On the Institutional Legacy of Mercantilist and Imperialist Colonialism

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Abstract

The article features a temporal approach to modelling the social impact of Western colonialism. We collect a data set for all former colonies and dependencies that are regarded as countries today (143 observations). Our data, as well as existing theory, suggest that the very heterogeneous era of colonization might be divided into an early 'mercantilist' wave and a much later 'imperialist' wave with quite different characteristics. We demonstrate that a commonly used determinant of institutional quality - colonial settler mortality - had a much weaker effect on institutional outcomes during the imperialist scramble for Africa. When we broaden the analysis, it is shown that the positive effect of colonial duration on democracy is strongest among countries colonized during the imperialist era. Controlling for colonial duration, our results further indicate that a long history of statehood is bad for democracy while there is almost no effect of the national identity of the colonizer.

Keywords: colonialism, democracy, institutions, development, settler mortality.

JEL Codes: N40, N50, P33.

1 Introduction

The legacy of Western colonialism still exerts a significant influence on communities around the world. The great wave of independencies from colonial rule happened more than four decades ago but many scholars still claim to

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observe strong indications of lingering colonial or even neo-colonial patterns. For instance, the debt crisis in the 1980s and the structural adjustment programs that followed were by some regarded as a return to older systems of Western domination. In the economics literature, seminal works such as North (1990), Hall and Jones (1999), Sokoloff and Engerman (2000), and Acemoglu, Johnson, and Robinson (henceforth AJR) (2001, 2002) trace the fundamental reason for persistent underdevelopment and stagnant economic growth back to weak institutions that countries inherited from colonial times. A new research agenda on the social impact of colonialism has recently appeared that builds on this tradition.[1]

The backbone of this article is the notion that the timing of colonial activities during the last half millennium is crucial for our understanding of its long-run social impact. Our ultimate dependent variable is institutional quality rather than economic performance. A number of existing works have already established a strong link between institutions and income levels. We attempt to provide three broad contributions to the literature: Firstly, to present a 'universal' sample of all former and existing Western colonies that currently are regarded as countries in the World Bank statistics. Our sample, by far the largest in the literature, includes 143 such countries with dates of colonization and independence and a specified founding event. A qualitative and quantitative conclusion from this section, which indeed confirms what several other works have suggested, is that the extremely heterogeneous era of Western colonization nonetheless might be divided into an early 'mercantilist' wave and a much later 'imperialist' wave with quite different characteristics.

Secondly, exploiting the dimensions of temporal heterogeneity developed above, we focus on one particular determinant of institutional quality that has rendered a great deal of attention in the literature: AJR:s (2001) famous measure of settler mortality. It is shown that whereas disease environment appears to have had a strong impact on institutional development during the early mercantilist era of colonization, it had a statistically different and often insignificant effect on African countries and on countries colonized after 1850 in the aftermath of a revolution in tropical medicine.

Thirdly, we carry out a general investigation of the effect of colonial du-

[1] See for instance the empirical works by Grier (1999), Bertocchi and Canova (2002), Rodrik et al (2004), Lange (2004), Banerjee and Iyer (2005), and Albouy (2006).

ration on two types of institutions that have received a particular attention in the literature; the level of democracy and the strength of the rule of law. The most important findings are that whereas there appears to be a general concave relationship between years spent under colonial rule and democracy, the duration of colonialism has a robust positive effect among countries colonized during the most intense period of imperialism after 1850. The level of democracy further appears to have a u-shaped association with the rule of law. When the timing of colonialism is controlled for, the national identity of the colonizer does not seem to be a strong determinant of institutional strength which suggests to us that it is not so much the different colonial policies of for instance the Spanish and the British that explain the varition in institutional outcomes but rather the circumstance that British colonies were mostly created in a generally more civilized and enlightened imperialist era.

Our work is related to a huge number of books and articles, all of which can not be reviewed here. Our major argument about two distinct waves of colonization, as well as our working definition of a colony, are inspired by Osterhammel's (2005) excellent survey of colonial theory, Curtin's (1989, 1998) important research on colonialism and medical history, Fieldhouse's (1984) and Pakenham's (1991) accounts of the imperialist era, to name a few works. Several other research projects in economics have gathered extensive colonial samples - for instance Grier (1999), AJR (2001), and Feyrer and Sacerdote (2006) - but no other article has, to our knowledge, explicitly attempted to track all former colonies in the world and identify founding events. We hope that our sample therefore might serve as a reference for future empirical work on colonialism.

Recent research on colonialism has mainly investigated two basic hypotheses: Firstly, the *geography* and *endowments*-view, proposing that colonial institutions were strongly affected by the disease environment (AJR, 2001), by pre-colonial population densities and levels of urbanization (AJR, 2002), and (in the Americas) by the potential for sugar plantations and mining (Sokoloff and Engermann, 2000). This literature shows convincingly that where settler mortality was high due to tropical diseases, where there was an abundance of lootable minerals, and where a dense population could easily be exploited, Western colonists tended to install 'extractive', rent seeking institutions with weak private property rights that were harmful for long-run

development.

In the second *national origins*-hypothesis, differences in colonial policy are attributed to the legal systems and the different national ideologies of the colonizing countries. La Porta et al (1999) as well as Djankov et al (2003) place particular emphasis on the legal tradition of the colonizer, in particular the important difference between common law (British tradition) and civil law (French tradition). It is argued that the former legal tradition has proved to be more conducive to strong property rights and constraints against the executive than the latter. North (1990), Grier (1999), and Lange et al (2006) consider the different ideologies of the Spanish and the British colonists and argue that typical British colonial institutions - typically featuring freedom from expropriation and a preference for free trade - have been central for economic development.

In this article, we focus instead on the temporal dimension of colonization. We argue that while both the geography and the national origins hypotheses give important insights about the process of institutional development, they need to be complemeted with a more comprehensive theory of the importance of the timing of colonialism. Our results indicate that when the timing of colonialism is accounted for, the disease environment is shown to have a very heterogeneous effect before and after 1850 and the impact of national origin dummies more or less disappears. Temporal aspects, such as the effects of colonial duration on economic growth and income levels, have previously been studied in smaller samples by Grier (1999), Bertocchi and Canova (2002), Price (2003), and Feyrer and Sacerdote (2006).[2] The latter working paper also analyzes the effect of colonialism during different eras, but its dependent variable is economic development rather than institutional quality. Their sample of about 80 island observations - many of which are islands within the same country - is further very different from our cross-country sample. The general tendency in both Grier (1999) and Feyrer and Sacerdote (2006) that the duration of colonialism has been favorable for economic development, is well in line with our results of a positive effect of imperialist colonialism on institutions.

The article is structured as follows: In section two, we present our sample

[2] Bertocchi and Canova (2002) also recognize the very large differences between American and African colonization and therefore restrict their analysis to the relatively homogenous era of African colonization.

of 143 colonies and the methodology used for collecting the data. In section three, we discuss whether Western colonialism can be regarded as one great historical experiment. In section four, we test for temporal heterogeneity in the effects of settler mortality on institutions. In section five, we analyze the general determinants of democracy and rule of law, whereas section six provides a longer interpretation of the results. Section seven concludes.

2 The colony sample

Previous cross-country studies on the social and economic effects of Western colonization have tended to use very different data. Table 1 gives an overview of previous studies. Most works carry out cross-country investigations and the number of observations in theses studies range from 33 British colonies in Lange (2004) to 103 colonies in Rodrik et (2004).[3] Banerjee and Iyer (2005) collect a data base on 166 Indian districts. The most original database is Feyrer and Sacerdote's (2006) use of data from 80 islands, some of which are countries (like Barbados) whereas many observations are islands within island countries (like Efate within the island country Vanuatu).

Judging by the heterogeneity among the previous samples in table 1, there appears to be a risk of sample selection bias in the existing literature. In any case, it is very hard to make a comparison of inference when samples differ to this extent. Since our aim is to investigate the general determinants of institutional choice among all former colonies, it is of central importance to get as close to the universal sample of Western colonies as possible. To do so, we need to clarify how a colony is defined. We use the following definition, which is a modified variant of that in Osterhammel (2005, p 10):

Definition 1 *A Western colony is a new and lasting political organization created outside Europe by Western countries (countries in Europe excluding Russia but including the Western offshoots United States, Australia, New Zealand, and Canada) from the 15th to the 20th centuries through either invasion and conquest, and/or settlement colonization, but built on pre-colonial conditions. Its rulers are in sustained dependence on a geographically remote mother country or imperial center that claims exclusive*

[3] The base sample in the latter article contains 79 such countries with data on settler mortality.

rights of possession of the colony or in other ways strongly dominate politics in the country.

Using this definition means that we restrict our sample in a number of ways (see the Data Appendix for a presentation of the data). The time interval specified above (the modern era) means that we disregard previous events of colonization such as the Danish settlements of Iceland and Greenland or the Greek colonizations throughout the Mediterranean during antiquity. It also means that we disregard the current American presence in Iraq. The fact that we only consider Western colonies means that we do not take into account the Japanese conquests in East Asia in the 1930s, nor the Russian aquisitions until 1917. The requirement that the colony in question must be dependent on a particular Western country implies that we exclude a number of countries in the Middle East such as Syria, Iraq, and Jordan which were ruled by Western countries in the wake of World War I on a mandate from the League of Nations. We also exclude Ethiopia, the only country in Africa that was never a colony.[4]

Most colonial powers used several different types of colonialism. One of the more important distinctions was between colonies and protectorates. Full colonies were often 'possessions' in the full meaning of the word. Algeria and other French colonies were indeed considered to be parts of France. Protectorates, on the other hand, were generally more loosely tied to the mother country. For instance, British protectorates like Bhutan and Qatar were at least nominally still independent but typically had to concede substantial power to the British, such as the handling of foreign affairs and the right to deploy troops in the country. In line with most of the literature, we treat all protectorates as colonies.

