Appendix for "The Colonial Origins of Comparative Development: An Investigation of the Settler Mortality Data"

Not for publication. To be posted on the author's website.

This appendix has two sections. The first, A.I, presents a detailed discussion of the mortality sources, how rates are assigned to different countries, and when mortality rates come from soldiers on campaign, soldiers in barracks, African laborers, or were ultimately derived from bishops. The mortality rate classifications, summarized in Appendix Table A1, are used for the various robustness checks in Section II. Mortality rates from new sources introduced by Acemoglu et al. (2005) are also discussed. The sub-section on the Caribbean and Latin America discusses how the AJR benchmarking system based on the bishop data can produce widely varying results, supplementing the discussion in Section I.A. The sub-sections on Africa discusses how the data does not consistently apply either the selection rule of

- choosing the earliest available rate, stated in AJR (2001),
- or of choosing the earliest available peacetime rate, when such a rate is available, or else using the earliest campaign rate, stated in AJR (2005, 2006),

This discussion provides support for claims made in Section I.B.

The second section, A.II, presents additional statistics on the correlations between the main variables, and reports additional coefficient estimates and robustness checks, including

- Analyzing the difference between dropping countries with extrapolated data and the check by AJR to keep only the "Earliest Available Data."
- Averaging the mortality data for Mali, lowering the rate from 2940 to 478.2.
- Reporting the coefficients on the campaigning soldier and laborer indicators.
- Incorporating additional data from sources introduced in Acemoglu et al (2005).
- Testing alternative measures of property rights institutions other than expropriation risk.
- Estimating the reduced-form relationship between log mortality and log GDP per capita.

A.I. Region-by-Region Summary of Data Problems, Extrapolations, Indicator Codes, and Additional Data Sources.

Sub-Saharan Africa: The basis for assigning three different mortality rates from western Mali to seven different countries in the original data is not completely clear, although it appears to arise from Curtin (1998) liberal use of Mali's changing colonial names throughout his text.

- Two tables in Curtin (1998) report mortality rates that belong to Mali, one titled "Haut-Senégal-Niger" on page 85, the other, transcribed from Reynaud (1898), has rates marked "French Soudan" on page 238 in the Appendix. The table with "Haut-Senégal-Niger" lists yearly rates from 1880 to 1892; the table with "French Soudan" rates contains only the years from 1884 to 1888. The yearly rates reported for the five overlapping years are very similar (i.e. 282, 225, 201, 222, and 117 versus 280, 225, 200, 221, and 116), as they do come from the same campaigns.
- "French Soudan" is the name for Mali from 1890 to 1899 and from 1920 to 1959. "Haut-Senégal-Niger" is the name for Mali and Burkina Faso from 1904 to 1920 and for Niger from 1904 to 1911. The text and map in Curtin's chapter containing the "Haut-Senégal-Niger" table (pp. 74-89) indicate that these rates refer to campaigns in western Mali, and the table's footnotes uses the word "Soudan" three times, and "le Soudan français" once.
- Although "Haut-Senegal" and "Niger" are not synonyms, the AJR Data Appendix states (p. 3) "In Haut-Senegal (Niger), in 1880-83 there was a death rate of 400 per 1000 mean strength (Curtin 1998, p. 85)," to justify assigning the earliest mortality rate of 400 (1880-83) from the "Haut-Senégal-Niger" table to Niger only.
- Incorrectly, the AJR Data Appendix states (p.3) that "Burkina Fasu [sic], Central African Federation [sic], Chad, French Congo and Mauritania were part of French Soudan." and assign to these countries the first rate in the "French Soudan" table of 280 from 1884. [i] This rate is then assigned to Angola, Cameroon, Gabon, and Uganda under the unsubstantiated premise that their disease environments are similar. Uganda and Angola do not border any of the countries alleged to be part of French Soudan.[ii]
- The mortality rate of 2940 used for Mali comes from the two-month Logo expedition from 1874 (Curtin, 1998, p. 81), discussed in footnote 2 of the main text.

The net result is that three different rates, all from western Mali, are given to three different sets of countries: a rate of 400 from 1880-3 to Niger, a rate of 280 from 1884 to the five dispersed

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[i] Perhaps a misunderstanding arose from how the general term "Soudan" in French – as seen in older editions of *Le Petit Larousse* – refers to a large swath of land south of the Sahara from Mali (French Soudan), to Darfour in modern (Anglo-Egyptian) Sudan. However, this area still includes Mali, and excludes French Congo and most of the Central African Republic. The latter two countries were part of French Equatorial Africa, while Mali, Burkina Faso, and Niger were part of French Occidental Africa.

[ii] It is also not clear why the rate of 280 from Curtin (1998) is applied to Gabon because it is a neighbor of Congo, while Congo itself receives the rate of 240 from Curtin et al. (1995).

countries of Burkina Faso, Cameroon, Gabon, Angola and Uganda, and an epidemic-based rate of 2940 from two months in 1874 to Mali. In the AJR "Earliest Available Data" check Niger, Gabon, and Burkina Faso are kept, although they are conjectured from other countries.

The Mali-based rates are all classified as campaign rates. As Curtin uses the terms "campaign" and "expedition" interchangeably, the rate from the Logo expedition is a campaign rate. The other rates are primarily campaign rates according to Curtin (1998, p. 84), "The annual deaths reported for most years in the 1880s are therefore a combination of garrison rates for four to six months, plus campaign rates for six to eight months during the dry season." Furthermore, the rates of 280 and 400 are higher than the average rate of 200.24 that Curtin (1998) singles out as the "Annual Mortality of French Troops on Campaign in the French Sudan, 1883-88" in his Table 4.3, titled "Senegal and French Sudan – Barracks and Campaign." Averaging the mortality rates for Mali over time produces a rate of 478.2. Separate mortality rates for the other six countries are not evident in Curtin's texts.

The rates applied to Congo and Kenya are clearly maximum rates and taken from African laborers. The rate of 240 for Congo, also used for Zaire, is in Curtin et al. (1995, p. 463):

> …workers had to be recruited elsewhere; and they were recruited by force from all parts of French Equatorial Africa… They were therefore unprepared for the diseases they encountered in the forested Mayombe highlands… They were also underfed and ill-housed. As a result, the overall death rate reached 100 per thousand per annum, and as high as 240 per annum at the peak of mortality…

The laborer rate of 145 for Kenya, also used for Tanzania, comes from this passage (p. 491):

> some of East Africa's highland peoples who lived in malaria-free areas knew that if they stayed overnight in lowland regions where mosquitos bred, they would be likely to suffer from malaria… The Europeans had the armed force to require that African men move to the lowlands… The result, in Kenya, was that workers from the highlands died at annual rates as high as one hundred and forty-five per thousand in Mombasa and nearby coastal regions on the eve of the First World War.

The AJR Data Appendix (p. 3) is not specific about which examples in Curtin (1968) justify the use of African coerced labor as a lower bound for the mortality of Europeans. This argument is subject to debate as all of the mortality rates for blacks refer to troops, not laborers, who may have faced quite different conditions. The mortality of the Congolese laborers may have been abnormally high as they were "underfed and ill-housed," (Curtin, 1995, p. 463). In the Ethiopian campaign of 1867-68 reported in Curtin (1998, pp. 45-6), badly treated laborers died at a much higher rate than the European soldiers they accompanied. It also appears that the origin of the troops may be different than that of the laborers. Moreover, these examples compare average rates to other average rates, and thus do not justify using maximum rates. That is not to say that Congo was a healthy place for Europeans, only that the maximum laborer rates are not comparable to average soldier rates.[iii]

Note that both Congo and Kenya are added in the third step of the AJR data construction, although they are not conjectured from other countries, and hence they are retained in my first robustness check. There is no reason provided in AJR for why Congo is retained in the "Earliest Available Data" check, while Kenya is dropped.

For Madagascar, the first available rate, apparently from peacetime, is mentioned in the following passage (Curtin, 1998, p. 181) "In 1880, the peacetime garrison at the French post at Nossi-Bé had an annual death rate of about 75 per thousand."[iv] The original data use a rate of 536.04 from 1895 during the Madagascar Expedition (p. 188), consisting of about 15,000 soldiers. Curtin (pp. 184-188) refers to this expedition repeatedly as a "campaign," making its coding clear. The reasoning in the AJR Data Appendix (p. 2) appears to conflict with the stated preference for choosing the earliest peacetime rate:

> The very high mortality rate from disease in Madagascar in 1895 is a reasonable estimate of what settlers would have expected because this was not a particularly well-organized campaign.

Curtin (1998, p. 191) writes that mortality rates diminished quickly after the 1895 campaign:

> From 1896 to 1903, the French were no longer fighting a single campaign, but many small campaigns. The death rate of French troops over these later years is partly a campaign death rate – not just a barracks rate – but by 1897, the *annual* mortality [of 30] had dropped to less than the monthly mortality during the campaign of 1895.

[iii] The rate for Kenay may be overstated. Kenya is next to Ethiopia, with much lower mortality, and there appear to be healthier highlands in Kenya. AJR (2005, p. 33) states that when rates from multiple regions from within a country are available should be chosen.

[iv] Acemoglu et al. (2006, p. 7) argues that the Nossi-Be rate should not be used since it comes from an island just off the coast, even though it has been formally part of Madagascar since 1896. Yet in the next sentence, Curtin (1998, p. 181) mentions a similar mortality rate on land: from 1884 to 1885, "those who went ashore for the occupation of Tamatave died at 95 per thousand." Later in the paragraph, Curtin mentions another mortality rate of "59 per thousand for the Malagasay expedition of 1884-85."

In 1897 the mortality rate was 30 per year, and by 1904, it was 7.69.

