two loci coincide when $A_t^I = \tau/(1-\gamma)$. After this point, for $A_t^I > \tau/(1-\gamma)$ the Conditional Malthusian Frontier, $MM|_{A_t^I}$, drops below the *LL* locus, rendering the industrial sector viable.

So far it has become evident that growth in the latent industrial sector productivity, A_t^I , has an influence on the global dynamics of the size of the workforce, which in turn reflects a transition of the system from the Malthusian to the Post-Malthusian regime. The following lemma is summarizing the dynamics of the workforce.

Lemma A.7 (*The Dynamics of the Workforce with respect to the LL Locus and the Conditional Malthusian Frontier*)
Given $A_t^I > 0$, for all $A_t^A > 0$,

1. If $A_t^I < \frac{\tau}{(1-\gamma)}$, then

the Conditional Malthusian Frontier is above the LL locus, i.e.,

$$\hat{L}(A_t^A, A_t^I) > L^{LL}(A_t^A),$$

and

$$L_{t+1} - L_t \begin{cases} < 0 & \text{if } L_t > L^{LL}(A_t^A) \\ = 0 & \text{if } L_t = L^{LL}(A_t^A) \\ > 0 & \text{if } L_t < L^{LL}(A_t^A); \end{cases}$$

2. If $A_t^I > \frac{\tau}{(1-\gamma)}$, then

the Conditional Malthusian Frontier is below the LL locus, i.e.,

$$\hat{L}(A_t^A, A_t^I) < L^{LL}(A_t^A),$$

and, for all L_t ,

$$L_{t+1} - L_t > 0.$$

Proof. Part (1) follows immediately from Lemmas A.3 and A.6, and Corollary A.3. Part (2) follows from the same Lemmas while observing that, above the Conditional Malthusian Frontier, $L_{t+1} - L_t > 0$ if $A_t^I > \tau/(1-\gamma)$, and if L_t is below the LL locus. \square

A.3 Proof Lemma 1

Proof. Under $A_t^I < \tau/(1-\gamma)$, the Jacobian matrix of the conditional dynamical system in (??), is given by

$$\begin{aligned} J(A_t^A, L_t) &= \begin{bmatrix} \partial A_{t+1}^A / \partial A_t^A & \partial A_{t+1}^A / \partial L_t \\ \partial L_{t+1} / \partial A_t^A & \partial L_{t+1} / \partial L_t \end{bmatrix} \\ &= \begin{bmatrix} \beta + b(L_t)^\lambda (A_t^A)^{b-1} & \lambda(L_t)^{\lambda-1} (A_t^A)^b \\ \frac{1-\gamma}{\tau} v \xi^{2-a} & \frac{1-\gamma}{\tau} v \xi^{-a} \end{bmatrix}, \end{aligned} \quad (\text{A.8})$$

which, when evaluated at the conditional steady state given by (18) and (19), yields

$$J(A_{ss}^A, L_{ss}) = \begin{bmatrix} \beta + b(1-\beta) & \lambda(1-\beta) \left[\frac{\tau - (1-\gamma)v\xi^{-a}}{(1-\gamma)v\xi^{2-a}} \right] \\ \frac{1-\gamma}{\tau} v \xi^{2-a} & \frac{1-\gamma}{\tau} v \xi^{-a} \end{bmatrix} \equiv J_{ss}. \quad (\text{A.9})$$

To ensure that the system has two positive eigenvalues, it must be established that:

$$\begin{aligned} \text{Det}(J_{ss}) &> 0, \text{ and} \\ \text{Tr}(J_{ss}) &> 0, \forall \xi \in (0, 1). \end{aligned}$$

From (A.9) it follows that for $\text{Det}(J_{ss}) > 0$, $\xi < \left[\frac{(1-\gamma)v}{\tau} \left(\frac{\beta + b(1-\beta)}{\lambda(1-\beta)} + 1 \right) \right]^{1/a}$ is a sufficient condition. In addition it is clear from (A.9), that $\text{Tr}(J_{ss}) > 0, \forall \xi \in (0, 1)$.

Given so far that the discrete dynamical system has two positive eigenvalues, it is clear from the phase diagram in Figure ??, that (A_{ss}^A, L_{ss}) is a locally asymptotically stable node of the conditional dynamical system for any ξ , and convergence takes places monotonically. \square

B Robustness-Cross Country Regressions

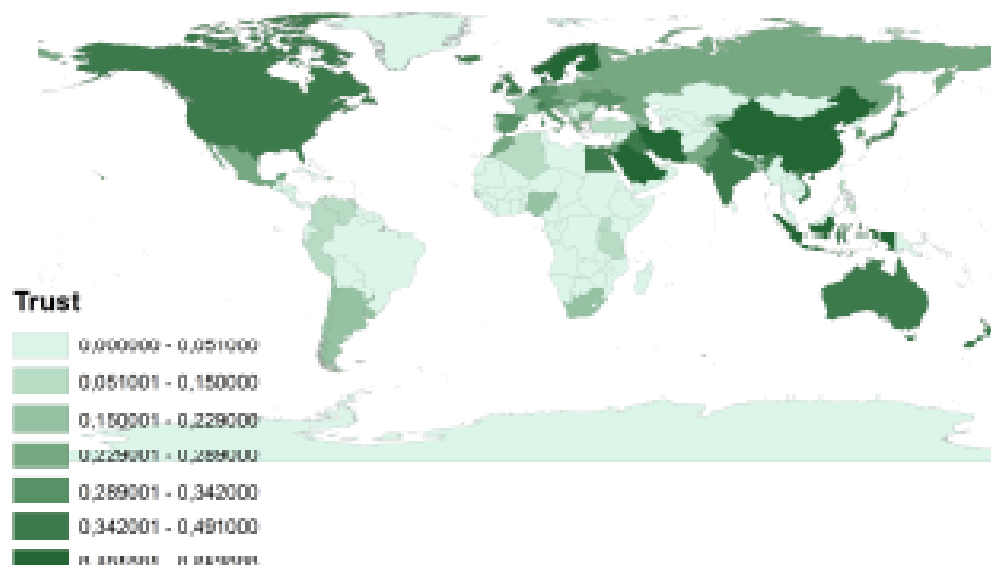
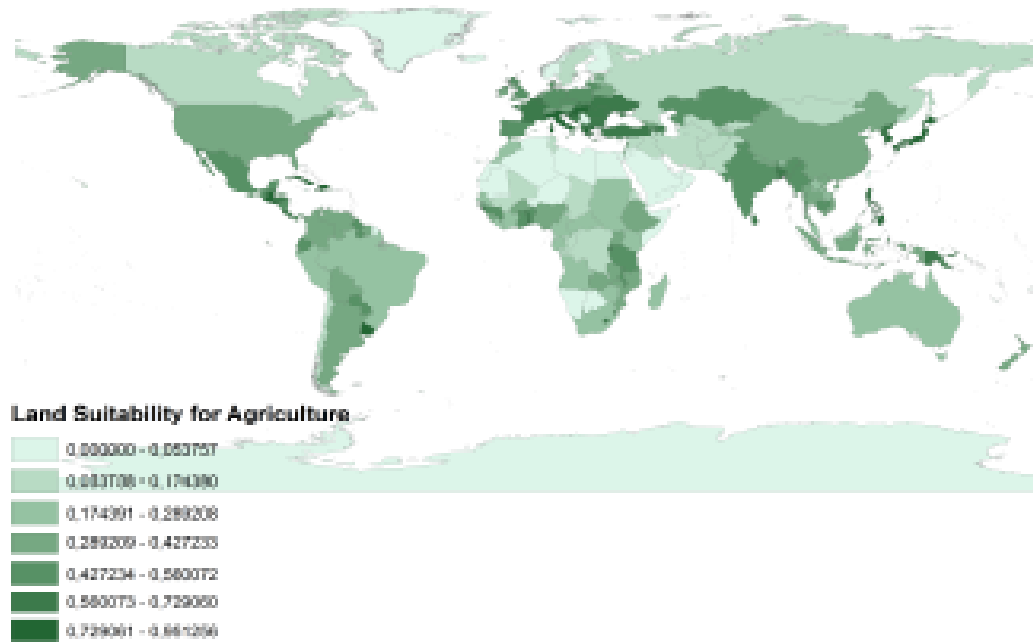
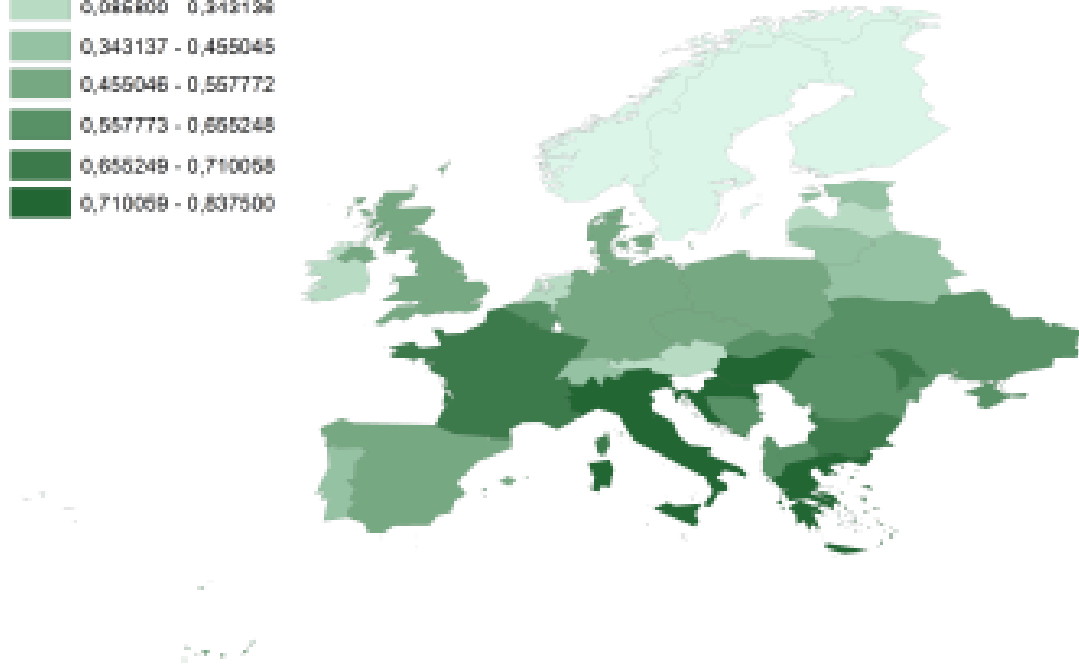
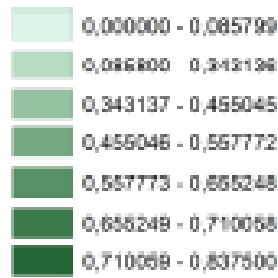


FIGURE B.2: Land Suitability and Trust - World Map

Land Suitability for Agriculture



Trust

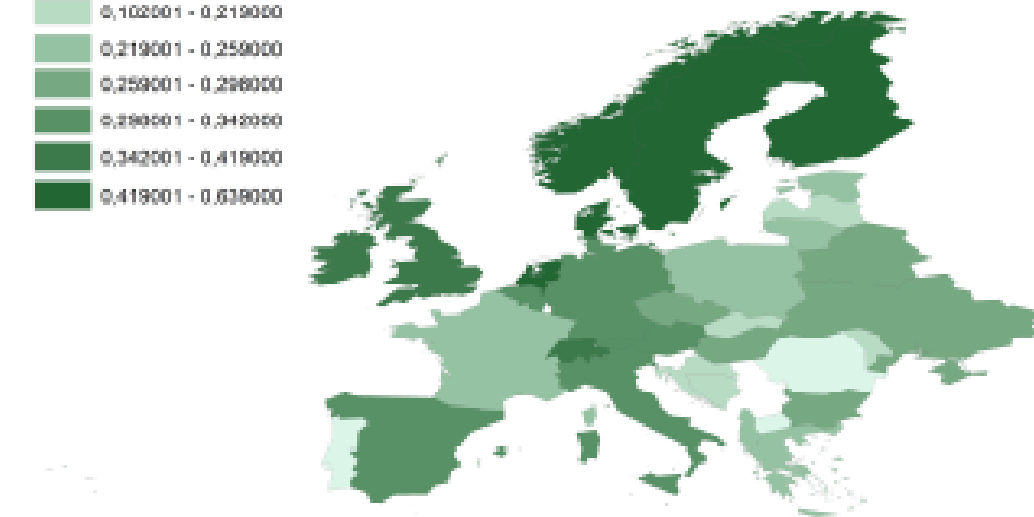
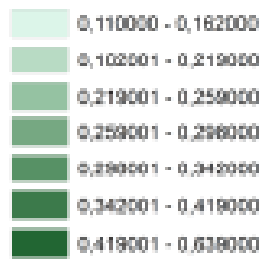