Using the definition above, we have identified 143 former colonies in the world that are now sovereign states or still dependencies and that have entries in the World Bank statistics as countries.[5] The sample includes all countries in North, Central, and South America, all countries in Africa except Ethiopia, all countries in South Asia except Thailand, most Pacific

[4]Italy occupied the country during 1936-41, but this did not result in a lasting colonial administration. Bertocchi and Canova also exclude Liberia, but after close consideration we decided that its 23-year period of American domination until independence in 1847 qualifies it to be regarded as a colony.

[5]Our sources in this data collection have been Britannica (2006), CIA (2006), and Nationalencyklopedien (2006).

islands, only a few small countries in the Middle East (Bahrain, Kuwait, Qatar, United Arab Emirates, and Yemen), and no countries in Northern or Central Asia (except Bhutan). Some of the countries in our sample are very small and not normally included in cross-country macroeconomic studies. The smallest countries in our sample in terms of population size for which we have data on institutional quality include Cook islands (21,400 individuals), Cayman islands (39,000), and the Caribbean island group Saint Kitts and Nevis (46,000).

We have also tried to determine dates of colonization and independence for all colonies in the sample, and the Data Appendix lists the major event for each country that motivates using the particular year stated as the date of colonization. Whereas the year of independence is usually quite straightforward, the onset of colonization is often more difficult to determine. For the very important colony of India (including Pakistan and Bangladesh), we have chosen the year 1750 when the military campaigns of Robert Clive made the East India Company the strongest power on the Indian peninsula. However, the Portuguese had established trading posts already in early sixteenth century and the country did not become a crown colony until 1858. The colonies in West Africa are particularly hard to decide on since hundreds of years passed between the first contact with Europeans in the fifteenth century and the great Scramble in the 1880s. We have tried to stay close to our definition of a colony when determining the date of colonization. In particular, we have tried to identify a date when Western colonizers became the major political power in the region. This date is sometimes hundreds of years before the formal declaration of colony status, which some previous authors have used.

Regardless of the method chosen for dating major events of colonization, it is quite clear that Western colonialism is a highly heterogeneous process spanning more than five centuries. Figure 1 shows the dates of colonization and independence for the 143 countries in our sample. The oldest colony in our sample is Cape Verde, colonized by the Portuguese already in 1462, whereas the most recently created colony is Niger in Saharan African, not colonized in accordance with our definition until 1922. The first country to be decolonized was the United States in 1776 whereas 17 countries, including for instance Puerto Rico, Martinique, Guam, and French Polynesia, are still not sovereign nations.

Visual inspection of figure 1 suggests that there are two major clusters of similar colonial experiences. The first cluster in the lower-left corner shows colonies in South and Central America and in the Caribbean, created by the Spanish but also the Portuguese from 1492 onwards and decolonized around 1820. The second, larger cluster in the upper-right corner has its core among African countries colonized in the late nineteenth century and decolonized around 1960. A formal statistical cluster analysis, where we force the software program to identify two clusters each for the dates of colonization and independence, establish one cluster of 62 countries colonized between 1462-1715 and another with 81 colonies set up between 1750-1922. Regarding independence, the equivalent groupings are 24 observations for 1776-1898 and as many as 119 observations during 1901-2002.

Figure 2 puts the time distribution of new colony formation in focus. The figure largely conforms to the standard narrative about the different colonial eras. The first wave of Spanish and Portuguese colonization effort is reflected in the first peak in figure 2. Between 1502-1537, 22 new colonies were formed in the new world and some other places (Mocambique - 1505, Malaysia - 1511, and Sao Tomé and Principe - 1522). A primary motive for this early 'mercantilist' wave was the prospects of capturing gold treasures in the Americas and to gain control of the spice trade in the Indian Ocean (Landes, 1998). As colonial policy matured, subsequent centuries saw a considerable number of Spanish conquistadores settling down permanently in the acquired lands. The later part of the sixteenth century also saw the emergence of the 'encomienda' system of forced labor in South America which has been discussed by several authors (Sokoloff and Engerman, 2000).

The mature part of the mercantilist phase also included the establishment of the Caribbean plantation economy around 1640 (Osterhammel, 2005). As figure 2 shows, the time period 1610-1660 was also a period of intense colonization, mainly in the Caribbean and mainly by French and British colonizers. The sugar plantations relied heavily on the mass importation of slaves from West Africa. As discussed above, the slave trade had serious political consequences on some of the African nations in the interior, although the white traders mostly stayed near the ocean.

Around 1750, the British East India Company consolidated their influence over the Indian provinces including Pakistan and Bangladesh. Apart from this important development, not much happened in terms of new colony

formation. The British abolished slavery in 1807, which substantially weakened the Western powers' interest in West Africa and in their Caribbean holdings (Curtin, 1989). Colonization activity once again started to increase as the nineteenth century progressed. However, as can be inferred from figure 2, the great new wave did not start until 1880. During only two decades, 40 new colonies were formed, the great majority (25) in Africa. The 'imperialist' race for the African continent started and received its basic ground rules in the infamous Berlin conference of 1885.[6] A relatively brief but intense colonial epoch then proceeded during which the majority of the world's population lived in colonies. Massive decolonization then followed in the wake of World War II when 98 countries in our sample attained full independence.

3 Modelling the effects of colonialism

The renewed scholarly interest in colonialism among economists essentially stems from the notion that the colonial era had a major impact on the evolution of economic and political institutions, which in turn (since institutions tend to be persistent) strongly influence current economic performance (North, 1981, 1990; AJR, 2001, 2002, 2005; Engerman and Sokoloff, 2000). To put this formally, let Z^C be the quality of colonial institutions, Z^P the present quality of institutions in the post-independence era, and let Y be an indicator of economic performance, for instance output per capita, then the standard hypothesis in the literature is that

$$Z^C \Longrightarrow Z^P \Longleftrightarrow Y.$$

In other words, because of institutional persistence, Z^C still largely explains Z^P which in turn has a strong effect on Y. However, due to reverse causation, Y also affects Z^P which means that we have a joint endogeneity problem if we try to assess the relationship between the latter two variables empirically. An obvious candidate as an instrumental variable for Z^P would of course be Z^C. Unfortunately, it has turned out to be very difficult to estimate Z^C with any precision. The well-known solution by Hall and Jones (1999) and AJR (2001) was to try to indentify a vector of exogenous

[6] See for instance Pakenham (1991) for an account of these events.

variables $\mathbf{X}$ that had a causal effect on Z^C but no direct impact on Y:

$$\mathbf{X} \Longrightarrow Z^C \Longrightarrow Z^P; \quad \mathbf{X} \nRightarrow Y$$

$\mathbf{X}$ in Hall and Jones (1999) contained distance from the equator and the fraction of the population speaking European languages, whereas AJR (2001) used settler mortality during colonial times as their favored candidate for $\mathbf{X}$.

If colonialism had been a perfect historical experiment, then all participating colonies $i \in N = 143$ should have been colonized at the same date t and decolonized at the same date $t + d$ so that they could all be compared at current date $\tau = t + d + f = 2002$ where d is the duration of the colonial era and f is the duration of post-colonial independence. We should further have been able to identify a number of exogenous variables $\mathbf{X}$ that each had a substantial degree of variation at the onset of the experiment and that actually appeared to explain the variation that eventually unfolded in the institutional quality of country i at the current date, $Z^P_{i,2002}$.

Of course, perfect historical experiments hardly ever exist. Most works so far have focused on the problem of finding a suitable exogenous instrumental variable X_t to account for the variation in colonial and current institutional quality. We argue that in order to identify some X_t or to propose a general theory of the institutional effects of colonialism, we need to seriously consider the fact that t, d, and f have been very far from uniform across colonies. As Figure 1 shows, the typical colony in the New World - created during the mercantilist wave - has scores like $t = 1525$, $d = 300$, and $f = 177$, whereas the same numbers for a typical African country would be $t = 1890$, $d = 75$, and $f = 37$. Indeed, figures 1 and 2 as well as our discussion above seem to suggest that we can make a rough division between what we refer to as a mercantilist wave, lasting perhaps until 1715 when Mauritius is colonized, and an imperialist wave starting with the central colonization of India, and reaching its peak in 1880-1900.

Does this heterogeneity along the time dimension necessarily matter for all-encompassing theories about the causal linkages between exogenous factors, colonial institutions, and economic development? To be more precise, why could we not reasonably expect that the mapping of some exogenous variable X onto institutional quality Z^C during the mercantilist era

$X_{1525} \Longrightarrow Z^C_{1825}$ typically is essentially the same as $X_{1890} \Longrightarrow Z^C_{1965}$? Below, we briefly outline arguments for the view that the timing of colonization is indeed essential.

The argument against viewing colonialism as one historical process might be divided into the following broad areas: (1) *Colonial incentives and choice sets*, and (2) *the impact of the disease environment*. If we start with the first area, it appears fairly uncontroversial to claim that the incentive structure of the early colonists was quite different from that of the late colonists. We believe that our reference to a 'mercantilist' and an 'imperialist' era provides a succinct summary of the differences in incentives. The Spanish and Portuguese colonization efforts with their peak in the first half of the sixteenth century were largely driven by the desire to capture precious metals (in America) and to gain monopoly positions in the lucrative spice trade (in Asia) (Landes, 1998; Lange et al, 2006). For both the Spanish and the Portuguese, the conquests of America and parts of Asia were further seen as a continuation of the preceding 'reconquista' of Muslim Granada (Landes, 1998).