The mortality rate from the Gold Coast (i.e. Ghana, which is also applied to Togo and Cote d'Ivoire) of 668 comes from 1823 to 1826 (Curtin, 1998, p. 18) is from the First Anglo-Asante War. According to Curtin (p.18), "these troops were not on campaign during the whole four years, but their death rate from disease can be taken to be a campaign, rather than a barracks, death rate." The yearly data (Army Medical Department, 1840, p.7) show an increase in mortality from 1823 to 1824 when the war began, as this coincided with a yellow fever epidemic, which subsided a few years later. The role of poor living conditions is clear from a passage in the *United Service Journal* (1840, p. 516): [v]

> Here diseases of the bowels proved nearly as great a source of mortality as fever; but considering that the soldiers were fed constantly on salt provisions, and that the water was of the very worst quality this is not to be wondered at. None of the officers died from that class of diseases, though thirty-seven perished from fever; which shows that they must have been in great measure attributable to some other cause than climate.

Note that Ghana is not included in the AJR "Earliest Available Data" although the locations, from Dixcove to Accra, that produced the rate are clearly within Ghana.

The war also led to substantial troop buildups in the Sierra Leone Company, which included the Gambia. Referring to the mortality rate of 483 for Sierra Leone, Curtin (1998, p. 10) states that "European mortality represented in the chart was not the normal West African experience, but only typical of what could happen during a yellow fever epidemic." Because the mortality rate is averaged using troop strengths as weights, and as there was a military build-up during the epidemic period – the number of troops rose from 6 in 1824 to 571 in 1825, dropping to 9 by 1830 – the mortality rate for the entire period of 1817 to 1836 reflects the epidemic period (Feinberg, 1974). According to Curtin (1989, p. 18),

> The Sierra Leone rate of more than 400 per thousand was somewhat higher than usual, but peacetime rates of 100 to 200 per thousand had been common enough in the past and were to persist for several decades to come.

[v] In their Data Appendix, Acemoglue et al. (2005) consider using the Sierra Leone rate for Ghana, Togo, Nigeria, and Cote d'Ivoire, although this rate is impacted by the epidemic as well (see below).

Although evidence of actual conflict is not given, the living conditions up until 1826 at the Sierra Leone camp were abysmal, with "diseases of the stomach and bowels" killing many. [vi]

The deaths from Gambia come from a particularly hard hit sub-population of the Sierra Leone Command from 1825 to 1826, precisely during the worst time of the yellow fever epidemic. AJR use this period to infer a mortality rate of 1470, which they state (Data Appendix, p. 3), "is high but not extraordinary for that time and place." Since Gambia was part of the Sierra Leone Command, the Sierra Leone rate can be revised to avoid double-counting mortality in Gambia: Tulloch (Army Medical Department, 1840, p. 7) suggests a rate of 350. It seems reasonable to classify rates for both Gambia and Sierra Leone as campaign rates given the nearby conflict, the poor conditions, the yellow fever epidemic, and Curtin writing that the rates are higher than typical peacetime rates. Classifying them as barracks rates has little effect on the results.[vii]

The rate for Senegal of 164.66 from 1819 to 1838 is taken from Curtin (1989, p. 8), which based on Curtin (1998, p. 4) reflects the mortality of garrisons stationed at Saint Louis and Gorée. Given that these are fixed garrisons and there relatively few wars at this time, this appears to be a barracks rate.[viii]

For an expedition of 159 Europeans in 1841 up the Niger, which AJR use for Nigeria, Curtin (1998, p. 21) explains:

> The longest time any of the steamers spent in the river that year was just over two months, but even for this brief period the death rate was 350 per thousand. The death rate per month gives a measure more nearly comparable with similar expeditions, and the overall monthly death rate in this case, based on the number of days each man was at risk

[vi] The Army Medical Department (1840, pp. 6-9) describes these conditions, including the brackish water soldiers drank, "liable to cause slight affections in the bowels in persons unaccustomed to it." While soldiers had rations of one pound of meat and one pound of bread per day, the meat given to these soldiers was of poor quality, with little else being added to it unlike in other stations. The author states that some portion of the sickness and mortality was due to the privation of diet. All of the troops were also "commuted punishment men" of "the most degraded class of soldiers" and may have had higher mortality rates than typical soldiers.

[vii] If the rates for Gambia and Sierra Leone are classified as barracks rates then the first stage estimates of β using the campaign dummies in Table 2 become slightly more significant without controls and slightly less significant in other specifications.

[viii] Acemoglu et al. (2009) claim that this rate should be coded as a campaign rate because the French built forts up the Senegal River at Dagan (1821) and Merinaghen (1822), although this refers to different places, and still would not reflect campaigning conditions. Acemoglu et al. also state that "They also sent many missions into the interior," without mentioning any specific missions. However, according to Curtin (1998, p. 22) these missions began in earnest starting in 1838, at the very end of the sample period.

on a steamer in the Niger, comes to 162 per thousand, per month. [ix]

The mortality rate for Nigeria is 2004, exactly 162 multiplied by 12. As Curtin states, it is comparable with other expeditions, and is thus properly labeled a campaign rate. Since the Niger delta is within Nigeria, and as it mentioned in the second-step of the Data Appendix (p. 3) this rate should have been kept in the "Earliest Available Data" check, but according to AJR Appendix Table A2 it is not. It is kept in my non-conjectured rate robustness check.

The rate for South Africa of 15.50 is from soldiers in the Cape Colony from 1818 to 1836. This period was peaceful except for the 5th (1818-1819) and 6th (1834-36) Xhosa Wars. With less than a quarter of the time spent campaigning, this rate may be deemed a barracks rate.

North and Northeast Africa: As mentioned earlier, North Africa has a fairly healthy Mediterranean climate suitable for European settlement. In Sudan and Ethiopia, the hot and arid summers may not have been particularly comfortable for European soldiers, a number of whom died from sunstroke when they had inadequate shelter, but they were not decimated by tropical disease. Nevertheless, for most of these countries, the mortality rates in the AJR data are abnormally high because of waterborne diseases that stem from campaign conditions. [x] In addition, the rates for these countries do not correspond consistently to the earliest rate or the earliest peacetime rate available in the sources. They do appear to be the highest rates available in the sources.

The rate of 78.2 used for Algeria from 1831-38 is clearly a campaign rate. The relevant passage in Curtin (1989, p. 17) is worth repeating in its entirety:

> Climatically, the south shore of the Mediterranean was much like the north shore in Italy or southern France. On grounds of general climate, one might expect even smaller mortality differences than those reported on Table 1.1. The British posts at Gibraltar, Malta, and the Ionian islands, however, show a range of relocation costs from 7 to 65 percent [greater mortality than Britain, proportionally], which seems to indicate that the disease environment was not much different from that of northern Europe. The high Algerian figure of 288 percent [greater mortality than France, proportionally] in the

[ix] In another passage, Curtin (1996, p. 101) writes "It would not be statistically legitimate to annualize a death rate of this magnitude, but if one did, it would have been more than 2,000 per thousand annual strength." Acemoglu et al. (2006) cite this passage to justify this rate, although it seems to do the opposite.
[x] To explain the role of typhoid in affecting these mortality rates: Curtin names chapters in his (1998) book "The Typhoid Campaigns: Northeastern Africa in the 1880s," and "Typhoid and the Egyptian Garrison."

> 1830s was certainly the result of campaigning in the conquest period. Within a decade or so, the Algerian death rate was closer to the rates of the Mediterranean islands. Indeed, by 1909-13, Gibraltar, Malta, and Cyprus had all begun to show small relocation benefits for British troops (Table 1.2).

Acemoglu et al. (2005) claims that none of the rates originate from wartime. Yet, the Algerian campaign was not a minor expedition: Curtin calls it “a major military operation” (1989, p. 28), “with a total force of 100,000 in round numbers” (p. 5). Acemoglu et al. (2005) cites a rate mentioned in passing in Tulloch (1847) that early Algerian settlers experienced a mortality of 70, which does not mention which diseases were responsible. The relatively high mortality of these settlers is not altogether surprising given that this was during the initial settlement of Algeria and during a war – the conditions facing the settlers were far from ideal, and yet they still fared better than the initial settlers of Jamestown, who died at four times this rate (Earle, 1979). Later experience would show Algeria to be quite healthy once sanitary conditions were established: the hundreds of thousands of European settlers who came to Algeria certainly attest to this (see Curtin et al., 1995, pp. 434-5).

Furthermore, mortality rates from the same source for more peaceful years are not chosen, seen in Curtin’s tables and texts, including (1989, p. 30)

> The mortality rate for the French in Algeria dropped steeply over the midcentury… from 78 per thousand in the first five years of conquest (1831-35) to 15 per thousand in the late 1860s (1863-69).

Curtin (1998, p. 152) singles out a particular Algerian barracks rate of 12.64 from 1872-76 to compare with the campaign rate of 63.3 from Tunisia in 1881, which is in the AJR mortality series.

The rate of 67.8 used for Egypt is the second is the second of three reported in Curtin’s Table 6.2 (1998, p. 158):

- The first rate of 24.7 is from a short campaign from July to October of 1882. The death rate from enemy action, listed in the same table, was 31.1
- The second rate of 67.8 is labeled “Post-Campaign.” It is from the period following the initial invasion, from October to December of 1882. The death rate from enemy action from during this time was 18.2, only 41 percent lower than during the invasion, and thus was not from a time of peace. The disease mortality rate is also repeated in Table 6.4

(p.169) titled “Mortality in Northeast African Campaigns,” which suggests Curtin saw it as a campaign rate.

- The third rate of 32.64 is from the following year, 1883. There were no deaths from enemy action over this year, so this appears to be the first peacetime rate.

It appears that mortality rose temporarily at the end of 1882 because of the after-effects of dirty water drunk while campaigning and to deplorable conditions in Cairo after the British captured it:

> The outbreak [of typhoid] seems to have been caused principally by the condition of the Cairene barracks and water sources at the moment of the British occupation. Sanitary officers described their shock in finding human wastes on the stairways and in the corridors of the barracks they took over from the Egyptian army (p. 161).

This, along with the deaths from enemy action, is likely why Curtin calls 67.8 a “post-campaign” rate rather than a “barracks” or “peacetime” rate. From 1895 to 1904 Curtin (p. 198) reports a further decline of mortality to 10.56. Of the rates listed for Egypt, 67.8 is the highest rate, and not the first available peacetime rate. Given the conditions of the soldiers, it makes sense to follow Curtin (p. 169) and label the rate from 67.8 applied to Egypt a campaign rate.