FIGURE B.3: Land Suitability and Trust-Europe

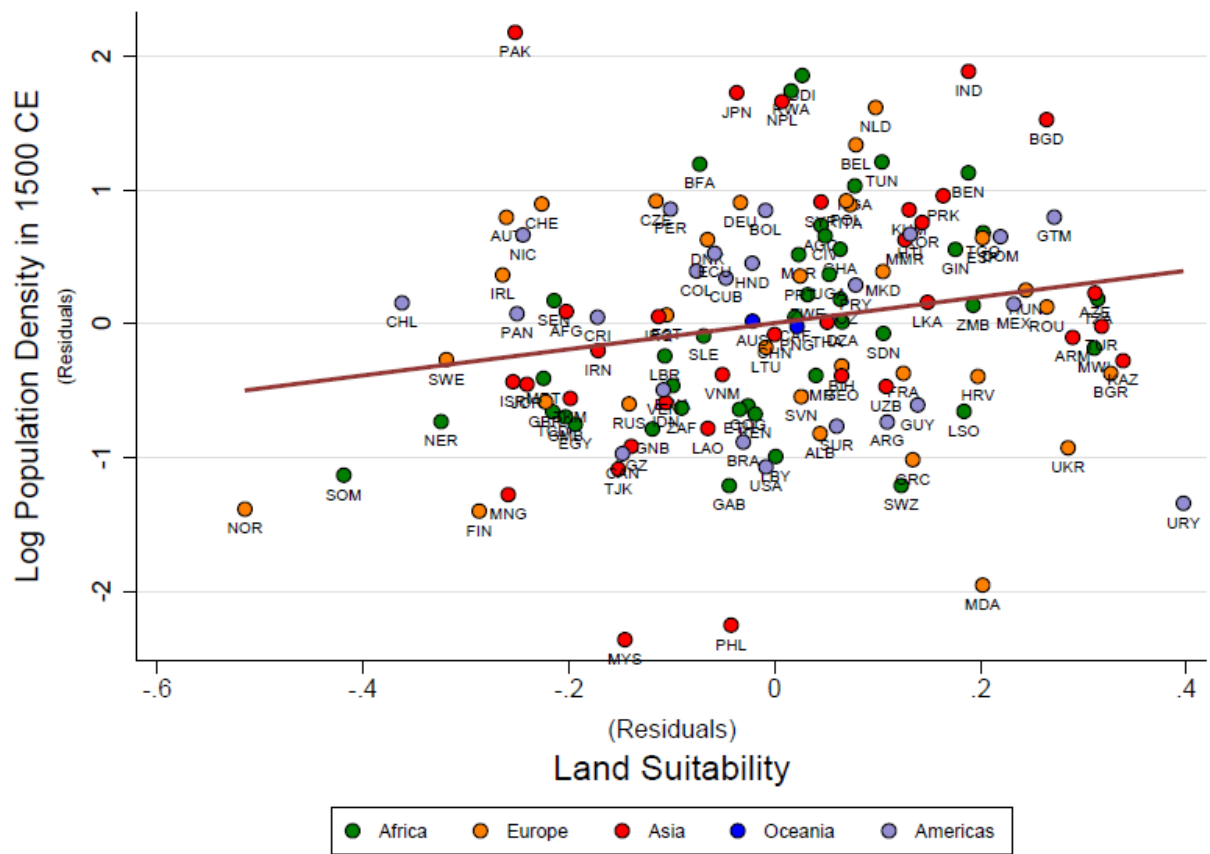


FIGURE B.4: Land Suitability and Population Density in the Year 1500 (conditional on geographical characteristics, years since the Neolithic transition, distance from the nearest technological frontier and continental fixed effects)

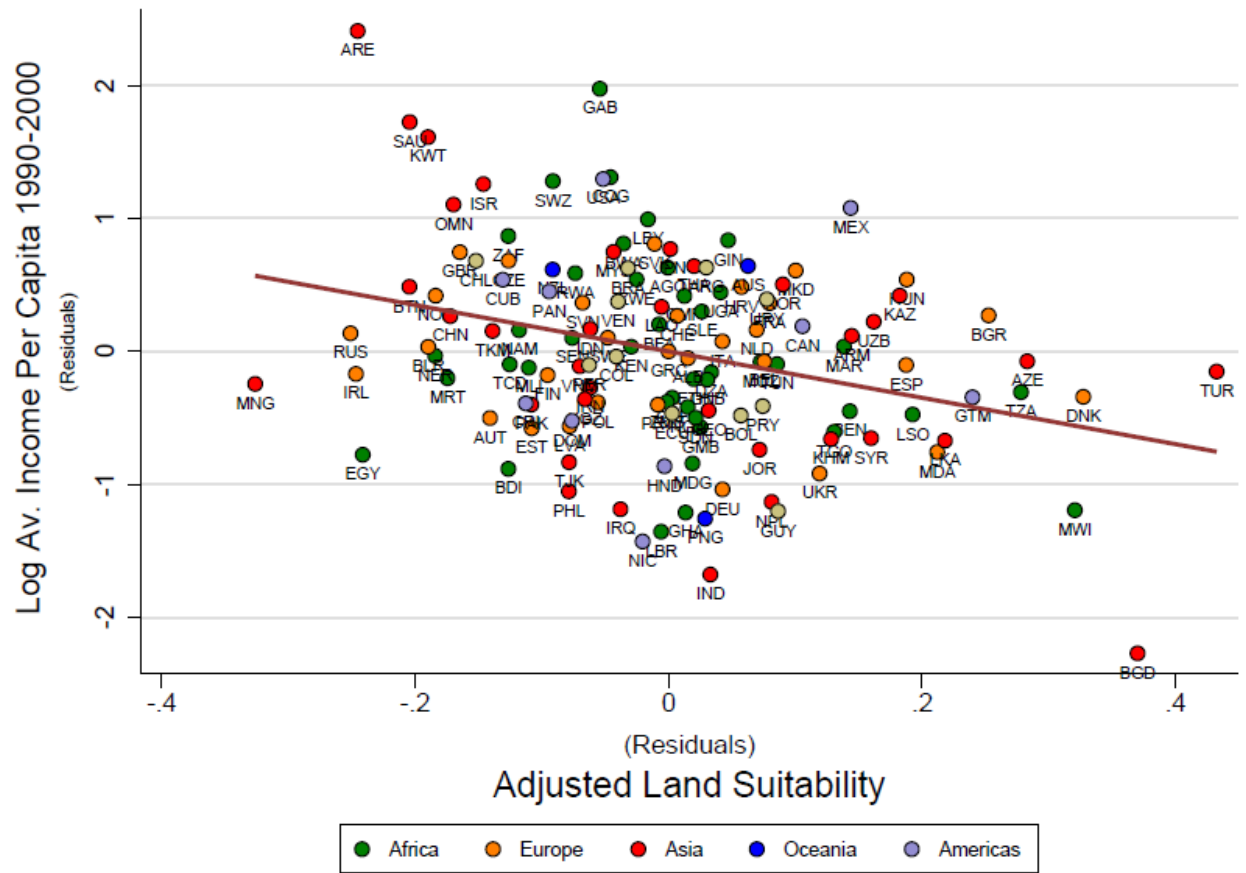


FIGURE B.5: Land Suitability and Economic Outcomes in the Industrial Era (conditional on geographical and institutional characteristics, years since the Neolithic transition, distance from the nearest technological frontier, disease environment, schooling and continental fixed effects)

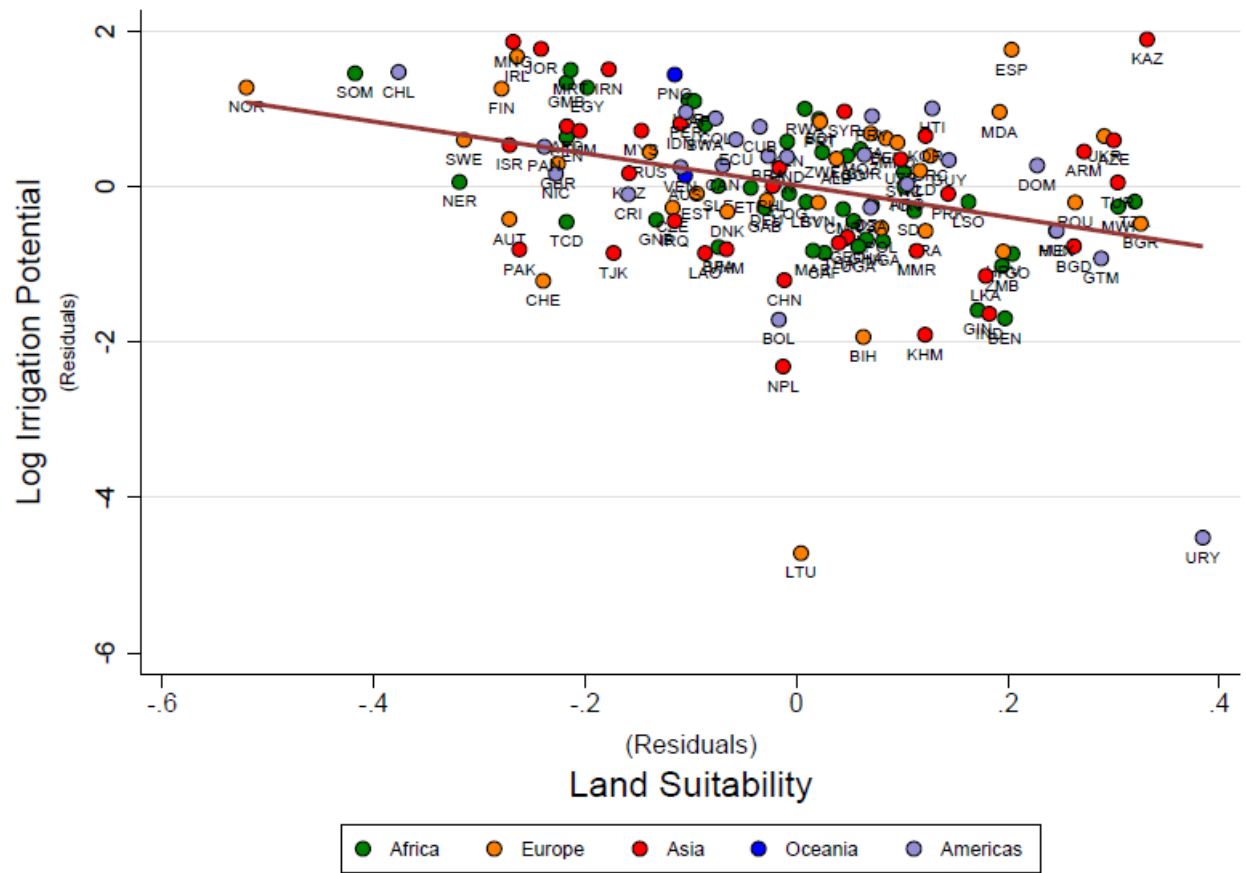


FIGURE B.6: Land Suitability and Irrigation Potential (conditional on geographical characteristics, years since the Neolithic transition, distance from the nearest technological frontier and continental fixed effects)

