ONLINE APPENDIX

Physiological Constraints and the Emergence of Modern Growth

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A1. INCLUSION OF CONTROL VARIABLES

In the estimates in Table A1 we include latitude, ruggedness, distance to sea or navigable rivers, temperature, and precipitation as control variables. These variables are essential controls because economic development has long been associated with these geographical characteristics (see, e.g. Gallup et al., 1999; Hall and Jones, 1999; Nunn and Puga, 2012; Dell et al., 2012; Michalopoulos, 2012; Michalopoulos and Papaioannou, 2018).

First, consider the regressions in columns (1)-(3) in which ruggedness and distance to sea or navigable river are included as control variables. Geographical ruggedness and long distance to the ocean are often considered economic handicaps because they make transport of goods expensive, increases the cost of irrigating, and makes it more expensive to do business (Gallup et al., 1999; Nunn and Puga, 2012). While these adverse economic effects are generally accepted, Nunn and Puga (2012) suggest that ruggedness within Africa has had a historic indirect positive effect on income by retarding the slave trades and, consequently, economic development. In the income regressions, the coefficient of ruggedness is insignificant for Africa but significantly negative for the non-African countries, suggesting that ruggedness is generally bad for prosperity but that negative and positive effects cancel out for Africa. Ruggedness, however, does not affect the timing of the fertility transition for African and non-African countries. The coefficients of the distance to the ocean or navigable river are significant and have the expected signs in the fertility and income regressions. Furthermore, the signs and the significance of the coefficients of height in 1900 remain consistent with those of the baseline regressions.

Table A1. Geographic control variables.

	1	2	3	4	5	6	7	8	9
	FerT	Y(2000)	Edu(2000)	FerT	Y(2000)	Edu(2000)	FerT	Y(2000)	Edu(2000)
Height,1900	-0.356***	15.21***	50.26***	-0.38***	20.76***	43.54***	-0.27***	9.57***	29.74***
	(9.98)	(4.72)	(7.30)	(8.16)	(6.07)	(5.30)	(6.10)	(3.26)	(3.73)
DistSea	0.002***	-0.38***	-0.14						
	(2.62)	(5.70)	(0.83)						
Rugg*(1-DAfr)	0.002	-0.194**	-0.08						
	(1.31)	(2.52)	(0.46)						
Rugg*DAfr	-0.001	-0.013	0.36**						
	(0.64)	(0.17)	(1.99)						
Temp*(1-DAfr)				0.00	0.16	-0.53*			
				(0.28)	(1.20)	(1.72)			
Temp*DAfr				0.001***	-0.34***	-1.52***			
				(5.07)	(2.86)	(5.65)			
Preciptation				0.00	-0.15	0.05			
				(0.64)	(1.46)	(0.23)			
Abs. Latitude							-0.01***	0.52***	1.19***
							(4.61)	(6.32)	(4.96)
R-Squared	0.63	0.56	0.58	0.61	0.52	0.59	0.41	0.28	0.59
N	136	139	117	138	140	118	177	182	118

Notes: The numbers in parentheses are absolute *t*-statistics that are based on heteroscedasticity consistent standard errors. All variables, except educational attainment, are measured in logs. FerT = fertility transition year. Y(2000) = per capita income in 2000 in purchasing power parity. Edu(2000) = educational attainment of the adult population in 2000. H(1900) = height of the 1900 birth cohort. Abs. Lat. = absolute latitude. Dist. Sea. = distance to ocean or navigable river. Y(1900) = per capita income in 1900. Elev. = average elevation above sea level. Temp. = average temperature. DAfr = dummy variable taking the value of 1 for an African country and zero elsewhere. Agr. Sui. = agricultural suitability. *, **, ***: Significant at 10, 5 and 1% levels.

Second, temperature and precipitation are included as controls in columns (4)-(6) in Table A1. While there is no clear consensus of the effects of precipitation on economic outcome, the climate literature highlights several adverse effects of temperature on agricultural productivity, cognitive performance, mortality and physical performance (Dell et al., 2012). For temperature, we allow its coefficient to vary between African and non-African countries, approximately following Dell et al. (2012) who argue that temperature has only adverse effects on income in poor countries because they are more reliant on temperature-sensitive agriculture but also because higher temperatures lead to poor economic outcomes induced by political instability. The results in Table A1 are consistent with those of Dell et al. (2012): Precipitation is unimportant for per capita income, education and the fertility transition. However, temperature is bad for Africa's development in terms of education, income and the timing of the fertility transition. Furthermore, the signs and the significance of the coefficients of height in 1900 remain consistent with those of the baseline regressions.