The rate for Sudan of 88.2 is the highest of five rates in chapter 6 of Curtin (1998), all of which occurred during the Anglo-Sudan (or Mahdi) War:

- The first rate of zero comes from a campaign launched from Suakin, a coastal Sudanese city, from February to April of 1884 with 4,500 troops. According to Curtin (1998 p. 173) there were no deaths from disease: “Medically, this brief period… appears as one of unaccountable success, unless there were errors in the reporting. The force had only 127 hospital admissions and no deaths at all from disease…”[xi]
- The second rate of 30.36 (p.169) is from the Nile Expedition, which also occurred in southern Egypt, although primarily in Sudan. It spanned 15 months from March 1884 to July 1885 and consisted of 10,771 men.
- The third rate of 10.9 (p.169) comes from a second Suakin expedition from March into May of 1885, with a troop strength of 7,235.
- The fourth rate of 88.2 (p.173), used by AJR, comes from May 15, 1885, to the end of the year, when the British left a garrison in Suakin, which had an average annual strength of

[xi] Acemoglu et al. (2005, p. 22) states that the first available mortality rate of zero for the Sudan is one which “Curtin clearly suggests is mistaken.” This interpretation does not agree with Curtin’s text.

465. According to Royle (1900, pp. 459-60) this garrison was "besieged" by Sudanese enemies throughout the year. [xii] 41 soldiers died: 20 of typhoid, and 15 of sunstroke (Army Medical Department, 1885). The deaths from sunstroke were blamed partly on the tents the soldiers had for accommodations, which were inadequate shelter against the summer sun and heat (p. 145).

- The fifth rate of 27.24 (p.169) is from a force of 5,873 men on the Sudan Frontier from November 1885 to January 1886.

The fourth rate is much higher than the other rates and occurred while British forces were besieged by their Sudanese enemies. Given the intense fighting and adverse conditions the soldiers faced during this colonial war, these rates are all effectively campaign rates. The fourth rate is problematic, not only because it is unusually high, but because it is based on the smallest sample. Curtin never calls this rate a peacetime rate, nor does he call it a campaign rate. It does seem reasonable to classify this rate as a campaign rate as the soldiers were under constant attack, and as the death toll was higher than in all of the other campaigns, with half of the deaths from typhoid, and most of the others from sunstroke due to inadequate shelter,

Ethiopia's rate of 26 is unquestionably a campaign rate as it is taken from Table 2.1 in Curtin (1998, p. 44) labeled, "British Military Mortality on the Magdala Campaign, 1867-68."

Asia and Oceania: Curtin (1989, p. 8) reports mortality rates for three presidencies in India: 36.99 for Bombay, 71.41 for Bengal, and 48.63 for Madras for years 1829 or 1830 to 1838. These rates are assigned to Pakistan, Bangladesh and India, respectively. All three presidencies overlapped with India, but for reasons not explained, only the Madras rate is applied to India. This breaks the rule of taking the lowest available mortality rate for a given country.

Discussing the mortality rates he reports for India, Curtin (1989, p. 25) writes

> it reflects the high mortality from wartime years…. Campaigning was frequent especially in the two northern presidencies [Bengal and Bombay]. The comparative peace for

[xii] According to Royle (1900, pp. 459-60), "In May, 1885, when Graham's force withdrew from Souakim, General Hudson took over the command. The troops left to protect the town consisted of 930 Europeans, 2,405 Indians, and the Egyptians forming the regular garrison…. Day after day the Dervish scouts approached the forts and cavalry patrols went out and fired upon them; night after night parties of the enemy took up positions from which they fired on the town… Thus Souakim continued to be besieged, the enemy refraining from any serious attack, and devoting themselves principally to raiding the friendly tribes in adjoining territory. On 11th May, 1886, the remainder of the British and Indian troops left." It is not clear why Royle mentions 930 Europeans, when an average annual strength of 465 men over seven and-a-half months would imply 744 Europeans. Perhaps some were lost to combat or others counted as officers.

> Madras accounts for its lower mortality rates. After 1852, death rates fell sharply in all three presidencies, again the probable result of relative peace in these years.

Although it is not obvious what to do here, given the passage above, it makes sense to deem Bengal and Bombay campaign rates and Madras a barracks rate. The rate for Sri Lanka of 69.8, taken from 1817-1836 is coded as a barracks rate as the period was relatively peaceful.[xiii]

The mortality rate of 140 for Vietnam comes from a campaign in Cochin China, which the original source, Reynaud (1898, pp. 92-101, 471), describes as being deadly due to the deplorable, dirty conditions the soldiers endured and multiple cholera epidemics.[xiv]

The mortality rate of 14.9 for Hong Kong belongs to the British China Field Force who fought in 1860 during Arrow's War. The primary source (Army Medical Department, 1862) states that this rate is "from the 1st of August till the 15th of November, during which the army was in the field." 136 soldiers out of 9161 died of disease over this 107 day period, producing a non-annualized rate of 14.845 (14.9 is reported in the secondary source, Reynauld 1898, used by Curtin 1998) or 50.64 when annualized. While the rate is clearly a campaign rate, it is below an actual barracks rate for Hong Kong from 1842-5 of 285 (Tulloch, 1847, p. 254), mentioned in Acemoglu et al. (2005). Furthermore, in the same source for the same year, a rate of 50.17 is reported for South China (Hong Kong and Canton) during which time the soldiers were at peace. The results in the main text code the 14.9 rate as a barracks rate for Hong Kong, although this produces results similar to annualizing the rate to 50.64 and recoding it as from a campaign. Coding the 14.9 rate as a campaign rate without annualizing it, as Acemoglu et al. (2008) suggest, increases the first-stage relationship, but seems unjustified given that the rate is neither annualized nor applicable to Hong Kong.

The rate of 17.7 used for Malaysia and Singapore is from a small sample in Penang, Malaysia. Curtin (1989, p. 17) writes:

> the Straights Settlements of the 1830s enjoyed a brief reputation for superior healthfulness – for European troops, curiously enough, but not for those recruited in

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[xiii] Acemoglu et al. recode this is as a campaign because of the 3rd Kandyan War, which took place October 1817 to October 1818, roughly one year over the 20-year period. This coding is less favorable to the hypothesis.

[xiv] AJR chose this rate over a lower rate of 60 for Tonkin from 1864 (Curtin, 1998, p. 238), although it is not clear why. The Cochin China happens only 3 years before the Tonkin rate, despite AJR's stated preference for the lowest mortality rate reported within a country.

> British India. The death rate of European troops in Penang during 1929-38 was only 17.7 per thousand, although the mean strength of this force was too low to be significant.

Since the rate is from Penang, Malaysia it is only a conjectured rate for Singapore, although it is kept in the AJR "Earliest Available Data" check. Acemoglu et al. (2005) find that this mortality rate is repeated in the Statistical Society of London (1841), which also gives a combined mortality rate of 20.0 for a much larger group of soldiers in Penang, Malacca, and Singapore combined (p. 146).

For Indonesia, the data uses a rate of 170 from 1819-1829 in the Dutch East Indies, during a period of conflict which included the Java War. Curtin (1989, p. 18) states:

> The very high mortality rate for the Dutch East Indies (Indonesia) was unrepresentative for the same reason the Algerian figure was. These years included those of the Java War, with tough campaigns, high casualties from combat and high disease rates.

AJR do not use a rate from a more peaceful era of 39.15, from 1859 to 1914 (p.82), which is much closer to the rate for Malaysia. According to Curtin (1989), it would seem that this rate should be a campaign rate, although the Java War did begin in 1825, meaning it covered just less than half the period. Coding the rate to peacetime generally weakens the first-stage results.

The rate of 8.55 for New Zealand is taken from 1846 to 1855. This contained the last month of the Flagstaff War in January 1846, the Hutt Valley Campaign from March to August 1846, and the Wanganui Campaign from April to July 1847. The period from 1848 to 1859 was apparently peaceful.[xv] Given that most of the period was peaceful, New Zealand is coded as a barracks rate.

Acemoglu et al. (2005) report a new barracks mortality rate of 14.1 for Australia (Balfour, 1845, p. 195). It is higher than the rate of 8.55 previously assigned from New Zealand.

The Caribbean and Latin America: The mortality rates of 130 for Jamaica and 85 for the Windward Leeward Command (including Barbados, Guiana, and Trinidad and Tobago) from 1817 to 1836 appear to be barracks rates, although soldiers were suffering from the residual

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[xv] Acemoglu et al. (2009) claims that the mortality rate from New Zealand should be coded as a campaign rate, citing a passage from Curtin (1989) that refers to data from 1859 to 1864, four years after the end of the sample period, during which hostilities has resumed. Coding New Zealand as a campaign rate is beneficial to the AJR hypothesis.

effects of war (Curtin 1989, pp. 25-8):[xvi]

> As expected from campaign conditions, the death rates of all the islands had been high in wartime, but these levels continued into the immediate peacetime (Figure 1.2). The then-current military policy of keeping troops in the islands for a dozen years or more may be at fault to the extent that these men were veterans of the heavy fighting and the disease that went with it. By the 1830s and 1840s, however, death rates were more stable at a lower level.

The data apply the Jamaican rate of 130 to Haiti and the Dominican Republic, and the Windward Leeward Command rate of 85 to the Bahamas. This latter choice is questionable given the Bahamas closer proximity to Jamaica, although the Bahamas does lie lower than Jamaica, which presumably makes it less healthy. The AJR Data Appendix (p. 4) states that "information from Gutierrez 1986 indicates that these were similar disease environments," although nowhere in Gutierrez (1986) do I see corroboration for this claim. The unreliability of this extrapolation is apparent from Acemoglu et al. (2005, p. 33), which finds of an actual rate from the Bahamas of 189 (Tulloch, 1838b, p. 229), over twice the extrapolated rate of 85.

