

## **Online Appendix**

### **Ancestry and Development: New Evidence**

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**NOTE:** Tables A2-A10 in this Appendix are numbered to correspond to the numbering of tables in the main text. So for instance Table A2 is to be compared to Table 2 in the main text of the paper.

**Table A1 - Regressions using Historical Data, using the USA as the frontier instead of the UK  
(Dependent variable: absolute difference in log per capita income, various dates as in row 2)**

	(1)	(2)	(3)	(4)	(5)
	Income 1820	Income 1870	Income 1913	Income 1960	Income 2005
<b>Relative genetic distance to the USA, weighted, Pemberton et al.</b>	<b>3.512</b> <b>(2.01)**</b>	<b>12.036</b> <b>(4.00)***</b>	<b>10.991</b> <b>(3.11)***</b>	<b>17.186</b> <b>(4.95)***</b>	<b>18.525</b> <b>(5.10)***</b>
Absolute difference in latitudes	1.111 (5.44)***	1.270 (4.91)***	1.199 (4.91)***	0.976 (4.15)***	-0.495 (2.17)**
Absolute difference in longitudes	0.633 (4.19)***	0.716 (2.30)**	0.854 (2.96)***	0.645 (2.61)***	-0.624 (2.81)***
Geodesic Distance (1000s of km)	-0.082 (3.89)***	-0.096 (2.59)***	-0.102 (3.21)***	-0.067 (2.39)**	0.056 (2.11)**
1 for contiguity	-0.203 (4.09)***	-0.213 (4.62)***	-0.235 (5.40)***	-0.164 (2.82)***	-0.522 (8.85)***
=1 if either country is an island	-0.106 (3.47)***	0.024 (0.25)	0.024 (0.27)	-0.038 (0.77)	-0.039 (0.58)
=1 if either country is landlocked	0.129 (3.77)***	0.173 (2.56)**	0.222 (3.07)***	0.279 (3.33)***	0.152 (1.79)*
=1 if pair shares at least one sea or ocean	0.010 (0.29)	0.092 (2.03)**	0.131 (2.91)***	0.107 (1.96)*	0.006 (0.08)
$R^2$	0.27	0.22	0.19	0.18	0.07
$N$	1,081	1,540	1,711	5,460	14,365
Standardized $\beta$ on genetic distance (%)	11.492	27.125	21.976	28.955	23.470
Standardized $\beta$ on genetic distance (%) for a common sample <sup>(a)</sup>	11.948	26.856	24.154	19.333	11.978

t-statistics based on two-way clustered standard errors, in parentheses; \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

<sup>(a)</sup>: the common sample is composed of 820 pairs (41 countries).

All regressions include an intercept (estimates not reported)

All columns include controls for: absolute difference in latitudes, absolute difference in longitudes, geodesic distance, dummy for contiguity, dummy for either country being an island, dummy for either country being landlocked, dummy = 1 if pair shares at least one sea or ocean.

**Table A2 – Income Level Regressions, controlling for geographic distance, using Cavalli-Sforza et al. data**  
 (Dependent variable: log income per capita 2005)

	(1)	(2)	(3)	(4)
	Univariate	Distance and geography controls	Add tropics control	IV using 1500 genetic distance
<b>F<sub>ST</sub> genetic distance to the USA, weighted, Cavalli-Sforza et al. (1994)</b>	<b>-12.646</b> <b>(8.90)***</b>	<b>-6.330</b> <b>(2.96)***</b>	<b>-6.079</b> <b>(2.79)***</b>	<b>-7.503</b> <b>(2.68)***</b>
Absolute latitude		0.032 (4.42)***	0.041 (4.35)***	0.039 (3.91)***
Landlocked dummy		-0.567 (3.05)***	-0.501 (2.68)***	-0.460 (2.37)**
Island dummy		0.629 (3.11)***	0.434 (1.49)	0.440 (1.50)
Geodesic distance to the USA		0.294 (0.42)	1.297 (1.77)*	1.169 (1.52)
Absolute difference in latitude to the USA		0.161 (0.19)	-0.287 (0.35)	-0.013 (0.01)
Absolute difference in longitude to the USA		-0.485 (0.92)	-1.130 (2.10)**	-0.987 (1.67)*
Dummy for common sea/ocean with the USA		-0.190 (1.02)	-0.053 (0.28)	-0.028 (0.14)
Dummy for contiguity to the USA		0.528 (1.72)*	0.388 (1.09)	0.430 (1.23)
% land area in the tropics			0.069 (0.22)	0.081 (0.26)
# of observations	171	171	150	150
Adjusted R <sup>2</sup>	0.30	0.44	0.48	0.48
Standardized $\beta$ on genetic distance (%)	55.027	27.546	26.774	33.043