Colonialism in the nineteenth century also had trade opportunities and potentially easy riches as incentives, but the overall motives were now much more complex. The benefits of free trade were now generally acknowledged.[7] It is presumably impossible to understand the wave of colonizing efforts after 1880 without reference to power strategic and imperialist considerations and a spirit of increasing nationalistic rivalry. Colonies were often formed only to prevent other powers from colonizing. Some of the British activities in Africa might also be explained by a humanistic agenda aimed at rooting out slavery and a more or less honest Western hope of spreading 'civilization' (Pakenham, 1991).

A possibly even greater difference between the two eras concerned the colonists' choice sets or restrictions of action. In 1492, Cortés and Pizarro showed the way by ruthlessly establishing the Spanish as the new rulers of the Aztec and Inca empires. Cornerstones of colonial economies during the mercantilist era were institutions like the 'encomienda' - a system of forced labor for native Indians - and slavery, mainly using imported African slaves on sugar plantations. Strong rules of private property or for the

[7] Lange et al (2006) argue that the British pursued a 'liberal' or 'capitalist' model of colonialism with profit as the ultimate aim.

constraint of the executive were not really to be found anywhere in Europe (North, 1990; AJR, 2004). Not until the later half of the seventeenth century did institutional development take off in England and in the Netherlands, although really strong capitalist institutions were probably not in place even there until the nineteenth century (North, 1990; AJR, 2005). Hence, a choice between 'extractive' and 'productive' institutions does not seem to have been in place during the mercantilist era.

By 1880, however, the situation was very different. The French and American revolutions, and the independence of most American nations had radically changed the political landscape in the Western world. The Enlightenment had brought a new way of scientific thinking based on empirical observation and a political philosophy where the equality of men was an important notion.[8] The British abolished slave trading for their nationals in 1807, a policy which greatly affected colonial policy even among the other colonizing nations. Furthermore, the Industrial Revolution fundamentally changed Western societies and strong private property rights and constraints against the executive were more or less generally accepted in the major colonial centers. A discriminatory colonial policy giving favorable institutions to those colonies where there was settlement potential for Western colonists would certainly have been possible. Yet, by this time, the supply of European settlers was drying up.

The second key factor for understanding the difference between the two major colonial eras, the disease environment, will be treated at some length in the following section.

4 Disease environment

A variable that has been used and discussed by several authors as a candidate for X_t is AJR's (2001) measure of settler mortality during colonial times. The variable provides a proxy for settler mortality by using data on mortality among soldiers and bishops in Western colonies between 1604-1848, extracted mainly from the work of Curtin (1989). It shows the annual number of deaths in malaria and yellow fever per 1000 people and is available

[8] Feyrer and Sacerdote (2006) contrast the purposes of Magellan's journeys in 1519 with those of Cook in 1768 and 1779 and find that whereas the spread of Christianity was an important motive for Magellan, Cook seemed to be more driven by scientific curiousity and a respect for the native people he encountered.

for about 75 countries.

AJR's (2001) main hypothesis was that settler mortality served as a useful proxy for the feasibility of creating 'settler colonies'. Where the disease environment was favorable to Western colonists, they created durable settlements and installed strong institutions of private property (for instance in United States and Australia), whereas where settler mortality was high they developed 'extractive' institutions designed to create the greatest flow of rents with the least possible physical presence of colonists. Their empirical analysis shows that colonies with high settler mortality indeed appears to have weaker property rights and constraints against the executive than colonies with a favorable disease environment. Subsequent articles by the authors have further confirmed this hypothesis, as well as contributions from other research teams (Easterly and Levine, 2003; Rodrik et al, 2004).

AJR's (2001) hypothesis and results have been challenged by a few works. Albouy (2006) argues that AJR's construction of their settler mortality-variable suffers from 'inconsistencies, comparability problems, and and questionable geographic assignments' and that when a revised series is used instead, the relationship between institutions and settler mortality is not robust. AJR (2006) refute all these claims. A more fundamental critique from Glaeser et al (2004) rests on the argument that settler mortality did not have its major impact through institutions but through human capital accumulation. The key insight according to this point of view is that colonists in regions with low mortality essentially brought themselves rather than good institutions. Glaeser et al (2004) also criticize most of the institutional variables in the literature as reflecting policy outcomes rather than long-run institutions.

The angle for discussing settler mortality used in this article is the one already developed above: Can we really assume that mortality in tropical diseases during the Spanish conquest of America by 1525 follows the same underlying relationship with institutional quality as during the scramble for Africa in 1890? Mercantilist colonial strategies were surely to some extent influenced by settler mortality, but probably even more so by the devastating mortality among the indigenous population in smallpox and other diseases introduced by Westerners. In for instance Mexico, the size of the Indian population is believed to have plummeted from about 20 million by the time of Cortés' arrival in 1520 to 1.5 million in 1620 (Diamond, 1997, p 210). In

the Caribbean, the Indian populations often disappeared completely. In their place, Spanish and British colonizers started to import African slaves. The devastating long-run impact of this demographic revolution in parts of America has been documented in the important work of Sokoloff and Engerman (2000).

Apart from this important fact, there is another fundamental difference between 1525 and 1890: The revolution in tropical medicine that took place in the mid 1800s. One of the main arguments delivered in Philip Curtin's works (1989, 1998) is indeed that the dramatic reduction in settler mortality after 1840 appears to have made the colonization of Africa possible. In for instance Algeria, the annual mortality among French troops fell from 81 per thousand soldiers in 1836-46 to 22 deaths per thousand in 1859-67, implying a decrease in mortality of 73 percent during just two decades. The rapid decline in mortality continued ever after 1860. In French West Africa, annual mortality fell from 164 per thousand soldiers in 1819-38 to below 7 deaths per thousand in 1909-13, i.e. a reduction by 93%. Data for British West Africa and South Africa show similar developments (Curtin, 1989, Tables 1.1 and 1.8). AJR's (2001) practice of using the earliest mortality data available for Africa, often from the 1840s, seems problematic from this perspective. The much higher rates of settler mortality from the first half of the nineneenth century are not obviously relevant determinants of colonial institutional policy in 1890. We might therefore have a problem of measurement error.

What hypothesis emerges from these facts regarding the statistical relationship between settler mortality and institutions? The general empirical specification in AJR:s first-stage estimation (2001) is:

$$Z_{i,\tau}^{P} = \alpha_0 + \alpha_1 LogMort_{i,t_i} + \alpha_2 Control_i + \varepsilon_i$$

where *LogMort* is the natural logarithm of the annual mortality series created by AJR (2001) and $Control_i$ is a vector of control variables. AJR (2001) run reduced form regressions with a measure of Z^P, *Risk of expropriation,* as the dependent variable (this variable is discussed further below).

What should we expect to find regarding the level of the *LogMort*-estimate α_1 if we divide the total sample into subsamples of countries colonized before and after the revolution in tropical medicine around 1850? On

the one hand, the general improvement in medicine after 1850 might imply that mortality declined proportionally in the tropics and in mid-latitude countries. In this case, the relative 'cost of relocation' to the tropics in terms of an increased probability of dying, which Curtin (1989) refers to, might be roughly constant. Hence, one might expect $\alpha_1 < 0$ and that the absolute magnitudes should be almost the same in both subsamples. On the other hand, the potential problems of measurement error in *LogMort* related to the revolution in tropical medicine, as well as the much smaller supply of potential Western settlers during this era, would both suggest that α_1 should be weaker and perhaps not significantly different from zero after 1850 and during the African scramble. Our main hypothesis is that this latter effect dominates so that α_1 is expected to be smaller in absolute terms among African countries and countries colonized after 1850.

In order to test for parameter heterogeneity on the grounds discussed above, we propose an empirical strategy where the main estimated equation takes the following form:[9]

$$\begin{aligned} Z_{i,\tau}^{P} &= \alpha_0 + \alpha_1 LogMort_{i,t_i} + \alpha_2 Africa_i + \alpha_3 Post1850_i + \alpha_4 Latitude_i + \\ &\quad + \alpha_5 \gamma LogMort_{i,t_i} \cdot Africa_i + \alpha_6 (1-\gamma) LogMort_{i,t_i} \cdot Post1850_i + \epsilon_i \end{aligned} \tag{1}$$

Africa is a dummy variable equal to one for African countries and $Post1850$ indicates whether the country was colonized after 1850 (=1) or not (=0). We include an *Africa*-dummy alongside our $Post1850$-dummy since even African countries that were colonized before the nineteenth century, like Ghana and South Africa, were still greatly affected by the resurgence of Western colonial ambitions in Africa after 1885. Our interest in 1850 is of course due to the dramatic change in the efficiency of tropical medicine that occurred around this time. *Latitude* measures absolute distance from the equator in latitude degrees and is a control variable that is often included in this type of studies. The standard result is that countries further from the equator have stronger institutions, i.e. we would expect that $\alpha_4 > 0$. ϵ_i is a normally distributed error term. Note further that $LogMort_{i,t_i}$ has a (i, t_i)-subscript, indicating that the date of the *LogMort* measurement varies drastically over observations in the sample.

[9] Please see the Appendix for summary statistics and presentations of all variables included.

Our main regressors of interest are the interaction terms $LogMort_{i,t_i} \cdot Africa_i$ and $LogMort_{i,t_i} \cdot Post1850_i$. These are multiplied by a dummy variable γ that indicates what partitition of the sample that we focus upon. $\gamma = 1$ means that we compare the effect of *LogMort* between African and non-African countries and do not include the $LogMort_{i,t_i} \cdot Post1850_i$-term, whereas $\gamma = 0$ means that we leave out $LogMort_{i,t_i} \cdot Africa_i$ and focus on differences between countries colonized before and after 1850. The null hypothesis that we test is $\alpha_5 = \alpha_6 = 0$. If the estimates of α_5 and α_6 are positive and significantly different from zero, we have confirmed our main hypothesis of a less pronounced relationship in these categories of colonies.