Acemoglu et al. (2005) mentions that Tulloch (1838a, p. 32) reports disaggregated mortality rates for Trinidad and Tobago (106.3) and Guiana (84). Trinidad has a lower rate (106.3) than Tobago (152.8). The original mortality rate for Guyana of 32.18 is based on French Guyana. Hence it is coded as a conjectured rate, although it is included in the AJR "Earliest Available Data" without explanation.

Tulloch (1838b, p. 231) reports that a small contingent in Honduras suffered a mortality rate of 95.2; a case where the benchmarked rate of 78.1 was relatively close.

As discussed in the main text, mortality data from Latin American bishops is used to "benchmark" the rates of 16 countries to a campaign rate in Mexico. However, it turns out that the rules used to benchmark mortality rates from different sources may produce widely differing rates, which appears to undermine its reliability.

Gutierrez defines low, medium, and high temperature regions as areas with mean temperatures of less than 20°C, 20°C to 24.9°C, and 25°C or greater, respectively, and assigns

[xvi] Acemoglu et al. (2009) gives a different rationale for why these rates should be coded as campaign rates. For Jamaica, it cites the Baptist War of 1831, a slave uprising which lasted ten days. For Trinidad and Tobago, the papers cites the Bussa Rebellion of 1816, prior to the sample period, and the Demerara rebellion, which lasted three weeks. This duration seems far too short to recode a mortality rate measured over a 20 year period. Recoding Jamaica as a campaign rate can raise or lower the first-stage estimate, depending on the specification.

cities to these regions according to temperatures in Showers (1979). In the text of his article, Gutierrez lists a number of cities in low and high temperature regions, although not in medium temperature regions. These cities are shown in Figure A1, along with the assignment of mortality rates to different countries based on the bishops in AJR. Note that several countries, including Uruguay, Paraguay, Venezuela, Costa Rica, Honduras, and El Salvador do not contain cities that Gutierrez mentions. Using additional cities listed in Showers (1979) the following countries have cities in multiple regions:

- Low and medium: Bolivia, Ecuador
- Medium and high: El Salvador, Honduras
- Low, medium, and high: Brazil, Colombia, Mexico, Venezuela

Basing the classification on capital cities would produce a similar classification to the one in AJR, except for Brazil which would change from low to medium. [xvii]

No actual evidence is given that this classification by temperature creates an accurate classification of disease environments, suitable for benchmarking. There appear to be cases where the classification breaks down. For example, the one city listed in the Bahamas, Nassau, has a mean temperature of 24.8°C, placing the Bahamas in the medium-temperature region. Despite being in a medium-temperature region, the Bahamas has a higher observed mortality, 189, than the Windwards and Leewards or Jamaica, countries in the high-temperature region, with rates of 85 and 130. While there likely are similarities in the disease environment between the Bahamas and the Windward and Leewards, the extrapolation procedure appears unable to capture finer distinctions in mortality within the Caribbean.

The bishop mortality rates are benchmarked using a rate from Mexico. However, there are two mortality rates listed for Mexico on facing tables in Curtin (1998, pp. 238-9): a rate of 53 from Reynaud (1898) and a rate of 71 from an anonymous article in the *British Medical Journal* (1898). Despite the stated preference for lower rates, the data uses 71 rather than 53. Although there is little explanation of these rates or why they differ, it is clear from the table that they are from a campaign: in fact it was a major campaign with over 30,000 troops. The French faced heavy resistance and lost the Battle of Puebla, which is celebrated to this day by Mexicans on Cinco de Mayo, a national holiday. Naturally, all of the mortality rates benchmarked to this rate

[xvii] More discrepancies would occur if one were to redo their classification based on the mean temperature variable from Parker (1997) used as a control variable in the AJR regressions: Brazil would change from low to high, and Peru and Uruguay from low to medium.

should be labeled as from a campaign.

Furthermore, the rate of 71 used by AJR is not annualized. The original source (Reynaud 1898, 113-121 and pp. 471-2) shows that the lower rate of 53 applies to the army, while the rate of 71 applies to the army, navy, and marines combined.[xviii] The mortality rate for the navy and marines, 82 was higher as they were staying on the unhealthy Mexican coast, while the army went into the highlands. Using the mortality of the navy and marines to benchmark the high mortality region results in mortality rates 50 percent lower for Latin America; using the army rate to benchmark the low mortality region results in rates 25 percent lower.[xix]

The AJR Data Appendix (p. 4) states that the results would be "virtually the same" if the rate of 130 from Jamaica is used as a benchmark for the high mortality region, although this would lower mortality rates of Latin American countries by 20 percent.[xx] Other benchmarking systems from the Caribbean produce widely varying results. For instance, the city of Cayenne, French Guiana, is mentioned by Gutierrez as being in a high mortality zone, giving it a bishop rate of 32.8. Curtin reports a very similar soldier mortality rate of 32.18 for French Guiana – which AJR assigned to (British) Guyana. As these rates are so close, the benchmarking assumptions could justify using the bishop mortality rates directly, instead of multiplying them by 4.25. Similar methods would lower the rates for Latin America: benchmarking high mortality areas with the rate of 85 from the Windward Leeward Command (Curtin, 1989, Table 1.5), or the rate of 84 from Guiana lowers Latin American mortality by almost 50 percent. On the other hand, using the Bahamas rate of 189 as a medium mortality benchmark results in mortality rates 141 percent higher.

To cross-validate the accuracy of the Latin American numbers, AJR proposes an alternative benchmarking system based on naval station data for 1825-45 from Curtin (1964. p. 486) and the mortality rate of 483 from Sierra Leone. The ratio of the mortality rate of "South American Stations" of 7.7 to that of the anti-slavery blockade off of the African coast, 54.4,

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[xviii] Using the text I was able to estimate the number of troop-years (34,319) that French troops were at risk and the number of deaths in this population (2,095) to calculate an overall annual mortality rate of 61.

[xix] American troops during the Mexican War experienced a mortality rate of 100 (Adams, 1952, p. 194). Scott's 1847 campaign during this war took a similar route from Veracruz to Mexico City, although much campaigning occurred in what is now the United States and just south of the current U.S.-Mexico border.

[xx] According to AJR (Data Appendix, p. 4) "Running our regressions using data that takes Jamaica as the base for applying the Gutierrez's ratios actually strengthens our results." This is only true for the IV estimates, the opposite is true for the first stage. Lowering the mortality rates for Latin American lowers the first-stage estimate but increases the second-stage IV estimate. This makes sense using the indirect least squares formula ($\alpha = \pi/\beta$) if the reduced form coefficient π changes by less than the first stage β.

which may not apply to Sierra Leone, is 0.142. This ratio multiplied by Sierra Leone's rate of 483 produces an imputed solider mortality rate of 68.9 for South America, which is then applied directly to Argentina and Chile in their data instead of 71, without documentation explaining this change. Still, these rates imply that Argentina and Chile, largely temperate countries, are over four times more deadly than the United States. The Appendix states "This change of data does not affect the numbers much" since 68.9 is close to the imputation of 71 for the low mortality region (including Argentina and Chile) using bishop data.

This cross-validation method appears to be quite arbitrary: using the same methodology with the other naval station data in Curtin (1968), it is possible to calculate a number of other possible benchmarked rates for the low mortality region. Seven alternative examples are shown in Table A2. Another indication that the benchmarking system is flawed is apparent when comparing the naval station rates to the soldier rates in the benchmarked countries. If benchmarking is appropriate, then the ratios between naval station rates should be similar to ratios between corresponding soldier rates (e.g. comparing Malta and Jamaica 16.3/130 should be close to 9.3/18.1). As these ratios are often very different, often not obeying the same ordinal rankings, benchmarking can produce widely varying and inconsistent imputed mortality rates.

Gutierrez's own comparison of European and Latin American bishop mortality, based on remaining life-expectancy at age 40 suggests that mortality differences were relatively small. In the low, medium, and high temperature regions, Gutierrez finds life-expectancies of 22.1, 21.2, and 17.6 years for Latin-American bishops. In the seventeenth century, the Latin American bishops had an overall life expectancy of 19.8 years, French bishops 27.4 years; in the eighteenth century, the corresponding figures are 20.3 and 29.0. These rates reveal that mortality was approximately 40 percent higher in Latin America than it was in Europe. This is far from the over 300 percent difference in the AJR data. Furthermore, bishops in Latin America originally born in Europe had a life-expectancy of 20.5 years, while those born in Latin America had an expectancy of 19.4 years, implying that these differences do not appear to be due to immunities acquired in youth.

Overall, it appears that benchmarking systems do not provide stable or reliable mortality estimates for Latin America. Among the possible systems, the one used to produce the Latin American mortality rates in the data are relatively high, and most comparable to campaign rates.

North America: The mortality rate for the United States of 15 is from troops in the Northern

United States for 1829 to 1838, a time when this area was relatively peaceful. [xxi] The rate of 16.1 for Canada also occurred during a relatively peaceful time, 1817-36.

It is worth noting that even within the United States, the rate of 15 is low. Over the same time period, the mortality rate for the Southern United States is 34. (both rates are shown in Curtin, 1989, p. 7). These rates are from times mainly of peace, as evidenced by the fact that they are much lower than rates seen during the Civil War, where white soldiers in the Union army had mortality rates from disease of 53.4 and black soldiers had mortality rates of 143.4 (Adams, 1952. p. 239). Much like the campaigns in Mexico and North Africa, typhoid ("continued fever") and diarrhea-dysentery accounted for about half of the Civil War deaths, with malaria playing a minor role, as the soldiers faced campaign-type conditions. Although the Civil War was a major war, it is not clear that the actual campaigns suffered from worse conditions than European soldiers on campaign in colonial countries, particularly as Union soldiers typically had access to medical services, hospitals, and fresh food (see Adams, 1952). [xxii]

A.II. Additional Information and Robustness Checks

Table A3 presents the means, standard deviations, and correlations among the main variables in the analysis, log mortality, expropriation risk, log GDP per capita, and the indicators for whether a rate campaign from campaigning soldiers or African laborers, both for the entire sample, and the sample without conjectured rates. It shows how the indicators are positively related to log mortality and negatively related the expropriation risk and log GDP per capita. In addition, the table reports bias from omitting these variables on the log-mortality coefficient in the first stage, β, and the second-stage reduced from, π, using standard omitted variable bias formulas from Wooldridge (2001) in the case without controls. These show that omitted variable bias stems mainly from the campaign indicator, and is large in the first stage and without the conjectured data.

