

## Data Appendix

### *Definitions and Sources of Variables*

*Climate* is constructed on the basis of Köppen's widely used system of climatic classification.<sup>1</sup> The classification schedule is vegetation-based and divides climate into five major types which Köppen refers to as *A, B, C, D*, and *E*. Climate *A* corresponds to wet tropical climates, *B* to dry tropical climates, *C* and *D* to temperate, mid-latitude climates, and *E* to tundra and ice. In constructing our *Climate* variable we made a ranking of climates according to how favorable they are to agriculture. Countries with type *B* and *E* climates have been given a value of 0. Most of the tropical dry countries in this category are found in the Sahara and on the Arabian peninsula. The tropical climates in the *A* category were scored 1. Precipitation is abundant and biodiversity great, but the heavy rainfall typically does not favor annual grasses. Countries with temperate climates of type *Cfa, Cwa*, and *D* (humid subtropical and continental) were scored 2. A particular subgroup within the non-tropical climates is the Mediterranean and west coast climates (*Csa, Csb, Cfb, Cfc*) with more or less hot, dry summers and wet winters. These types of climate are found in the western parts of continents; in Europe, Mediterranean North Africa, California, Chile, South Africa, and the northwestern parts of Australia. As discussed by Blumler (1992) and Diamond (1997), this type of climate is particularly favorable to agriculture based on annual, heavy grasses. Countries that fall into this category were scored 3. Hence, *Climate* has four units of variation with a mean value normalized to 0.

*Latitude* is the absolute distance from the equator in latitude degrees. The data are from World Bank (1999).

*Axis* captures the rate of East-West orientation. The variable was constructed by measuring the distance in longitudinal degrees between the eastern and westernmost points of each continent and dividing this number by the distance in latitudinal degrees between the northernmost and southernmost points. A value of, for instance, 2 indicates that the landmass in question is about two times more East-West oriented than north-south. The

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<sup>1</sup> The data and the discussion of climate have been derived from Strahler and Strahler (1992) and Britannica (2000).

Eurasian landmass is by far the most East-West oriented of the major continents, while South America is the most north-south oriented.

*Size* is just the size of the landmass to which the country belongs in millions of square kilometers. Data are from CIA (2001). The variation is enormous ranging from Eurasia's 44 million square kilometers to the tiny Malta and Comoros islands of less than 1,000 square kilometers.

*Geo Conditions* is the first principal component of *Climate*, *Latitude*, *Axis*, and *Size*.

*Plants* is the number of annual or perennial wild grasses known to exist in prehistory with a mean kernel weight exceeding 10 milligrams. These data are from Blumler (1992) and are equivalent to the numbers shown and discussed in Table 2. The geographical distribution ranges between 33 species in the Near East, Europe, and North Africa - including wild barley, emmer and einkorn wheat - to 0 in the Pacific islands. As noted above, we have divided Eurasia into three subcontinents which had different and independent experiences of plant and animal domestication. The Western part reaches its limit in the Indus Valley in Pakistan, where the easternmost archeological evidence of crops from the Fertile Crescent has been found (Smith, 1998). Southeast Asia includes Indonesia, the Philippines, and Papua-New Guinea. Also America is split up into three zones of independent agricultural origins; Central, North, and South. Caribbean islands and islands near Africa are regarded as belonging to the Central American and African zones respectively, while the Pacific islands are treated as independent of the Asian zone of agricultural origin (and hence have zero species suitable for domestication).

*Animals* is the number of domesticable big mammals, weighing more than 45 kilos, which are believed to have been present in prehistory in various regions. The data were presented in Table 2. The 14 animals are the ancient ancestors of sheep, goat, cattle, horse, pig, Bakhtrian camel, Arabian camel, llama, yak, Bali cattle, reindeer, water buffalo, donkey, and the mithan (Diamond, 1997). Out of these 14, western Eurasia and North Africa had access to 9, Eastern Eurasia 7, Southeast Asia 2, Central and North America, Sub-Saharan Africa, Australia and the Pacific islands 0 (Nowak, 1991). On average, early hunter-gatherers across the world had access to somewhere between 3-4 domesticable animals.

