

RA **Economics and institutional change**

Is Africa Different? Historical Conflict and State Development

Mark Dincecco
James Fenske
Massimiliano Gaetano Onorato

ISSN 2279-6894
IMT LUCCA EIC WORKING PAPER SERIES #08/2015
© IMT Institute for Advanced Studies Lucca
Piazza San Ponziano 6, 55100 Lucca

Research Area
Economics and institutional change

Is Africa Different? Historical Conflict and State Development

Mark Dincecco
University of Michigan

James Fenske
University of Oxford

Massimiliano Gaetano Onorato
IMT Institute for Advanced Studies Lucca

Is Africa Different?

Historical Conflict and State Development*

Mark Dincecco[†] James Fenske[‡] Massimiliano Gaetano Onorato[§]

July 22, 2015

Abstract

We show that the consequences of historical warfare for state development differ for Sub-Saharan Africa. We identify the locations of more than 1,500 conflicts in Africa, Asia, and Europe from 1400 to 1799. We find that historical warfare predicts common-interest states defined by high fiscal capacity and low civil conflict across much of the Old World. For Sub-Saharan Africa, historical warfare predicts special-interest states defined by high fiscal capacity and high civil conflict. Our results offer new evidence about where and when “war makes states.”

*We thank Idalia Bastiaens, Robert Bates, Lisa Blaydes, Catherine Boone, Peter Carroll, Gary Cox, Christian Davenport, Philip Hoffman, Nahomi Ichino, Eliana La Ferrara, David Laitin, James Morrow, Larry Neal, Amy Pond, Torsten Persson, Guido Tabellini, Jonathan Rodden, Jean-Laurent Rosenthal, Kenneth Scheve, Peter Schram, Leonard Wantchekon, Warren Whatley, and seminar participants at Bocconi, Caltech, EPSA 2015, George Mason, MPSA 2015, Michigan, Queen Mary, Stanford, and UCL for helpful comments. We thank Heather Elliott and Maiko Heller for research assistance. We thank the Department of Political Science at the University of Michigan and the National Science Foundation (grant SES-1227237) for financial support.

[†]University of Michigan; dincecco@umich.edu

[‡]University of Oxford; james.fenske@economics.ox.ac.uk

[§]IMT Lucca; m.onorato@imtlucca.it

1 Introduction

State capacity matters for economic development (Besley and Persson, 2013, Dincecco and Katz, 2014, Acemoglu et al., 2015). The success of Asian Tiger nations speaks to the economic role that states can play (Wade, 1990, Evans, 1995, Kang, 2002). By contrast, poor nations in Sub-Saharan Africa face problems of weak state infrastructure and political instability (Migdal, 1988, Herbst, 2000, Bates, 2009).

But where does state capacity come from? A large literature argues that competition between military rivals plays a key role in the development of state capacity (Tilly, 1975, 1992, Mann, 1986, Brewer, 1989, Downing, 1992, Besley and Persson, 2009). According to this account, states undertake administrative reforms that increase extractive capacity and allow them to finance military efforts. As fiscal and military strength grows, states are better able to prevent civil war.

The standard account of warfare and state development centers on European history. Yet it is not clear whether the logic of “war makes states” is universal. To illustrate, take Sub-Saharan Africa. Region-specific factors including low population density (Herbst, 2000) and colonization (Reid, 2014) may have thwarted the process by which warfare can build fiscal strength. Similarly, region-specific factors such as the transatlantic slave trade (Nunn, 2008) may have promoted the persistence of conflict. Beyond region-specific factors, the outcomes of historical warfare themselves including “bad” political institutions (Hariri, 2012), ethnic fractionalization (Whatley and Gillezeau, 2011), and lack of social trust (Nunn and Wantchekon, 2011) may have affected the state development process in Sub-Saharan Africa. For such reasons, historical warfare may not predict greater extractive capacity or less civil conflict in Sub-Saharan Africa in the ways that the standard account says that it should.

To better understand the origins of state capacity, this paper tests the relationship between historical warfare and state development across continents. We assemble new data on the locations of more than 1,500 conflicts in Africa, Asia, and Europe between 1400 and 1799. We regress modern state development on historical warfare, a benchmark set of demographic and geographic controls, and fixed effects for continents. We focus on two key state development outcomes: fiscal capacity and civil conflict.

Our results offer new evidence about where and when “war makes states.” Using the typology of Besley and Persson (2011, 2015), we find that historical warfare predicts “common-

interest” states defined by high fiscal capacity and low civil conflict across much of the Old World. For Sub-Saharan Africa, historical warfare predicts “special-interest” states defined by high fiscal capacity and high civil conflict. Our results suggest two revisions to the conventional wisdom. First, political stability does not always appear to accompany fiscal strength. Second, factors specific to Sub-Saharan Africa do not appear to wholly undermine the process by which warfare can build fiscal strength.

Our empirical strategy includes continental fixed effects and a benchmark set of demographic and geographic controls. Still, it is possible that omitted variables (e.g., proximity to waterways) that affect both historical warfare and state development explain our results. We use two strategies to test this possibility. The first strategy is to control for other observable country characteristics that are not likely to be outcomes of historical warfare themselves, including initial conditions (e.g., technological adoption), geographical features (e.g., malaria risk), colonial and legal origins, and artificial borders. We find that our results are robust to controls for these other observable characteristics. The second strategy is to test how likely it is that unobservable country characteristics explain our results. For half of the reported specifications, we find that including a “full” set of controls increases the size of our estimates. For the other half, we find that, to explain away our results, the influence of unobservable features would have to be on average many times larger than the influence of the observed controls. This strategy provides further evidence that unobservable features cannot fully explain our results. We also perform a variety of other robustness checks. For example, we show that our results are robust to sample changes (e.g., including New World conflicts and countries). Similarly, we show evidence for intermediate state development outcomes.

Finally, we test for mechanisms that may help explain why the relationship between historical warfare and state development differs for Sub-Saharan Africa. We focus on three potential outcomes of historical warfare: political institutions, ethnic fractionalization, and social trust. Our results suggest that social trust is one mechanism that may help explain why conflict persists in Sub-Saharan Africa.

The paper proceeds as follows. Section 2 presents the conceptual framework. Section 3 discusses the data. Section 4 describes the empirical strategy and main results. Section 5 performs robustness checks. Section 6 tests for mechanisms. Section 7 concludes.

2 Conceptual Framework

This section performs two tasks. First, we describe the standard account of warfare and state development in European history (Tilly, 1975, 1992). We focus on two key implications of the standard account regarding fiscal capacity and civil conflict. Second, we discuss Sub-Saharan Africa in light of the standard account. We describe contrasting views in the African history literature about whether the standard account can apply to this region. This lack of scholarly consensus motivates our empirical analysis.

2.1 Warfare and State Development

Tilly (1992, table 3.1) estimates that major powers in Europe were at war 78 to 95 percent of all years from 1500 to 1800. Rulers saw clear upsides from military victory, including royal glory, but faced few risks from defeat (Cox, 2011). Battle loss did not generally cost rulers their thrones until 1800, when Napoleon began to replace monarchs that were defeated (Hoffman, 2012). Rulers thus had incentives to launch frequent wars.

To defend against survival threats from rivals, states made fiscal innovations that secured new and more regular sources of taxation (Tilly, 1975, 1992). Mann (1986) shows that major increases in revenues in England from 1688 to 1815 correspond with the onset of wars. Genaioli and Voth (2014) find a positive and significant relationship between interstate conflicts and state consolidation in Europe between 1500 and 1800. Dincecco and Prado (2012) show that fiscal capacity today is greater for countries that fought more wars between 1816 and 1913.

The “ratchet effect” is one mechanism through which fiscal innovations may persist over time (Rasler and Thompson, 1985). Expanding and regularizing tax systems involves fixed costs. Once states have established stronger fiscal institutions, the marginal costs of sustaining them can be low. Thus, greater wartime tax revenues may not fall to pre-war levels once conflict ends. If external threats are recurrent, then fiscal capacity may increase in ratchet-like steps.

Interstate military competition may eventually create the conditions for domestic political stability (Tilly, 1992). Bates (2009) describes two mechanisms through which early modern states could reduce civil violence: repression and enticement. As fiscal and military strength grew, states were better able to impose widespread security. Monarchs could

enforce local peace agreements and demilitarize rural warlords. They could also co-opt local elites through court favors and privileges. The establishment of parliaments was another way to give local elites a stake in the state's success. Thus, we may observe the "anti-persistence" of civil conflict over the long run (Fearon and Laitin, 2014).

The standard account of warfare and state development yields two key implications. First, historical warfare should produce greater fiscal capacity today. Second, it should reduce civil conflict. Thus, in the typology of Besley and Persson (2011, 2015), the standard account implies that historical warfare should predict "common-interest" states.

2.2 Sub-Saharan Africa

A first set of views in the African history literature supports the standard account that "war makes states." Herbst (2000) argues that the consequences of warfare for state development in pre-colonial Africa were muted, not because of a flaw in the "war makes states" argument, but because there was simply less conflict than in early modern Europe. Still, Bates (2014) finds a positive relationship between military competition and state centralization in Sub-Saharan Africa during the pre-colonial period. Furthermore, there is evidence that the legacy of early political structures persists over time. Gennaioli and Rainer (2007) and Michalopoulos and Papaioannou (2013) show that state centralization in pre-colonial Africa predicts public goods provision and economic development today. Similarly, Depetris-Chauvin (2014) finds that pre-colonial state strength reduces current civil conflict in Sub-Saharan Africa. Thies (2007) shows a positive link between military rivalry and extractive capacity in Sub-Saharan Africa between 1975 and 2000.