[xxi] Acemoglu et al. (2008) recode the United States to be a campaign rate because of the Seminole War in Florida (1835-42), the Black Hawk War (1832), and the Creek War (1836). Only the Black Hawk War happened in the Northern United States, where the mortality rate is taken from. The other wars happened in the South were the mortality rate was 34 over this period.

[xxii] In the Revolutionary War British soldiers had a mortality rate in the neighborhood of 26 (Cantlie, 1974, p. 156), although the British soldiers spent much of their time in barracks in New York, Boston, and Halifax. Hessian mercenaries died at a rate of 34. American soldiers probably died at a rate of approximately 52 (close to the Civil War rate), as they were apparently twice as sickly as the British, with sickness rates of 200 as opposed to 100 for the British, probably due to differences in campaign conditions.

Table A4 reports the coefficients and standard errors for all of the variables in the first-stage specifications in Table 2, including the campaign-rate and laborer-rate indicators. Generally the coefficients on the control variables and the indicator variables become larger and more significant when the conjectured rates are dropped despite the smaller sample size.

Table A5 presents robustness checks related to dealing with the conjectured data for the first stage. Panels A and B replicated Table 2. Panel C also drops Congo and Kenya, with rates from African laborers, which slightly weakens the first stage from Panel B. This check may correspond to the "Earliest Available Data" robustness check that should have been included in the AJR Data Appendix; the actual check is reported in Panel D, which is considerably stronger, although it contains five conjectured rates and misses three countries with native data. Panel E builds on Panel B but averages the mortality rates for Mali seen in Figure 1 over time, to produce a rate of 478.2. Doing this generally lowers the estimates and increases the size of the standard errors, as there is less identifying variation in the data.

Table A6 shows the first-stage regression results with the additional data from Acemoglu et al. (2005) without or with only one of the other robustness checks. Panels A, B, and C correspond to the same panels in Table 2, except that they include this additional data. In general the results are not much stronger, and in some cases weaker, than with the original data.

Tables A7 and A8 check the robustness of the first stage using alternate measures of institutions – Constraint on Executive in 1990 and Law and Order Tradition in 1995 – applying the first two checks simultaneously. These results show that mortality is still not a robust predictor of either of these measures, although it does a slightly better job with the Law and Order Tradition measure, than with the Constraint on Executive measure, where the correlation changes direction in most of the specifications.

Table A9 presents estimates of the reduced-form second-stage equation of log GDP per capita on log mortality, producing the $\pi = \alpha\beta$ coefficient mentioned on page 9. In general the robustness checks lower the magnitude and significance of the coefficient on log mortality, but by less than in the first-stage, β. Since the IV estimate $\alpha = \pi / \beta$ this tends to make the estimated effect of institutions on log GDP per capita larger than without the checks. Note also that the coefficients of the campaign indicator are generally smaller than in the first stage, which suggests that campaign rates were more likely taken from countries with poor property-rights institutions than countries with low GDP per capita. Table A10 presents the coefficients for the two-stage least squares estimates using Wald statistics. Note that in the presence of a weak instrument, the coefficients and standard errors, based on Wald statistics, are biased and inconsistent.

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* Source brought to attention in AJR's (2005) Response, along with Barfour (1845), Cantlie (1974), and Tulloch (1847) mentioned in the main text.

APPENDIX TABLE A2: POSSIBLE RATES USING AJR'S BENCHMARKING SYSTEM WITH NAVAL STATION DATA

Naval Station	Naval Station Rate	Latin American Station Ratio	Benchmarked Soldier Country	Benchmarked Soldier Rate	Inferred Rate for Low Mortality Region	Scaling Factor for Bishop Rates
Formula	Rate 1	= 7.7/ Rate 1		Rate 2	= Ratio x Rate 2	= Inferred Rate / 16.7
	(1)	(2)		(3)	(4)	(5)
African Station	54.4	0.142	Sierra Leone	483	68.9	4.12
African Station	54.4	0.142	Gold Coast	668	94.9	5.68
Mediterranean Station	9.3	0.828	Gibraltar	21.4	17.7	1.06
Mediterranean Station	9.3	0.828	Malta	16.3	13.5	0.81
Home Station	9.8	0.786	England	15.3	12	0.72
East Indian Station	15.1	0.51	India	48.63	24.8	1.49
West Indian Station	18.1	0.425	Trinidad & Tobago	85	36.2	2.17
West Indian Station	18.1	0.425	Jamaica	130	55.3	3.31

Naval station rates are taken from Curtin (1964, p. 486). Benchmarked soldier rates from AJR (2001), except for Gibraltar and England, which are from Curtin (1989, pp. 7-8), Table 1.1., used by AJR in the first step of their data construction. The first line, combining the "African Station" rate with the "Sierra Leone" rate gives the calculation used by AJR. Other lines use the same formula using different stations and countries. "Latin American Station Ratio" gives the ratio of the mortality rate in the "Latin American Station" of 7.7 to the "Naval Station Rate" listed in column 1. Since the "Latin American Station" presumably refers to a low mortality region in Gutierrez (1986), the "Inferred Rate for Low Mortality Region" is computed by taking this ratio and multiplying it by the "Benchmarked Soldier Rate," of which there are often several possible alternatives. The "Scaling Factor for Bishop Rates" is the ratio of inferred rate to the actual bishop mortality rate in the low-temperature region of 16.7.

TABLE A3: MEANS AND CORRELATIONS OF MAIN VARIABLES

	Campaign Indicator	Laborer Indicator	Log Mortality	Expropriation Risk	Log GDP per Capita
Panel A: Original Sample (64 countries)					
Mean	0.66	0.06	4.65	6.52	8.05
Standard Deviation	0.48	0.24	1.25	1.47	1.05
			Correlation Matrix		
Campaign Indicator	1.00				
Laborer Indicator	-0.36	1.00			
Log Mortality	0.46	0.12	1.00		
Expropriation Risk	-0.32	-0.23	-0.52	1.00	
Log GDP per capita	-0.31	-0.29	-0.68	0.72	1.00
<u>Omitted Variable Bias Estimates</u>					
Coefficient on Log Mortality	0.18	0.02	Total		
First-stage	-0.13	-0.04	-0.16		
Second-stage reduced form	-0.05	-0.03	-0.08		
Panel B: Non-conjectured sample (28 countries)					
Mean	0.54	0.07	4.64	6.70	7.89
Standard Deviation	0.51	0.26	1.54	1.60	1.13
			Correlation Matrix		
Campaign Indicator	1.00				
Laborer Indicator	-0.30	1.00			
Log Mortality	0.53	0.11	1.00		
Expropriation Risk	-0.46	-0.24	-0.57	1.00	
Log GDP per capita	-0.55	-0.16	-0.70	0.76	1.00
<u>Omitted Variable Bias Estimates</u>					
Coefficient on Log Mortality	0.18	0.02	Total		
First-stage	-0.20	-0.03	-0.24		
Second-stage reduced form	-0.14	-0.02	-0.15		

The omitted variable estimates gives the predicted bias from not including the indicator variables in the regression equations. The coefficient on log mortality gives the coefficient of a simple regression of the indicator variable, *I*, on log mortality, *m*, given by *corr(I,m)*std(I)/std(m)*, where *corr* is correlation, and *std* is the standard deviation. According to standard formulas given in Wooldridge (2001). the omitted variable bias is determined by multiplying this coefficient by the corresponding coefficient for the indicator variables in Panels C and D of Table A4 for the first stage and A9 for the second-stage reduced form. Note that the total bias in panel A gives the difference between the log mortality coefficients in column 1 of Panels A and C, while the total bias in panel B gives the difference in the log mortality coefficients in column 1 of Panels B and D.

APPENDIX TABLE A4: FIRST STAGE ESTIMATES WITH ALL COEFFICIENTS REPORTED
(Dependent Variable: Expropriation Risk)

Control Variables	No Controls	Latitude Control	Without Neo-Europes	Continent indicators	Continents & Latitude	Percent European, 1975	Malaria in 1994
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Original Data (64 countries, 36 mortality rates)							
Log mortality (β)	-0.61	-0.52	-0.40	-0.44	-0.35	-0.42	-0.52
	(0.17)	(0.19)	(0.17)	(0.20)	(0.21)	(0.19)	(0.22)
Latitude		2.01			2.00		
		(1.45)			(1.50)		
Asia				0.33	0.47		
				(0.49)	(0.53)		
Africa				-0.27	-0.26		
				(0.33)	(0.31)		
"Other" Continent				1.23	1.05		
				(0.84)	(0.85)		
Percent European, 1975						0.02	
						(0.01)	
Malaria in 1994							-0.44
							(0.51)
Constant	9.37	8.56	8.21	8.57	7.77	8.19	9.13
	(0.80)	(1.04)	(0.79)	(0.95)	(1.08)	(0.95)	(0.94)
Number of countries	64	64	60	64	64	64	62
Number of rates/clusters	36	36	33	36	36	36	35
R-squared	0.27	0.30	0.13	0.31	0.33	0.34	0.29
Panel B: Removing conjectured mortality rates (28 countries and mortality rates)							
Log mortality (β)	-0.59	-0.42	-0.32	-0.31	-0.22	-0.29	-0.38
	(0.19)	(0.22)	(0.19)	(0.20)	(0.23)	(0.21)	(0.24)
Latitude		3.34			2.32		
		(1.63)			(1.52)		
Asia				-1.32	-0.91		
				(0.68)	(0.75)		
Africa				-2.04	-1.81		
				(0.55)	(0.43)		
"Other" Continent				-0.29	-0.38		
				(1.06)	(0.99)		
Percent European, 1975						0.02	
						(0.01)	
Malaria in 1994							-1.07
							(0.64)
Constant	9.44	7.93	7.91	9.55	8.43	7.65	8.95
	(0.93)	(1.23)	(0.87)	(0.93)	(1.34)	(1.05)	(1.02)
Number of countries	28	28	25	28	28	28	28
Number of rates/clusters	28	28	25	28	28	28	28
R-squared	0.32	0.40	0.14	0.52	0.55	0.49	0.37