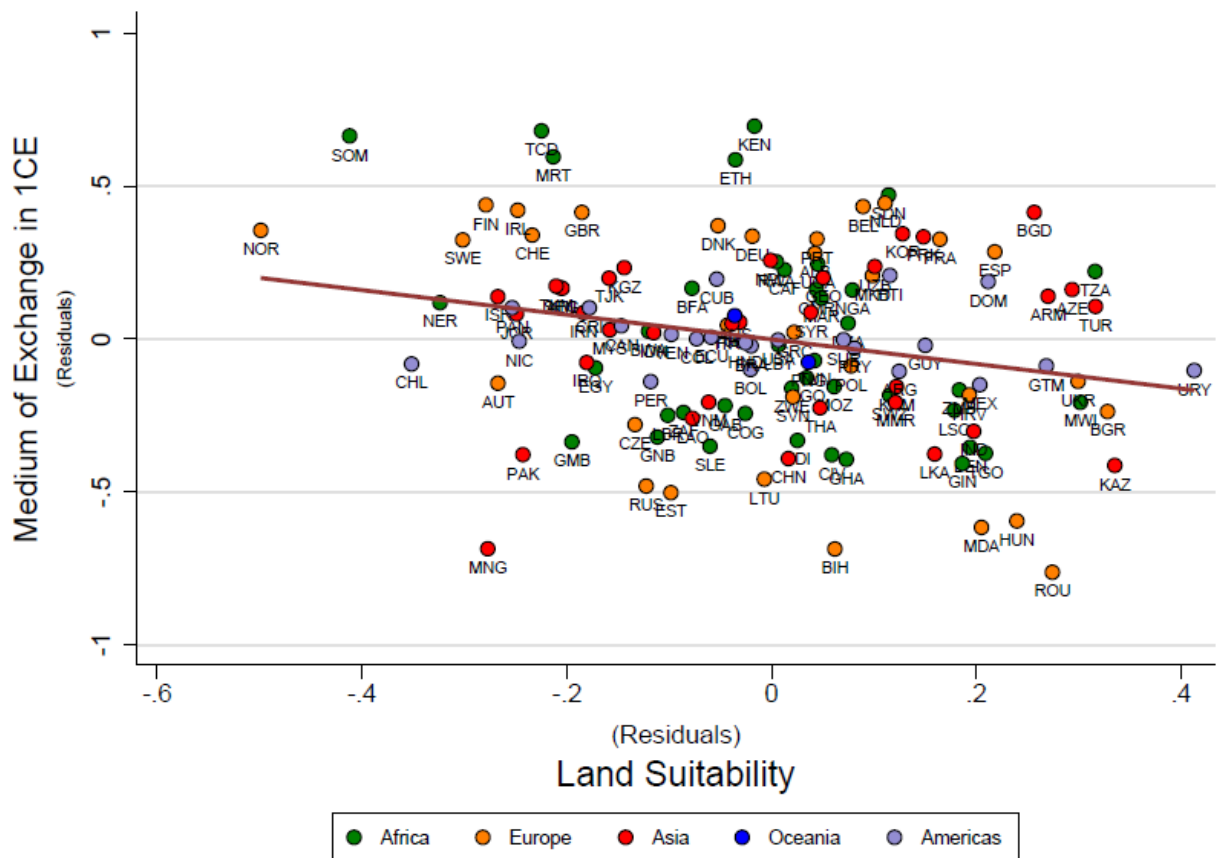


FIGURE B.7: Land Suitability and Medium of Exchange in the Year 1CE (conditional on geographical characteristics, years since the Neolithic transition, distance from the nearest technological frontier and continental fixed effects)

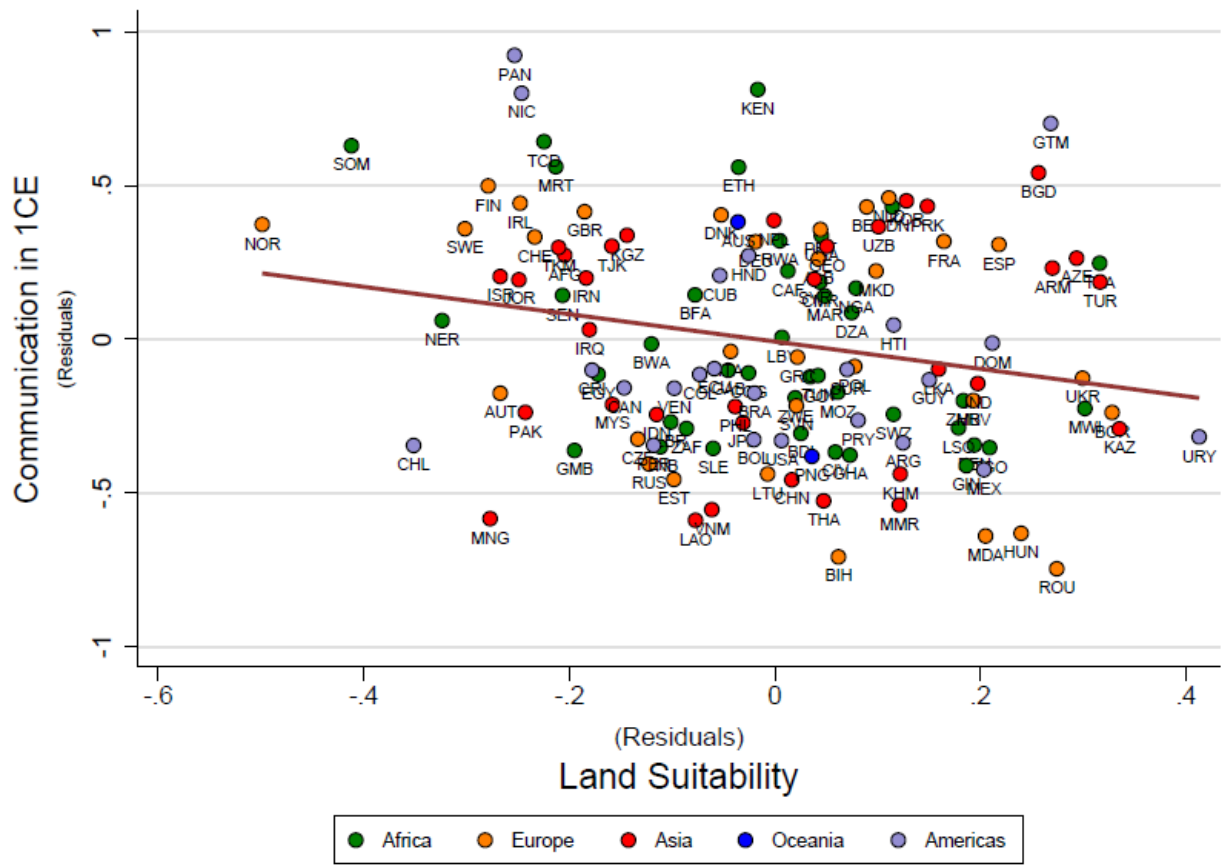


FIGURE B.8: Land Suitability and Medium of Communication in the Year 1CE (conditional on geographical characteristics, years since the Neolithic transition, distance from the nearest technological frontier and continental fixed effects)

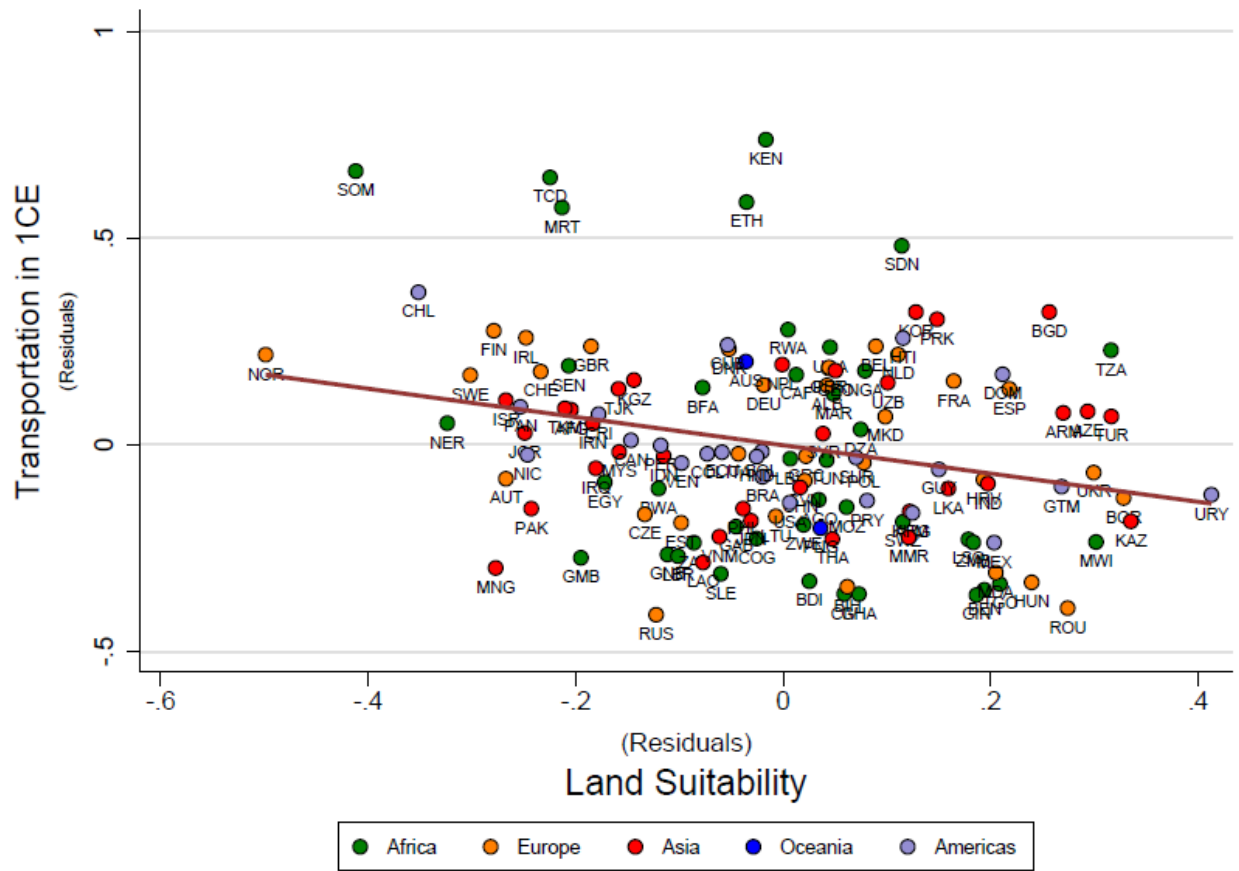


FIGURE B.9: Land Suitability and Medium of Transportation in the Year 1CE (conditional on geographical characteristics, years since the Neolithic transition, distance from the nearest technological frontier and continental fixed effects)