Third, absolute latitude is included as a control in the last three columns in Table A1. As expected, the coefficient of latitude is positive in the income and education model and negative in the fertility transition model. Furthermore, the signs and the significance of the coefficients of height in 1900 remain consistent with those of the baseline regressions.

Table A2. Culture, Social Infrastructure and constraints on executive.

	FerT	Y(2000)	Edu(2000)	FerT	Y(2000)	Edu(2000)	FerT	Y(2000)	Edu(2000)
Height,1900	-0.32***	18.3***	8.61***	-0.36***	16.19***	7.56***	-0.40***	16.60***	4.64***
	(3.73)	(2.12)	(4.55)	(6.10)	(4.09)	(5.26)	(8.76)	(5.01)	(3.97)
Exec. Constr., 1900							-0.003	0.28*	0.18**
							(1.49)	(1.86)	(3.76)
Individualism/ Collectivism	-0.0002	-0.002	0.001						
	(0.17)	(0.24)	(0.27)						
Soc. Infr. 1990				-0.00	0.24	-0.05			
				(0.41)	(1.22)	(0.58)			
R-Squared	0.21	0.12	0.21	0.34	0.14	0.15	0.21	0.12	0.21
N	65	68	52	115	118	87	65	68	52

Notes: The numbers in parentheses are absolute *t*-statistics that are based on heteroscedasticity consistent standard errors. All variables, except educational attainment, are measured in logs. FerT = fertility transition year. Y(2000) = per capita income in 2000 in purchasing power parity. Edu(2000) = educational attainment of the adult population in 2000. . *, **, ***: Significant at 10, 5 and 1% levels.

In Table A2 we control for culture and institutions. The complication associated with data for culture is that there is no single broad-based measure of culture. Following the broad literature, we consider one oft-used aspect of culture, viz the individualist/collectivist index of Hofstede et al. (2010), where collectivist societies emphasize the needs, wants and goals of a group over the individual while an individualistic society emphasizes personal control, autonomy and accomplishments while collectivist ones impose mutual obligations and expectations for groups with common goals. The coefficients of the strength of individualism, which are included in the estimates in the first three columns in Table A2, are all insignificant. As least as far the growth effects are concerned, this result may not be surprising because there are two potentially countervailing effects of individualism/collectivism on growth: Individualism promotes innovation, but collectivism facilitates the coordination of production factors and collective action more generally (Gorodnichenko and Roland, 2015). Furthermore, the signs and the significance of the coefficients of height in 1900 remain consistent with those of the baseline regressions.

We control for institutions in the regressions in the last six columns in Table A2. A large body of the literature has long considered institutions vital for economic development (see, e.g. Hall and Jones, 1999; Acemoglu et al., 2001, 2002). We consider two often-used indicators for institutions, viz social infrastructure and constraints on executive. Social infrastructure is included in the regressions in columns (4)-(6) in Table A2. Social infrastructure is constructed for 1990 by Hall and Jones (1999) and is measured as an unweighted average of i) law and order; ii) bureaucratic quality; (iii) corruption; (iv) risk of expropriation; and (v) government repudiation of contracts. The coefficients of social infrastructure in 1990 are insignificant at any conventional significance levels and are only significant at the 10 percent levels if height is excluded from the regressions (the results are not shown).

Next, we include constraints on executive in 1900 from Polity IV because it is an often-used indicator of institutions and because it is available for a reasonable large sample in 1900. The coefficients of height in 1900 in the bivariate regressions in the first three columns are statistically highly significant and have the expected signs. The coefficients of constraints on executive in 1900 are, on average, marginally statistically significant and have the expected signs (columns (7)-(9)). The coefficients of height remain significant and with the expected signs.

Table A3. PID and Institutions.

	1	2	3	4	5	6	7	8	9
	FerT	Y(2000)	Edu(2000)	FerT	Y(2000)	Edu(2000)	FerT	Y(2000)	Edu(2000)
Height,1900	-0.32***	18.3***	8.61***	-0.38***	19.27***	5.43**	-0.41***	19.17***	7.36***
	(3.73)	(3.12)	(4.55)	(7.40)	(5.95)	(2.37)	(8.60)	(5.90)	(6.06)
PID(1900)	0.000	-0.002	0.001						
	(0.17)	(0.24)	(0.27)						
Agr. Sui.				-0.02***	0.52	1.14***			
				(4.32)	(1.13)	(3.66)			
Soil Fert.							-0.02***	0.33	0.37**
							(3.52)	(0.95)	(2.47)
R-Squared	0.39	0.12	0.21	0.43	0.19	0.11	0.40	0.17	0.18
N	61	68	52	140	143	141	143	146	123

Notes. The numbers in parentheses are absolute *t*-statistics that are based on heteroscedasticity consistent standard errors. PID(1900) = parasitic and infectious disease in 1900. All variables, except educational attainment, are measured in logs. FerT = fertility transition year. Y(2000) = per capita income in 2000 in purchasing power parity. Edu(2000) = educational attainment of the adult population in 2000. . *, **, ***: Significant at 10, 5 and 1% levels.