*Bio Conditions* is the first principal component of *Plants* and *Animals*.

*Political Environment* is from Knack and Keefer's (1995), who in turn have used data from the private risk service *International Country Risk Guide*. The data exhibit the average of coding over 1986-95 of five political-institutional characteristics of each country: (i) quality of bureaucracy, (ii) rule of law, (iii) government corruption, (iv) risk of expropriation and (v) risk of government repudiation of contracts.

*Social Infrastructure* was developed by Hall and Jones (1999) to quantify the wedge between social and private returns to productive activity; it is the average of Knack and Keefer's political codings and Sachs and Warner's (1995) index of the openness of each country to free trade during 1950 to 1994.

*1997 GDP per capita* is expressed in constant US dollars (international prices, base year 1985). The data are from World Bank (1999) and were compiled by William Easterly on the basis of Penn World Table 5.6 and other sources.

*Years since transition to agriculture* is the number of years before the present that agriculture was adopted in eight world areas of independent agricultural development. The only missing region is Southeast Asia (Indonesia, Philippines, Papua-New Guinea) where transition data are very uncertain. The data builds upon Diamond (1997) and were partly presented in Table 1.

### *Data Series*

Country	1997 GDP per capita	Climate	Latitude	Axis	Size	Geo Conditions
Argentina	6489	2	0.4075	0.791	17.814	-0.1083
Austria	13921	3	0.5359	2.355	44.614	1.7026
Bangladesh	1779	1	0.2653	2.355	44.614	0.5534
Belgium	14305	3	0.5649	2.355	44.614	1.7591
Belize	4191	1	0.1983	1.575	24.23	-0.3216
Benin	1048	1	0.0707	1	30.365	-0.7545
Bolivia	1896	1	0.1688	0.791	17.814	-0.8847
Botswana	2681	0	0.2393	1	30.365	-0.7364
Brazil	4449	1	0.2173	0.791	17.814	-0.7900
Bulgaria	4617	3	0.4675	2.355	44.614	1.5691
Burkina Faso	530	1	0.1339	1	30.365	-0.6313
Burundi	397	1	0.0374	1	30.365	-0.8195

Cameroon	965	1	0.1192	1	30.365	-0.6599
Cape Verde	1169	1	0.1677	1	0.004	-1.0881
Central African Rep.	528	0	0.0481	1	30.365	-1.1093
Chad	392	0	0.1153	1	30.365	-0.9783
Chile	6518	3	0.3728	0.791	17.814	0.1348
China	2387	2	0.3285	2.355	44.614	0.9872
Colombia	3813	1	0.0532	0.791	17.814	-1.1101
Comoros	434	1	0.1297	1	0.002	-1.1623
Congo, Republic	1978	1	0.0409	1	30.365	-0.8126
Costa Rica	3801	1	0.1105	1.575	24.23	-0.4928
Cote d'Ivoire	1187	1	0.0611	1	30.365	-0.7734
Czech Republic	3751	3	0.5556	2.355	44.614	1.7409
Denmark	16178	3	0.6191	2.355	44.614	1.8648
Dominican Republic	2687	1	0.2062	1	0.076	-1.0117
Ecuador	2926	1	0.0229	0.791	17.814	-1.1692
Egypt, Arab Rep.	2106	3	0.3333	1	30.365	0.3791
El Salvador	2158	1	0.1531	1.575	24.23	-0.4097
Equatorial Guinea	2301	1	0.0258	1	30.365	-0.8421
Ethiopia	369	0	0.1001	1	30.365	-1.0080
Fiji	4143	1	0.1981	1	0.018	-1.0286
Finland	14028	2	0.6690	2.355	44.614	1.6515
France	14650	3	0.5429	2.355	44.614	1.7161
Gambia, The	747	1	0.1473	1	30.365	-0.6051
Georgia	1246	2	0.4670	2.355	44.614	1.2575
Ghana	1031	1	0.0744	1	30.365	-0.7474
Greece	7346	3	0.4229	2.355	44.614	1.4821
Guatemala	2401	1	0.1625	1.575	24.23	-0.3914
Guinea	843	1	0.1297	1	30.365	-0.6395
Guinea-Bissau	689	1	0.1362	1	30.365	-0.6267
Haiti	621	1	0.2104	1	0.076	-1.0036
Honduras	1424	1	0.1577	1.575	24.23	-0.4006
Hong Kong	18811	2	0.2523	2.355	44.614	0.8386
Hungary	5200	3	0.5269	2.355	44.614	1.6850
Iceland	14155	2	0.7099	1.667	0.103	0.6182
India	1624	1	0.2808	2.355	44.614	0.5836
Indonesia	2735	1	0.0729	3	1.919	-0.2319
Ireland	13943	3	0.6068	0.75	0.07	0.2650
Israel	11181	3	0.3565	2.355	44.614	1.3526
Italy	13357	3	0.5046	2.355	44.614	1.6415
Jamaica	2326	1	0.2006	1	0.011	-1.0238
Japan	16003	2	0.3968	1.214	0.377	-0.2162