Robust t-statistics in parentheses; \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .  
 All regressions include an intercept (estimates not reported).

**Table A3 – Robustness of the Effect of Genetic Distance to Continental Effects, using the Cavalli-Sforza et al. data**  
(Dependent variable: log income per capita 2005)

	(1)	(2)	(3)	(3)	(5)
	All Continent dummies	All Macro-region dummies	Removing SS African countries	Removing European countries	Removing European and SS African countries
<b>F<sub>ST</sub> genetic distance to the USA, weighted, Cavalli-Sforza et al.</b>	<b>-4.565 (1.90)*</b>	<b>-4.815 (1.71)*</b>	<b>-8.121 (3.00)***</b>	<b>-5.203 (2.18)**</b>	<b>-5.042 (1.28)</b>
# of observations	171	171	126	135	90
Adjusted R <sup>2</sup>	0.49	0.56	0.28	0.32	0.18
Standardized $\beta$ on gen. dist. (%)	19.864	20.951	30.585	22.315	18.252

Robust t-statistics in parentheses; \* p<0.1; \*\* p<0.05; \*\*\* p<0.01.

All regressions include an intercept (estimates not reported).

Continent dummies in column (1) are for Europe, Africa, Latin America & Caribbean, Asia, North America, and Oceania (omitted category).

Macro-region dummies in column (2) are for Sub-Saharan Africa, North America, Western & Southern Europe, Eastern & Central Europe, Latin America (excl. Caribbean), Caribbean, North Africa, East & Southeast Asia, South Asia, Southwestern & Central Asia, Middle East, Oceania (omitted category).

All regressions include additional controls for absolute latitude, landlocked dummy, island dummy, geodesic distance to the USA, absolute difference in latitude to the USA, absolute difference in longitude to the USA, dummy for common sea/ocean with the USA, dummy for contiguity to the USA.

**Table A4 – Genetic Distance, Genetic Diversity, Language and Religion, using Cavalli-Sforza et al. (1994) data**  
 (Dependent variable: log income per capita 2005)

	(1)	(2)	(3)
	Gen. div. controls	Gen. div. & dist. & geo. controls	Add linguistic and religious distance
<b>F<sub>ST</sub> genetic distance to the USA, weighted, Cavalli-Sforza et al. (1994)</b>	<b>-11.911 (8.09)***</b>	<b>-6.966 (2.64)***</b>	<b>-5.345 (2.04)**</b>
Predicted genetic diversity, Ashraf-Galor (2013)	115.816 (2.53)**	104.750 (1.68)*	108.449 (1.74)*
Predicted genetic diversity squared, Ashraf-Galor (2013)	-87.604 (2.58)**	-77.032 (1.70)*	-80.110 (1.77)*
Linguistic distance to the USA, Fearon measure, weighted			-0.269 (0.48)
Religious distance to the USA, Mecham-Fearon-Laitin, weighted			-1.697 (2.33)**
# of observations	169	148	140
Adjusted R <sup>2</sup>	0.33	0.48	0.57
Standardized $\beta$ on genetic distance (%)	51.998	30.827	24.088

Robust t-statistics in parentheses; \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

All regressions include an intercept (estimates not reported).

Columns (2) and (3) include controls for absolute latitude, landlocked dummy, island dummy, geodesic distance to the USA, absolute difference in latitude to the USA, absolute difference in longitude to the USA, dummy for common sea/ocean with the USA, dummy for contiguity to the USA, and percentage of land area in the tropics.