Parasitic and infectious disease (PID) may hamper economic development because it lowers productivity and learning during periods of sickness and reduces the cognitive development in infanthood and childhood (Gallup et al., 1999; Madsen, 2016). The coefficients of PID are all insignificant, while the coefficients of height remain significant and have the expected signs, even if the sample is relatively small.

Indicators of soil fertility and agricultural suitability, which were constructed by Michalopoulos (2012), are included as control variables in the regressions in the last six columns in Table A3. Along with latitude and continental fixed effects, Ashraf and Galor (2011) find that agricultural suitability explains 60 percent of the cross-country variation in population density, suggesting that agricultural suitability is an important indicator of land productivity that may have advanced the timing of the fertility transition and, perhaps, the technological sophistication of the economy. In context of our hypothesis, high land productivity may have affected the height through and economic development through various channels and, therefore, leading to an omitted variable bias. Using soil fertility as instruments for height in France, for example, Kelly et al. (2015) finds a significantly positive relationship in the first-stage regression, suggesting that height may have captured the effects of soil quality on the outcome variables. The coefficients of soil fertility and agricultural suitability are mostly significant and an improved land quality is associated with increased education, per capita income and an earlier fertility transition. However, the inclusion of land quality does not affect the significance and the signs of the parameter estimates of height.

Table A4. Continental fixed effects and village democracy.

	1	2	3	4	5	6	7	8	9
	FerT	Y(2000)	Edu(2000)	FerT	Y(2000)	Edu(2000)	FerT	Y(2000)	Edu(2000)
Height,1900	-0.24***	12.22***	43.99***	-0.28***	16.14***	7.78***	-0.39***	21.89***	6.53***
	(5.69)	(3.68)	(4.76)	(4.07)	(2.91)	(3.88)	(7.58)	(5.99)	(4.46)
appointment by higher authority				0.00	0.03	0.04**			
				(0.06)	(0.83)	(2.37)			
election or other formal consensus							-0.01	0.04	0.00
							(1.13)	(1.17)	(0.21)
R-Squared	0.60	0.43	0.58	0.21	0.09		0.35	0.23	0.13
Continent FE	Y	Y	Y	N	N	N	N	N	N
N	177	182	135	73	73		106	107	87

Notes. The numbers in parentheses are absolute *t*-statistics that are based on heteroscedasticity consistent standard errors. All variables, except educational attainment, are measured in logs. FerT = fertility transition year. Y(2000) = per capita income in 2000 in purchasing power parity. Edu(2000) = educational attainment of the adult population in 2000. . *, **, ***: Significant at 10, 5 and 1% levels.

In the estimates in Table A4 we include continental fixed effects (columns (1)-(3)) and village democracy on economic development (columns (4)-(9)). Of the village democracy variables constructed by Murdock (1967), we include the following two control variables in the estimates: 1) appointment of leader by election or other formal consensus; and 2) appointment of the leader by higher authority. These variables may influence the outcome variables through path dependence of the quality of institutions. However, the coefficients of both variables are insignificant except in one case in which the coefficient is the opposite of the expected sign, noting that the number of observations is down to 40 or 50. Common for all regressions in Table A4 is that the economic and statistical significance of the coefficients of height are rather close to that of the bivariate baseline regressions.

Thus far, we have checked for endogeneity by including several variables that are potentially correlated with the error terms and used historical height data to ensure that there are no feedback effects from the outcome variables to height. As a final causality check, we undertake a placebo test by including the bilateral geographic distance to the UK for each individual country as an additional regressor in the cross-country baseline regressions in which the outcome variables consist of the fertility transition, and per capita income and education in 2000. The geographical distance to the UK is a natural contender to latitude because the UK is the cradle of the First and Second Industrial Revolution and it rapidly spread to its neighboring countries through trade, migration, travel, and journal articles. The regression results are presented in Table A5 with three sets of base-line regressors: pre-1500 height, pre-1500 body mass, and height in 1900 are regressors. We include continental fixed effects in the regressions with height in 1900. The coefficients of the distance to the UK are all insignificant except in one case in which educational attainment is a significant positive function of distance – the opposite result of what we would expect. The coefficients of height remain significant in all cases.