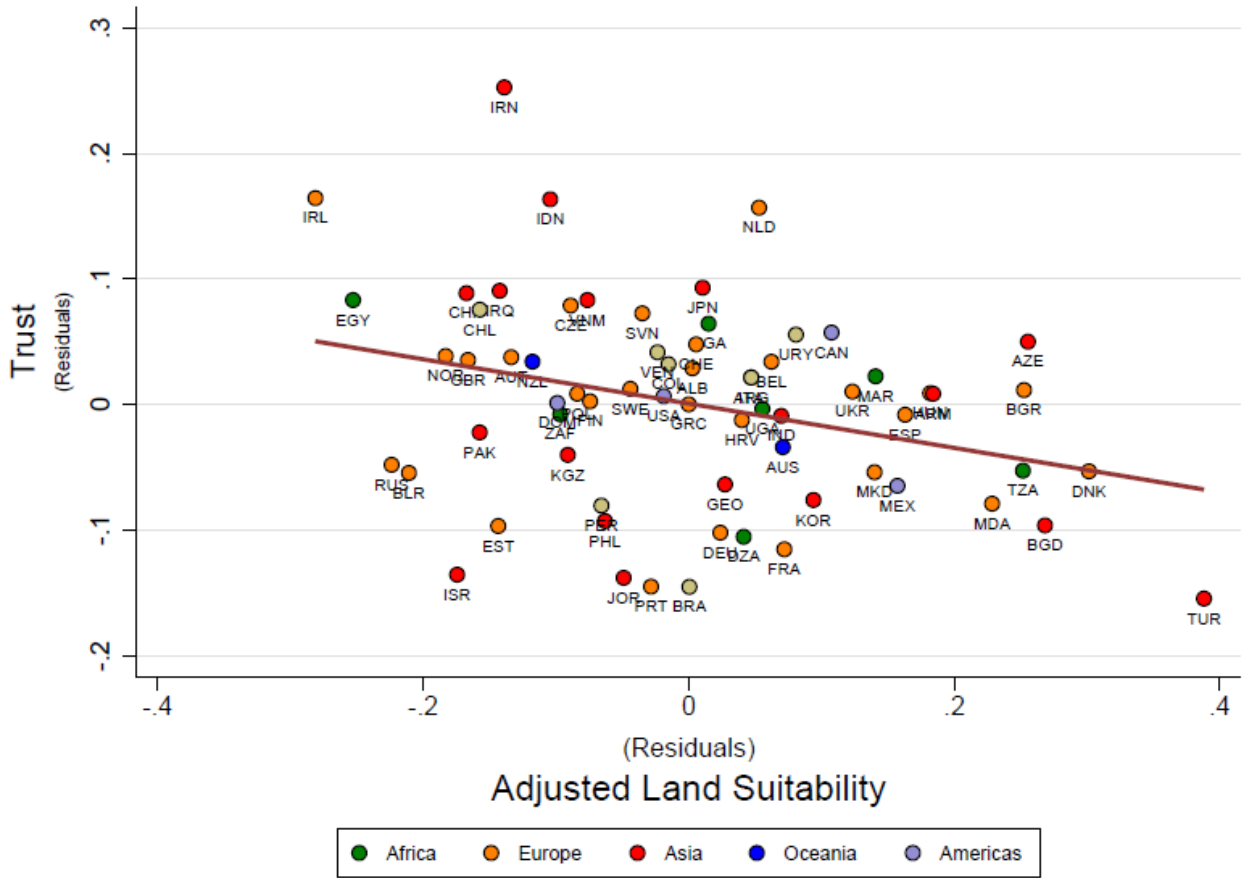


TABLE B.1: Summary Statistics-Reduced Form Model-Cross Country Sample

	Summary Statistics				Pairwise Correlations										
	Mean	S.D.	Min.	Max.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Trust	0.297	0.147	0.051	0.653	1.000										
(2) Adjusted Land Suitability	0.499	0.218	0.020	0.876	-0.436	1.000									
(3) Log Adjusted Years Since Neolithic	4.571	0.994	1.282	6.218	-0.125	0.166	1.000								
(4) Log Average Ruggedness	5.988	0.965	3.051	7.908	-0.250	-0.060	0.728	1.000							
(5) Log Average Elevation	3.425	0.751	0.000	4.159	0.399	-0.057	0.027	-0.255	1.000						
(6) Log Absolute Latitude	0.396	0.243	0.000	0.693	0.104	0.393	-0.076	-0.613	0.285	1.000					
(7) % of Land within 100 km of Coast or River	8.696	0.307	7.824	9.250	0.101	0.230	0.286	0.146	0.366	0.028	1.000				
(8) Ethnic Fractionalization	0.352	0.234	0.002	0.930	-0.300	-0.098	0.051	0.375	-0.544	-0.462	-0.268	1.000			
(9) Polity IV	5.541	3.704	0.000	10.000	0.270	0.034	-0.057	-0.316	0.369	0.363	0.011	-0.297	1.000		
(10) Disease Environment	208.119	15.164	186.000	248.000	-0.230	0.025	0.016	0.332	-0.655	-0.430	-0.198	0.425	-0.310	1.000	
(11) Log Schooling	4.030	0.553	0.928	4.498	0.275	0.112	-0.088	-0.340	0.509	0.409	0.085	-0.436	0.404	-0.297	1.000

Note: Number of Observations = 67

TABLE B.2: Robustness of the Land Suitability Index-Climatic Component in the Malthusian Era

	(1)	(2)	(3)	(4)	(5)
	Log Pop. Dens. in 1500 CE	Log. Irrig. Potent.	Med. of Exch. in 1 CE	Comm. in 1 CE	Transp. in 1 CE
Climatic Suitability	1.047*** (0.316)	-1.526*** (0.401)	-0.432*** (0.133)	-0.516*** (0.140)	-0.454*** (0.106)
Continental Dummies	Yes	Yes	Yes	Yes	Yes
Geographical Controls	Yes	Yes	Yes	Yes	Yes
Observations	130	130	130	130	130
R-square	0.710	0.379	0.581	0.437	0.749

Summary: This table establishes robustness of the results to the climatic component. Analytically it establishes the significant positive effect of climatic suitability for agriculture on population density in the year 1500, on irrigation potential, on medium of exchange, communication and transportation in the year 1 CE, while controlling for geography, years since the Neolithic transition, distance from the nearest technological frontier and unobserved continental fixed effects.

Notes: (i) Climatic suitability for agriculture is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate suitability for cultivation, such as growing degree days and the ratio of actual to potential evapotranspiration; (ii) irrigation potential measures the fraction of land that becomes marginally arable upon the use of irrigation; (iii) the set of continent dummies includes a fixed effect for Africa, the Americas, Australia, Europe and Sub-Saharan Africa; (iv) a single continent dummy is used to represent the Americas, which in natural given the historical period examined; (v) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (vi) robust standard error estimates are reported in parentheses; (vii) *** denotes statistical significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level, all for two-sided hypothesis tests.

TABLE B.3: Robustness of the Land Suitability Index-Climatic Component in the Malthusian Era

	(1)	(2)	(3)	(4)	(5)
	Log Pop. Dens. in 1500	Irrig. Potent.	Med. of Exch. in 1 CE	Comm. in 1 CE	Transp. in 1 CE
Soil Suitability	0.616 (0.616)	-2.352*** (0.785)	-0.431** (0.206)	-0.452 (0.281)	-0.203 (0.158)
Continental Dummies	Yes	Yes	Yes	Yes	Yes
Geographical Controls	Yes	Yes	Yes	Yes	Yes
Observations	130	130	130	130	130
R-square	0.690	0.368	0.551	0.392	0.698

Summary: This table establishes robustness of the results to the soil component. Analytically it establishes the significant positive effect of soil suitability for agriculture on population density in the year 1500, on irrigation potential, on medium of exchange, communication and transportation in the year 1 CE, while controlling for geography, years since the Neolithic transition, distance from the nearest technological frontier and unobserved continental fixed effects. **Notes:** (i) Soil suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of soil suitability for cultivation, such as soil carbon density and soil pH; (ii) irrigation potential measures the fraction of land that becomes marginally arable upon the use of irrigation; (iii) the set of continent dummies includes a fixed effect for Africa, the Americas, Australia, Europe and Sub-Saharan Africa; (iv) a single continent dummy is used to represent the Americas, which in natural given the historical period examined; (v) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (vi) robust standard error estimates are reported in parentheses; (vii) *** denotes statistical significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level, all for two-sided hypothesis tests.

TABLE B.4: Robustness of the Land Suitability Index-Climatic and Soil Component and Current Outcomes

	(A.1)	(A.2)	(B.1)	(B.2)
	Log Per Capita Av. GDP 1990-2000	Trust	Log Per Capita Av. GDP 1990-2000	Trust
Adjusted Climatic Suitability	-1.371*** (0.498)	-0.191** (0.090)		
Adjusted Soil Suitability			-2.523*** (0.734)	-0.351*** (0.105)
Continental Dummies	Yes	Yes	Yes	Yes
Geographical Controls	Yes	Yes	Yes	Yes
Leg.l Orig.-Eur. Col.-Rel. Sh.	Yes	Yes	Yes	Yes
Log Adj. Years Since Neol.	Yes	Yes	Yes	Yes
Ethn. Fractionalization	Yes	Yes	Yes	Yes
Polity IV	Yes	Yes	Yes	Yes
% of Pop at Risk of Malaria	Yes	Yes	Yes	Yes
Log Schooling	Yes	Yes	Yes	Yes
Observations	132	70	132	70
R-square	0.765	0.714	0.776	0.750

Summary: This table tests the robustness of the validity of the land suitability index. In particular it establishes the significant adverse effect of ancestry adjusted climatic suitability (Panel A) and ancestry adjusted soil suitability (Panel B) on income per capita in the year 2000 and the level of generalized trust, while controlling for geography, adjusted years since the Neolithic transition, ethnic fractionalization, quality of institutions, disease environment, schooling, and fixed effects for legal origin, major religion shares, European colony, and unobserved continental fixed effects. **Notes:** (i) Generalized levels of trust captures the fraction of total respondents within a given country, that answer that "most people can be trusted " in the question "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people"; (ii) climatic suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate suitability for cultivation such as growing degree days and the ratio of actual to potential evapotranspiration; (iii) Soil suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of soil suitability for cultivation, such as soil carbon density and soil pH; (iv) adjusted climatic (soil) suitability is the cross-country weighted average of climatic (soil) suitability. The weight associated with a given country represents the fraction of the year 2000 population that can trace its ancestral origins to the given country in the year 1500; (v) the set of continent dummies includes a fixed effect for Africa, Asia, Australia, Europe, North America, South America, Oceania and Sub-Saharan Africa; (vi) the set of geographical controls include log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (vii) the set of legal origins dummies includes a fixed effect for British legal origin, French origin, German origin, Scandinavian origin and Socialist origin; (viii) the set of major religion shares dummies includes a fixed effect for Catholic share, Muslim share, Protestant share, and other religious shares; (ix) the set of European colony dummies includes a fixed effect for British colony, French colony, Spanish colony, other European colony and non-colony; (x) robust standard error estimates are reported in parentheses; (xi) *** denotes statistical significance at the 1 % ** at the 5%, and * at the 10%, all for two-sided hypothesis tests.

TABLE B.5: Robustness of the Population Density Measure

	(1)	(2)	(3)	(4)	(5)	(6)
	L Pop. Den in 1500-(E&J)	L. Pop. Den in 1000-(E&J)	L.Pop. Den in 1-(E&J)	L. Pop. Den in 1500-(M)	L Pop. Den in 1000-(M)	L. Pop. Den in 1-(M)
Land Suit.	0.373*** (0.084)	0.355*** (0.090)	0.255** (0.103)	0.456*** (0.081)	0.495*** (0.072)	0.499*** (0.114)
Continents	Yes	Yes	Yes	Yes	Yes	Yes
Geography	Yes	Yes	Yes	Yes	Yes	Yes
Obs	130	126	117	45	44	42
R-square	0.718	0.640	0.682	0.887	0.898	0.916

Summary: This table establishes the robustness of the effect of land suitability on past economic outcomes using different population density measures. In particular it employs population density in the 1500, 1000 and 1, both from McEvedy and Jones (1978) as well as from Maddison (2003) historical estimates. The analysis controls for geography, years since the Neolithic transition, distance from the nearest technological frontier and unobserved continental fixed effects. Notes: (i) Data on historical population estimates come from Mc Evedy and Jones (1978) and from Maddison (2003); (ii) log land suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate suitability for cultivation, such as growing degree days and the ratio of actual to potential evapotranspiration, as well as ecological indicators of soil suitability for cultivation, such as soil carbon density and soil pH; (iii) the set of continent dummies includes a fixed effect for Africa, the Americas, Australia, Europe and Sub-Saharan Africa; (iv) a single continent dummy is used to represent the Americas, which in natural given the historical period examined; (v) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (vi) robust standard error estimates are reported in parentheses; (vii) *** denotes statistical significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level, all for two-sided hypothesis tests.

TABLE B.6: Robustness-Trade Channel in the Malthusian Era

	(1)	(2)	(3)	(4)	(5)
	Log Pop. Dens. in 1 CE	Log. Irrig. Potent.	Med. of Exch. in 1 CE	Comm. in 1 CE	Transp. inr 1 CE
Land Suitability	0.865* (0.446)	-1.988*** (0.613)	-0.432*** (0.162)	-0.463** (0.199)	-0.364*** (0.120)
Log Land Suit.. Diversity	0.381** (0.152)	-0.205 (0.198)	0.101 (0.061)	0.063 (0.062)	0.077 (0.053)
Continental Dummies	Yes	Yes	Yes	Yes	Yes
Geographical Controls	Yes	Yes	Yes	Yes	Yes
Observations	130	130	130	130	130
R-square	0.710	0.396	0.570	0.408	0.720

Summary: This table explores the trade channel. It establishes the significant positive effect of land suitability on population density in the year 1500 as well as the adverse effect of land suitability on irrigation potential, medium of exchange, communication and transportation in the year 1 CE, while controlling for geography, land inequality, years since the Neolithic transition, distance from the nearest technological frontier and unobserved continental fixed effects. Notes: (i) Log land suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate suitability for cultivation, such as growing degree days and the ratio of actual to potential evapotranspiration, as well as ecological indicators of soil suitability for cultivation, such as soil carbon density and soil pH; (ii) land diversity measure is based on the distribution of a land suitability index across grid cells within a country; (iii) irrigation potential measures the fraction of land that becomes marginally arable upon the use of irrigation; (iv) the set of continent dummies includes a fixed effect for Africa, the Americas, Australia, Europe and Sub-Saharan Africa; (v) a single continent dummy is used to represent the Americas, which in natural given the historical period examined; (vi) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (vii) robust standard error estimates are reported in parentheses; (viii) *** denotes statistical significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level, all for two-sided hypothesis tests.

TABLE B.7: Robustness-Trade Channel in the Modern Era

	(1)	(2)
	Log Per Cap.Av GDP 1990-2000	Trust
Adjusted Land Suitability	-1.276** (0.508)	-0.322*** (0.115)
Log Adjusted Land Suitab. Diversity	-0.405* (0.215)	0.017 (0.047)
Continental Dummies	Yes	Yes
Geographical Controls	Yes	Yes
Legal Origin-European Colony-Major Relig. Shares	Yes	Yes
Institutional Controls-Education	Yes	Yes
Observations	132	70
R-square	0.8019	0.749

Summary: This table explores the trade channel in the modern era. It establishes the significant adverse effect of adjusted land suitability on income per capita in the year 2000 and the level of generalized trust, while controlling for geography, adjusted land suitability diversity, adjusted years since the Neolithic transition, ethnic fractionalization, quality of institutions, disease environment, fixed effects for legal origin, European colony, major religion shares and unobserved continental fixed effects. **Notes:** (i) Generalized levels of trust captures the fraction of total respondents within a given country, that answer that "most people can be trusted " in the question "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people"; (ii) land suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate and soil suitability for cultivation; (iii) land suitability diversity is the range of the land suitability index; (iv) adjusted land suitability (diversity) is the cross-country weighted average of the land suitability (diversity) measure. The weight associated with a given country represents the fraction of the year 2000 population that can trace its ancestral origins to the given country in the year 1500; (v) the set of continent dummies includes a fixed effect for Africa, Asia, Australia, Europe, North America, South America, Oceania and Sub-Saharan Africa; (vi) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (vii) the set of legal origins dummies includes a fixed effect for British legal origin, French origin, German origin, Scandinavian origin and Socialist origin; (viii) the set of major religion shares dummies includes a fixed effect for Catholic share, Muslim share, Protestant share, and other religious shares; (ix) the set of European colony dummies includes a fixed effect for British colony, French colony, Spanish colony, other European colony and non-colony; (x) robust standard error estimates are reported in parentheses; (xi) *** denotes statistical significance at the 1 % ** at the 5%, and * at the 10%, all for two-sided hypothesis tests.