A second set of views contends that the standard account of war-related state building cannot apply to Sub-Saharan Africa. Scholars point to at least three region-specific factors that make Sub-Saharan Africa distinct from other parts of the Old World: political geography, the transatlantic slave trade, and colonialization.

A first factor is political geography. Population density in 1500 was 14 people/sq km in Europe, 8 people/sq km in the Ottoman Empire, 13 people/sq km in China, and 46 people/sq km in Japan, but only 2 people/sq km in Sub-Saharan Africa (Herbst, 2000, table 1.1). In this land-rich but labor-scarce environment, the main goal of warfare was to capture people rather than territory. Thornton (1999, p. 16) writes: "Indeed, ownership of slaves

in Africa was virtually equivalent to owning land in Western Europe or China.” The most common type of pre-colonial conflict, called the raiding war, reflects Sub-Saharan Africa’s political geography. In contrast to the European-style campaigning war, defined by large-scale operations and set-piece battles, the raiding war was characterized by repeat assaults on the enemy (Reid, 2012). This type of warfare did not conclude with final surrender, creating the potential for open-ended conflict (Klein, 1972).

A second factor is the transatlantic slave trade. Curtin (1975) and Eltis (1987) argue that the slave trade was an outgrowth of pre-colonial conflicts over people. Others claim that the combination of the New World demand for slaves and a new gunpowder technology – known as the gun-slave cycle – increased raiding wars and slave exports (Rodney, 1972, Inikori, 1982, Law, 1991, Whatley, 2012). Fenske and Kala (2014) show that, in regions that became dependent on slave exports, disruptions to the slave trade produced short-run and long-lasting increases in intra-African conflict.

A third factor is European colonialization. The “Scramble for Africa” began in the 1880s and lasted through the start of World War I. Reid (2014) argues that there was a nineteenth-century military revolution in Sub-Saharan Africa akin to the military revolution in early modern Europe. The colonial peace prevented this revolution from running its natural course, creating conditions for persistent conflict (Reid, 2014). Another argument highlights the borders that colonial powers established, which did not correspond with pre-colonial borders. Michalopoulos and Papaioannou (2011) show that civil conflict in Africa today is greater in areas where ethnic groups were partitioned by colonizers. Similarly, Fearon and Laitin (2014) find that post-1945 civil conflict in Africa is greater in places that saw nineteenth-century colonial wars.

Political geography, the transatlantic slave trade, and colonialization are all reasons why we may not observe the “anti-persistence” of civil conflict in Sub-Saharan Africa. Beyond such region-specific factors, the outcomes of historical warfare themselves may explain why Sub-Saharan Africa may differ in this regard. A first potential outcome is “bad” political institutions. Autocracy was the traditional mode of rule for pre-colonial states outside of Europe (Hariri, 2012). Early states were either strong enough to prevent colonization, or were colonized under indirect rule, which may have strengthened local autocrats (Mamdani, 1996). Thus, early statehood can translate into autocracy today (Hariri, 2012). States that lack

democratic institutions may be more likely to witness political violence (Besley and Persson, 2011). A second potential outcome is ethnic fractionalization. Whatley and Gillezeau (2011) argue that the transatlantic slave trade made Africans more valuable as slaves than as citizen taxpayers. Thus, there was a greater incentive by social groups to conduct slave raids and less incentive to strengthen states. A key consequence of the slave trade was the creation of smaller and more independent villages, which promoted ethnic divisions (Whatley and Gillezeau, 2011). There is a large literature that links ethnic fragmentation with civil conflict (e.g., Montalvo and Reynal-Querol, 2005). A third potential outcome is a lack of social trust. Besley and Reynal-Querol (2014) argue that social groups with a history of fighting can be less trustful of each other. A lack of social trust can translate into greater civil conflict, particularly if social groups used violence to produce slaves for export (Nunn, 2008, Nunn and Wantchekon, 2011, Fenske and Kala, 2015).¹ Bates (2008) and Reid (2012) argue that pre-colonial warfare in Sub-Saharan Africa has important consequences for civil conflict today. Besley and Reynal-Querol (2014) show econometric evidence that greater pre-colonial conflict in Africa is linked with greater post-colonial conflict.²

Our discussion indicates that there is scholarly debate about the extent to which the standard account of warfare and state development can apply to Sub-Saharan Africa. To frame this debate in the typology of Besley and Persson (2011, 2015), historical warfare may not predict “common-interest” states defined by high fiscal capacity and low civil conflict in Sub-Saharan Africa. Rather, it may predict “special-interest” states defined by high fiscal capacity and high civil conflict, or “weak” states defined by low fiscal capacity and high civil conflict.³ Our empirical analysis will test between these contrasting views in the literature.

¹Furthermore, conflict experience can endow ethnic groups with “martial institutions,” which may be passed from one generation to the next and make conflict more likely to persist (Jha and Wilkinson, 2012).

²Boone (2014) argues that land-related conflicts in modern-day Africa can actually be an outcome of state-building efforts. Helderling (2014) finds that greater state capacity led to more conflict in 1990s Rwanda.

³Acemoglu et al. (2010) offer one explanation for how high fiscal capacity and high civil conflict can co-exist. When fiscal capacity is high, the military will gain greater economic power if it undertakes a coup. To reduce the likelihood of a coup, the civilian government has an incentive to limit military strength, which reduces the state’s monopoly on security and makes it more likely that civil conflict will persist.

3 Data

3.1 Historical Conflict

Our historical conflict data are from Brecke (1999). This unique database provides a comprehensive list of violent conflicts worldwide from 1400 to the present. To compile this database, Brecke uses roughly 80 sources, including dictionaries and encyclopedias, scholarly books and compilations, and non-English language works (in Chinese, Japanese, and Russian). For Sub-Saharan Africa, Brecke's sources include Freeman-Grenville (1973), Ajayi and Crowder (1985), and McEvedy (1995).

Brecke's database defines violent conflict according to Cioffi-Revilla (1996).⁴ Brecke's database includes all recorded violent conflicts with a magnitude of 1.5 or higher on Richardson's (1960) base-10 log conflict scale. As a review of Brecke's source materials will attest, external conflicts (i.e., conflicts that take place between states, broadly defined) form the basis of his database.

For each conflict, Brecke's database lists belligerents and years, along with supporting information. For example, one entry reads "Akramu-Accra (Ghana), 1660." We use this information to identify the modern country in which each conflict took place (in this example, Ghana). To improve accuracy, we double-check the history of each conflict with the secondary literature. Another entry reads "England-France, 1475." This entry refers to Edward IV's invasion of Calais. We thereby code this conflict for France. While it is true that this coding scheme overlooks conflicts that are fought outside a country's soil, but which may still increase that country's fiscal capacity (e.g., England in 1475), we view it as the most straightforward way to operationalize the argument that external threats drove institutional reforms. We focus on historical warfare in the Old World: conflicts on the continents of Africa, Asia (including the Middle East), and Europe. Our regression analysis will include the Americas as a robustness check.

Scholars have made wide use of Brecke's database. Iyigun (2008) tests the effects of Ottoman military engagements on Catholic-Protestant conflicts in European history. Parker

⁴This definition is: "An occurrence of purposive and lethal violence among 2+ social groups pursuing conflicting political goals that results in fatalities, with at least one belligerent group organized under the command of authoritative leadership. The state does not have to be an actor. Data can include massacres of unarmed civilians or territorial conflicts between warlords."

(2008) and Zhang et al. (2011) link climate change to the seventeenth-century global “crisis” of state breakdowns. Besley and Reynal-Querol (2014) test the historical legacy of conflict in Africa. Fearon and Laitin (2014) study conflict persistence from 1816 onward. Other scholars that use Brecke’s database include Michalopoulos and Papaioannou (2011), Pinker (2011), Lagerlöf (2014), and Morris (2014).

Brecke’s database may not record all historical conflicts. Still, the scale and scope of Brecke’s database makes it likely that it includes the most important conflicts as documented by historians. A related concern is that the quality of historical data may differ across world regions. For example, the literature on historical warfare in Sub-Saharan Africa is small (Reid, 2014). Furthermore, the nature of African warfare – raiding wars versus European-style campaigning wars – may make it less amenable to documentation. For these reasons, Brecke’s database may not adequately record all African conflicts. However, any attempt to add conflicts from other sources would be selective, because most available sources have a regional focus (e.g., Thornton, 1999). To help account for differences in data quality across world regions, our regression analysis will always include continental fixed effects.

There are two reasons why we code conflicts according to modern borders (Fearon and Laitin, 2014). First, given that our goal is to better understand cross-country variation in current state development, it makes sense to take modern nation-states as our unit of analysis. Second, the country-level approach is feasible. Many of the covariates that we want to include in our analysis – both historically and today – are only available at this level. Endogenous borders that emerge as a response to conflict outcomes do not present a problem for our analysis, because we fix modern borders and project them backward in time. Thus, the measurement of contemporary and historical variables for each country rely upon the same borders.⁵

Our main historical conflict variable computes the share of years from 1400 to 1799 in which a country experienced conflict on its soil. This measure of historical conflict is widely comparable across countries.⁶ We focus on the pre-1800 period because we want to test for

⁵This approach is similar to dividing continents into square grids (e.g., 100 x 100 km). As described, an advantage of using modern borders is that far more covariates are available at the country level than at the grid cell level.