Table 2 shows the results of this statistical exercise with AJR's (2001) *Risk of expropriation* as the dependent variable, believed to capture the strength of property rights and the constraints against the executive. It measures the average risk of expropriation during the years 1985-95 and ranges between minimum 3.5 and maximum 10 with higher scores indicating a lower risk (i.e. better institutions). The variable is available for 64 countries that make up the base sample, specified in AJR, 2001, Appendix Table A2.

In column 1, we start by exactly replicating the estimate in AJR (2001) of -0.613, showing a strong negative influence of *LogMort* on institutional quality as hypothesized. *LogMort* alone explains about 27 percent of the variation, which is quite remarkable. A one standard deviation increase in *LogMort* (1.25) results in a fall in *Risk of expropriation* of $-0.613 \cdot 1.25 = -0.766$, which is equivalent to 11.7 percent of the whole range of variation in institutional quality.

In columns 2-3, we then run a first test for parameter heterogeneity with dummies and interaction terms. In column 2, the coefficient for *LogMort* in the upper row falls drastically when we control for a different relationship among the African countries. The interaction term is strongly significant and the implied coefficient for the African countries is -0.12 to be compared with -1.211 for the non-African countries. A one standard deviation increase in *LogMort* thus causes an decrease in institutional quality by 1.51 units (23.2 percent of total variation in *Risk of expropriation*) among non-African countries, whereas the same change among the African countries causes a decline by merely 0.15 units (2.3 percent). The coefficient for *LogMort* in Africa can further be shown to be insignificant. Column 3 also suggests that

the coefficients for countries colonized before and after 1850 are different, but since the interaction term is insignificant we can not reject the null hypothesis of identical parameters.

The full test from the equation above is then carried out in columns 4 and 5. The estimates of α_2 and α_3 in column 4 are both negative and significant, suggesting that colonies in the late imperialist wave of colonization are worse off than earlier colonies. The significant estimate of α_5 is however the most interesting result. Column 4 once again implies that non-African colonies have a very different slope coefficient for *LogMort* ($\alpha_1 = -1.119$) from that of the African countries ($\alpha_1 - \alpha_5 = -0.08$). When we make the *Post*1850 partition in column 5, the slope for these colonies is again flatter but the null hypothesis of $\alpha_6 = 0$ can not be rejected.

Risk of expropriation is however not the only measure that has been used in the literature to capture the strength of property rights institutions and the general quality of economic institutions. In table 3, columns 1-3, we use instead the index *Government Anti-Diversion Policies* (GADP), originally developed by Knack and Keefer (1995), as our institutions-variable. *GADP* provides an average for the time period 1985-95 of five indicators; quality of bureaucracy, rule of law, government corruption, risk of government repudiation of contracts, and lastly risk of expropriation, the indicator used by AJR (2001). *GADP* thus provides a broader measure of institutional quality. Column 1 first shows that whereas the relationship between institutions and *LogMort* is negative and significant in the full sample, it is weakly significant or non-significant in the African and Post1850 subsamples. In column 2, the *Africa* and *Post*1850 dummies are both negative and significant. Furthermore, the interaction term in column 2 is positive and significant. Thus the slope coefficient for *LogMort* is a lot flatter in Africa than in the rest of the world ($\alpha_1 - \alpha_5 = -0.020$ as compared to $\alpha_1 = -0.136$). Similarly, the slope coefficient for *Post*1850-countries is now significantly different (i.e. flatter) from that of earlier colonies.

The same basic pattern is prevalent in columns 4-9. In 4-6, the dependent variable is Hall and Jones' (1999) *Social infrastructure*, created by taking the average of *GADP* and Sachs and Warner's (1995) index of trade openness during 1950-1994. *LogMort* is again shown to have a statistically significant difference in slope coefficients when we partition the sample along the *Africa* and the *Post*1850-dimensions. In 7-9, we use *Rule of law* in 2002 from

Kaufmann et al (2003), a variable also employed by Rodrik et al (2004) and Easterly and Levine (2003).[10] Again, the interaction terms are positive and significant and the differences in slope estimates are large.

The implication of these results is that there are strong indications of parameter heterogeneity in the settler mortality variable in the expected direction. *LogMort* is still a remarkably robust determinant of institutional quality among non-African colonies and colonies created before 1850, but the relationship looks quite different among countries associated with the imperialist wave of colonization. In the next section, we will take a closer look at how the timing and duration of colonization has affected institutions.

5 Colonial determinants of institutional quality

5.1 Empirical strategy

In this section, we broaden the analysis to investigate how the duration of colonial rule has affected political and economic institutions. We also study whether the impact of being a colony during the mercantilist era is similar to the effect of being a colony during the imperialist era. We focus on two types of institutions that are generally believed to be central for economic development; the level of democracy and the strength of the rule of law. We also introduce a number of other potential determinants related to colonialism such as country size, national identity of colonizer, and the history of statehood.[11]

The main equation that we estimate has the simple setup:

$$Z_{i,\tau}^{P} = \beta_0 + \beta_1 Duration_i + \beta_2 Control_i + \varepsilon_i$$

$Z_{i,\tau}^{P}$ now includes measures of democracy and rule of law where a higher score means 'better' institutions. *Duration* is the total number of years under colonial rule, i.e. *Independence* - *Colonized* where *Independence* is the year of indepence and *Colonized* is the year of colonization, as discussed in section two. *Control* is a vector of other colonialism-related variables. This vector will often include the squared term *Duration sq* as a regressor in order to check for non-linearities.

[10] We have normalized the variable to range between 0 and 100 to simplify the analysis.
[11] See the Data Appendix for an extensive description of the data used.

At this stage, a brief note on causality is necessary. Could it be the case that $Z_{i,\tau}^{P}$ in some way has had a reverse casual effect on the duration of colonialism? Using current income levels instead of institutional quality as their dependent variable, Feyrer and Sacerdote (2006) consider such a reverse causation mechanism and instrument colonial duration with wind patterns. They find, however, that OLS and IV estimates are more or less identical. We believe that a feedback loop from current institutions to colonial duration is rather unlikely and it is unclear what direction such an effect would take.[12] In the section below, we will nonetheless briefly check the robustness of our hypotheses by employing an IV-approach.

We are primarily interested in three things: Whether we can reject the null hypothesis of $\beta_1 = 0$, i.e. if colonial duration has had a visible effect on the institutional quality of today. Secondly, we are interested in whether the effect of colonial duration is homogeneous over the different eras of colonization and across continents. Thirdly, we want to analyze if there are other colonial determinants of institutional quality with strong and significant effects.

5.2 Democracy

Democracy is the first variable that we take a closer look at. We include the level of democracy since it is generally acknowledged that there is a clear link between political freedom and economic development (Lipset, 1959; Barro, 1999). How causality runs is, however, still debated in the literature (Acemoglu et al, 2006). It is often proposed that political competition forces otherwise self-interested governments to provide their population with public goods like education and an efficient rule of law. Failure to do so will cause governments to be ousted by the electorate. Democracy is thus a kind of over-arching institution that supplies rulers with incentives towards efficient and welfare-improving governance, as well as constraints against opportunistic predation.

Our proxy for democracy is taken from the well-known Polity IV-dataset collected by Marshall and Jaggers (2003). More specifically, we use their 'Polity'-variable for the year 2002 which combines the scores on their mea-

[12] We cannot say if it is more likely that colonial powers would tend to grant independence early to colonies with strong institutions or if they would be inclined to keep such colonies within their empires.

sures of democracy and autocracy. A strong democracy is defined to have a system of rule where citizens can effectively express preferences for policies and leaders, where there are strong constraints against the executive, and where civil liberites and political participation are well protected. An autocracy then is characterized by a suppression of competitive political participation, weak constraints on the government, and that leaders are chosen within a small elite. In order to simplify the quantitive analysis, we have normalized the variable to get a range from 0 to 100 where a score of 100 thus is given to the most democratic countries in 2002 whereas a score of 0 implies a completely autocratic country. In the first category, we find for instance Australia, Mauritius, and Trinidad, whereas the least democratic country in the world in 2002 is deemed to be Qatar. Countries that score around 50 are very weak states that are neither democratic nor autocratic. This group includes collapsed or almost collapsed states like DR Congo, Somalia, and Liberia.[13]

It has been argued in this literature that levels of democracy are strongly associated with income levels (Lipset, 1959; Barro, 1999). However, when Acemoglu et al (2006) include country fixed effects in a cross-country panel, the link between changes in income levels and changes in democracy disappears. They argue that what appears to matter the most are long-run historical factors, for instance the date of independence from colonial rule. We follow up on this track by specifically analyzing the long-run colonial determinants of democracy.

In the empirical analysis, we use *Polity* as our dependent variable and introduce a number of variables that are more or less associated with colonialism. Our main variable $Duration_i$ measures the length of colonial rule from colonization to independence. Cape Verde has the longest colonial duration (513 years), followed by Aruba (503 years) and Puerto Rico (494 years). The shortest colonial eras were experienced in Liberia (23 years), Bhutan (37 years), and Niger (38 years). The average duration of colonial rule among the 143 colonies is 204 years with a standard deviation of 138 years.

Table 4 shows the first set of regressions. In column 1, we see that total

[13] We have chosen to redefine the 'interregnum' or 'anarchy' scores of -77 for Somalia and DR Congo in the original dataset to a Polity-coding of 0, which gives them a score of 55 in our normalized Democracy-variable.

duration of colonial rule is positively associated with the level of democracy. The estimate is strongly significant and it is noteworthy that *Duration* alone explains 26 percent of the variation in *Polity*. The point estimate implies that a one standard deviation increase in *Duration* would increase *Polity* by roughly 18 units, which is of course 18 percent of the whole range (0.130*138.22).