Table A5. Geographic distance to the UK.

	7	8		9	10		9	10	
	FerT	Y(2000)	Edu(2000)	FerT	Y(2000)	Edu(2000)	FerT	Y(2000)	Edu(2000)
BM(1500)	-0.10***	4.71***	10.2***						
	(6.31)	(4.50)	(2.71)						
H(1500)				-0.35***	15.0***	29.5***			
				(4.71)	(3.72)	(3.79)			
H(1900)							-0.25***	12.7***	45.8***
							(5.69)	(3.62)	(4.86)
UK-Dist.	0.000	-0.06	0.11***	0.001	-0.09	0.07	-0.03	-0.26	0.38
	(0.41)	(1.34)	(2.68)	(0.89)	(1.58)	(1.30)	(0.63)	(0.43)	(1.11)
R-Squared	0.44	0.28	0.17	0.34	0.23	0.16	0.61	0.43	0.58
Continental FE	N	N	N	N	N	N	Y	Y	Y
N	32	32	28	46	47	43	177	180	134

Notes: The numbers in parentheses are absolute *t*-statistics that are based on heteroscedasticity consistent standard errors. All variables, except educational attainment, are measured in logs. FerT = fertility transition year. Y(2000) = per capita income in 2000 in purchasing power parity. UK-Dist. = Geographical between country *i* and the UK in 1000km. Edu(2000) = educational attainment of the adult population in 2000. H(1900) = height of the 1900 birth cohort. *, **, ***: Significant at 10, 5 and 1\% levels.

Table A6. Excluding countries with pre-1900 fertility transition.

	1	2	3	4	5	6	7	8	9
	FerT	Y(2000)	Edu(2000)	FerT	Y(2000)	Edu(2000)	FerT	Y(2000)	Edu(2000)
H(1900)	-0.17***	11.75***	43.96***	-0.16***	9.27***	39.48***	-0.09**	9.30***	4.68**
	(4.89)	(3.43)	(4.73)	(4.42)	(2.59)	(3.87)	(2.23)	(3.26)	(2.20)
Abs. lat.				-0.001*	0.21***	0.29	0.001	0.01	-0.17***
				(1.63)	(2.75)	(1.22)	(0.50)	(0.10)	(2.73)
Y/Pop(1900)							-0.003**	0.36***	-0.01
							(2.43)	(2.80)	(0.18)
Dist. Sea							0.00	-0.19**	-0.10
							(0.93)	(2.03)	(1.50)
Elev.							0.00	-0.02	0.02
							(0.11)	(0.20)	(0.29)
Temp*(1-DAfr.)							0.00	-0.01	-0.17***
							(1.52)	(0.16)	(3.54)
Temp*DAfr.							-0.01	1.92**	-0.64
							(0.95)	(2.36)	(1.34)
Climate Vul.							0.01***	-0.95**	-0.39***
							(4.28)	(6.92)	(4.33)
Cal(1500)							0.001	-0.05	-0.04
							(0.81)	(0.93)	(1.44)
$Cal(1500)^2$							0.004	0.27	-0.23
							(1.39)	(0.87)	(1.26)
Agr. Suit.							-0.01**	-0.45***	0.26**
							(2.07)	(2.87)	(246)
R-Squared	0.63	0.45	0.55	0.64	0.47	0.56	0.78	0.82	0.67
Continental FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
N	170	165	126	170	165	126	119	119	104

Notes: The numbers in parentheses are absolute *t*-statistics that are based on heteroscedasticity consistent standard errors. All variables, except educational attainment, are measured in logs. FerT = fertility transition year. Y(2000) = per capita income in 2000 in purchasing power parity. Countries in which the fertility transition occurred before 1900 are excluded. H(1900) = height of the 1900 birth cohort. *, **, ***: Significant at 10, 5 and 1% levels.

A2. LATITUDE GRADIENT AND BODY MASS

A potential concern pertaining to the regressions for Europe and Italy, particularly, is that the variations in latitude may be too narrow to give the sufficient identifying variations. Foster and Collard (2013), for example, find that humans conform to Bergmann's rule only when there are major differences in latitude and temperature between populations and for populations close and distant from the Equator. To gain insight into the relationship between body mass and latitude gradient, we regress height and body mass in 1500 against the absolute latitude at four different latitude quartiles, Q1-Q4, where Q4 is the highest latitude and Q1 the lowest (refer to Table A7). The overall significance of the coefficients of latitude are high ($p < 0.000$), which reinforces the finding above that height and body mass are significantly positively related to latitude. The coefficients of latitude on body mass and height are more significant in high than at low absolute latitudes, however, the null hypothesis that the latitude effects are highest at low (Q1) and high (Q4) latitudes can only be rejected in the body mass regression as indicated by the Chi-squared tests and not that strongly rejected in the body mass regression. This suggests that our proposed mechanism works reasonable well across a smooth gradient of latitude and that our results are not driven by a subset of countries with close and distant proximities to Equator other as found by Foster and Collard (2013).