**Table A5 – Income difference regressions, using genetic distance from Cavalli-Sforza et al. (1994).  
(Dependent variable: difference in log per capita income, 2005)**

	(1) Relative GD	(2) Simple GD	(3) Horsrace between simple and relative GD	(4) 2SLS with 1500 GD
<b>Relative <math>F_{ST}</math> genetic distance to the USA, weighted, Cavalli-Sforza et al.</b>	<b>5.094 (4.82)***</b>		<b>4.902 (4.37)***</b>	<b>9.113 (5.21)***</b>
<b>Weighted Fst Genetic Distance, Cavalli-Sforza et al.</b>		<b>2.042 (3.23)***</b>	<b>0.235 (0.40)</b>	
Absolute difference in latitudes	-0.248 (1.10)	0.112 (0.45)	-0.226 (1.02)	-0.444 (1.81)*
Absolute difference in longitudes	-0.353 (1.75)*	-0.414 (2.03)**	-0.337 (1.77)*	-0.120 (0.56)
Geodesic Distance (1000s of km)	0.031 (1.26)	0.024 (0.96)	0.028 (1.21)	0.007 (0.26)
1 for contiguity	-0.480 (8.19)***	-0.541 (9.52)***	-0.478 (8.23)***	-0.381 (6.16)***
=1 if either country is an island	0.022 (0.37)	-0.003 (0.06)	0.021 (0.35)	0.043 (0.71)
=1 if either country is landlocked	0.115 (1.35)	0.124 (1.40)	0.113 (1.32)	0.087 (1.06)
=1 if pair shares at least one sea or ocean	-0.011 (0.18)	0.014 (0.20)	-0.010 (0.15)	-0.026 (0.41)
$R^2$	0.08	0.05	0.08	0.08
Standardized $\beta$ on genetic distance (%)	23.475	14.378	22.588	41.345

t-statistics based on two-way clustered standard errors, in parentheses; \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

All regressions include an intercept (estimates not reported).

All regressions are based on 14,365 country pair observations from 170 countries.

**Table A6 – Income difference regressions, robustness and extensions, using genetic distance data from Cavalli-Sforza et al. (1994)**  
 (Dependent variable: absolute difference in log per capita income, 2005)

	(1)	(2)	(3)	(4)	(5)
	Continent dummies	Excl. New World	Excl. Sub-Saharan Africa	Climatic Difference	Common history controls
<b>Relative <math>F_{ST}</math> genetic distance to the USA, weighted, Cavalli-Sforza et al.</b>	<b>3.035</b> <b>(2.73)***</b>	<b>4.226</b> <b>(3.07)***</b>	<b>4.320</b> <b>(4.07)***</b>	<b>5.440</b> <b>(4.81)***</b>	<b>5.458</b> <b>(4.61)***</b>
Measure of climatic difference of land areas, by 12 KG zones				0.032 (5.00)***	
1 if countries were or are the same country					-0.361 (3.93)***
1 for pairs ever in colonial relationship					0.211 (1.94)*
1 for common colonizer post 1945					-0.101 (1.35)
1 for pairs currently in colonial relationship					-0.938 (4.91)***
Religious distance index, relative to USA, weighted					0.886 (3.60)***
Linguistic distance index, relative to USA, weighted					0.204 (1.08)
$R^2$	0.14	0.08	0.05	0.11	0.12
Observations (countries)	14,365 (170)	8,256 (129)	7,750 (125)	11,026 (149)	10,296 (144)
Standardized $\beta$ on genetic distance (%)	13.987	19.897	17.082	25.781	26.007

t-statistics based on two-way clustered standard errors, in parentheses; \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

All regressions include an intercept (estimates not reported).

All columns include controls for: absolute difference in latitudes, absolute difference in longitudes, geodesic distance, dummy for contiguity, dummy for either country being an island, dummy for either country being landlocked, dummy = 1 if pair shares at least one sea or ocean.

Column 1 includes a full set of continental dummy variables: both in Asia Dummy, both in Africa Dummy, both in Europe Dummy, both in Latin America/Caribbean dummy, Both in Oceania Dummy, Dummy if one and only one country is in Asia, Dummy if one and only one country is in Africa, dummy if one and only one country is in Europe, dummy if one and only one country is in North America, dummy if one and only one country is in South America.