⁶Large conflicts may lead to greater fiscal reforms than small conflicts. To measure conflict intensity, one could use casualty totals (Dincecco and Prado, 2012), but these data are only available for about one-third of Brecke’s conflicts. A second possibility is to incorporate conflict durations in days or months. However, precise start and end dates are not available for over 70 percent of the Brecke data.

the legacy of “pre-colonial” conflicts. Namely, we want to exclude nineteenth-century colonial wars related to the Scramble for Africa. We compute two alternative historical conflict variables. The first computes the number of distinct conflicts that a country experienced on its soil between 1400 and 1799. The second computes the share of years over this period in which a country experienced the *start* of conflict on its soil.

Table 1 summarizes the historical conflict data.⁷ 1,661 recorded conflicts took place from 1400 to 1799, for an average of 415 per century. Consistent with the state formation literature, Europe saw the most warfare over this period (810 conflicts), followed by Asia (523), Sub-Saharan Africa (230), and North Africa (98). Figure 1 maps these conflicts.

3.2 Fiscal Capacity

We take our main variable, the share of direct (i.e., income, social security, payroll, and property) taxes in total taxes, from Dincecco and Prado (2012). These data are averaged over the 1990s (data from the 2000s are not as widely available).

There are several reasons why the direct tax share is a particularly meaningful measure of fiscal capacity. Lindert (2004) and Besley and Persson (2013) note a striking similarity between the historical evolution of fiscal systems and current differences in fiscal systems between rich and poor countries. As states developed stronger fiscal systems over time, there was a shift from indirect taxes such as trade taxes toward direct taxes such as income taxes. The collection of direct taxes requires greater administrative capacity to effectively monitor and enforce tax payments than does the collection of indirect taxes such as customs taxes at ports. Furthermore, rich countries today depend to a greater extent on direct taxes than do poor countries, which rely heavily on trade taxes (Besley and Persson, 2013). The reliance on trade taxes by African governments has generated inadequate revenues both historically and today, making it difficult for African states to provide basic public goods and services such as security, school books, and roads that promote development (Herbst, 2000).

We use three alternative fiscal capacity variables from Besley and Persson (2011). These data are taken from 1999. The first alternative is the share of income taxes in total taxes. This measure is similar in spirit to our main variable. The second alternative is income

⁷These statistics use the conflict start variable to avoid double-counting, since some conflicts spill over from one century into the next.

tax bias, computed as the difference between the income tax share and the trade tax share. This variable represents another way to measure fiscal capacity. The third alternative is government size, measured as the ratio of total tax revenues to GDP.

3.3 Civil Conflict

We take our civil conflict variables from Besley and Persson (2011). Our main variable computes the share of years from 1950 to 2000 in which a country experienced a civil war, as counted for each year in which conflict deaths of the government and/or its domestic adversary exceed 1,000. A set of two alternative variables incorporates purges, as defined by at least one murder of a political opponent by the standing government in the span of one year. Combining these data sources, Besley and Persson generate two variables for political violence: an ordered variable that equals 0 for years of peace, 1 for years of purges without civil war, and 2 for years of both purges and civil wars; and a dummy variable that equals 1 if the ordered variable equals 1 or 2. We use these variables to compute average scores for political violence between 1945 and 2000.

4 Empirical Strategy and Main Results

4.1 Empirical Strategy

We use OLS to estimate:

$$y_i = \alpha + \beta \text{Conflict}_i + \delta \text{Conflict}_i \times \text{Africa} + x_i' \gamma + \mu_j + \epsilon_i, \quad (1)$$

where i indexes countries. y_i denotes one of our four measures of fiscal capacity or one of our three measures of civil conflict. Conflict_i is one of our three measures of historical conflict. $\text{Conflict}_i \times \text{Africa}$ interacts historical conflict with a dummy variable for Sub-Saharan Africa. x_i is a vector of baseline controls to be described ahead. μ_j are a full set of fixed effects for continents (Asia, Europe, North Africa, Sub-Saharan Africa). ϵ_i are robust standard errors. Our coefficients of interest are β , the estimated relationship between historical warfare and current fiscal capacity or civil conflict for the rest of the Old World (Asia, Europe, and North Africa), and δ , the estimated relationship between historical warfare and current fiscal capacity or civil conflict for Sub-Saharan Africa relative to the impact for the rest of the Old World.

The vector x_i denotes a benchmark set of controls that we include in all regressions. We select benchmark controls that are unlikely to be shaped by developments after 1500 (Ashraf and Galor, 2011). To account for initial demographic conditions, we include log population density in 1500 and the log timing of the Neolithic Revolution, defined to have taken place when a majority of the country’s population began to practice sedentary agriculture as the primary mode of subsistence. To account for country-level geographic features, we always include log land suitability for agriculture, log absolute latitude, and total land area. Table A1 displays the descriptive statistics for the regression variables.

4.2 Main Results

Table 2 presents our estimates for the relationship between historical warfare and fiscal capacity. As described, all regressions include a full set of continental dummies and the benchmark set of controls. Column 1 shows the result for our main fiscal capacity variable, the direct tax share. The estimated coefficients for the rest of the Old World and for Sub-Saharan Africa are both positive and statistically significant.⁸

Columns 2 to 4 use our alternative fiscal capacity variables: the income tax share, income tax bias, and government size (i.e., the tax-to-GDP ratio). The results for the income tax share (column 2) and income tax bias (column 3) are similar to column 1. There is a positive and significant correlation between historical warfare and fiscal capacity for the rest of the Old World and for Sub-Saharan Africa. The result for government size (column 4) is also similar, even if the coefficient for $Conflict_i$ loses significance in this specification. Furthermore, now the coefficient for $Conflict_i \times Africa$ does not significantly differ from the rest of the Old World. Taken together, these results suggest that the main consequence of historical warfare is for fiscal capacity, rather than for overall state size.⁹

Columns 5 and 6 repeat the column 1 specification for our alternative historical conflict

⁸The main results in Tables 2 and 3 do not change if we include interaction terms for Asia and North Africa (relative to Europe, the omitted category). The coefficients for $Conflict_i \times Asia$ are never significant. The coefficient for $Conflict_i \times NorthAfrica$ is negative and significant for the main fiscal capacity specification and positive and significant for the main civil conflict specification. Furthermore, the main results remain robust if we code historical conflict as $\log(1 + Conflict_i)$ to reduce the influence of outliers.

⁹For robustness, we use two non-fiscal alternatives. The first is the government anti-diversion score according to the International Country Risk Guide (2010). This measure averages the index scores in 1997 (the last available year) for the following categories: law and order, bureaucratic quality, corruption, risk of expropriation, and government repudiation of contracts. The second is the Brookings Institution state weakness score according to Rice and Patrick (2008). In both cases, the coefficient for $Conflict_i$ remains positive and significant, while the coefficient for $Conflict_i \times Africa$ is not significantly different from the rest of the Old World.

variables: the number of conflicts between 1400 and 1799, and the share of years in which a country experienced the start of conflict. The results are again positive and significant.¹⁰

Table 3 presents our estimates for the relationship between historical warfare and civil conflicts. Column 1 uses our main variable, the share of years of civil war between 1950 and 2000. Columns 2 and 3 use our alternative variables for average political violence (ordered and dummy). Columns 4 and 5 repeat the column 1 specification for the alternative historical conflict variables as described before. The results are robust across all specifications. The estimated coefficients for Sub-Saharan Africa are always positive and statistically significant, while the estimated coefficients for the rest of the Old World are not (with the exception of column 4, in which the point estimate for $Conflict_i$ is *negative* and significant).¹¹

The results in Tables 2 and 3 support the argument that historical warfare has significant consequences for state development. We find a positive correlation between historical warfare and current fiscal capacity across the Old World, including in Sub-Saharan Africa. The estimates from column 1 of Table 2 indicate that a one standard deviation increase in the share of years of historical conflict for a country in the rest of the Old World is associated with a 0.436 standard deviation increase in the share of tax revenues that it gathers from direct taxes. For Sub-Saharan Africa, a one standard deviation increase in the share of years of historical conflict translates into a 1.502 standard deviation increase in the direct tax share. By contrast, the positive correlation between historical warfare and civil conflict today that we find for Sub-Saharan Africa, and for this region only, suggests that Africa is different. Our estimate from column 1 of Table 3 indicates that a one standard deviation increase in the share of years of historical conflict is associated with a 0.444 standard deviation increase in post-1950 civil conflict in Sub-Saharan Africa. For the rest of the Old World, our results show evidence consistent with the “anti-persistence” of conflict.

The typology in Besley and Persson (2011, 2015) provides an intuitive way to interpret our results. We find that historical warfare predicts “common-interest” states defined by high fiscal capacity and low civil conflict across much of the Old World. For Sub-Saharan

¹⁰The main results in Tables 2 and 3 remain robust if we control for historical conflicts fought in neighboring countries. The coefficients for neighboring conflicts are never significant.

¹¹For robustness, we estimate the specification in column 1 of Table 3 for a similar sample as our main fiscal capacity variable (the civil conflict and fiscal capacity variables overlap for 67 out of 70 total observations). The results are qualitatively identical to the reported results; the point estimate for $Conflict_i \times Africa$ is larger than before.

Africa, we find that historical warfare predicts “special-interest” states high fiscal capacity and high civil conflict.

5 Robustness

The significant correlations that we document in the previous section are consistent with the argument that historical warfare is linked with greater fiscal capacity across the Old World, including in Sub-Saharan Africa. We also document a feature of historical warfare that is particular to Sub-Saharan Africa: conflict persistence. However, these correlations could be explained by omitted variables that influence both historical warfare and state development outcomes today. For example, if other geographical features such as terrain ruggedness influence patterns of historical warfare, and if such features have implications for current fiscal capacity or civil conflict, then they could generate a positive relationship between historical conflict and current outcomes.