APPENDIX TABLE A4: FIRST STAGE ESTIMATES WITH ALL COEFFICIENTS REPORTED
(Dependent Variable: Expropriation Risk)

Control Variables	No Controls (1)	Latitude Control (2)	Without Neo-Europes (3)	Continent indicators (4)	Continents & Latitude (5)	Percent European, 1975 (6)	Malaria in 1994 (7)
Panel C: Removing conjectured mortality rates (28 countries and mortality rates)							
Log mortality (β)	-0.45	-0.39	-0.31	-0.37	-0.30	-0.27	-0.36
	(0.18)	(0.20)	(0.17)	(0.22)	(0.23)	(0.19)	(0.21)
Campaign Indicator	-0.72	-0.71	-0.43	-0.61	-0.59	-0.72	-0.85
	(0.46)	(0.46)	(0.42)	(0.49)	(0.49)	(0.43)	(0.52)
Laborer Indicator	-1.61	-1.39	-1.34	-1.45	-1.20	-1.44	-1.56
	(0.89)	(0.91)	(0.89)	(0.93)	(0.94)	(0.92)	(0.99)
Latitude		1.46			1.49		
		(1.31)			(1.43)		
Asia				0.22	0.32		
				(0.49)	(0.51)		
Africa				-0.08	-0.11		
				(0.35)	(0.35)		
"Other" Continent				0.95	0.83		
				(0.90)	(0.91)		
Percent European, 1975						0.01	
						(0.01)	
Malaria in 1994							-0.36
							(0.44)
Constant	9.18	8.60	8.16	8.69	8.08	8.07	9.02
	(0.73)	(0.94)	(0.74)	(0.92)	(1.06)	(0.85)	(0.83)
Number of countries	64	64	60	64	64	64	62
Number of rates/clusters	36	36	33	36	36	36	35
R-squared	0.34	0.35	0.19	0.35	0.36	0.40	0.36
Panel D: Removing conjectured mortality and adding campaign and laborer indicators (28 countries and mortality rates)							
Log mortality (β)	-0.35	-0.21	-0.18	-0.25	-0.14	-0.20	-0.22
	(0.22)	(0.25)	(0.22)	(0.23)	(0.26)	(0.23)	(0.26)
Campaign Indicator	-1.15	-1.17	-0.81	-0.55	-0.65	-0.66	-1.11
	(0.57)	(0.52)	(0.49)	(0.51)	(0.50)	(0.51)	(0.52)
Laborer Indicator	-1.88	-1.33	-1.50	-1.04	-0.65	-1.34	-1.52
	(0.67)	(0.68)	(0.65)	(0.72)	(0.81)	(0.66)	(0.74)
Latitude		3.00			2.46		
		(1.61)			(1.61)		
Asia				-1.18	-0.72		
				(0.66)	(0.70)		
Africa				-1.70	-1.48		
				(0.54)	(0.45)		
"Other" Continent				-0.32	-0.42		
				(1.12)	(1.05)		
Percent European, 1975						0.02	
						(0.01)	
Malaria in 1994							-0.75
							(0.67)
Constant	9.09	7.73	7.81	9.42	8.20	7.75	8.77
	(0.91)	(1.24)	(0.88)	(0.97)	(1.39)	(1.03)	(0.99)
Number of countries	28	28	25	28	28	28	28
Number of rates/clusters	28	28	25	28	28	28	28
R-squared	0.43	0.49	0.26	0.54	0.57	0.53	0.45

APPENDIX TABLE A4: FIRST STAGE ESTIMATES WITH ALL COEFFICIENTS REPORTED
(Dependent Variable: Expropriation Risk)

Control Variables	No Controls (1)	Latitude Control (2)	Without Neo-Europes (3)	Continent indicators (4)	Continents & Latitude (5)	Percent European, 1975 (6)	Malaria in 1994 (7)
Panel E: Removing conjectured rates, adding campaign and laborer indicators, and revising with new data (34 countries and rate							
Log mortality (β)	-0.41	-0.30	-0.19	-0.31	-0.19	-0.24	-0.30
	(0.20)	(0.21)	(0.21)	(0.21)	(0.22)	(0.22)	(0.23)
Campaign Indicator	-1.08	-1.12	-0.89	-0.60	-0.72	-0.80	-1.07
	(0.51)	(0.47)	(0.47)	(0.51)	(0.53)	(0.50)	(0.49)
Laborer Indicator	-1.80	-1.36	-1.59	-1.08	-0.59	-1.48	-1.53
	(0.60)	(0.67)	(0.62)	(0.71)	(0.87)	(0.64)	(0.72)
Latitude		2.58			3.11		
		(1.64)			(1.65)		
Asia				-0.03	0.41		
				(0.68)	(0.65)		
Africa				-0.87	-0.70		
				(0.59)	(0.56)		
"Other" Continent				0.61	0.44		
				(0.96)	(0.90)		
Percent European, 1975						0.02	
						(0.01)	
Malaria in 1994							-0.64
							(0.64)
Constant	9.30	8.26	7.96	8.92	7.61	8.09	9.08
	(0.83)	(1.16)	(0.91)	(1.10)	(1.26)	(1.05)	(0.87)
Number of countries	34	34	30	34	34	34	32
Number of rates/clusters	34	34	30	34	34	34	32
R-squared	0.42	0.46	0.26	0.47	0.52	0.50	0.46

Clustered standard errors in parentheses. Panels A, B, and C correspond to Panels C, D, and E in Table 2. See tables 1 and 2 and the text for more detail.

APPENDIX TABLE A5: "EARLIEST AVAILABLE DATA," AND AVERAGING MALI RATES

(Dependent Variable: Expropriation Risk)

Control Variables	No Controls (1)	Latitude Control (2)	Without Neo-Europes (3)	Continent indicators (4)	Continents indicators & Latitude (5)	Percent European, 1975 (6)	Malaria in 1994 (7)
Panel A: Original data (64 countries and 36 mortality rates)							
Log mortality (β)	-0.61	-0.52	-0.40	-0.44	-0.35	-0.42	-0.52
(heteroscedastic-clustered s.e.)	(0.17)	(0.19)	(0.17)	(0.20)	(0.21)	(0.19)	(0.22)
p -value of log mortality	0.001	0.01	0.03	0.04	0.11	0.03	0.02
p -value of controls	-	0.17	-	0.40	0.34	0.02	0.40
Panel B: Removing conjectured mortality rates only (28 countries and mortality rates)							
Log mortality (β)	-0.59	-0.42	-0.32	-0.31	-0.22	-0.29	-0.38
(heteroscedastic-clustered s.e.)	(0.19)	(0.22)	(0.19)	(0.20)	(0.23)	(0.21)	(0.24)
p -value of log mortality	0.005	0.07	0.10	0.13	0.35	0.19	0.12
p -value of controls	-	0.05	-	0.01	0.002	0.02	0.10
Panel C: Removing conjectured mortality rates and Congo and Kenya (26 countries and mortality rates)							
Log mortality (β)	-0.57	-0.42	-0.31	-0.31	-0.22	-0.28	-0.41
(heteroscedastic-clustered s.e.)	(0.19)	(0.22)	(0.19)	(0.20)	(0.24)	(0.22)	(0.25)
p -value of log mortality	0.007	0.07	0.12	0.13	0.36	0.21	0.11
p -value of controls	-	0.11	-	0.02	0.01	0.02	0.26
Panel D: Replication of AJR "Earliest Avaliable Data" robustness check (30 countries and 28 mortality rates)							
Log mortality (β)	-0.68	-0.60	-0.44	-0.41	-0.34	-0.43	-0.50
(heteroscedastic s.e.)	(0.22)	(0.25)	(0.24)	(0.24)	(0.28)	(0.27)	(0.26)
p -value of log mortality	0.004	0.02	0.08	0.10	0.22	0.13	0.06
p -value of controls	-	0.33	-	0.04	0.04	0.05	0.10
Panel E: Removing conjectured mortality rates and using the average of rates over Mali (28 countries and mortality rates)							
Log mortality (β)	-0.60	-0.39	-0.29	-0.28	-0.16	-0.24	-0.33
(heteroscedastic-clustered s.e.)	(0.23)	(0.26)	(0.21)	(0.23)	(0.27)	(0.24)	(0.29)
p -value of log mortality	0.02	0.15	0.19	0.24	0.57	0.33	0.26
p -value of controls	-	0.06	-	0.01	0.00	0.01	0.07

Unlike Panel B, without conjectured rates, Panel D retains Niger, Burkina Faso, Gabon, Guyana, and Singapore, while it omits Ghana, Nigeria, and Kenya . See text and Tables 1 and 2 for more details.