Table A7. Height in 1500 regressed against latitude on quartiles

	H(1500)	*BM*(1500)
Abs. Lat Q1	0.007(0.97)	-0.034(1.12)
Abs. Lat Q2	0.009(1.68)	-0.011(0.72)
Abs. Lat Q3	0.013***(4.92)	0.032***(2.87)
Abs. Lat Q4	0.015***(4.50)	0.025**(2.19)
N	49	33
Chi. Sq. (4)	102.6***	60.0***
Chi. Sq. (2)	2.88	7.32**

Notes: All the variables are measured in logs and the numbers in parentheses are absolute *t*-values. Q1 is the lowest and Q4 is the highest absolute latitude. Chi. Sq. (2) is a Wald test for equality between the coefficients of (Q1 & Q4) and (Q2 & Q3), distributed as a Chi-squared under the null hypothesis that the coefficients of (Q1 & Q4)=(Q2 & Q3). Chi. Sq. (4) is a Wald test for Q1 = Q2 = Q3 = Q4 = 0, distributed as a Chi-squared under the null hypothesis. *** = significant at the 1% level; ** = significant at the 5% level.

Next, we investigate whether the correlation between bilateral body weight distance and the absolute bilateral latitude distance between country *i* and *j* depends on the absolute bilateral latitude distance. To this end the latitude distances between countries *i* and *j* are interacted with decile dummies, D1-D10, where D10 is the highest absolute altitude, while controlling for longitude-effects. We then test whether the correlation between the absolute distance in body weight and the absolute distance in latitude between country *i* and *j* .

The results are presented in Table A8. The Wald test for equality between the coefficients of D1-D10, distributed as a Chi-squared under the null hypothesis that the coefficients of D1-D10 are equal, was insignificant, suggesting that the bilateral body mass distance is independent of the latitude distance between country *i* and *j*. The tendency for large bilateral latitude distances to be statistically more significant than that of short distances is not surprising given that signal-noise ratio is likely to increase with distance. Note that there is no clear relationship between the coefficients of the D's and bilateral latitude distances.

Table A8. Bilateral body mass distances regressed on bilateral latitude distances, distributed on distances in in latitude deciles.

Abs. Lat. Dist. D1	0.069	(1.47)
Abs. Lat. Dist. D2	0.025	(1.16)
Abs. Lat. Dist. D3	0.025*	(1.71)
Abs. Lat. Dist. D4	0.008	(0.74)
Abs. Lat. Dist. D5	-0.006	(0.84)
Abs. Lat. Dist. D6	0.019***	(2.66)
Abs. Lat. Dist. D7	0.024***	(4.76)
Abs. Lat. Dist. D8	0.019***	(4.09)
Abs. Lat. Dist. D9	0.017**	(2.33)
Abs. Lat. Dist. D10	0.019***	(5.16)
N	525	
Chi-Sq. (9)	10.7(p = 0.29)	

Notes: All the variables are measured in logs. The numbers in parenthesis are absolute *t*-statistics and *N* is the number of observations. D1 is the lowest and D10 is the highest absolute latitude distance between country *i* and *j*. Longitude effects are included in the regression. Chi-Sq. (9) is a Wald test for equality between the coefficients of D1-D10, distributed as a Chi-squared with 9 degrees of freedom under the null hypothesis that the coefficients of D1-D10 are equal.

A3. SUMMARY STATISTICS

Table A 9. Summary Statistics.