In this section, we use two strategies to test the robustness of our results. First, we control for a range of observable country characteristics beyond our baseline controls that may be correlated with historical warfare and state development outcomes today. Second, we test how likely it is that our results are driven by unobservable country features. We also test whether our estimates are robust to sample changes and show evidence for intermediate outcomes.

5.1 Further Controls for Observables

Table 4 presents our estimates for historical warfare and fiscal capacity with additional controls. We start with a parsimonious specification. To show that our main results do not depend on the benchmark set of controls, column 1 excludes them from the benchmark specification (we retain the full set of continental fixed effects). The coefficients for β and δ are similar as before.

Different forms of colonial rule by Europeans, rather than pre-colonial conflict, may predict fiscal capacity outcomes in Sub-Saharan Africa today. Column 2 adds colonial dummies for British, French, Portuguese, Spanish, and other European colonizers according to Nunn and Puga (2012) to the benchmark specification that includes a full set of continental dummies and the benchmark set of controls. The results for both the rest of the Old World and

for Sub-Saharan Africa closely resemble the benchmark case (i.e., column 1 of Table 2).

Column 3 repeats this specification for a key feature related to colonial rule: the creation of artificial borders. We control for this feature according to Alesina et al. (2011), who measure the straightness of a country's land borders. Borders that resemble straight lines are likely to be artificially drawn, while borders that resemble uneven lines are likely to correspond with natural features (e.g., rivers). The results remain robust to this control.

Column 4 repeats this specification for legal origins, another feature related to colonial rule. We include dummy variables for British and French legal origins according to Ashraf and Galor (2011). The results are again similar.¹²

Our baseline set of controls includes two measures of initial conditions: log population density in 1500 and the log timing of the Neolithic Revolution. It may be the case that initial technology influenced both the likelihood of historical conflicts and the development of fiscal capacity. To account for initial technological conditions, we include a measure of technological adoption in 1500 from Comin et al. (2010). Gennaioli and Rainer (2007) and Michalopoulos and Papaioannou (2013) link pre-colonial state centralization in Africa with better public goods provision and economic performance today. Initial state strength may have also influenced the ability of states in Sub-Saharan Africa to survive colonialization (Englebert, 2000). To account for pre-colonial state centralization, we include a measure of state antiquity in 1500 according to Bockstette et al. (2002). Column 5 shows the results with these additional controls. The coefficient estimates remain robust, even though the number of observations falls from 70 to 49 due to a lack of available data.¹³

Column 6 repeats this analysis for additional geographic controls beyond those included in our benchmark set (i.e., log land suitability for agriculture, log absolute latitude, and total land area). Specifically, we add controls for the share of a country's population at risk for malaria, the population share that lives in tropical zones, the average distance to the nearest

¹²To the extent that the particular form of colonial rule influences post-independence interventions by past colonizers (e.g., the relationship between Benin and France), then the colonizer dummies account for this possibility. For robustness, we control for two other features that help proxy for the autonomy of newly-independent nations. To account for Cold War alliances, we control for vote affinity with the United States across roll-call votes in the UN General Assembly between 1946-1989 according to Strezhnev and Voeten (2013). To proxy for leadership quality, we control for the share of years between 1946-2000 for which a nation's leader is highly educated according to Besley and Reynal-Querol (2011). The main results in Tables 4 and 5 are robust to both controls.

¹³To account for the historical role of indigenous slavery in Sub-Saharan Africa, we include the variable from Bezemer et al. (2014). The main results in Tables 4 and 5 are robust to this control.

waterway (sea-navigable river or coast), the average distance to the nearest coast, terrain ruggedness, the share of land that is desert, and a proxy for natural resource wealth (i.e., gem diamond extraction) according to Ashraf and Galor (2011) and Nunn and Puga (2012). The results continue to hold. The point estimate for $Conflict_i \times Africa$ falls by nearly one-half, but is still significant.¹⁴

Column 7 includes all of the controls described in columns 2 to 6, with the exception of the variables for other initial conditions, which we exclude because the number of observations is small. The results resemble the previous specification in terms of magnitude and significance.¹⁵

Table 5 repeats the robustness checks with additional controls for historical warfare and civil conflicts. The coefficient values for Sub-Saharan Africa are always positive and significant in columns 1 through 7, with point estimates similar in magnitude to the benchmark case (i.e., column 1 of Table 3). As for the main results, the coefficients for the rest of the world are never significant.¹⁶

While the addition of new controls cannot rule out omitted variable concerns, the results are robust. This exercise reinforces our main results, namely that there is a positive and significant relationship between historical warfare and fiscal capacity throughout the Old World, including in Sub-Saharan Africa, and that historical conflicts predict current civil wars, but only in Sub-Saharan Africa.

¹⁴For robustness, we add two other geographic controls. Iliffe (2007, ch. 2) suggests that border zones between forests and savannas in Africa could be prone to more conflict. To proxy for ecological diversity, we compute one minus the Herfindahl index of the different ecological zones in each country according to GAEZ (Fischer et al., 2000, plate 55). To further control for natural resource wealth, we include average oil production between 1980-2012 according to the U.S. EIA (2013). The main results in Tables 4 and 5 are unchanged in both cases. Finally, to the extent that geography (e.g., terrain ruggedness) influences the type of colonial independence movement (Garcia-Ponce and Wantchekon, 2014), then the geographic controls account for this possibility.

¹⁵As alternative way to control for unobservables, we include fixed effects for macro-geographical regions according to the UN Statistics Division. The UN lists 22 macro-geographical regions worldwide, 14 of which are in our sample. The main results in Tables 4 and 5 remain robust.

¹⁶Our results suggest that conflict locations in Sub-Saharan Africa persist from the pre-colonial period to the present. Ideally, we want to know whether the same groups that fought in the past continue to fight today. To proxy for migration patterns, we control for a country's share of foreign migrants in total population in 1960 as compiled by Ashraf and Galor (2011). The main result in Table 5 is robust to this control.

5.2 Potential Bias from Unobservables

Even though we control for a wide variety of potential omitted variables, the results in Tables 4 and 5 could still be biased by unobservable features that influence both historical warfare and modern state development. To address this concern, we compute a measure based on Altonji et al. (2005), Bellows and Miguel (2009), and Nunn and Wantchekon (2011) that estimates how much greater the influence of any unobservable features would have to be, relative to the observed controls, to fully explain away the previous set of results.

Specifically, this measure computes the ratio $\hat{\beta}^f / (\hat{\beta}^r - \hat{\beta}^f)$ according to the coefficients for our variables of interest ($Conflict_i$ and $Conflict_i \times Africa$) for two regressions, the first of which includes the covariates for a “restricted” set of controls (which we label $\hat{\beta}^r$), and the second of which includes the covariates for a “full” set of controls (which we label $\hat{\beta}^f$). The logic is that, the greater the ratio, the larger that selection on unobservable features must be to fully explain away our estimates.

We test two sets of restricted covariates. The first includes no controls, and the second our benchmark set of controls. We test five sets of full covariates: (1) the baseline set of controls, (2) colonial origins, (3) legal origins, (4) other initial conditions, and (5) additional geographic controls. These sets of covariates are described in the previous section. We test (1) for the specification in which the restricted set of covariates includes no controls, and (2) to (5) for the specification in which the restricted set includes the benchmark set of controls. In total, there are five combinations of restricted and full covariates for which we can calculate ratios.

Table 6 presents the ratios for our main fiscal capacity and conflict variables for $Conflict_i$ (Panel A) and $Conflict_i \times Africa$ (Panel B). Out of the 20 reported ratios, only one is less than one (i.e., for $Conflict_i$ when the dependent variable is the civil war share; this coefficient is generally not significant in Tables 3 and 5). 10 of the 20 ratios are negative, which indicates that the coefficients of interest, $Conflict_i$ and $Conflict_i \times Africa$, actually increase in magnitude once the full set of covariates is included. The remaining 9 ratios range in value from 1.10 to 34.69, with the median equal to 20.92 when the dependent variable is the direct tax share and 17.87 when the dependent variable is the civil war share. The latter set of results suggests that, to fully explain away the positive correlation between historical warfare and fiscal capacity (civil conflict) today, the influence of unobservable features

would have to be on average 19 times greater (18 times greater) than observable features. We view this exercise as further evidence that unobservable features cannot fully explain our estimates.

5.3 Alternative Samples

As another set of robustness checks, we re-run our main specifications for a variety of different samples.

The Scramble for Africa by European colonizers did not begin until the late nineteenth century. Still, white settler communities in Sub-Saharan Africa (e.g., in South Africa) began in the eighteenth century. To account for the potential role of eighteenth-century colonialism in Sub-Saharan Africa, columns 1 and 2 of Table 7 exclude eighteenth-century wars and recompute our main historical conflict variable for 1400 to 1700. The key estimates for fiscal capacity (column 1) and civil conflict (column 2) are similar in magnitude and significance as the benchmark case. As an alternative strategy, columns 3 and 4 exclude South Africa, the most prominent white settler community. The results are also robust to this sample change.

Russia and China saw much greater conflict between 1400 and 1799 than other sample countries (Figure 1).¹⁷ Columns 5 and 6 exclude Russia and China from the main specifications. The results are again robust. The point estimate for $Conflict_i \times Africa$ falls for civil conflicts (column 6), but remains significant.