TABLE A6: FIRST STAGE ESTIMATES REVISING WITH ADDITIONAL DATA FROM ACEMOGLU ET AL. (2005)
(Dependent Variable: Expropriation Risk)

Control Variables	No Controls (1)	Latitude Control (2)	Without Neo-Europes (3)	Continent indicators (4)	Continent indicators & Latitude (5)	Percent European, 1975 (6)	Malaria in 1994 (7)
Panel A: Revising with new data only (64 countries, 41 mortality rates)							
Log mortality (β)	-0.59	-0.48	-0.34	-0.38	-0.28	-0.36	-0.44
(heteroscedastic-clustered s.e.)	(0.17)	(0.19)	(0.17)	(0.20)	(0.21)	(0.19)	(0.21)
p -value of log mortality	0.001	0.02	0.05	0.07	0.17	0.06	0.05
p -value of controls	-	0.11	-	0.17	0.13	0.01	0.188
Panel B: Removing conjectured rates and revising with new data (34 countries and rates)							
Log mortality (β)	-0.62	-0.50	-0.35	-0.36	-0.27	-0.35	-0.42
(heteroscedastic s.e.)	(0.18)	(0.21)	(0.19)	(0.20)	(0.21)	(0.22)	(0.22)
p -value of log mortality	0.002	0.02	0.08	0.08	0.22	0.12	0.07
p -value of controls	-	0.10	-	0.02	0.011	0.016	0.075
Panel C: Adding campaign and laborer indicators and revising with new data (64 countries, 41 mortality rates)							
Log mortality (β)	-0.44	-0.37	-0.27	-0.34	-0.27	-0.24	-0.34
(heteroscedastic-clustered s.e.)	(0.17)	(0.19)	(0.17)	(0.20)	(0.21)	(0.18)	(0.20)
p -value of log mortality	0.015	0.05	0.12	0.09	0.19	0.20	0.11
p-value of indicators	0.11	0.16	0.26	0.25	0.36	0.15	0.20
p -value of controls	-	0.20	-	0.58	0.45	0.01	0.318

Additional data shown in Appendix Table A1. See text and Table 1 and 2 for more detail.

APPENDIX TABLE A7: FIRST STAGE ESTIMATES USING CONSTRAINT ON EXECUTIVE IN 1990 AS AN INSTITUTIONS MEASURE

Control Variables	No Controls	Latitude Control	Without Neo-Europes	Continent indicators	Continents & Latitude	Percent European, 1975	Malaria in 1994
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Original data (34 countries, 60 mortality rates)							
Log mortality (β)	-0.97	-0.93	-0.86	-0.47	-0.46	-0.57	-0.39
(heteroscedastic-clustered s.e.)	(0.21)	(0.26)	(0.27)	(0.29)	(0.32)	(0.25)	(0.26)
p -value of log mortality	0.000	0.001	0.003	0.12	0.16	0.03	0.15
p -value of controls	-	0.70	-	0.000	0.000	0.000	0.001
Panel B: Removing conjectured mortality, campaign and laborer indicators, and new data (31 countries and mortality rates)							
Log mortality (β)	-0.17	0.03	-0.03	-0.11	0.09	-0.01	-0.04
(heteroscedastic s.e.)	(0.30)	(0.34)	(0.34)	(0.32)	(0.36)	(0.33)	(0.28)
p -value of log mortality	0.57	0.93	0.94	0.74	0.80	0.99	0.89
p-value of indicators	0.000	0.000	0.000	0.004	0.000	0.001	0.000
p -value of controls	-	0.03	-	0.40	0.26	0.03	0.54

Constraint on Executive in 1990 is on a scale from 1 to 7 with a higher score indicating more constraints, taken from the Polity III data set. Sample does not include the Bahamas, Hong Kong, Malta and Sierra Leone. See text and other tables for additional information.

APPENDIX TABLE A9: FIRST STAGE ESTIMATES USING LAW AND ORDER TRADITION IN 1995 ASAN INSTITUTIONS MEASURE

Control Variables	No Controls	Latitude Control	Without Neo-Europes	Continent indicators	Continents & Latitude	Percent European, 1975	Malaria in 1994
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Original data (63 countries, 36 mortality rates)							
Log mortality (β)	-0.54	-0.42	-0.41	-0.39	-0.29	-0.41	-0.46
(heteroscedastic-clustered s.e.)	(0.13)	(0.15)	(0.14)	(0.14)	(0.15)	(0.14)	(0.16)
p -value of log mortality	0.000	0.01	0.006	0.009	0.06	0.007	0.007
p -value of controls	-	0.04	-	0.008	0.002	0.10	0.49
Panel B: Removing conjectured mortality, correcting Mali, campaign and laborer indicators (28 countries and mortality rates)							
Log mortality (β)	-0.34	-0.24	-0.19	-0.19	-0.08	-0.17	-0.25
(heteroscedastic s.e.)	(0.17)	(0.18)	(0.17)	(0.17)	(0.18)	(0.16)	(0.20)
p -value of log mortality	0.05	0.19	0.26	0.28	0.68	0.32	0.22
p-value of indicators	0.41	0.33	0.56	0.75	0.30	0.79	0.54
p -value of controls	-	0.08	-	0.005	0.005	0.003	0.49

Law and Order Tradition in 1995 is measured on a scale from 0 to 6, with a higher score meaning more law and order, from Political Risk Services. Sample does not include El Salvador. See text and other tables for additional information.

APPENDIX TABLE A9: REDUCED-FORM RELATIONSHIP BETWEEN LOG GDP PER CAPITA AND MORTALITY
(Dependent Variable: Log GDP per Capita)

Control Variables	No Controls	Latitude Control	Without Neo-Europes	Continent indicators	Continents & Latitude	Percent European, 1975	Malaria in 1994
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Original Data (64 countries, 36 mortality rates)							
Log mortality (π)	-0.57	-0.50	-0.49	-0.43	-0.38	-0.39	-0.32
	(0.07)	(0.10)	(0.09)	(0.13)	(0.15)	(0.11)	(0.12)
Latitude		1.51			1.15		
		(0.91)			(0.93)		
Asia				-0.68	-0.60		
				(0.35)	(0.39)		
Africa				-0.74	-0.73		
				(0.28)	(0.26)		
"Other" Continent				0.28	0.17		
				(0.29)	(0.24)		
Percent European, 1975						0.01	
						(0.00)	
Malaria in 1994							-1.06
							(0.33)
Constant	10.70	10.09	10.30	10.43	9.97	9.58	9.97
	(0.40)	(0.64)	(0.49)	(0.58)	(0.79)	(0.63)	(0.52)
Number of countries	64	64	60	64	64	64	62
Number of rates/clusters	36	36	33	36	36	36	35
R-squared	0.46	0.49	0.36	0.57	0.58	0.59	0.58
Panel B: Removing conjectured mortality rates (28 countries and mortality rates)							
Log mortality (π)	-0.52	-0.34	-0.37	-0.35	-0.28	-0.27	-0.27
	(0.10)	(0.12)	(0.10)	(0.14)	(0.16)	(0.11)	(0.14)
Latitude		3.32			1.91		
		(1.14)			(1.24)		
Asia				-1.50	-1.16		
				(0.32)	(0.38)		
Africa				-1.33	-1.14		
				(0.43)	(0.30)		
"Other" Continent				-0.10	-0.17		
				(0.29)	(0.22)		
Percent European, 1975						0.02	
						(0.00)	
Malaria in 1994							-1.28
							(0.47)
Constant	10.28	8.78	9.46	10.56	9.64	8.84	9.69
	(0.56)	(0.84)	(0.62)	(0.57)	(0.98)	(0.66)	(0.60)
Number of countries	28	28	25	28	28	28	28
Number of rates/clusters	28	28	25	28	28	28	28
R-squared	0.49	0.64	0.35	0.73	0.77	0.71	0.62

APPENDIX TABLE A9: REDUCED-FORM RELATIONSHIP BETWEEN LOG GDP PER CAPITA AND MORTALITY
(Dependent Variable: Log GDP per Capita)

Control Variables	No Controls (1)	Latitude Control (2)	Without Neo-Europes (3)	Continent indicators (4)	Continents & Latitude (5)	Percent European, 1975 (6)	Malaria in 1994 (7)
Panel C: Removing conjectured mortality rates (28 countries and mortality rates)							
Log mortality (π)	-0.49	-0.45	-0.44	-0.39	-0.36	-0.32	-0.24
	(0.10)	(0.12)	(0.11)	(0.14)	(0.17)	(0.11)	(0.15)
Campaign Indicator	-0.30	-0.29	-0.19	-0.33	-0.32	-0.30	-0.44
	(0.32)	(0.32)	(0.32)	(0.30)	(0.31)	(0.25)	(0.31)
Laborer Indicator	-1.13	-0.98	-1.03	-0.94	-0.82	-0.97	-0.76
	(0.37)	(0.39)	(0.36)	(0.37)	(0.46)	(0.33)	(0.36)
Latitude		1.05			0.77		
		(0.90)			(1.04)		
Asia				-0.74	-0.69		
				(0.34)	(0.36)		
Africa				-0.61	-0.62		
				(0.29)	(0.29)		
"Other" Continent				0.12	0.05		
				(0.31)	(0.27)		
Percent European, 1975						0.01	
						(0.00)	
Malaria in 1994							-1.03
							(0.37)
Constant	10.60	10.18	10.26	10.51	10.19	9.54	9.91
	(0.39)	(0.63)	(0.48)	(0.55)	(0.84)	(0.59)	(0.50)
Number of countries	64	64	60	64	64	64	62
Number of rates/clusters	36	36	33	36	36	36	35
R-squared	0.52	0.53	0.42	0.60	0.61	0.63	0.62
Panel D: Removing conjectured mortality and adding campaign and laborer indicators (28 countries and mortality rates)							
Log mortality (π)	-0.36	-0.18	-0.27	-0.31	-0.20	-0.23	-0.14
	(0.14)	(0.14)	(0.14)	(0.16)	(0.18)	(0.14)	(0.16)
Campaign Indicator	-0.78	-0.80	-0.59	-0.38	-0.48	-0.36	-0.71
	(0.50)	(0.39)	(0.45)	(0.36)	(0.37)	(0.40)	(0.38)
Laborer Indicator	-0.92	-0.27	-0.72	-0.49	-0.11	-0.46	-0.32
	(0.40)	(0.39)	(0.35)	(0.32)	(0.44)	(0.30)	(0.38)
Latitude		3.55			2.36		
		(1.13)			(1.58)		
Asia				-1.41	-0.96		
				(0.33)	(0.48)		
Africa				-1.13	-0.92		
				(0.38)	(0.31)		
"Other" Continent				-0.12	-0.21		
				(0.31)	(0.24)		
Percent European, 1975						0.02	
						(0.00)	
Malaria in 1994							-1.27
							(0.44)
Constant	10.04	8.44	9.38	10.47	9.29	8.88	9.49
	(0.55)	(0.80)	(0.60)	(0.60)	(1.13)	(0.62)	(0.55)
Number of countries	28	28	25	28	28	28	28
Number of rates/clusters	28	28	25	28	28	28	28
R-squared	0.58	0.72	0.43	0.74	0.79	0.73	0.68