TABLE B.8: Robustness-Slavery in the Malthusian Era

	(1)	(2)	(3)	(4)	(5)
	Log Pop. Dens. in 1 CE	Log. Irrig. Potent.	Med. of Exch. in 1 CE	Comm. in 1 CE	Transp. inr 1 CE
Land Suitability	1.239*** (0.439)	-2.213*** (0.588)	-0.299* (0.163)	-0.222 (0.169)	-0.228** (0.114)
Log Social Stratification in 1 CE	1.094*** (0.392)	-0.783** (0.394)	0.416*** (0.143)	0.892*** (0.147)	0.458*** (0.126)
Continental Dummies	Yes	Yes	Yes	Yes	Yes
Geographical Controls	Yes	Yes	Yes	Yes	Yes
Observations	130	130	130	130	130
R-square	0.718	0.405	0.593	0.540	0.756

Summary: This table is exploring the slavery channel. It establishes the significant positive effect of land suitability for agriculture on population density in the year 1 CE, on irrigation potential, on the fraction of irrigated land in 1900, on communication, medium of exchange and transportation in the year 1, while controlling for geography, years since the Neolithic transition, distance from the nearest technological frontier, social stratification and unobserved continental fixed effects. **Notes:** (i) Land suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate and soil suitability for cultivation; (ii) social stratification captures the number of classes within a society. The index is assigned a value of 1 for egalitarian societies, a value of 2 for two social classes and a value of 3 for three or more social classes (slaves or casts); (iii) irrigation potential measures the fraction of land that becomes marginally arable upon the use of irrigation; (iv) the set of continent dummies includes a fixed effect for Africa, the Americas, Australia, Europe and Sub-Saharan Africa. (v) a single continent dummy is used to represent the Americas, which in natural given the historical period examined; (vi) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (vii) robust standard error estimates are reported in parentheses; (viii) *** denotes statistical significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level, all for two-sided hypothesis tests.

TABLE B.9: Robustness-Slavery in the Modern Era

	(1)	(2)
	Log Per Cap. Av. GDP 1990-2000	Trust
Adjusted Land Suitability	-1.876*** (0.595)	-0.355*** (0.088)
Log Adjusted Social Stratification in 1 CE	1.165** (0.558)	0.548* (0.303)
Continental Dummies	Yes	Yes
Geographical Controls	Yes	Yes
Legal Origin-European Colony-Major Religion Shares	Yes	Yes
Institutional Controls-Education	Yes	Yes
Observations	127	68
R-square	0.812	0.779

Summary: This table explores the slavery channel in the modern era. It establishes the significant adverse effect of adjusted land suitability on income per capita in year 2000 and on the level of generalized trust, while controlling for geography, adjusted years since the Neolithic transition, ethnic fractionalization, quality of institutions, disease environment, social stratification in the year 1 CE and fixed effects for legal origin, European colony, major religion shares and unobserved continental fixed effects. Notes: (i) Generalized levels of trust captures the fraction of total respondents within a given country, that answer that "most people can be trusted " in the question "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people"; (ii) land suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate and soil suitability for cultivation; (iii) social Stratification captures the number of classes within a society. The index is assigned a value of 1 for egalitarian societies, a value of 2 for two social classes and a value of 3 for three or more social classes (slavery or castes); (iv) adjusted land suitability (social stratification) is the cross-country weighted average of the land suitability (social stratification) measure. The weight associated with a given country represents the fraction of the year 2000 population that can trace its ancestral origins to the given country in the year 1500; (v) the set of continent dummies includes a fixed effect for Africa, Asia, Australia, Europe, North America, South America, Oceania and Sub-Saharan Africa; (vi) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (vii) the set of legal origins dummies includes a fixed effect for British legal origin, French origin, German origin, Scandinavian origin and Socialist origin; (viii) the set of major religion shares dummies includes a fixed effect for Catholic share, Muslim share, Protestant share, and other religious shares; (ix) the set of European colony dummies includes a fixed effect for British colony, French colony, Spanish colony, other European colony and non-colony; (x) robust standard error estimates are reported in parentheses; (xi) *** denotes statistical significance at the 1 % ** at the 5%, and * at the 10%, all for two-sided hypothesis tests.

TABLE B.10: Robustness-Influential Observations in the Malthusian Era

	(1)	(2)	(3)	(4)	(5)
	Log Pop. Dens. in 1 CE	Log. Irrig. Potent.	Med. of Exch. in 1 CE	Comm. in 1 CE	Transp. inr 1 CE
Land Suitability	1.280** (0.615)	-1.838** (0.797)	-0.491*** (0.130)	-0.584** (0.282)	-0.297*** (0.078)
Continental Dummies	Yes	Yes	Yes	Yes	Yes
Geographical Controls	Yes	Yes	Yes	Yes	Yes
Observations	130	130	130	130	130
Pseudo R-square	0.474	0.239	0.440	0.349	0.551

Summary: This table establishes that the effect of land suitability on population density in 1500, on irrigation potential, on medium of exchange, communication and transportation is robust to outliers using Quantile Regression Analysis. The analysis controls for geography, years since the Neolithic transition, distance from the nearest technological frontier and unobserved continental fixed effects. Notes: (i) Soil suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of soil suitability for cultivation, such as soil carbon density and soil pH; (ii) irrigation potential measures the fraction of land that becomes marginally arable upon the use of irrigation; (iii) the set of continent dummies includes a fixed effect for Africa, the Americas, Australia, Europe and Sub-Saharan Africa; (iv) a single continent dummy is used to represent the Americas, which in natural given the historical period examined; (v) the set of controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island, years since Neolithic transition and distance from the nearest technological frontier; (vi) robust standard error estimates are reported in parentheses; (vii) *** denotes statistical significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level, all for two-sided hypothesis tests.

TABLE B.11: Robustness-Influential Observations in the Modern Era

	(1)	(2)
	Log Per Capita Av. GDP 1990-2000.	Trust
Adj. Land Suitability	-0.908*** (1.69e-14)	-0.356*** (3.07e-15)
Controls	Yes	Yes
Number of Observations	132	70
Pseudo R-square	0.6187	0.545

Summary: This table establishes that the adverse effect of adjusted land suitability on income per capita in 2000 and on the generalized level of trust is robust to outliers using Quantile Regression Analysis. The analysis controls for geography, adjusted years since the Neolithic transition, ethnic fractionalization, quality of institutions, disease environment and fixed effects for legal origin, European colony, major religion shares and unobserved continental fixed effects. **Notes:** (i) Generalized levels of trust captures the fraction of total respondents within a given country, that answer that "most people can be trusted " in the question "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people"; (ii) land suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate and soil suitability for cultivation; (iii) adjusted land suitability is the cross-country weighted average of the land suitability measure. The weight associated with a given country represents the fraction of the year 2000 population that can trace its ancestral origins to the given country in the year 1500; (iv) the set of continent dummies includes a fixed effect for Africa, Asia, Australia, Europe, North America, South America, Oceania and Sub-Saharan Africa; (v) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (vi) the set of legal origins dummies includes a fixed effect for British legal origin, French origin, German origin, Scandinavian origin and Socialist origin; (vii) the set of major religion shares dummies includes a fixed effect for Catholic share, Muslim share, Protestant share, and other religious shares; (viii) the set of European colony dummies includes a fixed effect for British colony, French colony, Spanish colony, other European colony and non-colony; (ix) robust standard error estimates are reported in parentheses; (x) *** denotes statistical significance at the 1 % ** at the 5%, and * at the 10%, all for two-sided hypothesis tests.

TABLE B.12: Robustness-Regional Controls in the Malthusian Era

	(1)	(2)	(3)	(4)	(5)
	Log Pop. Dens. in 1 CE	Log. Irrig. Potent.	Med. of Exch. in 1 CE	Comm. in 1 CE	Transp. inr 1 CE
Land Suitability	0.972** (0.431)	-2.047*** (0.594)	-0.415** (0.167)	-0.479** (0.193)	-0.376*** (0.124)
Continental Dummies	Yes	Yes	Yes	Yes	Yes
Geographical Controls	Yes	Yes	Yes	Yes	Yes
Observations	130	130	130	130	130
R-square	0.710	0.396	0.570	0.408	0.720

Summary: This table explores the robustness of the results to the use of alternative regional controls. It establishes the significant positive effect of land suitability on population density in the year 1500 as well as the adverse effect of land suitability on irrigation potential, medium of exchange, communication and transportation in the year 1 CE, while controlling for geography, years since the Neolithic transition, distance from the nearest technological frontier and unobserved continental fixed effects. **Notes:** (i) Land suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate suitability for cultivation, such as growing degree days and the ratio of actual to potential evapotranspiration, as well as ecological indicators of soil suitability for cultivation, such as soil carbon density and soil pH; (ii) irrigation potential measures the fraction of land that becomes marginally arable upon the use of irrigation; (iii) the set of continent dummies includes a fixed effect for Latin America and the Caribbean, Sub-Saharan Africa, East Asia and Pacific Region, Europe and Central Asia, Middle East and North Africa and South Asia ; (iv) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (v) robust standard error estimates are reported in parentheses; (vi) *** denotes statistical significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level, all for two-sided hypothesis tests.

TABLE B.13: Robustness-Regional Controls in the Modern Era

	(1)	(2)
	Log Per Capita Av. GDP 1990-2000	Trust
Adjusted Land Suitability	-1.743*** (0.576)	-0.305*** (0.086)
Continental Dummies	Yes	Yes
Geographical Controls	Yes	Yes
Legal Origin-European Colony-Major Relig. Shares	Yes	Yes
Institutional Controls-Education	Yes	Yes
Observations	132	70
R-square	0.808	0.748

Summary: This table explores the robustness of the results to alternative regional controls. It establishes the significant adverse effect of adjusted land suitability on income per capita in year 2000 and the level of generalized trust while controlling for geography, adjusted years since the Neolithic transition, ethnic fractionalization, quality of institutions, disease environment, fixed effects for legal origin, European colony, major religion shares and unobserved regional fixed effects. **Notes:** (i) Generalized levels of trust captures the fraction of total respondents within a given country, that answer that "most people can be trusted" in the question "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people"; (ii) land suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate and soil suitability for cultivation; (iii) adjusted land suitability is the cross-country weighted average of the land suitability measure. The weight associated with a given country represents the fraction of the year 2000 population that can trace its ancestral origins to the given country in the year 1500; (iv) the set of continent dummies includes a fixed effect for Latin America and the Caribbean, Sub-Saharan Africa, East Asia and Pacific Region, Europe and Central Asia, Middle East and North Africa and South Asia; (v) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (vi) the set of legal origins dummies includes a fixed effect for British legal origin, French origin, German origin, Scandinavian origin and Socialist origin; (vii) the set of major religion shares dummies includes a fixed effect for Catholic share, Muslim share, Protestant share, and other religious shares; (viii) the set of European colony dummies includes a fixed effect for British colony, French colony, Spanish colony, other European colony and non-colony; (ix) robust standard error estimates are reported in parentheses; (x) *** denotes statistical significance at the 1% **, at the 5%, and * at the 10%, all for two-sided hypothesis tests.