However, as can be inferred from figure 3, showing the simple scatter plot of *Polity* versus *Duration*, the relationship does not really appear to be linear. When we introduce the squared term *Duration sq* in column 2, we find that a non-linear specification improves the fit considerably so that more than one third of the variation in the dependent variable is explained by running just these two terms. The coefficients imply that a maximum is reached at roughly 315 years ($0.4280/2 \cdot 0.00068$). In the sample of 96 countries with available *Polity*-data, only 15 have a value greater than 315 and are thus in the downward-sloping segment of the relationship. Figure 3 further indicates that there are three outliers with long colonial durations that potentially affect the estimates disproportionally: Cuba (CUB), Angola (AGO), and Malaysia (MYS). Excluding these observations in column 3 makes R^2 rise to almost 41 percent and causes the implied maximum to increase to 365 years. In this case, only 5 of the colonies included are in the downward-sloping region, which in turn means that for about 95 percent of the countries, a marginal increase in colonial duration improves their level of democracy.

In columns 4-6, we explore whether there is a temporal heterogeneity regarding the impact of colonial duration on democracy. In column 4, we only use colonies created during the mercantilist era, i.e. before 1750. As suggested by figure 3, the relationship between *Duration* and *Polity* is negative and insignificant for these 36 countries, whereas it is positive but insignificant for the remaining 60 countries. In column 6, we see that the positive general relationship for the whole sample is largely driven by countries colonized after 1850, during the heyday of imperialist colonialism. The large estimate for *Duration* at 0.54 is strongly significant and implies that every decade of colonial rule during this period increases levels of democracy by 5.4 units. This is indeed consistent with the hypotheses developed earlier about the different nature of the colonial eras.

The constants in columns 4-6 reveals that there is an additional dimen-

sion to this story. The constant in column 4 is 102.35 whereas it falls to 5.27 in column 6. Combining the level of the constants and the point estimates in columns 4 and 6 reveals that average levels of democracy are much higher among countries colonized during the mercantilist era. In fact, the predicted level of democracy in a mercantilist colony with a $Duration = 500$ is 73.3 whereas the predicted value for an imperialist colony with a $Duration = 100$ is only 59.3. We will discuss this aspect further below. Columns 7 and 8 show that the differences are not driven by any heterogeneity between Africa and the rest of the world since β_0 and β_1 do not display such a large difference in magnitudes as in the time-related subsamples.

In table 5, we then introduce a number of other potential colonial determinants of democracy besides duration. In column 1, we include a variable *State History*, capturing the extent of countries' statehood experience since the year 1 A.D. (Putterman, 2004). A high value (close to unity) means that the country has a long history of statehood above tribal level with indigenous rulers in power. Former colonies with the highest score are Ethiopia (0.98), Sri Lanka (0.85), and Cambodia (0.84), whereas the lowest scorers are Papua New Guinea (0.01), Kenya (0.01), and Central African Republic (0.01). The negative and significant estimate of *State History* in column 1 implies that when controlling for the duration of colonization, former colonies with a long history of advanced government are more likely to be led by autocratic regimes today.[14] Thus, there appears to be a kind of 'democratic curse' among ancient states.[15]

In column 2, we try a battery of geographical determinants; the logged size of country territory (*Log Area*), an island dummy (*Island*), settler mortality (*Log Mort*), the absolute distance from the equator in latitude degrees (*Latitude*), and a dummy for landlockedness (*Landlocked*). Out of these, only the *Island* dummy is significant at the 1 percent level, as previously found by Congdon Fors (2006) and others. All else equal, islands have a

[14] The unconditional relationship between *Polity* and *State History* is however weak. We also acknowledge the possibility of a kind of reverse causality in the sense that the type of government might influence a country's success at maintaining a sovereign state. Throughout most of history, a country with persistent democratic rule would run a very high risk of being conquered by aggressive military rulers in neighboring countries and possibly even cease to be a state.

[15] The 'reversal of fortune'-hypothesis by AJR (2002) maintains that colonies that were relatively rich by the year 1500 A.D. would be more heavily plundered and be relatively poor today. See also Chanda and Putterman (2006) for further tests of this hypothesis.

Polity-score that is about 30 percent higher than for non-islands. Somewhat surprisingly, it also turns out that geographically large countries tend to be more democratic, a result that is well in line (and largely driven by) the strong democratic traditions in large countries like Australia, Canada, and the United States. Even more suprising is the fact that the *Landlocked*-dummy is positive and weakly significant.[16] It is further noteworthy that *Log Mort* does not explain levels of democracy and neither does *Latitude*, two geographical variables that are commonly featured in this type of studies.

Regional dummies are included in column 3. *Neo-Europe* captures the impact of the four outliers Australia, Canada, New Zealand, and the United States that all have exceptional institutional quality. The estimate for *Neo-Europe* is very high and significant as usual in this type of regressions.[17] Asian countries, on the other hand, are typically significantly less democractic, as the estimate for the *Asia* dummy shows. When we check for the national identity of the last colonizer in column 4, none of the dummies for British, French, and Spanish colonies are significant, which we find somewhat surprising given the large literature on this topic.

In columns 5 and 6, finally, we make two more checks about the robustness of the association between *Duration* and *Polity*. In column 5, we use the quantile regression estimator QREG that minimizes absolute least squares and thus gives smaller weight to extreme observations. The levels of the parameter estimates both change compared to the estimates in table 4, column 2, but the signs are unaltered as are the strong levels of significance.

In column 6, we take seriously the potential concern mentioned above of reverse causality between *Polity* and *Duration*. As an instrument for *Duration*, we use *Colonized*, the date of colonization. Though the extent of democratic governance during colonial times could possibly have affected the duration of colonial rule, for instance in countries like United States and India, we believe it is highly unlikely that there could be any logical causal relationship from levels of democracy in 2002 to the date of the first colonization, often happening several hundreds of year ago. *Colonized* turns

[16] *Landlocked* is not significant if we exclude *LogMort* and run a regression with 96 countries. *Log Area* is in turn insignificant when we include a dummy for the four 'Neo-European' countries, as discussed below.

[17] It is well known in the empirical literature on colonialism that the Neo-European countries tend to be extreme outliers (AJR, 2001; Bertocchi and Canova, 2002; Hansson and Olsson, 2006).

out to be a very strong predictor of *Duration* in the first stage (the earlier the colonization, the more durable was the colonial era). In the second stage, the instrumented level of *Duration* has again a strong positive overall impact on *Polity* with an estimate that is fairly close to the non-instrumented coefficient in table 4, column 1.

5.3 Rule of law

The second type of institutions that we analyze here is *Rule of law*. As mentioned above, the variable is intended to reflect the strength of property rights and the general rule of law and order, both of which are features that are generally deemed to be central for economic development (North, 1990; AJR, 2001, 2002; Rodrik et al, 2004). We use a measure for the year 2002 from Kaufmann et al (2003) that we have normalized to range between 0 and 100. In accounting for the variation in *Rule of law* in table 6, we have used the same basic setup of independent colonial variables as previously.

When *Duration* enters the specification as a linear term in column 1, the estimate is positive and significant at the 0.05-level. As the scatter plot in figure 4 indicates, the unconditional relationship is not very strong and not obviously either concave or convex, as the non-significant estimates in column 2 confirm. In the other columns of the table, the estimates for *Duration* display a lot of variation and are not always significant. The marginal impact of *Duration* on *Rule of law* is further relatively small. The timing aspects of colonization thus do not appear to be strongly relevant for *Rule of law*. An interesting result is further that *State History* is now insignificant in column 3.

When we try the set of geographical variables in column 4, R^2 rises to almost 65 percent though with only 74 observations. The reason for this fall in observations in column 4 is of course the inclusion of *Log Mort*, which as we have already seen is a strong determinant of *Rule of law*. However, also *Log Area* and *Latitude* have strong correlations with *Rule of law*. The estimate for *Log Area* implies that the relationship between *Rule of law* and size of country territory is negative and convex. As discussed at length in Herbst (2000) and Hansson and Olsson (2006), country area can be regarded as a colonial variable since borders were set by the colonists and were then rarely changed after independence. It is further likely that the reason for the negative relationship has to do with the difficulties of broadcasting in-

stitutions over space and that larger countries tend to be endowed with a greater absolute amount of natural resource riches, which in turn increases rent seeking and irresponsible government. *Log Area* has a negative coefficient throughout the specifications, even when we expand the sample to 128 observations as in columns 5 and 6.

The strength of *Rule of law* further increases with distance from the equator, and as before, island status is good for institutional quality. Remarkably, none of the regional dummies in column 5 are significantly different from zero when controlling for geography and the duration of colonialism. It is further noteworthy that among the dummies for the colonizer nationality-dummies, only Britain is weakly significant with a positive sign, suggesting that a British colonial origin implies a 7-8 percent stronger *Rule of law*, holding all other variables constant. Controlling for *Duration*, Spanish former colonies do not seem to have a weaker *Rule of law*.

In the last two columns, we include *Polity* and its squared value in the regression. The motivation for this is that democracy is sometimes seen as a kind of 'meta-institution', or basic rule of the game, that could support the creation of economic institutions like property rights and executive constraints (Rodrik, 2000; Acemoglu and Robinson, 2006). We include a squared term because there is reason to believe that the strength of property rights and the general maintenance of law and order can sometimes be efficiently carried out by autocratic regimes (with a low *Polity*-score) as well as by democratic regimes (with a high *Polity*-score). The countries with the worst prerequisites for upholding the rule of law are presumably weak states that are neither democratic nor autocratic (with a *Polity*-score around 50).