APPENDIX TABLE A9: REDUCED-FORM RELATIONSHIP BETWEEN LOG GDP PER CAPITA AND MORTALITY
(Dependent Variable: Log GDP per Capita)

Control Variables	No Controls (1)	Latitude Control (2)	Without Neo-Europes (3)	Continent indicators (4)	Continents & Latitude (5)	Percent European, 1975 (6)	Malaria in 1994 (7)
Panel E: Removing conjectured rates, adding campaign and laborer indicators, and revising with new data (34 countries and r							
Log mortality (π)	-0.30	-0.17	-0.20	-0.24	-0.13	-0.18	-0.11
	(0.13)	(0.14)	(0.14)	(0.16)	(0.16)	(0.14)	(0.15)
Campaign Indicator	-1.12	-1.17	-1.03	-0.79	-0.91	-0.93	-0.83
	(0.47)	(0.39)	(0.45)	(0.48)	(0.48)	(0.47)	(0.36)
Laborer Indicator	-1.24	-0.75	-1.14	-0.82	-0.36	-1.02	-0.39
	(0.39)	(0.40)	(0.38)	(0.45)	(0.51)	(0.41)	(0.38)
Latitude		2.93			2.92		
		(1.24)			(1.45)		
Asia				-0.46	-0.04		
				(0.57)	(0.62)		
Africa				-0.66	-0.50		
				(0.46)	(0.44)		
"Other" Continent				0.32	0.16		
				(0.41)	(0.36)		
Percent European, 1975						0.01	
						(0.00)	
Malaria in 1994							-1.39
							(0.43)
Constant	10.05	8.87	9.42	9.99	8.75	9.19	9.56
	(0.49)	(0.85)	(0.59)	(0.70)	(1.01)	(0.66)	(0.50)
Number of countries	34	34	30	34	34	34	32
Number of rates/clusters	34	34	30	34	34	34	32
R-squared	0.55	0.64	0.42	0.59	0.66	0.61	0.67

Clustered standard errors in parentheses. See Table 1 and the text for more detail.

APPENDIX TABLE A10: INSTRUMENTAL VARIABLE ESTIMATES
(Dependent Variable: Log GDP per Capita)

Control Variables	No Controls (1)	Latitude Control (2)	Without Neo-Europes (3)	Continent indicators (4)	Continents & Latitude (5)	Percent European, 1975 (6)	Malaria in 1994 (7)
Panel A: Original Data (64 countries, 36 mortality rates)							
Expropriation Risk (α)	0.93	0.96	1.24	0.97	1.07	0.92	0.62
	(0.20)	(0.27)	(0.44)	(0.36)	(0.53)	(0.31)	(0.19)
Latitude		-0.42			-0.99		
		(1.33)			(1.91)		
Asia				-1.00	-1.10		
				(0.40)	(0.54)		
Africa				-0.47	-0.45		
				(0.34)	(0.39)		
"Other" Continent				-0.92	-0.95		
				(1.00)	(1.14)		
Percent European, 1975						0.00	
						(0.01)	
Malaria in 1994							-0.79
							(0.42)
Constant	1.99	1.86	0.08	2.09	1.62	2.05	4.34
	(1.35)	(1.61)	(2.84)	(2.37)	(3.25)	(1.96)	(1.36)
Number of countries	64	64	60	64	64	64	62
Number of rates/clusters	36	36	33	36	36	36	35
Panel B: Removing conjectured mortality rates (28 countries and mortality rates)							
Expropriation Risk (α)	0.87	0.82	1.15	1.12	1.25	0.94	0.70
	(0.22)	(0.34)	(0.61)	(0.63)	(1.18)	(0.62)	(0.34)
Latitude		0.58			-0.97		
		(1.96)			(4.09)		
Asia				-0.02	-0.03		
				(1.07)	(1.18)		
Africa				0.96	1.11		
				(1.49)	(2.25)		
"Other" Continent				0.23	0.30		
				(1.03)	(1.16)		
Percent European, 1975						0.00	
						(0.02)	
Malaria in 1994							-0.53
							(0.73)
Constant	2.06	2.27	0.37	-0.17	-0.86	1.63	3.46
	(1.49)	(1.95)	(3.91)	(5.26)	(8.59)	(3.87)	(2.52)
Number of countries	28	28	25	28	28	28	28
Number of rates/clusters	28	28	25	28	28	28	28

APPENDIX TABLE A10: INSTRUMENTAL VARIABLE ESTIMATES
(Dependent Variable: Log GDP per Capita)

Control Variables	No Controls (1)	Latitude Control (2)	Without Neo-Europes (3)	Continent indicators (4)	Continents & Latitude (5)	Percent European, 1975 (6)	Malaria in 1994 (7)
Panel C: Removing conjectured mortality rates (28 countries and mortality rates)							
Expropriation Risk (α)	1.09	1.15	1.45	1.06	1.19	1.18	0.66
	(0.38)	(0.51)	(0.71)	(0.49)	(0.73)	(0.73)	(0.34)
Campaign Indicator	0.49	0.52	0.43	0.32	0.38	0.55	0.12
	(0.61)	(0.71)	(0.68)	(0.48)	(0.66)	(0.86)	(0.47)
Laborer Indicator	0.63	0.63	0.91	0.59	0.61	0.73	0.27
	(1.46)	(1.55)	(1.94)	(1.40)	(1.59)	(1.83)	(0.96)
Latitude		-0.64			-1.00		
		(1.55)			(1.90)		
Asia				-0.97	-1.07		
				(0.43)	(0.55)		
Africa				-0.52	-0.49		
				(0.31)	(0.38)		
"Other" Continent				-0.89	-0.93		
				(1.07)	(1.25)		
Percent European, 1975						0.00	
						(0.01)	
Malaria in 1994							-0.79
							(0.47)
Constant	0.57	0.27	-1.57	1.28	0.61	0.00	3.97
	(2.94)	(3.63)	(5.04)	(3.53)	(5.00)	(5.17)	(2.66)
Number of countries	64	64	60	64	64	64	62
Number of rates/clusters	36	36	33	36	36	36	35
Panel D: Removing conjectured mortality and adding campaign and laborer indicators (28 countries and mortality rates)							
Expropriation Risk (α)	1.02	0.90	1.51	1.23	1.44	1.13	0.62
	(0.52)	(0.93)	(1.65)	(1.00)	(2.61)	(1.15)	(0.67)
Campaign Indicator	0.39	0.25	0.62	0.30	0.46	0.39	-0.02
	(0.92)	(1.37)	(1.68)	(0.97)	(2.18)	(1.04)	(0.99)
Laborer Indicator	0.99	0.92	1.55	0.79	0.82	1.06	0.63
	(1.46)	(1.53)	(3.04)	(1.69)	(2.21)	(1.95)	(1.18)
Latitude		0.85			-1.17		
		(3.78)			(8.17)		
Asia				0.04	0.07		
				(1.35)	(1.79)		
Africa				0.95	1.21		
				(1.84)	(3.86)		
"Other" Continent				0.28	0.39		
				(1.19)	(1.64)		
Percent European, 1975						-0.01	
						(0.03)	
Malaria in 1994							-0.80
							(0.89)
Constant	0.79	1.48	-2.41	-1.08	-2.49	0.09	4.05
	(4.04)	(6.32)	(11.70)	(8.54)	(19.61)	(7.90)	(5.43)
Number of countries	28	28	25	28	28	28	28
Number of rates/clusters	28	28	25	28	28	28	28

APPENDIX TABLE A10: INSTRUMENTAL VARIABLE ESTIMATES
(Dependent Variable: Log GDP per Capita)

Control Variables	No Controls	Latitude Control	Without Neo-Europes	Continent indicators	Continents & Latitude	Percent European, 1975	Malaria in 1994
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel E: Removing conjectured rates, adding campaign and laborer indicators, and revising with new data (34 countries and rat							
Expropriation Risk (α)	0.73	0.58	1.03	0.79	0.69	0.75	0.38
	(0.28)	(0.37)	(0.91)	(0.49)	(0.83)	(0.58)	(0.36)
Campaign Indicator	-0.33	-0.52	-0.11	-0.32	-0.41	-0.33	-0.43
	(0.55)	(0.65)	(0.97)	(0.56)	(0.87)	(0.66)	(0.61)
Laborer Indicator	0.07	0.05	0.50	0.03	0.05	0.09	0.19
	(0.87)	(0.77)	(1.76)	(0.94)	(0.81)	(1.13)	(0.71)
Latitude		1.43			0.76		
		(1.62)			(3.47)		
Asia				-0.43	-0.33		
				(0.41)	(0.72)		
Africa				0.03	-0.01		
				(0.55)	(0.65)		
"Other" Continent				-0.16	-0.15		
				(0.73)	(0.71)		
Percent European, 1975						0.00	
						(0.01)	
Malaria in 1994							-1.15
							(0.55)
Constant	3.24	4.05	1.18	2.96	3.47	3.13	6.13
	(2.21)	(2.58)	(6.50)	(3.72)	(5.48)	(4.10)	(2.98)
Number of countries	34	34	30	34	34	34	32
Number of rates/clusters	34	34	30	34	34	34	32

Estimated via two-stage least squares. Clustered standard errors in parentheses: as these are based on Wald statistics, which are inaccurate when the instrumental variable is weak. The coefficients on all the variables are also biased and inconsistent in the presence of a weak instrument (Staiger and Stock, 1997). See Table 3 and the text for more detail.

FIGURE A1: ASSIGNMENT OF MORTALITY RATES TO LATIN AMERICA USING "BENCHMARKING"