Columns 7 and 8 add in conflicts and countries in the Americas, for which Brecke (1999) records 97 conflicts from 1400 to 1799. The point estimate for the coefficient for $Conflict_i$ falls by nearly one-half for fiscal capacity (column 9), but remains significant, which suggests that the logic of “war makes states” may also apply to the New World. This result complements Thies (2005), who finds a positive relationship between interstate rivalry and fiscal capacity in twentieth-century Latin America. The other key estimates continue to hold.¹⁸

Finally, Besley and Reynal-Querol (2014, pp. 327-8) note that Angola is important to their cross-country results for conflict persistence in Africa. The coefficient for $Conflict_i \times Africa$

¹⁷Direct tax share data are not available for China. However, data for China for the three alternative fiscal capacity variables tested in Table 2 are available.

¹⁸The results for $Conflict_i$ and for $Conflict_i \times Africa$ are similar in magnitude and significance if we exclude countries in Europe and re-run our main specifications for fiscal capacity and civil conflict. The main difference is that the coefficient value for $Conflict_i$, while still larger, is no longer significant in the fiscal capacity specification. However, we lose over 40 observations in this specification.

remains large but loses significance when we exclude Angola from the main civil conflict specification (result not shown). However, Besley and Reynal-Querol study the whole of Africa rather than Sub-Saharan Africa only. If we follow this approach and code the interaction term for Africa as a whole, then the coefficient for $Conflict_i \times Africa$ remains significant at the 10 percent level when we exclude Angola from the main civil conflict specification (result not shown). Furthermore, the qualitative evidence strongly supports the view for conflict persistence in Angola. Henderson (1979, ch. 3) argues that civil conflict in Angola has deep historical roots, writing: “We can conclude...that the slave trade was the single most important cause of conflict during 400 years of Angola’s history (p. 98).” Similarly, Chabal (2008) highlights the relationship between pre-colonial power structures and modern civil conflict in Angola.

5.4 Intermediate Outcomes

As a final robustness check, we show evidence that historical warfare influences state development outcomes at an intermediate point in time. This evidence suggests that the relationships that we document between historical warfare and current state development are not just arbitrary correlations between some historical events and some modern outcomes (Austin, 2008).

For the intermediate outcome for fiscal capacity, we use cumulative railway kilometers built by 1910, just prior to the start of World War I, according to Mitchell (2007a,b,c). We view this measure as a proxy for the “infrastructural power” of the state (Mann, 1986). This variable has the key advantage over fiscal variables of being widely available across sample countries. For the intermediate outcome for civil conflict, we use the share of years from 1850 to 1899 in which Sub-Saharan African countries experienced intra-African conflict (i.e., conflict in which all belligerents were African) according to Fenske and Kala (2014). We focus on Sub-Saharan Africa for this outcome because our previous analysis does not detect any significant relationship between historical and current civil conflict outside of this region. We exclude the 1900-13 period because the colonial peace leaves no variation in intra-African conflicts.

Table 8 presents OLS estimates for the intermediate outcomes. Columns 1 and 2 show the results for the intermediate fiscal capacity outcome, log railway kilometers in 1910. The estimated coefficients are positive and significant for the rest of the Old World whether or not

we include colonial dummies. There is no systematic relationship for Sub-Saharan Africa, which may suggest that European colonizers built railways at the start of their rule regardless of the strength of pre-colonial states. Columns 3 and 4 repeat this analysis for the intermediate conflict outcome, intra-African conflicts from 1850 to 1899. The coefficients are again positive and significant.¹⁹

6 Mechanisms

The evidence in Sections 4 and 5 supports our argument that historical warfare significantly influences state development today. More historical warfare is correlated with greater fiscal capacity throughout the Old World. However, in Sub-Saharan Africa – and only there – more historical warfare is also correlated with greater civil conflict.

In this section, we test for mechanisms that may help explain why the relationship between historical warfare and state development differs for Sub-Saharan Africa. The conceptual framework in Section 2 guides the specific mechanisms that we test. We focus on three potential outcomes of historical warfare: political institutions, ethnic fractionalization, and social trust.²⁰ The idea is as follows. We add these variables one-by-one as controls to our main specifications for fiscal capacity and civil conflict. If these controls affect the magnitudes of our coefficients of interest, then we can think of them as mechanisms through which historical warfare influences state development (Angrist and Pischke, 2009).

Columns 1 to 3 of Table 9 present the results of this analysis for our main fiscal capacity variable. The coefficient values for $Conflict_i$ and $Conflict_i \times Africa$ remain similar in magnitude and significance after including controls for political institutions and ethnic fractionalization. However, the point estimate for $Conflict_i \times Africa$ falls to 2.812 and loses significance for the specification that controls for social trust. This result suggests that social trust may be one mechanism through which historical conflict influences fiscal development in Sub-Saharan Africa. We interpret this result with caution, because the number of countries for which trust data are available is small (i.e., 47 observations) and differs from the

¹⁹The results are similar in magnitude and significance if we use all conflicts fought in Sub-Saharan Africa between 1850 and 1899 rather than only intra-African conflicts.

²⁰Political institutions is the share of years of parliamentary democracy from 1945 to 2000 according to Besley and Persson (2011). Ethnic fractionalization is one minus the Herfindahl index of ethnolinguistic group shares circa 2001 from Alesina et al. (2002). Social trust is the fraction of World Values Survey respondents that agreed with the statement “Most people can be trusted” as compiled by Ashraf and Galor (2011).

benchmark sample. Columns 4 to 6 repeat this analysis for our main civil conflict variable. Once more, the coefficient value for $Conflict_i \times Africa$ falls in magnitude and lose significance once we include social trust as a control. We again interpret this result with caution due to the small sample for which these data are available. Still, this result suggests that social trust may be one factor that mediates the relationship between historical warfare and current civil conflict. Overall, this set of results support the evidence in Besley and Reynal-Querol (2014), who find that a history of conflict in Africa decreases inter-group trust and strengthens ethnic identify at the expense of national identity.

7 Conclusion

Do the consequences of historical warfare differ for Sub-Saharan Africa? To address this question, we assemble new data on the locations of more than 1,500 conflicts in Africa, Asia, and Europe from 1400 to 1799, which we use to test for the legacy of historical warfare on state development.

Our results provide new evidence about where and when “war makes states.” Following the typology of Besley and Persson (2011, 2015), our results suggest that historical warfare predicts “common-interest” states across much of the Old World, but predicts “special-interest” states in Sub-Saharan Africa. Our results are robust to a broad range of specifications, controls, and samples. We find that social trust is one mechanism that may help explain why conflict persists in Sub-Saharan Africa. Taken together, this evidence suggests that Sub-Saharan Africa is in fact different.

References

- Acemoglu, D., D. Ticchi, and A. Vindigni (2010). "Persistence of Civil Wars." *Journal of the European Economic Association*, 8: 664-76.
- Acemoglu, D., C. Garcia-Jimeno, and J. Robinson (2015). "State Capacity and Economic Development: A Network Approach." Forthcoming, *American Economic Review*.
- Ajayi, J. and M. Crowder (1985). *Historical Atlas of Africa*. Cambridge: Cambridge University Press.
- Alesina, A., A. Devleeschauwer, W. Easterly, S. Kurlat, and R. Wacziarg (2002). "Fractionalization." *Journal of Economic Growth*, 8: 155-94.
- Alesina, A., W. Easterly, and J. Matuszeski (2011). "Artificial States." *Journal of the European Economic Association*, 9: 246-77.
- Altonji, J. T. Elder, and C. Taber (2005). "Selection on Observed and Unobserved Variables: Assessing the Effectiveness of Catholic Schools." *Journal of Political Economy*, 113: 151-84.
- Angrist, J. and J.S. Pischke (2009). *Mostly Harmless Econometrics*. Princeton: Princeton University Press.
- Ashraf, Q. and O. Galor (2011). "Cultural Diversity, Geographical Isolation, and the Origin of the Wealth of Nations." NBER Working Paper 17640.
- Asiwaju, A. (1985). "The Conceptual Framework," in A. Asiwaju, ed., *Partitioned Africans*, pp. 1-18, New York: St. Martin.
- Austin, G. (2008). "The 'Reversal of Fortune' Thesis and the Compression of History: Perspectives from African and Comparative Economic History." *Journal of International Development*, 8: 996-1027.
- Bates, R. (2008). *When Things Fell Apart*. Cambridge: Cambridge University Press.
- Bates, R. (2009). *Prosperity and Violence*, Second Edition. New York: Norton.
- Bates, R. (2014). "The Imperial Peace," in E. Akyeampong, R. Bates, N. Nunn, and J. Robinson, eds., *Africa's Development in Historical Perspective*, pp. 424-46, Cambridge: Cambridge University Press.
- Bellows, J. and E. Miguel (2009). "War and Local Collective Action in Sierra Leone." *Journal*

- of *Public Economics*, 93: 1144-57.
- Besley, T. and T. Persson (2009). "The Origins of State Capacity: Property Rights, Taxation, and Politics." *American Economic Review*, 99: 1218-44.
- Besley, T. and T. Persson (2011). *The Pillars of Prosperity*. Princeton: Princeton University Press.
- Besley, T. and T. Persson (2013). "Taxation and Development," in A. Auerbach, R. Chetty, M. Feldstein, and E. Saez, eds., *Handbook of Public Economics*, pp. 51-110, Amsterdam: Elsevier.
- Besley, T. and T. Persson (2015). "State Capacity, Institutions, and Development." *The Political Economist Newsletter*.
- Besley, T. and M. Reynal-Querol (2011). "Do Democracies Select More Educated Leaders?" *American Political Science Review*, 105: 552-66.
- Besley, T. and M. Reynal-Querol (2014). "The Legacy of Historical Conflict: Evidence from Africa." *American Political Science Review*, 108: 319-36.
- Bezemer, D., J. Bolt, and R. Lensink (2014). "Slavery, Statehood, and Economic Development in Sub-Saharan Africa." *World Development*, 57: 148-63.
- Bockstette, V., Chanda, A., and L. Putterman (2002). "States and Markets: The Advantage of an Early Start." *Journal of Economic Growth*, 7: 347-69.
- Boone, C. (2014). *Property and Political Order in Africa*. Cambridge: Cambridge University Press.
- Brecke, P. (1999). "Violent Conflicts 1400 A.D. to the Present in Different Regions of the World." Paper presented at 1999 Meeting of Peace Science Society. <http://www.cgeh.nl/data#conflict>
- Brewer, J. (1989). *The Sinews of Power*. London: Unwin Hyman.
- Chabal, P. (2008). "E Pluribus Unum: Transitions in Angola," in P. Chabal and N. Vidal, eds., *Angola: The Weight of History*, pp. 1-18, New York: Columbia University Press.
- Cioffi-Revilla, C. (1996). "Origins and Evolution of War and Politics." *International Studies Quarterly*, 40: 1-22.
- Comin, D., W. Easterly, and E. Gong (2010). "Was the Wealth of Nations Determined in 1000 BC?" *American Economic Journal: Macroeconomics*, 2: 65-97.