**Table A7 – Regressions using Historical Data, using genetic distance from Cavalli-Sforza et al. (1994)**  
**(Dependent variable: absolute difference in log per capita income, various dates as in row 2)**

	(1)	(2)	(3)	(4)	(5)
	Income 1820	Income 1870	Income 1913	Income 1960	Income 2005
<b>Relative <math>F_{ST}</math> genetic distance to the UK, weighted</b>	<b>0.622</b> <b>(1.76)*</b>	<b>1.663</b> <b>(2.07)**</b>	<b>1.705</b> <b>(2.02)**</b>	<b>2.569</b> <b>(3.76)***</b>	<b>3.973</b> <b>(4.70)***</b>
$R^2$	0.26	0.17	0.16	0.16	0.07
<i>Observations (countries)</i>	1,081 (47)	1,540 (56)	1,711 (59)	5,460 (105)	14,365 (170)
Standardized $\beta$ on genetic distance (%)	7.978	14.521	13.079	21.975	22.840
Standardized $\beta$ on genetic distance (%) for a common sample <sup>(a)</sup>	9.150	14.781	13.591	7.493	3.935

t-statistics based on two-way clustered standard errors, in parentheses; \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

<sup>(a)</sup>: the common sample is composed of 820 pairs (41 countries).

All regressions include an intercept (estimates not reported).

All columns include controls for: absolute difference in latitudes, absolute difference in longitudes, geodesic distance, dummy for contiguity, dummy for either country being an island, dummy for either country being landlocked, dummy = 1 if pair shares at least one sea or ocean.



**Table A8 – Determinants of Institutional Differences, using Cavalli-Sforza et al. data**  
 (Dependent variables: measures of institutional quality for 1990, as in row 2)

	(1)	(2)	(3)	(4)
	Polity score 1990	Repudiation of contracts 1990	Risk of expropriation 1990	Rule of law 1990
<b>Relative <math>F_{ST}</math> genetic distance to the USA, weighted, Cavalli-Sforza et al.</b>	<b>16.943*** (2.70)</b>	<b>9.100*** (3.83)</b>	<b>6.504*** (2.70)</b>	<b>4.271*** (2.80)</b>
Absolute difference in latitudes	-1.243 (-0.67)	-0.108 (-0.19)	-0.300 (-0.73)	2.247*** (5.09)
Absolute difference in longitudes	-2.224 (-1.26)	-1.034* (-1.73)	-0.953** (-2.03)	0.581 (1.56)
Geodesic Distance (1000s of km)	0.389** (1.97)	0.102 (1.48)	0.076 (1.42)	-0.084* (-1.88)
1 for contiguity	-2.941*** (-4.90)	-0.555** (-2.56)	-0.482** (-2.08)	-0.192* (-1.88)
=1 if either country is an island	0.060 (0.15)	0.127 (0.80)	-0.035 (-0.33)	0.160* (1.69)
=1 if either country is landlocked	0.057 (0.19)	0.110 (0.53)	0.092 (0.39)	-0.113 (-0.97)
=1 if pair shares at least one sea or ocean	-0.333 (-0.69)	-0.084 (-0.62)	-0.106 (-0.72)	0.007 (0.08)
Observations	8,128	5,671	5,671	5,671
R-squared	0.042	0.076	0.056	0.147
Standardized $\beta$ on genetic distance (%)	12.18	21.59	17.49	16.31

t-statistics based on two-way clustered standard errors, in parentheses; \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .  
 All regressions include an intercept (estimates not reported).

**Table A9 – Genetic Distance and Differences in Democracy, using the Cavalli-Sforza et al. data**  
**(Dependent variable: absolute difference in Polity 2 democracy score at various dates listed in row 2)**