	World			Italy			
	Obs.	Mean	SD		Obs.	Mean	SD
ln Area	201	11.05	2.850	ln H	304	5.12	0.028
ln Pop	132	12.86	2.450	ln CFR	304	5.62	0.433
ln (Y/Pop)	183	8.52	1.165	ln Lat	19	3.76	0.062
ln(Cal)	129	8.42	1.290	ln Pop. Density	247	-2.23	0.673
(ln cal)^2	129	72.51	16.94	ln H(Roman Empire)	12	5.13	0.009
ln H(1900)	197	5.09	0.024	GER	190	0.49	0.18
ln H(1500)	49	5.11	0.027	Lit.	209	0.28	0.157
ln BM	33	4.15	0.115	ln (Y/Pop.)	190	8.55	0.67
ln Abs. Lat.	216	2.95	1.031				
ln Pop/Area	64	0.56	1.703				
ln Dist. Sea	143	-1.785	1.220	OECD			
ln Y/Pop(1900)	144	6.347	0.716		Obs.	Mean	SD
Ln Elev.	143	4.615	1.294	ln FerG	2538	4.69	0.303
Ln Temp.	143	2.735	0.695	ln H	2538	5.14	0.029
Ln Climate Vul.(2020)	184	0.770	0.600	ln (Pat/Pop)F	2538	2.35	3.271
ln(Cal.(1900)/Cal.(1500))	203	0.296	0.352				
ln Agr. Sui.	147	-0620	0.389				
ln Trust (1981-2014)	98	-1.519	0.591				
ln Exec. (2000)	151	1.419	0.583				
ln PID(1940)	185	-0.486	0.831				
ln Cal (1900)	203	8.98	1.150				

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A4. DATA SOURCES

Italian State Data

We consider nineteen states, which is one state short of the 20 states present in Italy today. In the historical source material, however, the Abruzzi and Moulise regions are merged together as one. The following 19 states are included in our sample: Piedmont, Aosta Valley, Liguria, Lombardy, Trentino-Alto, Venetia, Friuli, Emilia, Tuscany, Marches, Umbria, Latium, Abruzzi, Campania, Apulia, Basilicata, Calabria, Sicily, and Sardinia.

GDP per capita

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Population density

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Body Mass and Height
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To calibrate body mass (M) we employ the data on femoral head anterior-posterior breath (FH) and the formula developed by Ruff, C.B., W. W. Scott, and A. Liu, Allie, 1991. Articular and diaphyseal remodeling of the proximal femur with changes in body mass in adults. *American Journal of Physical Anthropology* 86, 397-413, (which pertains to males):

$$M = (2.741*FH - 54.9)*0.9.$$

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Height
Austria. 1727-1844. Army soldier aged 23-50. Middle year of the decade is taken. Sample size: 145802. age: 23-50. Raw data from Baten's website with John Komlos. http://www.wiso.uni-tuebingen.de/faecher/wirtschaftswissenschaft/lehrstuehle/volkswirtschaftslehre/wirtschaftsgeschichte/data-hub-height.html. 1858-1978. Recruits. Middle year of the quinquennium is taken.