- Cox, G. (2011). "War, Moral Hazard, and Ministerial Responsibility: England After the Glorious Revolution." *Journal of Economic History*, 71: 133-61.
- Curtin, P. (1975). *Economic Change in Pre-Colonial Africa*. Madison: University of Wisconsin Press.
- Depetris-Chauvin, E. (2014). "State History and Contemporary Conflict: Evidence from Sub-Saharan Africa." Working Paper, Brown University.
- Dincecco, M. and M. Prado (2012). "Warfare, Fiscal Capacity, and Performance." *Journal of Economic Growth*, 17: 171-203.
- Dincecco, M. and G. Katz (2014). "State Capacity and Long-Run Economic Performance." Forthcoming, *Economic Journal*.
- Downing, B. (1992). *The Military Revolution and Political Change*. Princeton: Princeton University Press.
- Eltis, D. (1987). *Economic Growth and the Ending of the Transatlantic Slave Trade*. Oxford: Oxford University Press.
- Englebert, P. (2000). "Pre-Colonial Institutions, Post-Colonial States, and Economic Development in Tropical Africa." *Political Research Quarterly*, 53: 7-36.
- Evans, P. (1995). *Embedded Autonomy*. Princeton: Princeton University Press.
- Fearon, J. and D. Laitin (2014). "Does Contemporary Armed Conflict Have Deep Historical Roots?" Working paper, Stanford University.
- Fenske, J. and N. Kala (2014). "1807: Economic Shocks, Conflict, and the Slave Trade." Working paper, University of Oxford.
- Fenske, J. and N. Kala (2015). "Climate and the Slave Trade." *Journal of Development Economics*, 112: 19-32.
- Fischer, G. H. van Velthuisen, F. Nachtergaele, and S. Medow (2000). "Global Agro-Ecological Zones - 2000." Food and Agriculture Organization of the United Nations and International Institute for Applied Systems Analysis.
- Freeman-Grenville, G. (1973). *Chronology of African History*. Oxford: Oxford University Press.
- Garcia-Ponce, O. and L. Wantchekon (2014). "Critical Junctures: Independence Movements and Democracy in Africa." Working paper, Princeton University.

- Gennaioli, N. and I. Rainer (2007). "The Modern Impact of Pre-Colonial Centralization in Africa." *Journal of Economic Growth*, 12: 185-234.
- Gennaioli, N. and H.J. Voth (2014). "State Capacity and Military Conflict." Forthcoming, *Review of Economic Studies*.
- Hariri, J. (2012). "The Autocratic Legacy of Early Statehood." *American Political Science Review*, 106: 471-94.
- Heldring, L. (2014). "State Capacity and Violence: Evidence from the Rwandan Genocide." CSAE Working Paper WPS/2014-08.
- Henderson, L. (1979). *Angola: Five Centuries of Conflict*. Ithaca: Cornell University Press.
- Herbst, J. (2000). *States and Power in Africa*. Princeton: Princeton University Press.
- Hoffman, P. (2012). "Why Was It Europeans Who Conquered the World?" *Journal of Economic History*, 72: 601-33.
- Iliffe, J. (2007). *Africans: The History of a Continent*, Second Edition. Cambridge: Cambridge University Press.
- Inikori, J. (1982). *Forced Migration*. New York: Africana.
- International Country Risk Guide (2010). "ICRG Researcher Dataset."
- Iyigun, M. (2008). "Luther and Suleyman." *Quarterly Journal of Economics*, 123: 1465-94.
- Jha, S. and S. Wilkinson (2012). "Does Combat Experience Foster Organizational Skill?: Evidence from Ethnic Cleansing during the Partition of South Asia." *American Political Science Review*, 106: 883-907.
- Kang, D. (2002). *Crony Capitalism*. Cambridge: Cambridge University Press.
- Klein, M. (1972). "Social and Economic Factors in the Muslim Revolution in Senegambia." *Journal of African History*, 13: 419-41.
- Lagerlöf, N.P. (2014). "Population, Technology, and Fragmentation: The European Miracle Revisited." *Journal of Development Economics*, 108: 87-105.
- Law, R. (1991). *The Slave Coast of West Africa, 1550-1750*. Oxford: Oxford University Press.
- Lindert, P. (2004). *Growing Public*. Cambridge: Cambridge University Press.
- Maddison, A. (2013). "Per Capita GDP, 1-2010 AD."

- Mamdani, M. (1996). *Citizen and Subject*. Princeton: Princeton University Press.
- Mann, M. (1986). "The Autonomous Power of the State: Its Origins, Mechanisms, and Results," in J. Hall, ed., *States in History*, pp. 109-36, Oxford: Oxford University Press.
- Murdock, G. (1967). *Ethnographic Atlas*. Pittsburgh: University of Pittsburgh Press.
- Michalopoulos, S. and E. Papaioannou (2011). "The Long-Run Effects of the Scramble for Africa." NBER Working Paper 17620.
- Michalopoulos, S. and E. Papaioannou (2013). "Pre-Colonial Ethnic Institutions and Contemporary African Development." *Econometrica*, 81: 113-52.
- Michalopoulos, S. and E. Papaioannou (2014). "On the Ethnic Origins of African Development." NBER Working Paper 20513.
- McEvedy, C. (1995). *Penguin Atlas of African History*. London: Penguin.
- Migdal, J. (1988). *Strong Societies and Weak States*. Princeton: Princeton University Press.
- Mitchell, B. (2007a). *International Historical Statistics: Africa, Asia, and Oceania, 1750-2005*. New York: Palgrave Macmillan.
- Mitchell, B. (2007b). *International Historical Statistics: The Americas, 1750-2005*. New York: Palgrave Macmillan.
- Mitchell, B. (2007c). *International Historical Statistics: Europe, 1750-2005*. New York: Palgrave Macmillan.
- Montalvo, J. and M. Reynal-Querol (2005). "Ethnic Polarization, Potential Conflict, and Civil Wars." *American Economic Review*, 95: 796-816.
- Morris, I. (2014). *War! What Is It Good For?* New York: Farrar, Straus and Giroux.
- Nunn, N. (2008). "The Long-Term Effects of Africa's Slave Trades." *The Quarterly Journal of Economics*, 123: 139-76.
- Nunn, N. and L. Wantchekon (2011). "The Slave Trade and the Origins of Mistrust in Africa." *American Economic Review*, 101: 3221-52.
- Nunn, N. and D. Puga (2012). "Ruggedness: The Blessing of Bad Geography in Africa." *Review of Economics and Statistics*, 94: 20-36.
- Parker, G. (2008). "Crisis and Catastrophe: The Global Crisis of the Seventeenth Century

- Reconsidered." *American Historical Review*, 113: 1053-79.
- Pinker, S. (2011). *The Better Angels of Our Nature*. Toronto: Penguin.
- Rasler, K. and W. Thompson (1985). "War Making and State Making: Governmental Expenditures, Tax Revenues, and Global Wars." *American Political Science Review*, 79: 491-507.
- Reid, R. (2012). *Warfare in African History*. Cambridge: Cambridge University Press.
- Reid, R. (2014). "The Fragile Revolution: Rethinking War and Development in Africa's Violent Nineteenth Century," in E. Akyeampong, R. Bates, N. Nunn, and J. Robinson, eds., *Africa's Development in Historical Perspective*, pp. 393-423, Cambridge: Cambridge University Press.
- Rice, S. and S. Patrick (2008). "Index of State Weakness in the Developing World." Brookings Institution.
- Rodney, W. (1972). *How Europe Underdeveloped Africa*. London: Bogle-L'Ouverture.
- Sachs, J. and A. Warner. (1997). "Trade Openness Indicators." Dataset, Center for International Development, Harvard University.
- Smith, R. (1989). *Warfare and Diplomacy in Pre-Colonial West Africa*. Madison: University of Wisconsin Press.
- Strezhnev, A. and E. Voeten (2013). "United Nations General Assembly Voting Data, Version 7."
- Thies, C. (2005). "War, Rivalry, and State-Building in Latin America." *American Journal of Political Science*, 49: 451-65.
- Thies, C. (2007). "The Political Economy of State-Building in Sub-Saharan Africa." *Journal of Politics*, 69: 716-31.
- Tilly, C. (1975). "Reflections on the History of European State-Making," in C. Tilly, ed., *The Formation of States in Western Europe*, pp. 3-83, Princeton: Princeton University Press.
- Tilly, C. (1992). *Coercion, Capital, and European States, 990-1992*. Cambridge: Blackwell.
- Thornton, J. (1999). *Warfare in Atlantic Africa, 1500-1800*. Abingdon: Routledge.
- United States Energy Information Administration (2013). "International Energy Statistics."
- Wade, R. (1990). *Governing the Market*. Princeton: Princeton University Press.