TABLE B.14: Robustness- OPEC and Very Low Productivity Countries

	(1)	(2)	(3)	(4)
	Log Per Cap. Av. GDP 1990-2000	Trust	Log Per Cap. Av. GDP 1990-2000	Trust
Adjusted Land Suitability	-1.453*** (0.522)	-0.196** (0.086)	-1.370** (0.598)	-0.365** (0.140)
Continental Dummies	Yes	Yes	Yes	Yes
Geographical Controls	Yes	Yes	Yes	Yes
L. Or-Eur. Col.- Relig. Sh.	Yes	Yes	Yes	Yes
Institutional Controls-Ed.	Yes	Yes	Yes	Yes
OPEC	Yes	Yes	No	No
Land Suitability>0.1	No	No	Yes	Yes
Observations	132	70	110	57
R-square	0.821	0.778	0.842	0.728

Summary: This table explores the robustness of the results to the potential of being driven by very low fertility countries. The first two columns control for OPEC countries, whereas the last two columns exclude countries with very low natural land productivity. The table establishes the significant adverse effect of adjusted land suitability on income per capita in year 2000 and the level of generalized trust while controlling for geography, adjusted years since the Neolithic transition, ethnic fractionalization, quality of institutions, disease environment, fixed effects for legal origin, European colony, major religion shares and unobserved continental fixed effects.

Notes: (i) Generalized levels of trust captures the fraction of total respondents within a given country, that answer that "most people can be trusted" in the question "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people"; (ii) land suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate and soil suitability for cultivation; (iii) adjusted land suitability is the cross-country weighted average of the land suitability measure. The weight associated with a given country represents the fraction of the year 2000 population that can trace its ancestral origins to the given country in the year 1500; (iv) the set of continent dummies includes a fixed effect for Africa, Asia, Australia, Europe, North America, South America, Sub-Saharan Africa and Oceania; (v) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (vi) the set of legal origins dummies includes a fixed effect for British legal origin, French origin, German origin, Scandinavian origin and Socialist origin; (vii) the set of major religion shares dummies includes a fixed effect for Catholic share, Muslim share, Protestant share, and other religious shares; (viii) the set of European colony dummies includes a fixed effect for British colony, French colony, Spanish colony, other European colony and non-colony; (ix) OPEC is a dummy for oil producing countries; (x) robust standard error estimates are reported in parentheses; (xi) *** denotes statistical significance at the 1% **, at the 5%, and * at the 10%, all for two-sided hypothesis tests.

C Robustness-WVS

TABLE C.1: Summary Statistics-WVS

	Summary Statistics				Pairwise Correlations													
	Mean	S. D.	Min.	Max.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Trust	0.252	0.434	0.000	1.000	1.000													
(2) Land Suitability	0.488	0.215	0.020	0.876	-0.122	1.000												
(3) Log Years Since Neolithic	8.649	0.390	7.824	9.250	0.144	0.197	1.000											
(4) Log Average Ruggedness	4.594	0.865	2.450	6.218	0.002	0.214	0.292	1.000										
(5) Log Average Elevation	6.261	0.763	3.806	7.908	-0.080	-0.041	0.068	0.700	1.000									
(6) Log Absolute Latitude	3.252	0.706	0.000	4.159	0.118	-0.062	0.297	0.225	-0.065	1.000								
(7) % Land 100 km of Coas/Riv	0.304	0.206	0.000	0.693	0.028	0.379	0.025	-0.015	-0.579	0.184	1.000							
(8) Ethnic Fractionalization	0.437	0.242	0.002	0.930	-0.142	-0.195	-0.434	0.006	0.407	-0.456	-0.480	1.000						
(9) Polity IV	5.262	3.268	0.000	10.000	0.004	0.068	-0.041	0.120	0.008	0.207	0.104	-0.038	1.000					
(10) Disease Environment	215.044	16.068	186.000	248.000	-0.086	0.020	-0.277	-0.186	0.134	-0.666	0.469	-0.005	1.000					
(11) Religious Group	53.028	13.886	1.000	86.000	-0.015	-0.165	-0.119	-0.160	-0.078	-0.081	0.015	0.172	0.042	-0.086	1.000			
(12) Gender	1.558	0.497	1.000	2.000	-0.061	-0.059	-0.161	0.008	0.059	0.063	-0.031	0.098	0.075	0.000	-0.010	1.000		
(13) Age	38.255	15.668	15.000	97.000	0.094	0.070	0.210	0.019	-0.145	0.153	0.155	-0.227	0.076	-0.169	0.060	-0.094	1.000	
(14) Educational Level	4.774	2.442	1.000	8.000	-0.046	-0.070	-0.298	0.044	0.112	-0.004	-0.071	0.170	0.172	0.096	-0.069	0.060	-0.332	1.000

Note: Number of observations =86498, Number of Countries=54

TABLE C.2: Robustness of Land Suitability Index-WVS

	(1)	(2)
		Trust
Adj. Soil Suit	-0.386*** (0.142)	
Adj. Clim. Suit		-0.377*** (0.114)
Regional F.E	Yes	Yes
Cross Country Controls		
Education-Gender-Religion	Yes	Yes
Observations	86498	86498
R-square	0.120	0.120

Summary: This table tests the robustness of the validity of the land suitability index. In particular it establishes the significant adverse effect of ancestry adjusted climatic suitability and ancestry adjusted soil suitability the individual level of trust, while controlling for geography, adjusted years since the Neolithic transition, ethnic fractionalization, quality of institutions, disease environment, schooling, and fixed effects for legal origin, dominant religion shares, European colony, individual control (age, gender, education, religious group) and unobserved continental fixed effects. Notes: (i)The "Trust" index is the response to the question whether most people can be trusted. The index takes values 0-1 with 1 indicating more trust; (ii) climatic suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate suitability for cultivation such as growing degree days and the ratio of actual to potential evapotranspiration; (iii) soil suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of soil suitability for cultivation, such as soil carbon density and soil pH; (iv) adjusted climatic (soil) suitability is the cross-country weighted average of climatic (soil) suitability. The weight associated with a given country represents the fraction of the year 2000 population that can trace its ancestral origins to the given country in the year 1500; (v) the set of continent dummies includes a fixed effect for Africa, Asia, Australia, Europe, North America, South America, Oceania and Sub-Saharan Africa; (vi) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (vii) the set of legal origins dummies includes a fixed effect for British legal origin, French origin, German origin, Scandinavian origin and Socialist origin; (viii) the set of major religion shares dummies includes a fixed effect for Catholic share, Muslim share, Protestant share, and other religious shares; (ix) the set of European colony dummies includes a fixed effect for British colony, French colony, Spanish colony, other European colony and non-colony; (x) robust standard error estimates are reported in parentheses; (xi) *** denotes statistical significance at the 1 % ** at the 5%, and * at the 10%, all for two-sided hypothesis tests.

TABLE C.3: Robustness to Confounding Factors-WVS

	(1)	(2)	(3)	(4)	(5)
				Trust	
Adjusted Land Suitability	-1.424*** (0.510)	-0.418*** (0.105)	-0.380*** (0.094)	-0.208*** (0.071)	-0.332*** (0.095)
Log Social Stratification in 1 CE		0.223*** (0.085)			
Log Land Suitability Diversity.(A)			0.181*** (0.056)		
OPEC				0.163*** (0.024)	
Continental Dummies	Yes	Yes	Yes	Yes	Yes
Geography-Institutional Controls	Yes	Yes	Yes	Yes	Yes
Education-Gender-Religion	Yes	Yes	Yes	Yes	Yes
Land Suitability>0.1	No	No	No	No	Yes
Logit Model	Yes	No	No	No	No
Marginal Effect	-0.241***	-	-	-	-
Observations	86403	84505	86498	86498	78091
R-square	0.117	0.123	0.122	0.126	0.103

Summary: This table explores the validity of the estimation. In particular Column (1) estimates a logit model. Column (2) explores the slavery channel by controlling for ancestry adjusted stratification in the year 1 CE. Column (3) explores the trade channel by controlling for diversity in land suitability. Column (4) introduces an OPEC dummy in the analysis to capture resource rich countries with very low land productivity. Column (5) is censoring the sample by excluding countries with extremely low natural land productivity. The baseline analysis controls for geography, adjusted years since the Neolithic transition, ethnic fractionalization, quality of institutions, disease environment, schooling, and fixed effects for legal origin, dominant religion shares, European colony, individual control (age, gender, education, religious group) and unobserved continental fixed effects. Notes: (i) The "Trust" index is the response to the question whether most people can be trusted. The index takes values 0-1 with 1 indicating more trust; (ii) land suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate suitability for cultivation, such as growing degree days and the ratio of actual to potential evapotranspiration, as well as ecological indicators of soil suitability for cultivation, such as soil carbon density and soil pH; (iii) irrigation potential measures the fraction of land that becomes marginally arable upon the use of irrigation; (iv) adjusted land suitability is the cross-country weighted average of the land suitability measure. The weight associated with a given country represents the fraction of the year 2000 population that can trace its ancestral origins to the given country in the year 1500; (v) the set of continent dummies includes a fixed effect for Africa, Asia, Australia, Europe, North America, South America, Oceania and Sub-Saharan Africa; (vi) the set of legal origins dummies includes a fixed effect for British legal origin, French origin, German origin, Scandinavian origin and Socialist origin; (vii) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (viii) the set of major religion shares dummies includes a fixed effect for Catholic share, Muslim share, Protestant share, and other religious shares; (ix) the set of European colony dummies includes a fixed effect for British colony, French colony, Spanish colony, other European colony and non-colony; (x) the set of continent dummies includes a fixed effect for Africa, Asia, Australia, Europe, North America, South America, Sub-Saharan Africa and Oceania; (xi) robust standard error estimates are reported in parentheses; (xii) *** denotes statistical significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level, all for two-sided hypothesis tests.

D Robustness-ESS

TABLE D.1: Summary Statistics-ESS

		Table: Descriptive Statistics-ESS																		
		Summary Statistics							Pairwise Correlations											
		Mean	S.D.	Min.	Max.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
(1)	Trust	0.400	0.490	0.000	1.000	1														
(2)	Land Suitability	0.472	0.255	0.007	0.956	-0.059	1													
(3)	Log Years Since Neolithic	8.678	0.371	5.991	9.259	-0.023	0.423	1												
(4)	Log Average Ruggedness	4.456	0.858	1.282	6.371	-0.040	0.206	0.281	1											
(5)	Log Average Elevation	5.905	0.792	-0.650	7.950	-0.057	-0.077	0.133	0.770	1										
(6)	Log Absolute Latitude	3.656	0.556	0.000	4.159	0.025	0.005	0.279	-0.040	-0.252	1									
(7)	% of Land 100 km Coas/Riv	0.364	0.248	0.000	0.693	0.005	0.639	0.200	-0.101	-0.447	0.144	1								
(8)	Ethnic Fractionalization	0.319	0.188	0.002	0.930	-0.054	-0.096	-0.273	0.033	0.310	-0.571	-0.380	1							
(9)	Polity IV	4.886	3.533	0.000	10.000	0.069	0.186	0.132	0.053	-0.204	0.288	0.332	-0.347	1						
(10)	Disease Environment	208.713	14.757	186.000	248.000	0.025	-0.346	-0.245	0.090	0.233	-0.267	-0.614	0.235	0.009	1					
(11)	Religious Group	4.627	2.334	1.000	11.000	0.027	-0.105	0.036	0.026	0.062	0.008	-0.133	0.074	-0.037	0.077	1				
(12)	Gender	1.559	0.496	1.000	2.000	0.011	-0.023	-0.028	-0.006	-0.013	0.025	-0.028	-0.009	0.009	0.053	-0.093	1			
(13)	Age	46.628	18.308	15.000	97.000	0.006	-0.008	0.072	-0.068	-0.103	0.186	0.046	-0.116	0.093	-0.037	-0.082	0.072	1		
(14)	Educational Level	3.978	1.871	1.000	7.000	0.136	-0.068	-0.053	-0.131	-0.126	0.099	-0.026	-0.032	0.083	0.090	0.060	0.045	-0.035	1	

Note: Number of Observations = 5940, Number of Countries = 26, Number of Countries (Ancestry) = 116

TABLE D.2: Robustness of the Land Suitability Index-ESS

	(1)	(2)
		Trust
Soil Suit (A)	-0.045*** (0.017)	
Climate Suit. (A)		-0.117*** (0.014)
Regional F.E	Yes	Yes
Geography-Institutional Controls (A)	Yes	Yes
Age-Gender-Education-Religion	Yes	Yes
Observations	5940	5940
R-square	0.129	0.129

Summary: This table explores the robustness of the results to the soil and the climate component of the land suitability index. It establishes the adverse effect of each component of land suitability on current levels of trust of migrants. Column (1) introduces the soil component whereas Column (2) introduces the climatic component. The analysis controls for geography, adjusted years since the Neolithic transition, ethnic fractionalization, quality of institutions, disease environment, schooling, and fixed effects for legal origin, dominant religion shares, European colony, individual controls (age, gender, education, religious group) and unobserved regional fixed effects. Notes: (i) The "Trust" index is the response to the question whether most people can be trusted. The index takes values 0-1 with 1 indicating more trust; (ii) Climatic suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate suitability for cultivation such as growing degree days and the ratio of actual to potential evapotranspiration; (iii) soil suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of soil suitability for cultivation, such as soil carbon density and soil pH; (iv) the set of continent dummies includes a fixed effect for Africa, Asia, Australia, Europe, North America, South America, Oceania and Sub-Saharan Africa; (v) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (vi) the set of legal origins dummies includes a fixed effect for British legal origin, French origin, German origin, Scandinavian origin and Socialist origin; (vii) the set of major religion shares dummies includes a fixed effect for Catholic share, Muslim share, Protestant share, and other religious shares; (viii) the set of European colony dummies includes a fixed effect for British colony, French colony, Spanish colony, other European colony and non-colony; (ix) (A) denotes that the controls are derived from the ancestry of the respondent; (x) the set of regional dummies includes a fixed effect for 251 NUTS 2 regions; (xi) robust standard error estimates are reported in parentheses; (xii) *** denotes statistical significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level, all for two-sided hypothesis tests.