Appendix 2. Timothy J. Hatton, "Long Run Trends in the Heights of European Men, 19th-20th Centuries". No splicing is done since when comparing the data from the second period to adult height contemporarily, it is not significantly different from height for adult male. (Compare to data for 21-51 male, from table A3. Jaume Garcia, Climent Quintana-Domeque,"the evolution of adult height in Europe A brief note", Economics and Human Biology 5 (2007) 340–349). Data for 1838 (170.1725cm) and 1839 (176.43cm) are deleted since the sample size is too small (around 10 people for each year) and it causes a sudden jump in the series (growth in height is more than 5cm over one year). Belgium. 1863-1953. Recruits. Middle year of the quinquennium is taken. Appendix 2. Timothy J. Hatton, "Long Run Trends in the Heights of European Men, 19th-20th Centuries". 1953-1980. 21-51 male. Table A3. Jaume Garcia, Climent Quintana-Domeque,"the evolution of adult height in Europe A brief note, Economics and Human Biology 5 (2007) 340–349. Splice is done based on the second period. UK. 1743-1810. Data converted from inch to cm (1 inch = 2.54 centimetres). Fig.3.4. Roderick Floud, Bernard Harris, "Health, Height and Welfare: Britain 1700-1980", in "Health and Welfare during Industrialization" Edited by Richard H. Steckel and Roderick Floud. 1810-1930. Middle year of the period is taken. Table 3, Roderick Floud, "Height, Weight and Body Mass of the British Population since 1820", NBER historical paper No. 108, 1998. 1935-1965. Middle year of the decade is taken. Table 4. ALEXANDER MORADI, "Towards an Objective Account of Nutrition and Health in Colonial Kenya A Study of Stature in African Army Recruits and Civilians, 1880–1980", The Journal of Economic History, Vol. 69, No. 3 (September 2009). 1968-1988. Middle year of the quinquennium is taken. Appendix 2. Timothy J. Hatton, "Long Run Trends in the Heights of European Men, 19th-20th Centuries". Splice is not performed since the difference between the overlapping years is less than 0.1cm. Canada. 1830-1979. Middle year of the period is taken. Data converted from inch to cm (1 inch = 2.54 centimetres). Interpolation and splicing are used. John Cranfield, Kris Inwood, "The great transformation: A long-run perspective on physical well-being in Canada", Economics and Human Biology 5 (2007) 204–228. Data for 1832 (166.878cm) is deleted since it causes a sudden jump in the series (growth in height is more than 5cm over one year). Denmark. 1767-1858, converted from year of measurement to birth year. Table 1. Roderick Floud, "the heights of Europeans since 1750: a new source for European economic history". Working paper, April 1984. 1858-1953. middle year of the quinquennium is taken. Appendix 2. Timothy J. Hatton, "Long Run Trends in the Heights of European Men, 19th-20th Centuries". 1950-1979. 21-51 male. Table A3. Jaume Garcia, Climent Quintana-Domeque,"the evolution of adult height in Europe A brief note", Economics and Human Biology 5 (2007) 340–349. Splice is used based on the last period. Data for 1977 (186cm) is deleted since it causes a sudden jump in the series (growth in height is more than 5cm over one year). Finland. 1950-1980. Males aged 21-51. Table A3. Jaume Garcia, Climent Quintana-Domeque,"the evolution of adult height in Europe a brief note", Economics and Human Biology 5 (2007) 340–349. France. 1658-1769: raw data from Baten's website with John Komlos. http://www.wiso.unituebingen.de/faecher/wirtschaftswissenschaft/lehrstuehle/volkswirtschaftslehre/wirtschaftsgeschichte/data-hub-height.html. 1770-1784, middle year of the decade is taken. Unweighted average of students born in the provinces and in Paris. Fig.1, John Komlos, "The Nutritional Status of French Students", The Journal of Interdisciplinary History, Vol. 24, No. 3 (Winter, 1994), pp. 493-508. 1784-1858, converted from year of measurement to birth year. 20-21 estimated median height. Table 5B.1, David R. Weir, "Economic Welfare and Physical Well-Being in France, 1750-1990", in "Health and Welfare during Industrialization" Edited by Richard H. Steckel and Roderick Floud. 1858-1978. Middle year of the quinquennium is taken. Appendix 2. Timothy J. Hatton, "Long Run Trends in the Heights of European Men, 19th-20th Centuries". This series is for young and adult male. It is taken as the height for adult male directly since the numbers match with the recent height data for French. Germany. 1725-1767. Southeast west soldier aged 23-50., male prisoners aged 23-49). raw data from Baten's website with John Komlos. http://www.wiso.uni-tuebingen.de/faecher/wirtschaftswissenschaft/lehrstuehle/volkswirtschaftslehre/wirtschaftsgeschichte/data-hub-height.html. 1815-1887. Middle year of the period is taken. Men over 23. Fig.1, Jörg Baten, John E. Murray, "Heights of Men and Women in 19th-Century Bavaria: Economic, Nutritional, and Disease Influences", Explorations in Economic History, Volume 37, Issue 4, October 2000, Pages 351-369. 1887-1978. middle year of the quinquennium is taken. Appendix 2. Timothy J. Hatton, "Long Run Trends in the Heights of European Men, 19th-20th Centuries". For 1815-1978, splice is used based on the period 1815-1887. Data for 1725-1767 and 1815-1978 are put together without manipulation since both are height for adult males. And the height growth trend matches with the neighbour countries during the same period (ca. 1767-1815 there is a decline in height in neighbour countries as well). Greece. 