Jordan	3098	3	0.3511	2.355	44.614	1.3422
Kenya	916	1	0.0057	1	30.365	-0.8813
Korea, Rep.	10131	2	0.4173	2.355	44.614	1.1604
Lao PDR	1765	1	0.1839	2.355	44.614	0.3944
Latvia	2691	3	0.6318	2.355	44.614	1.8895
Lesotho	1331	0	0.3288	1	30.365	-0.5618
Luxembourg	21974	3	0.5531	2.355	44.614	1.7361
Madagascar	577	1	0.2106	0.615	0.587	-1.1883
Malawi	571	1	0.1757	1	30.365	-0.5498
Malaysia	7696	1	0.0363	2.355	44.614	0.1067
Maldives	2424	1	0.1859	1	0.001	-1.0526
Mali	535	0	0.1390	1	30.365	-0.9321
Malta	9066	3	0.3987	1	0.001	-0.0160
Mauritania	922	0	0.1992	1	30.365	-0.8147
Mauritius	7391	1	0.2248	1	0.002	-0.9767
Mexico	6435	0	0.1862	1.575	24.23	-0.6558
Mongolia	1474	0	0.5277	2.355	44.614	0.7544
Morocco	2231	3	0.3733	1	30.365	0.4570
Mozambique	914	1	0.2055	1	30.365	-0.4915
Namibia	2764	0	0.1998	1	30.365	-0.8135
Nepal	1232	2	0.3079	2.355	44.614	0.9471
Netherlands	14683	3	0.5764	2.355	44.614	1.7815
Niger	424	0	0.1542	1	30.365	-0.9025
Norway	18547	2	0.6664	2.355	44.614	1.6464
Pakistan	1472	2	0.3464	2.355	44.614	1.0222
Panama	3612	1	0.1023	1.575	24.23	-0.5088
Papua New Guinea	1660	1	0.0733	2	0.462	-0.7602
Paraguay	2240	2	0.2843	0.791	17.814	-0.3487
Peru	2732	1	0.1310	0.791	17.814	-0.9583
Philippines	1873	1	0.1547	0.769	0.3	-1.2248
Poland	5034	3	0.5583	2.355	44.614	1.7462
Portugal	8684	3	0.4313	2.355	44.614	1.4985
Romania	1724	2	0.4947	2.355	44.614	1.3116
Rwanda	579	1	0.0226	1	30.365	-0.8484
Samoa	2171	1	0.1515	1	0.003	-1.1197
Senegal	1146	1	0.1641	1	30.365	-0.5723
Sierra Leone	507	1	0.0967	1	30.365	-0.7039
Singapore	17559	1	0.0151	2.355	44.614	0.0652
Slovak Republic	5393	3	0.5333	2.355	44.614	1.6976
Solomon Islands	2260	1	0.1069	1	0.028	-1.2062
South Africa	3134	3	0.3237	1	30.365	0.3603