TABLE D.3: Robustness to Confounding Factors-ESS

	(1)	(2)	(3)	(4)
			Trust	
Land Suit (A)	-0.097*** (0.016)	-0.076*** (0.014)	-0.097*** (0.015)	-0.070*** (0.017)
Social Stratification in 1 CE	-0.066*** (0.013)			
Land Suitability Diversity.(A)		-0.020*** (0.007)		
OPEC			-0.025** (0.010)	
Regional F.E	Yes	Yes	Yes	Yes
Geography-Institutional Controls (A)	Yes	Yes	Yes	Yes
Land Suitability>0.1	No	No	No	Yes
Age-Gender-Education-Religion	Yes	Yes	Yes	Yes
Observations	5823	5940	5940	5655
R-square	0.131	0.130	0.130	0.125

Summary: This table tests the robustness of the results in on a number of additional ethnic controls. Column (1) introduces a control for social stratification in the year 1 CE to explore the slavery channel. Column (2) introduces an index of suitability diversity to explore the trade channel. Column (3) introduces a control for OPEC countries. Column (4) excludes very low fertility countries to capture the possibility of corner solutions. The analysis controls for geography, adjusted years since the Neolithic transition, ethnic fractionalization, quality of institutions, disease environment, schooling, and fixed effects for legal origin, dominant religion shares, European colony, individual controls (age, gender, education, religious group) and unobserved regional fixed effects. Notes: (i) The "Trust" index is the response to the question whether most people can be trusted. The index takes values 0-1 with 1 indicating more trust; (ii) land suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate suitability for cultivation, such as growing degree days and the ratio of actual to potential evapotranspiration, as well as ecological indicators of soil suitability for cultivation, such as soil carbon density and soil pH; (iii) social stratification captures the number of classes within a society. The index is assigned a value of 1 for egalitarian societies, a value of 2 for two social classes and a value of 3 for three or more social classes (castes or slaves); (iv) land suitability diversity is based on the range of a land suitability index; (v) the set of continent dummies includes a fixed effect for Africa, Asia, Australia, Europe, North America, South America, Oceania and Sub-Saharan Africa; (vi) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (vii) the set of legal origins dummies includes a fixed effect for British legal origin, French origin, German origin, Scandinavian origin and Socialist origin; (viii) the set of major religion shares dummies includes a fixed effect for Catholic share, Muslim share, Protestant share, and other religious shares; (ix) the set of European colony dummies includes a fixed effect for British colony, French colony, Spanish colony, other European colony and non-colony; (x) (A) denotes that the controls are derived from the ancestry of the respondent; (xi) the set of regional dummies includes a fixed effect for 251 NUTS 2 regions; (xii) OPEC is a dummy for oil producing countries; (xiii) robust standard error estimates are reported in parentheses; (xiv) *** denotes statistical significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level, all for two-sided hypothesis tests.

TABLE D.4: Robustness to Parental and Partner Controls-ESS

	(1)	(2)	(3)
	Trust		
Land Suit (A)	-0.086*** (0.014)	-0.086*** (0.014)	-0.094*** (0.015)
Regional F.E	Yes	Yes	Yes
Geography-Institutional Controls (A)	Yes	Yes	Yes
Age-Gender-Education-Religion	Yes	Yes	Yes
Paternal Education-Employment	Yes	Yes	Yes
Maternal Education-Employment	No	Yes	Yes
Partner's Education-Employment	No	No	Yes
Observations	5940	5940	5873
R-square			

Summary: This table establishes the robustness of the results to the inclusion of parental and partner's control that could potentially affect trust of the individual. Column (1) introduces controls on the paternal level of education and employment at the age of 14 (of the respondent). Column (2) add the same controls for the mother of the respondent. Finally Column (3) adds a control on the marital status of the respondent and the partner's educational level. The analysis controls for geography, adjusted years since the Neolithic transition, ethnic fractionalization, quality of institutions, disease environment, schooling, and fixed effects for legal origin, dominant religion shares, European colony, individual controls (age, gender, education, religious group) and unobserved regional fixed effects.

Notes: (i) The "Trust" index is the response to the question whether most people can be trusted. The index takes values 0-1 with 1 indicating more trust; (ii) land suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate suitability for cultivation, such as growing degree days and the ratio of actual to potential evapotranspiration, as well as ecological indicators of soil suitability for cultivation, such as soil carbon density and soil pH; (iii) the set of continent dummies includes a fixed effect for Africa, Asia, Australia, Europe, North America, South America, Oceania and Sub-Saharan Africa; (iv) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (v) the set of legal origins dummies includes a fixed effect for British legal origin, French origin, German origin, Scandinavian origin and Socialist origin; (vi) the set of major religion shares dummies includes a fixed effect for Catholic share, Muslim share, Protestant share, and other religious shares; (vii) the set of European colony dummies includes a fixed effect for British colony, French colony, Spanish colony, other European colony and non-colony; (viii) (A) denotes that the controls are derived from the ancestry of the respondent; (ix) the set of regional dummies includes a fixed effect for 251 NUTS 2 regions; (x) robust standard error estimates are reported in parentheses; (xi) *** denotes statistical significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level, all for two-sided hypothesis tests.

TABLE D.5: Land Suitability and Trust of Second Generation Migrants

	(1)	(2)
		Trust
Land Suit (A)	-0.448* (0.234)	-0.029*** (0.008)
Regional F.E	Yes	Yes
Geography-Institutional Controls (A)	Yes	Yes
Age-Gender-Education-Religion	Yes	Yes
ESS Four Rounds	No	Yes
Logit Model	Yes	No
Marginal Effect	0.442*	-
Observations	5771	19794
R-square		

Summary: This table establishes the validity of the estimation. Column (1) estimates the logit model (since the trust variable is a binary variable). Column (2) expands the analysis to four waves of the ESS for which the country of origin of the father is available. The analysis controls for geography, adjusted years since the Neolithic transition, ethnic fractionalization, quality of institutions, disease environment, schooling, and fixed effects for legal origin, dominant religion shares, European colony, individual controls (age, gender, education, religious group) and unobserved regional fixed effects. Notes: (i) The "Trust" index is the response to the question whether most people can be trusted. The index takes values 0-1 with 1 indicating more trust; (ii) log land suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate suitability for cultivation, such as growing degree days and the ratio of actual to potential evapotranspiration, as well as ecological indicators of soil suitability for cultivation, such as soil carbon density and soil pH; (iii) the set of continent dummies includes a fixed effect for Africa, Asia, Australia, Europe, North America, South America, Oceania and Sub-Saharan Africa; (iv) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (v) the set of legal origins dummies includes a fixed effect for British legal origin, French origin, German origin, Scandinavian origin and Socialist origin; (vi) the set of major religion shares dummies includes a fixed effect for Catholic share, Muslim share, Protestant share, and other religious shares; (vii) the set of European colony dummies includes a fixed effect for British colony, French colony, Spanish colony, other European colony and non-colony; (viii) (A) denotes that the controls are derived from the ancestry of the respondent; (ix) the set of regional dummies includes a fixed effect for 251 NUTS2 regions; (x) robust standard error estimates are reported in parentheses; (xi) *** denotes statistical significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level, all for two-sided hypothesis tests.

TABLE D.6: Land Suitability and Trust of Second Generation Migrants

	(1)	(2)
	Trust	
Land Suit (A)	-0.149*** (0.029)	-0.074* (0.044)
Country F.E	Yes	Yes
Geography-Institutional Controls (A)	Yes	Yes
Age-Gender-Education-Religion	Yes	Yes
Father Born in Different Country	Yes	Yes
Both Parents Born in Different Country	No	Yes
Observations	2403	1266
R-square	0.219	0.255

Summary: This table establishes the robustness of the results to potential selection issues, by employing only second generation migrants. Column (1) keeps only the sample of the respondents born in an ESS country but whose fathers' have a different ancestry. Column (2) keeps only the sample of migrants whose parents come from a different country. The analysis controls for geography, adjusted years since the Neolithic transition, ethnic fractionalization, quality of institutions, disease environment, schooling, and fixed effects for legal origin, dominant religion shares, European colony, individual controls (age, gender, education, religious group) and unobserved regional fixed effects. The results are robust to the sample of second generation migrants, thereby capturing the intergenerational transmission of cultural traits. Notes: (i) The "Trust" index is the response to the question whether most people can be trusted. The index takes values 0-1 with 1 indicating more trust; (ii) land suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate suitability for cultivation, such as growing degree days and the ratio of actual to potential evapotranspiration, as well as ecological indicators of soil suitability for cultivation, such as soil carbon density and soil pH; (iii) the set of continent dummies includes a fixed effect for Africa, Asia, Australia, Europe, North America, South America, Oceania and Sub-Saharan Africa; (iv) the set of geographical controls includes log average ruggedness, log average elevation, log absolute latitude, log access to navigable waterways and a fixed effect for landlocked country and island; (v) the set of legal origins dummies includes a fixed effect for British legal origin, French origin, German origin, Scandinavian origin and Socialist origin; (vi) the set of major religion shares dummies includes a fixed effect for Catholic share, Muslim share, Protestant share, and other religious shares; (vii) the set of European colony dummies includes a fixed effect for British colony, French colony, Spanish colony, other European colony and non-colony; (viii) (A) denotes that the controls are derived from the ancestry of the respondent; (ix) the set of country fixed effects includes a fixed effect for 26 ESS countries. The regional dummies are available only for the fifth wave of ESS and thus the analysis employs countries fixed effects instead; (x) robust standard error estimates are reported in parentheses; (xi) *** denotes statistical significance at the 1 percent level, ** at the 5 percent level, and * at the 10 percent level, all for two-sided hypothesis tests.

E Variable Definitions and Sources

E.1 Cross-Country Variables

Outcome Variables

Population Density in the Year 1, 1000, and 1500. Population density (in persons per square km) for given year is calculated as population in that year, as reported by McEvedy and Jones (1978), divided by total land area as reported by the World Bank’s *World Development Indicators*. The cross-sectional unit of observation in McEvedy and Jones’ (1978) data set is a region delineated by its international borders in 1975. Historical population estimates are provided for regions corresponding to either individual countries or, in some cases, to sets comprised of 2–3 neighboring countries (e.g., India, Pakistan, and Bangladesh). In the latter case, a set-specific population density figure is calculated based on total land area and the figure is then assigned to each of the component countries in the set. The same methodology is also employed to obtain population density for countries that exist today but were part of a larger political unit (e.g., the former Yugoslavia) in 1975. Historical population estimates are also available from Maddison (2003), albeit for a smaller set of countries than McEvedy and Jones (1978).

Income Per Capita in 2000. Real GDP per capita, in constant 2000 CE international dollars, as reported by Penn World Table.

Years since Industrialization. The timing of industrialization is determined as the year in which the share of the agricultural sector became less than 30% of the aggregate economic activity. The measure employed is provided by O. Galor. The construction of the data is based upon Mitchell (1975) and the threshold is decided using 5-year averages in order to filter out most of the yearly fluctuations around the threshold.

Irrigation in 1900. Data on irrigation are reported by Freydank and Siebert (2008). They have constructed a set of annual values of area equipped for irrigation for all 236 countries during the time period 1900 - 2003. The values are provided in 1000 ha units. The *Irrigation* variable is using the data for the year 1900 and is expressed as the ratio of irrigated land over arable land.

Irrigation Potential. Data on irrigation potential is obtained from AQUASTAT. The index of irrigation potential is calculated as the fraction of land that becomes marginally suitable for cultivation upon the introduction of irrigation divided by the total arable land under rain-fed conditions. The fraction of land suitable for cultivation denotes the extent of very suitable, suitable, moderately suitable or marginally suitable land.