1928-1953. Middle year of the quinquennium is taken. Appendix 2. Timothy J. Hatton, "Long Run Trends in the Heights of European Men, 19th-20th Centuries". 1953-1980. 21-51 male. Table A3. Jaume Garcia, Climent Quintana-Domeque,"the evolution of adult height in Europe A brief note",Economics and Human Biology 5 (2007) 340–349. Splice is used based on the second period. Ireland. 1873-1978. Middle year of the quinquennium is taken. Appendix 2. Timothy J. Hatton, "Long Run Trends in the Heights of European Men, 19th-20th Centuries". This set of data is taken directly as for adult males since comparing to data for adult males, the difference on average is less than 1cm. (Comparing to data for male aged 21-51, year 1950-1980. Table A3. Jaume Garcia, Climent Quintana-Domeque,"the evolution of adult height in Europe A brief note",Economics and Human Biology 5 (2007) 340–349). Italy. 1810-1930. Data taken from the graph. Joerg Baten, Debin Mab, Stephen Morgan, Qing Wang, "Evolution of living standards and human capital in China in the 18–20th centuries: Evidences from real wages, age-heaping, and anthropometrics", Explorations in Economic History 47 (2010) 347–359. 1930-1950. Adult male. Table 4. Moramay López-Alonso, Raúl Porras Condey, "The ups and downs of Mexican economic growth: the biological standard of living and inequality, 1870–1950", Economics and Human Biology 1 (2003), 169–186. 1950-1980. Aged 21-51 male. Table A3, Jaume Garcia, Climent Quintana-Domeque,"the evolution of adult height in Europe A brief note", Economics and Human Biology 5 (2007) 340–349. Netherlands. 1799-1858. estimated median height. Converted from year of measurement to birth year. age group: 19-20. Table 9A.1, JW Drukker, Vincent Tassenaar, Paradoxes of Modernization and Material Well-being in Netherlands during nineteenth century. p.331 – 378. 1858-1978. Appendix 2. Timothy J. Hatton, "Long Run Trends in the Heights of European Men, 19th-20th Centuries". Height data for young male is used directly as estimations for adult male since comparing to the contemporary adult height, the difference is insignificant. Comparing to data taken from Fig.3. Joerg Baten, Debin Mab, Stephen Morgan, Qing Wang, "Evolution of living standards and human capital in China in the 18–20th centuries: Evidences from real wages, age-heaping, and anthropometrics”, Explorations in Economic History 47 (2010) 347–359. Norway. 1833-1858. converted from year of measurement to birth year. Table 1. Roderick Floud, "the heights of Europeans since 1750: a new source for European economic history". Working paper, April 1984. 1858-1978. middle year of the quinquennium is taken. Appendix 2. Timothy J. Hatton, "Long Run Trends in the Heights of European Men, 19th-20th Centuries". 2 cm is added to the whole series since this series is for young male. Portugal. 1887-1978. Middle year of the quinquennium is taken. Appendix 2. Timothy J. Hatton, "Long Run Trends in the Heights of European Men, 19th-20th Centuries". This set of data is taken directly as for adult males since comparing to data for adult males, there is nearly no difference on average. (Comparing to data for 21-51 male. Table A3. Jaume Garcia, Climent Quintana-Domeque,"the evolution of adult height in Europe: a brief note", Economics and Human Biology 5 (2007) 340–349). Spain. 1858-1953. Middle year of the quinquennium is taken. Appendix 2. Timothy J. Hatton, "Long Run Trends in the Heights of European Men, 19th-20th Centuries". 1953-1980. 21-51 male. Table A3. Jaume Garcia, Climent Quintana-Domeque,"the evolution of adult height in Europe A brief note", Economics and Human Biology 5 (2007) 340–349. Splice is used based on the second period. Sweden. 1735-1855. middle year of the decade is taken. ages 23-49. soldiers. Fig. 1, Heintel, Markus, Lars Sandberg and Richard Steckel. “Swedish Historical Heights Revisited: New Estimation Techniques and Results.” In The Biological Standard of Living in Comparative Perspective, edited by John Komlos and Jörg Baten, 449-58. Stuttgart: Franz Steiner, 1998. 1855-1953. Middle year of the quinquennium is taken. Appendix 2. Timothy J. Hatton, "Long Run Trends in the Heights of European Men, 19th-20th Centuries". 1953-1979. 21-51 male. Table A3. Jaume Garcia, Climent Quintana-Domeque,"the evolution of adult height in Europe A brief note", Economics and Human Biology 5 (2007) 340–349. Splice is used based on the third period. Switzerland. Converted from year of measurment to birth year. Kaspar Stauba, Frank J. Rühlia, Ulrich Woitek, Christian Pfister, "The average height of 18- and 19-year-old conscripts (N=458322) in Switzerland from 1992 to 2009, and the secular height trend since 1878". 2 cm is added to the whole series since this series is for young male. US. 1710-1931, native-born white males, middle year of the quinquennium is taken. age group: year 1755-63, 24-35 (sample size 767), 21-30 (sample size 885); year 1775-83, 24-35(sample size 968); 1861-65, 25-30 (sample size 123472); 1916-18, 21-30 (sample size 868445); 1943-44, 20-24 (11944). table6.8. Richard H. Steckel, "Stature and Living Standards in the United States", Chapter in NBER book American Economic Growth and Standards of Living before the Civil War (1992), p. 265 - 310, Conference held July 20-22, 1990, Published in January 1992 by University of Chicago Press. 1931-1982, White Males. John Komlos, "Underperformance in Affluence The Remarkable Relative Decline in U.S. Heights in the Second Half of the 20th Century", SOCIAL SCIENCE QUARTERLY, Volume 88, Number 2, June 2007. Interpolation and splicing are used.