Spain	10685	3	0.4155	2.355	44.614	1.4678
Sri Lanka	2734	1	0.0763	1	0.065	-1.2653
Sudan	1032	0	0.1560	1	24.614	-0.9978
Swaziland	2664	0	0.2949	1	30.365	-0.6279
Sweden	14827	2	0.6586	2.355	44.614	1.6313
Switzerland	15768	3	0.5268	2.355	44.614	1.6847
Syria	4772	3	0.3718	2.355	44.614	1.3824
Taiwan	11729	2	0.2667	0.67	0.036	-0.7501
Tanzania	540	1	0.0239	1	30.365	-0.8458
Thailand	5038	1	0.1530	2.355	44.614	0.3343
Togo	547	1	0.0688	1	30.365	-0.7582
Tunisia	3465	3	0.4091	1	30.365	0.5269
Turkey	4396	3	0.4578	2.355	44.614	1.5502
Uganda	697	1	0.0025	1	30.365	-0.8875
United Kingdom	14472	3	0.5723	0.5	0.244	0.0747
Uruguay	5949	2	0.3869	0.791	17.814	-0.1485
Zambia	649	1	0.1438	1	30.365	-0.6120
Zimbabwe	1242	0	0.1986	1	30.365	-0.8158

Country	Plants	Animals	Bio Conditions	Political Environment	Social Infrastructure
Argentina	2	1	-0.7689	0.579	0.3341
Austria	33	9	1.3884	0.949	0.8636
Bangladesh	6	7	0.1224	0.313	0.1563
Belgium	33	9	1.3884	0.954	0.8657
Belize	5	0	-0.7791	#N/A	#N/A
Benin	4	0	-0.8168	0.376	0.2437
Bolivia	2	1	-0.7689	0.381	0.5573
Botswana	4	0	-0.8168	0.713	0.5343
Brazil	2	1	-0.7689	0.682	0.3853
Bulgaria	33	9	1.3884	0.706	0.3973
Burkina Faso	4	0	-0.8168	0.498	0.2492
Burundi	4	0	-0.8168	0.528	0.2639
Cameroon	4	0	-0.8168	0.563	0.3593
Cape Verde	4	0	-0.8168	0.387	0.2291
Central African Rep.	4	0	-0.8168	0.42	0.2099
Chad	4	0	-0.8168	0.554	0.2770
Chile	2	1	-0.7689	0.646	0.5343

China	6	7	0.1224	0.641	0.3203
Colombia	2	1	-0.7689	0.565	0.3268
Comoros	4	0	-0.8168	0.567	0.5084
Congo, Republic	4	0	-0.8168	0.415	0.2073
Costa Rica	5	0	-0.7791	0.67	0.5461
Cote d'Ivoire	4	0	-0.8168	0.626	0.3128
Czech Republic	33	9	1.3884	#N/A	#N/A
Denmark	33	9	1.3884	0.984	0.8809
Dominican Republic	5	0	-0.7791	0.51	0.2548
Ecuador	2	1	-0.7689	0.573	0.7089
Egypt, Arab Rep.	33	9	1.3884	0.551	0.2755
El Salvador	5	0	-0.7791	0.372	0.3858
Equatorial Guinea	4	0	-0.8168	#N/A	#N/A
Ethiopia	4	0	-0.8168	0.399	0.1993
Fiji	0	0	-0.9678	0.611	0.5098
Finland	33	9	1.3884	0.98	0.8789
France	33	9	1.3884	0.941	0.8707
Gambia, The	4	0	-0.8168	0.568	0.3949
Georgia	33	9	1.3884	#N/A	#N/A
Ghana	4	0	-0.8168	0.54	0.3813
Greece	33	9	1.3884	0.712	0.7560
Guatemala	5	0	-0.7791	0.371	0.3968
Guinea	4	0	-0.8168	0.504	0.3518
Guinea-Bissau	4	0	-0.8168	0.34	0.2587
Haiti	5	0	-0.7791	0.236	0.1178
Honduras	5	0	-0.7791	0.424	0.3896
Hong Kong	6	7	0.1224	0.791	0.8957
Hungary	33	9	1.3884	0.788	0.4496
Iceland	0	0	-0.9678	0.986	0.8957
India	6	7	0.1224	0.591	0.3064
Indonesia	6	2	-0.4946	0.484	0.5196
Ireland	33	9	1.3884	0.889	0.7667
Israel	33	9	1.3884	0.756	0.4891
Italy	33	9	1.3884	0.815	0.8077
Jamaica	5	0	-0.7791	0.544	0.4831
Japan	6	7	0.1224	0.932	0.8327
Jordan	33	9	1.3884	0.562	0.6145
Kenya	4	0	-0.8168	0.582	0.3131
Korea, Rep.	6	7	0.1224	0.735	0.6673
Lao PDR	6	7	0.1224	0.574	#N/A