Indeed, figure 5 and the estimates in columns 7 and 8 clearly indicate that we have a u-shaped association between *Rule of law* and the level of democracy as measured by *Polity*. A strong autocracy is thus good for law and order, as can be exemplified by the appearance of the small Gulf states in the upper-left corner of Figure 4.[18] This relationship survives the inclusion of control variables in columns 7 and 8. The parameter values in column 7 imply that a minimum is reached at a *Polity*-level of approximately 51. We should, however, be cautious in interpreting this as a causal relationship

[18] Singapore is the obvious outlier and the fit of a nonlinear specification increases a lot if the country is excluded. The non-linear relationship is also robust to excluding the four Gulf states Qatar, United Arab Emirates, Bahrain, and Kuwait in the upper-left corner of Figure 5, although t-values fall.

since it is quite likely that the strength of rule of law also could affect the level of democracy (Rigobon and Rodrik, 2005). Note also that *Duration* is not significant in this specification, which might suggest that the main effect of *Duration* runs through *Polity*.

6 Interpretation

The broad argument in this article is that the timing and duration of colonization is central for understanding institutional outcomes. We have argued that it is highly problematic to treat Western colonialism as one historical experiment. For instance, we have seen that the disease environment had very different effects on institutions in countries colonized after the revolution in tropical medicine and that the institutional legacy of the African scramble appears to be different from that of the mercantilist era. In the previous section, we therefore tried to systematically control for the temporal aspect of colonization. How should the results from this exercise be interpreted?

We argue that there are three main results. Firstly, that the duration of colonial rule appears to have a predominantly positive effect on institutional quality. This striking result is somewhat similar in spirit to the results of Grier (1999) and Feyrer and Sacerdote (2006) who respectively showed that the duration of colonialism had a positive effect on present growth rates and income levels. It naturally also stands in contrast to dependency theory that generally claims an overall negative social effect of colonialism. The impact of colonial duration is most pronounced on levels of democracy, but the effects of mercantilist and imperialist colonialism are markedly different. Colonial duration is positively associated with levels of democracy among countries colonized after 1850 whereas the relationship is negative and non-significant among early colonies. Combining these relationships with the fact that early colonies tend to have relatively high levels of democracy today, results in the concave association in figure 3.

A potential intepretation of this relationship is that Western penetration after 1850 during an enlightened (yet imperialist) age created an openness to Western ideas and ideals that facilitated the transition to democracy and modernization. The case of India is illustrative in this sense. Being colonized in 1750 and with a peak of British dominance in the late 1800s, it is the

country with the longest duration of imperialist colonial rule and also one of the most democratic countries today (see top right scatter plot in Figure 3). In the other end of the *Polity*-range, we find many African countries and the Gulf states. In the Gulf states case, it seems likely that the colonial experience was not long enough to break down already established patterns of autocratic rule. In the African case, it rather seems as if Western influence was not durable enough to create functioning states with generally accepted boundaries and efficient forms of government. Hence, African countries are predominantly found among the autocratic and very weak states.

Secondly, the fact that *State History* has a strong negative impact on levels of democracy when controlling for colonial duration suggests that there is a kind of 'curse of ancient states'. We believe that the logic is the following: Up until the nineteenth or twentieth centuries, statehood experience throughout the world was more or less equivalent to an experience of autocratic rule. This explains why South Asian countries like Myanmar, Pakistan, and Sri Lanka with long histories of statehood and autocratic rule are highly autocratic still today. Colonial experience was probably not long enough to break down these traditions. Countries without ancient histories, like the United States and Kenya, could instead form their constitutions according to the best-practice of the day without this type of constraining historical heritage.[19] One might indeed speculate that this theory holds even for ancient non-former colonies like China and most of the countries in the Middle East, all of which are strongly autocratic.

Lastly, the results in tables 5 and 6 show that the identity of the colonizer does not seem to have a sizeable effect when controlling for duration. This might be said to stand in some contrast to a large tradition in the literature emphasizing the very different ideologies of particularly Spain and Britain that were supposedly reflected in their colonial policies and institutions (North, 1990; Lange et al, 2006). Admittedly, Neo-Europe is a kind of dummy for an disproportionally large British colonial penetration so among those four countries, one might certainly argue that British influence has been positive for our institutional variables. But a Spanish dummy does not give any strong results for either *Polity* or *Rule of law*. The hypothesis that

[19] This notion of the damaging effect of a long history is similar in spirit to Mancur Olson's (1982) famous proposition that countries with 'institutional sclerosis' had lower growth after Word War II.

different national colonial ideologies should be important for institutional outcomes therefore does not appear to receive strong support. Rather, our results seem to support the basic theme developed in this article, namely that it was primarily the timing of colonization that mattered for levels of democracy, whereas geographical fundamentals like country size and distance from the equator determined the strength of rule of law.

7 Conclusions

In this article, we create a new dataset of 143 colonies that are currently treated as countries by the World Bank. On the basis of this data and existing works, we suggest a temporal approach to studying the institutional impact of colonialism. In particular, we argue that the several hundred years of Western colonialism should be divided into a mercantilist phase (defined by the new colony formation in the 1520s in America) and an imperialist phase (with the African scramble after 1885 as the central process) that are too different to be treated as one coherent historical experiment. For instance, we show that the often used measure of settler mortality had a very different impact on countries colonized after the revolution in tropical medicine around 1850.

In a broader analysis of the colonial determinants of democracy and rule of law, it is shown that whereas there appears to be a general positive relationship between colonial duration and institutional quality, the positive effect is most pronounced on levels of democracy for countries colonized after 1850 during a more enlightened imperialist era. When controlling for colonial duration, we show that older states are significantly less democratic than younger states. Democracy further appears to have a u-shaped association with rule of law, although the issue of causality remains open. The national identity of the colonizer has only a minor impact once we control for the timing of the colonial experience. Our interpretation is that it was not so much different national ideologies that caused British colonies to have stronger institutions than other colonies, but rather the fact that British colonialism took place during a generally more enlightened era in history. Our broad conclusion is that comparative studies based on the temporal heterogeneity in the colonial experiment appears to be a fruitful area for future research.

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Table 1: Previously used colonial samples.

Study	**Observations**	**Regions**
AJR (2001)	64 countries	All continents
Acemoglu et al (2006)	87 countries	All continents
Banerjee and Iyer (2005)	166 districts	Indian districts
Bertocchi and Canova	38 countries	Africa
Feyrer and Sacerdote (2006)	80 island countries and islands	Atlantic, Pacific, and Indian oceans
Grier (1999)	63 countries	All continents
Lange (2004)	33 countries	British colonies
Lange et al (2006)	57 countries	British and Spanish colonies
Price (2003	72 countries	Countries with a twentieth century colonial experience
Rodrik et al (2004)	103 (79) countries	All continents

Table 2: OLS tests for parameter heterogeneity in Log Mort

	Dependent variable: Risk of expropriation (AJR, 2001)				
	(1)	(2)	(3)	(4)	(5)
Log Mort	-0.613***	-1.211***	-0.571**	-1.119***	-0.533**
	(0.152)	(0.201)	(0.235)	(0.215)	(0.262)
Africa (dummy)		-5.311***		-4.461***	0.369
		(1.286)		(1.081)	(0.472)
Post 1850 (dummy)			-1.740	-0.994***	-1.974
			(1.310)	(0.380)	(1.358)
Log Mort * Africa		1.091***		1.039***	
		(0.279)		(0.253)	
Log Mort * Post 1850			0.188		0.191
			(0.280)		(0.277)
Latitude				0.016	0.022
				(0.012)	(0.014)
Implied LogMort estimate: Africa [a]		-0.120		-0.080	
Implied LogMort estimate: Post1850 [a]			-0.383		-0.342
N	64	64	64	64	64
R^2	0.274	0.413	0.336	0.482	0.369

Note: Estimated intercepts are omitted from the table. The superscript *** denotes a p-value smaller than 0.01, ** denotes a p-value smaller than 0.05, and * denotes a p-value smaller than 0.1. In parenthesis are robust standard errors.

[a] The implied Log Mort estimates for Africa and Post1850 in columns (2)-(5) have simply been calculated on the basis of the specifications in these columns (i.e. $\alpha_1 + \alpha_5$ in columns (2) and (4), $\alpha_1 + \alpha_6$ in columns (3) and (5)).

Table 3: OLS tests for parameter heterogeneity using three related institutional variables

Dependent variables (in bold)	**GADP (Knack and Keefer, 1995)**			**Social infrastructure (Hall and Jones, 1999)**			**Rule of law (Kaufmann et al, 2003)**		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Log Mort	-0.064***	-0.136***	-0.083***	-0.103***	-0.191***	-0.123***	-10.80***	-16.92***	-12.71***
	(0.016)	(0.028)	(0.024)	(0.021)	(0.041)	(0.039)	(2.11)	(3.68)	(3.31)
Africa (dummy)		-0.421***	0.098**		-0.700***	0.017		-57.98***	6.61
		(0.127)	(0.039)		(0.220)	(0.076)		(18.02)	(7.06)
Post 1850 (dummy)		-0.126***	-0.407***		-0.132**	-0.582**		-8.97	-67.01***
		(0.034)	(0.139)		(0.054)	(0.225)		(6.56)	(20.41)
Latitude		0.003*	0.003*		0.001	0.001		0.51***	0.514**
		(0.001)	(0.002)		(0.002)	(0.002)		(0.18)	(0.20)
Log Mort * Africa		0.116***			0.160***			13.37***	
		(0.029)			(0.045)			(3.75)	
Log Mort * Post 1850			0.060**			0.095**			11.29***
			(0.027)			(0.040)			(3.69)
Log Mort estimate: Africa[b]	-0.033*	-0.020		-0.037	-0.031		-5.14**	-3.55	
	(0.019)			(0.028)			(2.07)		
Log Mort estimate: Post1850 [b]	-0.022		-0.023	-0.030		-0.028	-2.03		-1.42
	(0.016)			(0.022)			(2.46)		
N	73	73	73	72	72	72	75	75	75
R^2	0.246	0.461	0.395	0.332	0.492	0.440	0.329	0.500	0.491

Note: Estimated intercepts are omitted from the table. The superscript *** denotes a p-value smaller than 0.01, ** denotes a p-value smaller than 0.05, and * denotes a p-value smaller than 0.1. In parenthesis are robust standard errors.