Communication in Year 1, Transportation in Year 1, Medium of Exchange in Year 1. Data on a) Communication in the year 1 CE b) Transportation in the year 1 CE c) Medium of Exchange in the year ,1 CE are constructed from Peregrine’s (2003) Atlas of Cultural Evolution, and aggregated at the country level by Ashraf and Galor (2011a). Each of these three sectors is reported on a 3-point scale, as evaluated by various anthropological and historical sources. The level of technology in each sector is indexed as follows. In the communications sector, the index is assigned a value of 0 under the absence of both true writing and mnemonic or non-written records, a value of 1 under the presence of only mnemonic or non-written records, and a value of 2 under the presence of both. In the transportation sector, the index is assigned a value of 0 under the absence of both vehicles and pack or draft animals, a value of 1 under the presence of only pack or draft animals, and a value of 2 under the presence of both. In the Medium of Exchange sector, the index is assigned a value of 0 under the absence of domestically used articles and currency, a value of one under the presence of only domestically used articles and the value of 2 under the presence of both. In all cases, the sector-specific indices are normalized to assume values in the [0; 1]-interval. Given that the cross-sectional unit of observation in Peregrine’s dataset is an archaeological tradition or culture, specific to a given region on the global map, and since spatial delineations in Peregrine’s dataset do not necessarily correspond to contemporary international borders, the culture-specific technology index in a given year is aggregated to the country level by averaging across those cultures from Peregrine’s map that appear within the modern borders of a given country.

Mean Generalized Trust. The fraction of World Values Survey (WVS) respondents that agreed with the statement “most people can be trusted.”

Distrust in Civil Servants. It is the country average answer to the question: “Do you have a lot of confidence, quite a lot of confidence, not very much confidence, no confidence at all in civil servants?”. The variable is equal to 1 if the answer is no confidence, and 0 otherwise. The variable comes from the World Values Survey (WVS).

Geographical Variables

Land Suitability. A geospatial index of the suitability of land for agriculture based on ecological indicators of climate suitability for cultivation, such as growing degree days and the ratio of actual to potential evapotranspiration, as well as ecological indicators of soil suitability for cultivation, such as soil carbon density and soil pH. This index was initially reported at a half-degree resolution by Ramankutty et al. (2002). Formally, Ramankutty et al. (2002) calculate the land suitability index (S) as the product of climate suitability (Sclim) and soil suitability (Ssoil), i.e., $S = Sclim \cdot Ssoil$. The climate suitability

component is estimated to be a function of growing degree days (GDD) and a moisture index (α) gauging water availability to plants, calculated as the ratio of actual to potential evapotranspiration, i.e., $S_{lim} = f_1(GDD)f_2(\alpha)$. The soil suitability component, on the other hand, is estimated to be a function of soil carbon density (Csoil) and soil pH (pHsoil), i.e. $S_{soil} = g_1(C_{soil})g_2(pH_{soil})$. The functions, $f_1(GDD)$, $f_2(\alpha)$, $g_1(C_{soil})$, and $g_2(pH_{soil})$ are chosen by Ramankutty et al. (2002) by empirically fitting functions to the observed relationships between cropland areas, GDD, α , Csoil, and pHsoil. For more details on the specific functional forms chosen, the interested reader is referred to Ramankutty et al. (2002). Since Ramankutty et al. (2002) report the land suitability index at a half-degree resolution, Michalopoulos (2012) aggregates the index to the country level by averaging land suitability across grid cells within a country. This study employs the country-level aggregate measure reported by Michalopoulos (2012) as the control for land suitability in the baseline regression specifications for both historical population density and contemporary income per capita.

Land Suitability (Adjusted). The cross-country weighted average of the land suitability measure. The weight associated with a given country in the calculation represents the fraction of the year 2000 CE population (of the country for which the measure is being computed) that can trace its ancestral origins to the given country in the year 1500 CE. The ancestry weights are obtained from the World Migration Matrix (1500 CE–2000 CE) of Putterman and Weil (2010).

Land Suitability Diversity. The land suitability diversity measure is based on the range of the land suitability index, reported at a half-degree resolution by Ramankutty et al. (2002), across grid cells within a country. This variable is obtained from the data set of Michalopoulos (2012).

Land Suitability Diversity (Adjusted). The cross-country weighted average of the land suitability diversity measure. The weight associated with a given country in the calculation represents the fraction of the year 2000 CE population (of the country for which the measure is being computed) that can trace its ancestral origins to the given country in the year 1500 CE. The ancestry weights are obtained from the World Migration Matrix (1500 CE–2000 CE) of Putterman and Weil (2010).

Climatic Suitability. Climatic suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of climate suitability for cultivation such as growing degree days and the ratio of actual to potential evapotranspiration. This index was initially reported at a half-degree resolution by Ramankutty et al. (2002) whereas the country-level aggregate measure is obtained by Michalopoulos (2012).

Soil Suitability. Soil suitability is a geospatial index of the suitability of land for agriculture based on ecological indicators of soil suitability for cultivation, such as soil carbon density and soil pH. This index was initially reported at a half-degree resolution by Ramankutty et al. (2002) whereas the country-level aggregate measure is obtained by Michalopoulos (2012).

Absolute Latitude. The absolute value of the latitude of a country’s approximate geodesic centroid as reported by the CIA’s *World Factbook*.

Percentage of Land within 100 km of Waterway. The percentage of a country’s total land area that is located within 100 km of an ice-free coastline or sea-navigable river. This variable was originally constructed by Gallup et al. (1999) and is part of Harvard University’s CID Research Datasets on *General Measures of Geography* available online.

Average Elevation. The average elevation of a country in thousands of km above sea level, calculated using geospatial elevation data reported by the G-ECON project (Nordhaus, 2006) at a 1-degree resolution. The measure is thus the average elevation across the grid cells within a country.

Average Ruggedness. The measure is the average degree of ruggedness across the grid cells within a country, calculated using geospatial elevation data reported by the G-ECON project (Nordhaus, 2006) at a 1-degree resolution. This variable is obtained from the data set of Michalopoulos (2012).

Small Island and Landlocked Dummy. 0/1-indicators for whether or not a country is a small island nation, and whether or not it possesses a coastline. These variables are constructed by Ashraf and Galor (2011a) based on information reported by the CIA in The World Factbook online resource.

Disease Environment. The total number of different types of infectious diseases in a country, as reported by Fincher and Thornhill (2008), based on the Global Infectious Disease and Epidemiology Network (GIDEON) online database.

Distance Variables

Distance to Frontier in the Year 1, 1000 and 1500. The distance, in thousands of kilometers, from a country’s modern capital city to the closest regional technological frontier in the year 1500 CE, as reported by Ashraf and Galor (2011a). Specifically, the authors employ historical urbanization estimates from Tertius Chandler (1987) and George Modelski (2003) to identify frontiers based on the size of urban populations, selecting the two largest cities from each continent that belong to different sociopolitical entities.

Years since Neolithic Revolution. The number of thousand years elapsed, until the year 2000 CE, since the majority of the population residing within a country’s modern national borders began practicing sedentary agriculture as the primary mode

of subsistence. This measure, reported by Putterman (2008), is compiled using a wide variety of both regional and country-specific archaeological studies as well as more general encyclopedic works on the transition from hunting and gathering to agriculture during the Neolithic.

Years since Neolithic Revolution (Adjusted). The cross-country weighted average of the timing of the Neolithic Revolution. The weight associated with a given country in the calculation represents the fraction of the year 2000 CE population (of the country for which the measure is being computed) that can trace its ancestral origins to the given country in the year 1500 CE. The ancestry weights are obtained from the World Migration Matrix, 1500 CE–2000 CE, of Putterman and Weil (2010).

Institutional Variables

Ethnic Fractionalization. A fractionalization index, constructed by Alesina et al. (2003), that captures the probability that two individuals, selected at random from a country’s population, will belong to different ethnic groups.

Polity IV. The 1960–2000 CE mean of an index that quantifies the extent of institutionalized democracy, as reported in the Polity IV data set. The Polity IV democracy index for a given year is an 11-point categorical variable (from 0 to 10) that is additively derived from Polity IV codings on the (i) competitiveness of political participation, (ii) openness of executive recruitment, (iii) competitiveness of executive recruitment, and (iv) constraints on the chief executive.

Legal Origins. A set of dummy variables, reported by La Porta et al. (1999), that identifies the legal origin of the Company Law or Commercial Code of a country. The five legal origin possibilities are: (i) English Common Law, (ii) French Commercial Code, (iii) German Commercial Code, (iv) Scandinavian Commercial Code, and (v) Socialist or Communist Laws.

European Colony. An indicator for whether or not a country was colonized by a European nation as coded by Acemoglu et al. (2005a). The variable equals 1 for colonized countries.

Major Religion Shares. A set of variables, from La Porta et al. (1999), that identifies the percentage of a country’s population belonging to the three most widely spread religions of the world. The religions identified are: (i) Roman Catholic, (ii) Protestant, (iii) Muslim, and (iv) Other.

Percentage of Native Population. The variable of the percentage of native population is constructed by (Ashraf and Galor, 2011a), based on the migration matrix of Putterman and Weil (2010).

Schooling. Schooling is the average total enrollment rate for the period 1990–2000. The data are derived from the World Bank.

Social Stratification. Social Stratification is a measure of social complexity and captures the number of classes within a society. It is constructed from Peregrine’s (2003) Atlas of Cultural Evolution. The level of stratification is indexed as follows. The index is assigned a value of 1 for egalitarian societies, a value of 2 for two social classes and a value of 3 for three or more social classes. The index is constructed for the year 1 CE.

E.2 WVS Variables

Outcome Variables

Trust. The "Trust" index is the response to the question whether "most people can be trusted" or "one needs to be too careful". The index takes values 0-1 with 1 indicating that most people can be trusted. The index is taken from the four waves (1981-2002) of the WVS sample.

Individual Controls

Age. The age of the respondent. The age is taken from the four waves (1981-2002) of the WVS sample.

Gender. The gender of the respondent. The gender is taken from the four waves (1981-2002) of the WVS sample.

Religious Denomination. The religious group in which the respondent belongs. Respondents are classified in 90 religious groups, The data is taken from the four waves (1981-2002) of the WVS sample.

Level of Education. The higher level of education attained by the respondent. The questionnaire distinguishes seven different levels of education (inadequately completed elementary education, completed (compulsory) elementary education, (compulsory) elementary education and basic vocational qualification, secondary, intermediate vocational qualification, secondary, intermediate general qualification, full secondary, maturity level certificate, higher education - lower-level tertiary certificate, higher education - upper-level tertiary certificate). The data is taken from the four waves (1981-2002) of the WVS sample.

E.3 WVS Variables

Outcome Variables

Trust. Respondents are given the statement "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? Please tell me on a score of 0 to 10, where 0 means you can't be too careful and 10 means that most people can be trusted." In order to keep the symmetry with the "Trust" variable employed in the cross country sample, derived from the WVS, the variable is rescaled on a two-point scale, with the value 0, capturing the values 0-5 of the original variable and the value 1 capturing the values 6-10. Therefore 0 is now reflecting the answer "Strongly Disagree-Disagree" and 1 reflecting the answer "Strongly Agree-Agree".

Individual Controls

Age. The age of the respondent. The age is taken from the fifth wave of the ESS (2010) The robustness section employs data from rounds 2-5 (2004-2010) for which the origin of the migrant is available at the country level.

Gender. The gender of the respondent. The gender is taken from the fifth wave of the ESS (2010) The robustness section employs data from rounds 2-5 (2004-2010) for which the origin of the migrant is available at the country level.

Religious Denomination. The religious group in which the respondent belongs. The questionnaire covers 8 broad categories of religious denominations (Roman Catholic, Protestant, Eastern Orthodox, Other Christian denomination, Jewish, Islamic, Eastern Religions, Other non-Christian Religions) and a category of non-religious people. The data is taken from the fifth wave of the ESS (2010) The robustness section employs data from rounds 2-5 (2004-2010) for which the origin of the migrant is available at the country level.

Level of Education. The higher level of education attained by the respondent. The questionnaire distinguishes seven different levels of education (less than lower secondary, lower secondary, lower tier upper secondary, upper tier upper secondary, advanced vocational, lower tertiary BA level, higher tertiary > MA level). The same classification holds for the father's, mother's and partner's education. The data is taken from the fifth wave of the ESS (2010) The robustness section employs data from rounds 2-5 (2004-2010) for which the origin of the migrant is available at the country level.

Parental Employment Status at Age 14 of the Respondent. The employment status of the father (mother) when the respondent was 14. The questionnaire distinguishes six different levels of education (employee, self employed, not working, father (mother) dead/absent, refusal, don't know). The data is taken from the fifth wave of the ESS (2010) The robustness section employs data from rounds 2-5 (2004-2010) for which the origin of the migrant is available at the country level.

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