Latvia	33	9	1.3884	#N/A	#N/A
Lesotho	4	0	-0.8168	0.661	0.5515
Luxembourg	33	9	1.3884	1	0.9000
Madagascar	4	0	-0.8168	0.476	0.2380
Malawi	4	0	-0.8168	0.503	0.2513
Malaysia	6	7	0.1224	0.687	0.8437
Maldives	6	7	0.1224	#N/A	#N/A
Mali	4	0	-0.8168	0.311	0.2333
Malta	33	9	1.3884	0.622	0.5786
Mauritania	4	0	-0.8168	0.406	0.2031
Mauritius	4	0	-0.8168	0.704	0.8519
Mexico	5	0	-0.7791	0.592	0.3962
Mongolia	6	7	0.1224	0.582	#N/A
Morocco	33	9	1.3884	0.563	0.5037
Mozambique	4	0	-0.8168	0.536	0.2680
Namibia	4	0	-0.8168	0.462	0.3685
Nepal	6	7	0.1224	#N/A	#N/A
Netherlands	33	9	1.3884	0.988	0.8940
Niger	4	0	-0.8168	0.514	0.2570
Norway	33	9	1.3884	0.968	0.8727
Pakistan	33	9	1.3884	0.453	0.2265
Panama	5	0	-0.7791	0.41	0.3345
Papua New Guinea	6	2	-0.4946	0.625	0.3123
Paraguay	2	1	-0.7689	0.486	0.3097
Peru	2	1	-0.7689	0.438	0.4636
Philippines	6	2	-0.4946	0.407	0.2811
Poland	33	9	1.3884	0.694	0.4024
Portugal	33	9	1.3884	0.811	0.7946
Romania	33	9	1.3884	0.516	0.2912
Rwanda	4	0	-0.8168	0.387	0.1934
Samoa	0	0	-0.9678	#N/A	#N/A
Senegal	4	0	-0.8168	0.487	0.2433
Sierra Leone	4	0	-0.8168	0.398	0.1990
Singapore	6	7	0.1224	0.859	0.9297
Slovak Republic	33	9	1.3884	#N/A	#N/A
Solomon Islands	0	0	-0.9678	#N/A	#N/A
South Africa	4	0	-0.8168	0.74	0.4143
Spain	33	9	1.3884	0.802	0.7901
Sri Lanka	6	7	0.1224	0.463	0.4315
Sudan	4	0	-0.8168	0.308	0.1671
Swaziland	4	0	-0.8168	0.602	0.5312

Sweden	33	9	1.3884	0.987	0.8824
Switzerland	33	9	1.3884	1	1.0000
Syria	33	9	1.3884	0.491	0.4123
Taiwan	6	7	0.1224	0.823	0.7669
Tanzania	4	0	-0.8168	0.551	0.2757
Thailand	6	7	0.1224	0.711	0.8555
Togo	4	0	-0.8168	0.446	0.2228
Tunisia	33	9	1.3884	0.541	0.3373
Turkey	33	9	1.3884	0.601	0.3673
Uganda	4	0	-0.8168	0.368	0.2618
United Kingdom	33	9	1.3884	0.933	0.8556
Uruguay	2	1	-0.7689	0.564	0.3374
Zambia	4	0	-0.8168	0.424	0.2342
Zimbabwe	4	0	-0.8168	0.545	0.2725

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