[b] The Log Mort estimates for Africa and Post1850 are constructed in the following way: In columns (1), (4), and (7), the estimates presented have been obtained by regressing the institutional variable on only Log Mort in the African and Post 1850-subsamples respectively. In columns (2), (5), and (8), we have simply calculated the implied coefficients for the African countries on the basis of the specifications in these columns ($\alpha_1 + \alpha_5$). In columns (3), (6), and (9), we have made equivalent calculations (($\alpha_1 + \alpha_6$)).

Table 4: Colonial duration and democracy

	Dependent variable: Polity							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Samples	Full sample	Full sample	Excl. outliers[c]	Colonized before 1750	Colonized after 1750	Colonized after 1850	Africa	Non-Africa
Constant	38.95***	17.92***	20.07***	102.35***	33.80***	5.27	42.92***	34.71***
	(5.07)	(7.11)	(6.97)	(18.53)	(9.02)	(15.16)	(5.30)	(11.46)
Duration	0.130***	0.428***	0.385***	-0.058	0.157	0.540***	0.084**	0.155***
	(0.023)	(0.075)	(0.071)	(0.059)	(0.095)	(0.198)	(0.032)	(0.042)
Duration sq		-0.0007***	-0.0005***					
		(0.0002)	(0.0001)					
N	96	96	93	36	60	46	48	48
R^2	0.263	0.343	0.408	0.058	0.103	0.144	0.105	0.300

Note: The superscript *** denotes a p-value smaller than 0.01, ** denotes a p-value smaller than 0.05, and * denotes a p-value smaller than 0.1. In parenthesis are robust standard errors. The estimator is OLS.

[c] The three excluded outliers are Angola, Cuba, and Malaysia.

Table 5: Colonial determinants of democracy

	Dependent variable: Polity					
	(1)	(2)	(3)	(4)	(5)	(6)
Estimator	OLS	OLS	OLS	OLS	QREG	IV
Duration	0.401***	0.461***	0.364***	0.435***	0.518***	0.155***
	(0.067)	(0.079)	(0.095)	(0.102)	(0.101)	(0.023)
Duration sq	-0.0006***	-0.0007***	-0.0005***	-0.0007***	-0.0008***	
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	
State History	-32.47***					
	(10.10)					
Log Area		2.80**				
		(1.36)				
Island (dummy)		29.70***				
		(8.01)				
Landlocked (dummy)		13.41*				
		(6.70)				
Neo-Europe (dummy)			27.78***			
			(8.26)			
Asia (dummy)			-23.40***			
			(7.38)			
Other controls [c]	No	LogMort Latitude	Africa C America & Carib	Spain Britain France		
1st stage dependent variable						Duration
Colonized						-0.731***
						(0.028)
N	82	69	96	96	96	96
R^2	0.391	0.521	0.454	0.348	0.286[d]	0.877[e]

Note: Estimated intercepts are omitted from the table. The superscript *** denotes a p-value smaller than 0.01, ** denotes a p-value smaller than 0.05, and * denotes a p-value smaller than 0.1. In parenthesis are robust standard errors. The estimator is OLS in columns (1)-(4), a quantile regression procedure in column (5), and IV in column (6), using the date of colonization (*Colonized*) as the instrumental variable in the first stage.

[c] Wherever additional control variables have been used, they all have insignificant estimates that are not reported.

[d] Pseudo R^2.

[e] R^2 from the first-stage regression.

Table 6: Colonial determinants of rule of law

	Dependent variable: Rule of law							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Duration	0.034**	0.082	0.040***	0.017	0.021	0.030**	-0.002	
	(0.014)	(0.059)	(0.012)	(0.018)	(0.014)	(0.013)	(0.017)	
Duration sq		-0.0001						
		(0.0001)						
Neo-Europe (dummy)			60.07***	35.35***	49.26***	49.29***	41.68***	40.59***
			(3.41)	(8.64)	(7.90)	(7.78)	(5.30)	(8.50)
Log Mort				-4.33**				
				(1.90)				
Log Area				-2.65***	-4.28***	-3.99***		-2.93**
				(1.01)	(0.56)	(0.54)		(1.17)
Latitude				0.48**	0.70***	0.66***		0.494***
				(0.196)	(0.163)	(0.17)		(0.187)
Island				15.83***				
				(5.80)				
Britain (dummy)						7.47*		
						(4.10)		
Polity							-1.29***	-0.795**
							(0.33)	(0.320)
Polity sq							0.012***	0.0082***
							(0.003)	(0.003)
Other controls [c]	No	No	State history	Landlocked	Africa S America C America & Carib	France Spain	No	No
N	128	128	89	74	128	128	96	96
R^2	0.037	0.041	0.356	0.646	0.555	0.544	0.447	0.535

Note: Estimated intercepts are omitted from the table. The superscript *** denotes a p-value smaller than 0.01, ** denotes a p-value smaller than 0.05, and * denotes a p-value smaller than 0.1. In parenthesis are robust standard errors. The estimator is OLS in all specifications.

[c] Wherever additional control variables have been used, they all have insignificant estimates which are not reported.

Figure 1: Dates of colonization and independence for 143 colonies.

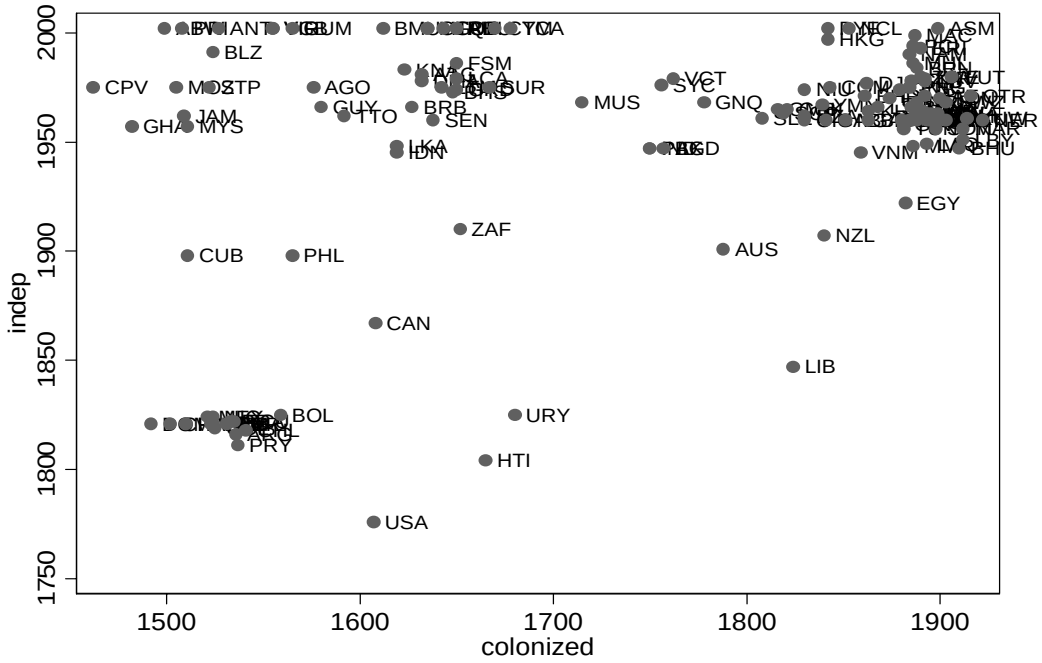
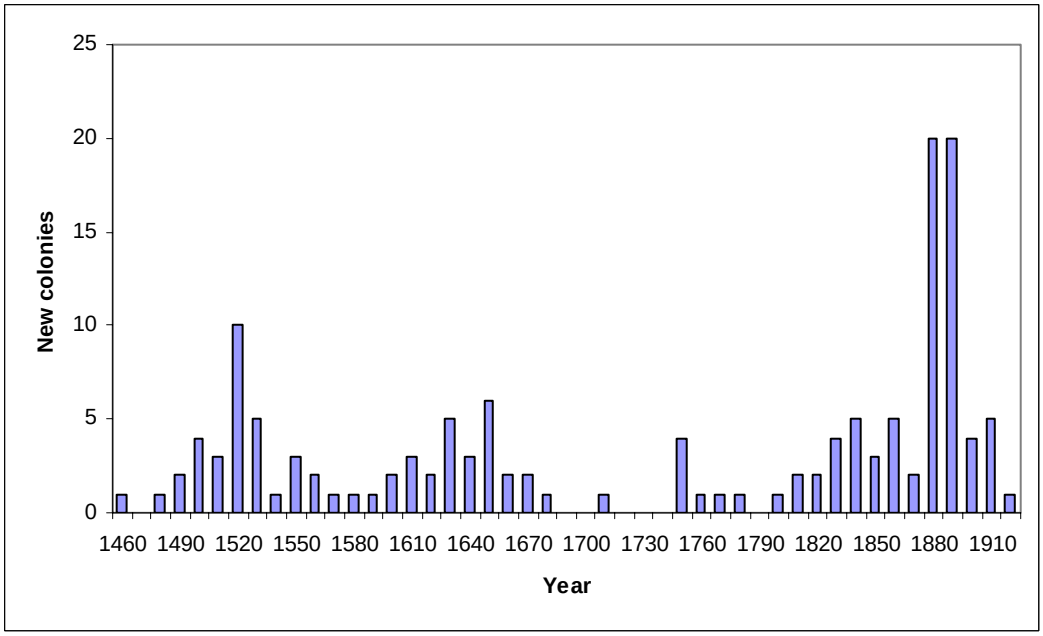
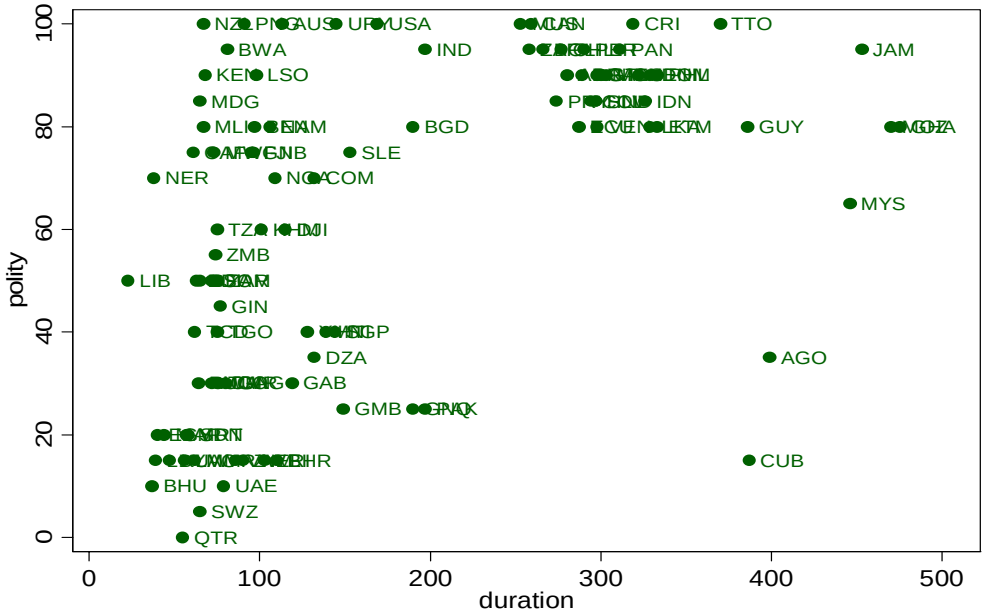