- Whatley, W. (2012). "The Gun-Slave Cycle in the 18th-Century British Slave Trade in Africa." Working paper, University of Michigan.
- Whatley, W. and R. Gillezeau (2011). "The Impact of the Transatlantic Slave Trade on Ethnic Stratification in Africa." *American Economic Review Papers and Proceedings*, 101: 571576.
- Wesseling, H. (1996). *Divide and Rule*. Amsterdam: Praeger.
- Zhang, D., H. Lee, C. Wang, B. Li, Q. Pei, J. Zhang, and Y. Anc (2011). "The Causality Analysis of Climate Change and Large-Scale Human Crisis." *Proceedings of the National Academy of Sciences*, 108: 17296301.

Table 1: Conflicts by Century and Continent, 1400-1799

	1400s	1500s	1600s	1700s	Total	Avg
Europe	261	220	232	97	810	203
Asia	148	181	93	101	523	131
Sub-Saharan Africa	21	61	90	58	230	58
North Africa	12	28	33	25	98	25
Total	442	490	448	281	1,661	415

Source: Brecke (1999).

Note: Number of conflicts that start in each century.

Table 2: Historical Warfare and Fiscal Capacity: Main Results

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Direct	Income	Income	Tax/GDP	Direct	Direct
	tax share,	tax share,	tax bias,	ratio,	tax share,	tax share,
	1990-2000	1999	1999	1999	1990-2000	1990-2000
Conflict, 1400-1799	0.457***	0.334**	0.426**	0.114	0.003***	1.227***
	(0.109)	(0.161)	(0.211)	(0.088)	(0.001)	(0.347)
	[0.000]	[0.042]	[0.048]	[0.199]	[0.001]	[0.001]
Conflict x Africa	4.301***	1.068**	1.611**	-0.248	0.018***	8.178***
	(1.371)	(0.428)	(0.634)	(0.253)	(0.006)	(2.819)
	[0.003]	[0.015]	[0.014]	[0.331]	[0.004]	[0.005]
Conflict measure	Years	Years	Years	Years	Number	Start
Country controls	Yes	Yes	Yes	Yes	Yes	Yes
Continent FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.610	0.647	0.686	0.788	0.601	0.605
Observations	70	72	71	73	70	70

Note: Estimation method is OLS. All regressions include full set of fixed effects for continents and country-level controls for log population density in 1500, log timing of Neolithic transition, log land suitability for agriculture, log absolute latitude, and area. Robust standard errors in parentheses, followed by corresponding p-values in brackets.

Table 3: Persistence of Conflict: Main Results

	(1)	(2)	(3)	(4)	(5)
Dependent variable	Civil war share, 1950-2000	Violence share (ordered) 1950-2000	Violence share (dummy) 1950-2000	Civil war share, 1950-2000	Civil war share, 1950-2000
Conflict, 1400-1799	0.055 (0.182) [0.763]	0.337 (0.349) [0.336]	0.284 (0.182) [0.123]	-0.001* (0.001) [0.090]	-0.341 (0.450) [0.450]
Conflict x Africa	2.727** (1.210) [0.026]	4.961** (2.347) [0.037]	2.364** (1.121) [0.037]	0.014*** (0.005) [0.009]	6.206*** (2.281) [0.008]
Conflict measure	Years	Years	Years	Number	Start
Country controls	Yes	Yes	Yes	Yes	Yes
Continent FE	Yes	Yes	Yes	Yes	Yes
R-squared	0.259	0.284	0.317	0.276	0.272
Observations	116	113	113	116	116

Note: Estimation method is OLS. All regressions include full set of fixed effects for continents and country-level controls for log population density in 1500, log timing of Neolithic transition, log land suitability for agriculture, log absolute latitude, and area. Robust standard errors in parentheses, followed by corresponding p-values in brackets.

Table 4: Historical Warfare and Fiscal Capacity: Robustness

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable: Direct tax share, 1990-2000							
Conflict, 1400-1799	0.280** (0.136) [0.044]	0.459*** (0.115) [0.000]	0.459*** (0.116) [0.000]	0.436*** (0.125) [0.001]	0.530*** (0.185) [0.007]	0.443*** (0.104) [0.000]	0.381*** (0.130) [0.005]
Conflict x Africa	4.535*** (1.387) [0.002]	4.135*** (1.402) [0.005]	4.383*** (1.470) [0.004]	4.616*** (1.429) [0.002]	4.064** (1.767) [0.027]	2.250* (1.239) [0.075]	2.985* (1.573) [0.065]
Conflict measure	Years	Years	Years	Years	Years	Years	Years
Country controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Continent FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Colonial origins	No	Yes	No	No	No	No	Yes
Artificial borders	No	No	Yes	No	No	No	Yes
Legal origins	No	No	No	Yes	No	No	Yes
Other initial conditions	No	No	No	No	Yes	No	No
Other geography	No	No	No	No	No	Yes	Yes
R-squared	0.530	0.624	0.640	0.617	0.674	0.689	0.724
Observations	75	70	65	70	49	70	65

Note: Estimation method is OLS. All regressions include full set of fixed effects for continents and country-level controls for log population density in 1500, log timing of Neolithic transition, log land suitability for agriculture, log absolute latitude, and area. Robust standard errors in parentheses, followed by corresponding p-values in brackets. "Other initial conditions" are state antiquity in 1500 and technological adoption in 1500. "Other geography" are % pop at risk for malaria, % pop living in tropical zones, avg dist to nearest waterway, avg dist to nearest coast, ruggedness, % desert, and gem diamond extraction.

Table 5: Persistence of Conflict: Robustness

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Dependent variable: Civil war share, 1950-2000						
Conflict, 1400-1799	0.254 (0.161) [0.116]	0.107 (0.176) [0.545]	0.082 (0.196) [0.675]	-0.018 (0.211) [0.933]	-0.266 (0.303) [0.385]	0.121 (0.172) [0.485]	0.143 (0.209) [0.497]
Conflict x Africa	2.791** (1.141) [0.016]	2.254* (1.229) [0.070]	2.605** (1.299) [0.048]	2.797*** (1.025) [0.007]	2.725* (1.474) [0.069]	2.642** (1.200) [0.030]	2.248* (1.316) [0.091]
Conflict measure	Years	Years	Years	Years	Years	Years	Years
Country controls	No	Yes	Yes	Yes	Yes	Yes	Yes
Continent FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Colonial origins	No	Yes	No	No	No	No	Yes
Artificial borders	No	No	Yes	No	No	No	Yes
Legal origins	No	No	No	Yes	No	No	Yes
Other initial conditions	No	No	No	No	Yes	No	No
Other geography	No	No	No	No	No	Yes	Yes
R-squared	0.206	0.356	0.250	0.281	0.300	0.340	0.372
Observations	132	116	108	116	76	116	108

Note: Estimation method is OLS. All regressions include full set of fixed effects for continents and country-level controls for log population density in 1500, log timing of Neolithic transition, log land suitability for agriculture, log absolute latitude, and area. Robust standard errors in parentheses, followed by corresponding p-values in brackets. "Other initial conditions" are state antiquity in 1500 and technological adoption in 1500. "Other geography" are % pop at risk for malaria, % pop living in tropical zones, avg dist to nearest waterway, avg dist to nearest coast, ruggedness, % desert, and gem diamond extraction.

Table 6: Potential Bias from Unobservables

		(1)	(2)
		Direct tax	Civil war
Controls in Restricted Set	Controls in Full Set	share, 1990-2000	share, 1950-2000
Panel A: Conflict, 1400-1799			
None	Baseline controls	-2.83	0.37
Baseline controls	Colonial origins	-188.25	-2.06
Baseline controls	Legal origins	20.75	-0.24
Baseline controls	Other initial conditions	17.09	-2.80
Baseline controls	Other geography	30.71	-1.84
Panel B: Conflict x Africa			
None	Baseline controls	21.09	-202.09
Baseline controls	Colonial origins	24.87	4.76
Baseline controls	Legal origins	-14.67	-40.26
Baseline controls	Other initial conditions	-36.35	34.69
Baseline controls	Other geography	1.10	30.97

Note: Each cell reports ratio based on coefficients for Conflict, 1400-1799 (Panel A) or Conflict x Africa (Panel B) for two regressions. The first includes covariates for “restricted” set of controls as listed; we label this coefficient $\hat{\beta}^r$. The second includes covariates for “full” set of controls as listed; we label this coefficient $\hat{\beta}^f$. We compute the ratio as $\hat{\beta}^f / (\hat{\beta}^r - \hat{\beta}^f)$. “Baseline controls” are log pop density in 1500, log timing of Neolithic transition, log land suitability for agriculture, log absolute latitude, and area. “Other initial conditions” are state antiquity in 1500 and technological adoption in 1500. “Other geography” are % pop at risk for malaria, % pop living in tropical zones, avg dist to nearest waterway, avg dist to nearest coast, ruggedness, % desert, and gem diamond extraction. All regressions include a full set of fixed effects for continents.