	(1) 1960	(2) 1970	(3) 1980	(4) 1990	(5) 2000	(6) 2005
<b>Relative <math>F_{ST}</math> genetic distance to the USA, weighted, Cavalli-Sforza et al.</b>	<b>6.143</b> <b>(0.96)</b>	<b>15.004**</b> <b>(2.08)</b>	<b>22.748***</b> <b>(2.74)</b>	<b>37.383***</b> <b>(4.26)</b>	<b>15.255**</b> <b>(2.25)</b>	<b>13.368**</b> <b>(2.12)</b>
Absolute difference in latitudes	3.576** (2.24)	6.911*** (3.46)	4.793** (2.55)	-3.545* (-1.82)	-4.174*** (-3.12)	-3.795*** (-2.80)
Absolute difference in longitudes	1.925* (1.79)	3.264** (2.22)	2.645* (1.68)	-3.482* (-1.81)	-1.433 (-0.86)	-0.645 (-0.41)
Geodesic Distance (1000s of km)	-0.289** (-2.24)	-0.462** (-2.54)	-0.361* (-1.85)	0.482** (2.24)	0.225 (1.31)	0.164 (1.01)
1 for contiguity	-2.354*** (-3.48)	-1.675** (-2.08)	-2.585*** (-3.66)	-4.004*** (-6.10)	-2.274*** (-3.90)	-2.567*** (-4.23)
=1 if either country is an island	0.990 (1.60)	1.706** (2.04)	1.061 (1.62)	-0.602*** (-2.73)	-1.410*** (-5.65)	-1.439*** (-6.06)
=1 if either country is landlocked	0.119 (0.29)	-0.526 (-1.28)	-0.584 (-1.54)	0.559 (1.31)	-0.352 (-0.48)	-0.053 (-0.09)
=1 if pair shares at least one sea or ocean	-0.739* (-1.78)	-0.352 (-0.60)	0.005 (0.01)	-0.363 (-0.80)	-1.304** (-2.49)	-1.397*** (-2.60)
R-squared	0.019	0.049	0.041	0.085	0.038	0.039
Standardized $\beta$ on genetic distance (%)	3.739	8.878	12.952	22.996	10.389	9.002

t-statistics based on two-way clustered standard errors, in parentheses; \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ .

All regressions include an intercept (estimates not reported).

All regressions run on a sample of 4,278 country pairs from 93 countries.

**Table A10 – Genetic distance and technological distance (1970–2000), using Cavalli-Sforza et al. data**  
 (Dependent variables: measures of technological usage from Comin et al. as described in row 2)

	(1)	(2)	(3)	(4)	(5)
	Agricultural Technology	Communications Technology	Transportation Technology	Industrial Technology	Overall Technology
Relative $F_{ST}$ genetic distance to the USA, weighted, Cavalli-Sforza et al.	0.392 (1.35)	0.465** (2.12)	0.573*** (2.82)	1.063*** (3.55)	0.706*** (3.05)
Absolute difference in latitudes	0.613*** (5.57)	0.249*** (3.81)	0.270*** (4.39)	0.269*** (3.75)	0.315*** (4.14)
Absolute difference in longitudes	0.328*** (2.73)	0.066 (1.17)	0.267*** (3.25)	0.118** (2.02)	0.196** (2.27)
Geodesic Distance (1000s of km)	-0.043*** (-3.26)	-0.013** (-2.10)	-0.032*** (-3.64)	-0.019*** (-2.98)	-0.028*** (-2.97)
1 for contiguity	-0.047*** (-3.43)	-0.077*** (-5.94)	-0.054*** (-3.97)	-0.093*** (-4.99)	-0.071*** (-5.69)
=1 if either country is an island	0.131* (1.65)	0.061** (2.21)	0.098** (2.05)	0.072*** (3.00)	0.124** (2.48)
=1 if either country is landlocked	-0.010 (-0.34)	0.017 (0.98)	-0.009 (-0.74)	0.015 (0.63)	-0.017 (-1.19)
=1 if pair shares at least one sea or ocean	0.018 (0.68)	-0.016 (-0.97)	0.008 (0.50)	-0.011 (-0.60)	-0.001 (-0.07)
Observations	5,886	7,140	6,216	5,356	7,260
R-squared	0.220	0.093	0.113	0.138	0.149
Standardized $\beta$ on genetic distance (%)	8.360	11.73	17.63	24.26	18.88

t-statistics based on two-way clustered standard errors, in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1; All regressions include an intercept (estimates not reported).

Figure A1 - Standardized Beta on genetic distance (%), common sample, Cavalli-Sforza et al. (1994) data