Table 7: Alternative Samples

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	Direct tax share, 1990-2000	Civil war share, 1950-2000	Direct tax share, 1990-2000	Civil war share, 1950-2000	Direct tax share, 1990-2000	Civil war share, 1950-2000	Direct tax share, 1990-2000	Civil war share, 1950-2000
	Exclude 1700s		No South Africa		No China, Russia		Include Americas	
Conflict, 1400-1700	0.450*** (0.089) [0.000]	-0.096 (0.150) [0.524]						
Conflict, 1400-1799			0.455*** (0.110) [0.000]	0.057 (0.181) [0.753]	0.418*** (0.103) [0.000]	0.076 (0.206) [0.715]	0.267* (0.142) [0.064]	0.082 (0.170) [0.632]
Conflict x Africa	2.603*** (0.684) [0.000]	3.400*** (0.783) [0.000]	3.297*** (0.916) [0.001]	2.741** (1.229) [0.028]	3.830*** (1.323) [0.005]	2.316* (1.171) [0.051]	3.981*** (1.298) [0.003]	2.731** (1.230) [0.028]
Conflict measure	Years	Years	Years	Years	Years	Years	Years	Years
Country controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Continent FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.618	0.294	0.632	0.262	0.620	0.320	0.446	0.232
Observations	70	116	69	115	69	114	88	141

Note: Estimation method is OLS. All regressions include full set of fixed effects for continents and country-level controls for log population density in 1500, log timing of Neolithic transition, log land suitability for agriculture, log absolute latitude, and area. Robust standard errors in parentheses, followed by corresponding p-values in brackets.

Table 8: Intermediate Outcomes

Dependent variable	(1)	(2)	(3)	(4)
	Log railway km, 1910		African conflict, 1850-99	
Conflict, 1400-1799	5.465*** (1.102) [0.000]	5.077*** (0.898) [0.000]	1.441** (0.618) [0.026]	1.159** (0.482) [0.023]
Conflict x Africa	-6.486* (3.283) [0.054]	-3.139 (5.071) [0.539]		
Conflict measure	Years	Years	Years	Years
Country controls	Yes	Yes	Yes	Yes
Continent FE	Yes	Yes	No	No
Colonial origins	No	Yes	No	Yes
R-squared	0.647	0.745	0.395	0.567
Observations	59	59	40	40

Note: Estimation method is OLS. All regressions include country-level controls for log population density in 1500, log timing of Neolithic transition, log land suitability for agriculture, log absolute latitude, and area. Sample for regressions 1-2 is Old World; we thus include full set of fixed effects for continents. Sample for regressions 3-4 is Sub-Saharan Africa only; we thus exclude continental fixed effects. Robust standard errors in parentheses, followed by corresponding p-values in brackets.

Table 9: Mechanisms

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)
	Direct tax share, 1990-2000			Civil war share, 1950-2000		
Conflict, 1400-1799	0.394*** (0.130) [0.004]	0.453*** (0.110) [0.000]	0.405*** (0.127) [0.003]	0.028 (0.191) [0.882]	0.089 (0.185) [0.630]	-0.026 (0.154) [0.868]
Conflict x Africa	4.151*** (1.163) [0.001]	4.283*** (1.447) [0.004]	2.812 (1.814) [0.130]	2.753** (1.222) [0.026]	2.570** (1.225) [0.038]	0.832 (2.381) [0.728]
Conflict measure	Years	Years	Years	Years	Years	Years
Country controls	Yes	Yes	Yes	Yes	Yes	Yes
Continent FE	Yes	Yes	Yes	Yes	Yes	Yes
Democracy	Yes	No	No	Yes	No	No
Fractionalization	No	Yes	No	No	Yes	No
Trust	No	No	Yes	No	No	Yes
R-squared	0.620	0.611	0.553	0.260	0.269	0.409
Observations	70	69	47	114	115	60

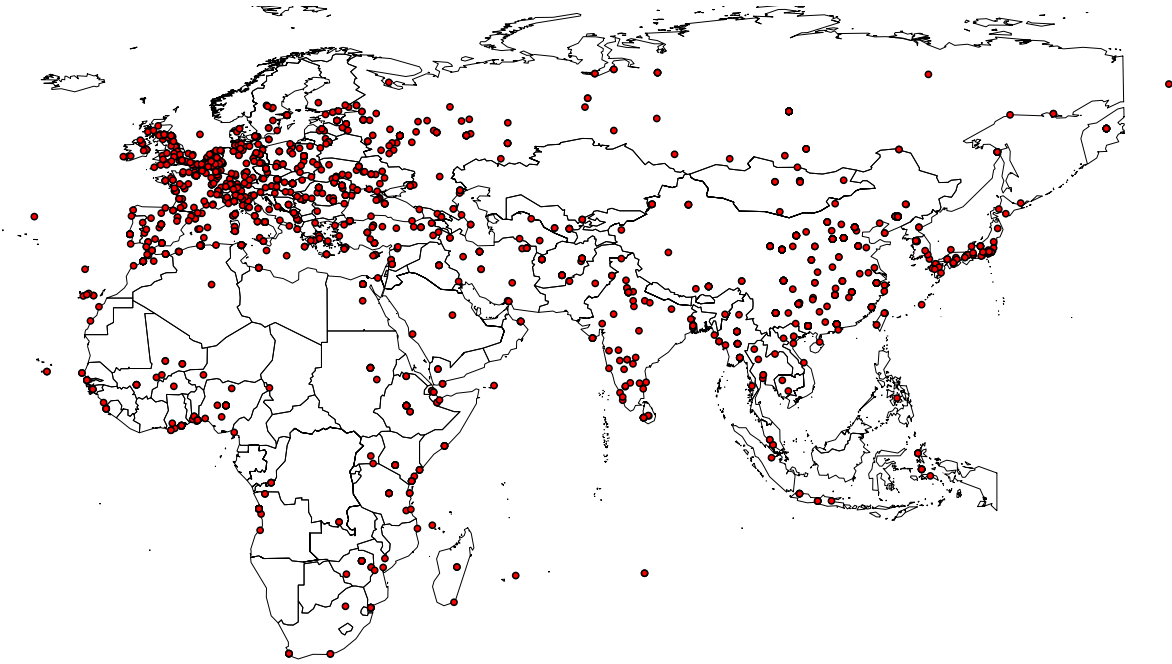
Note: Estimation method is OLS. All regressions include full set of fixed effects for continents and country-level controls for log population density in 1500, log timing of Neolithic transition, log land suitability for agriculture, log absolute latitude, and area. Robust standard errors in parentheses, followed by corresponding p-values in brackets.

Table A1: Descriptive Statistics

	Obs	Mean	Std Dev	Min	Max
Share of years of conflict, 1400-1799	149	0.0720	0.126	0	0.729
Number of conflicts, 1400-1799	149	13.21	35.11	0	351
Share of years of conflict starts, 1400-1799	149	0.0279	0.0598	0	0.501
Average share of direct taxes in total taxes, 1990-2000	75	0.467	0.167	0.136	0.795
Share of income taxes in total taxes, 1999	84	0.380	0.196	0.0431	0.785
Income tax bias, 1999	83	0.205	0.318	-0.600	0.745
Total taxes to GDP, 1999	85	0.212	0.125	0.0280	0.520
Share of years of civil conflict, 1950-2000	132	0.126	0.231	0	1
Average share of political violence, 1945-2000 (ordered)	128	0.319	0.475	0	2
Average share of political violence, 1945-2000 (dummy)	128	0.190	0.251	0	1
Europe	149	0.309	0.464	0	1
Asia	149	0.329	0.471	0	1
North Africa	149	0.0403	0.197	0	1
Sub-Saharan Africa	149	0.322	0.469	0	1
Log population density, 1500	132	1.241	1.334	-1.939	4.135
Log timing of Neolithic revolution (millenia elapsed until 2000)	131	8.436	0.593	5.892	9.259
Log land suitability for agriculture	126	-1.616	1.440	-5.857	-0.186
Log absolute latitude	146	3.018	1.025	0	4.174
Land area (1,000,000 sq km)	149	0.552	1.604	1.95e-06	16.38
British colony	144	0.278	0.449	0	1
French colony	144	0.174	0.380	0	1
Portuguese colony	144	0.035	0.184	0	1
Spanish colony	144	0.014	0.117	0	1
Other European colony	144	0.042	0.201	0	1
British legal origins	146	0.260	0.440	0	1
French legal origins	146	0.432	0.497	0	1
Technology adoption, 1500	89	0.775	0.313	0	1
State antiquity, 1500	117	0.497	0.242	0.0280	0.964
Share of population at risk of malaria	132	0.357	0.443	0	1
Share of population share living in tropical zone	128	0.237	0.382	0	1
Average distance to nearest waterway (1,000 km)	128	0.365	0.475	0.0110	2.386
Average distance to nearest coast (1,000 km)	128	0.349	0.427	0	2.206
Terrain ruggedness	144	1.497	1.462	0.0116	6.740
Share of land that is desert	144	0.0424	0.125	0	0.773
Gem diamond extraction, 1958-2000 (1,000 carats/sq km)	144	5.761	28.46	0	208.7
Log railway km, 1910	62	7.386	1.775	2.197	11.11
Share of years of intra-African conflict, 1850-99	48	0.0771	0.126	0	0.580
Share of years of parliamentary democracy, 1945-2000	148	0.202	0.341	0	1
Ethnic fractionalization, 2001	139	0.462	0.266	0	0.930
Average trade openness, 1950-92	82	0.318	0.384	0	1
Average education, 1910-60 (years of schooling)	96	4.699	2.951	0.409	9.620
Social trust	70	0.282	0.135	0.049	0.664
Log per capita GDP, 2000	138	8.403	1.273	5.884	10.78

Sources: See text.

Figure 1: Old World Conflict Locations, 1400-1799





INSTITUTE FOR ADVANCED STUDIES LUCCA