Figure 2: Time distribution of new colony formation, 1462-1922.



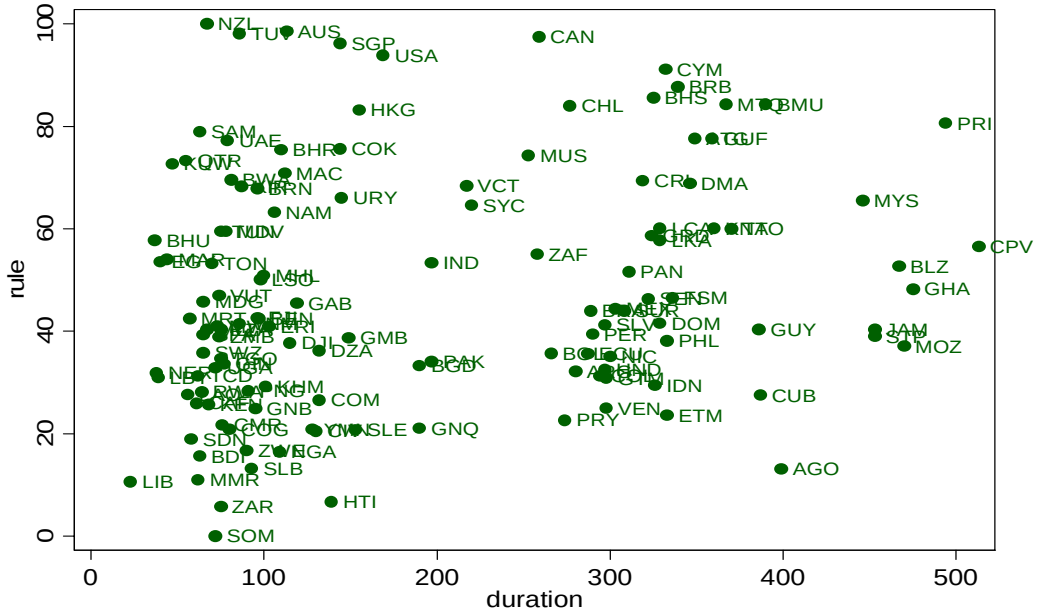
Note: The columns show the number of new colonies formed during a particular decade.

Figure 3: Scatter plot for level of democracy in 2002 and duration of colonial rule in 96 colonies.



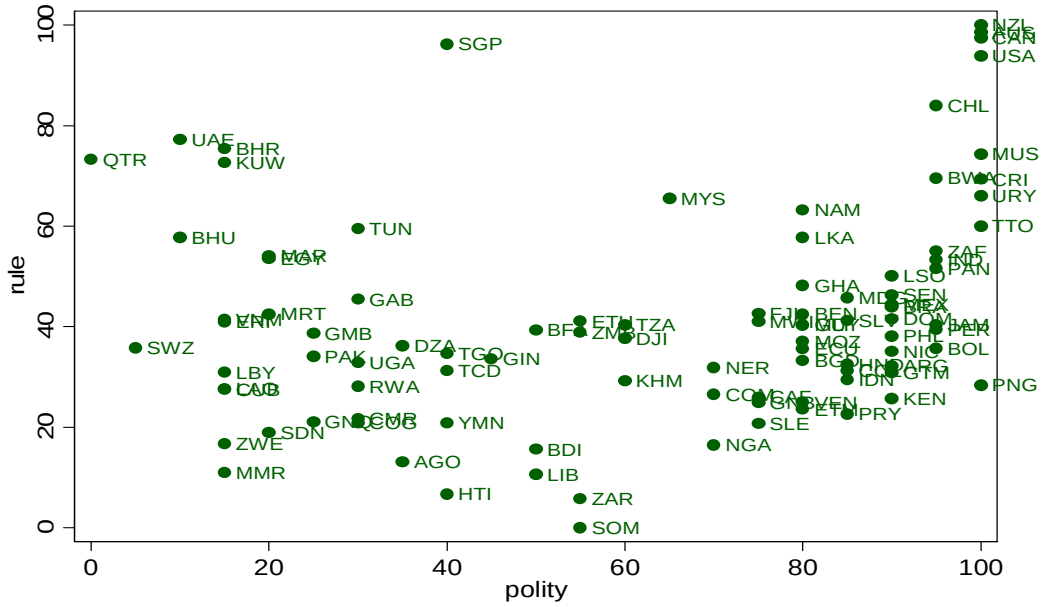
Note: See table 4, columns 1-2 for the linear and non-linear regression estimates.

Figure 4: Scatter plot for the rule of law in 2002 and duration of colonial rule for 128 colonies.



Note: See table 6, columns 1-2 for the linear and non-linear regression estimates.

Figure 5: Scatter plot for the rule of law in 2002 and level of democracy for 96 colonies.



Note: See table 6, columns 7-8 for the regression estimates.

Data Appendix

(Not for publication)

Country	Isocode	Colonized	Founding event	Independence
Algeria	DZA	1830	French army conquers Algiers and sends ruler Husayn into exile.	1962
American Samoa	ASM	1899	The island is annexed by Germany and the United States.	2002
Angola	AGO	1576	Paulo Dias de Novais founds Luanda.	1975
Anguilla	AIA	1650	British settlers colonize the island from Saint Kitts.	2002
Antigua	ATG	1632	Antigua colonized by the British, Barbuda in 1678.	1981
Argentina	ARG	1536	Pedro de Mendoza founds Buenos Aires.	1816
Aruba	ABW	1499	The Spanish discover and claim the island.	2002
Australia	AUS	1788	Arthur Phillip leads first settlement of former convicts in New South Wales.	1901
Bahamas	BHS	1648	William Sayle settles the island.	1973
Bahrain	BHR	1861	The country becomes a British protectorate after a treaty.	1971
Bangladesh	BGD	1757	The British becomes the dominant power in Bengal.	1947
Barbados	BRB	1627	English colonists settle the island.	1966
Belize	BLZ	1524	Guatemala is incorporated into the Spanish colonial empire.	1991
Benin	BEN	1863	Kingdom of Porto Novo becomes a French protectorate.	1960
Bermuda	BMU	1612	The Virginia Company settles the islands.	2002
Bhutan	BHU	1910	The country becomes a British protectorate after a treaty.	1947
Bolivia	BOL	1559	Chuquisaca becomes the seat of government for Upper Peru.	1825
Botswana	BWA	1885	The country becomes a British protectorate.	1966
Brazil	BRA	1533	The Portuguese organize a colonial government.	1822
Brunei	BRN	1888	Brunei becomes a British protectorate.	1984
British Virgin Islands	VGB	1555	A Spanish invasion force claims the islands.	2002
Burkina Faso	BFA	1895	Yatenga becomes a French protectorate.	1960
Burundi	BDI	1899	Burundi and Rwanda are included in German East Africa.	1962
Cambodia	KHM	1863	The country becomes a French protectorate.	1964
Cameroon	CMR	1884	The country becomes a German protectorate.	1960
Canada	CAN	1608	Samuel de Champlain found a fur trading post at Quebec.	1867
Cape Verde	CPV	1462	The Portuguese found Cidade Velha and settle the island.	1975
Cayman Islands	CYM	1670	England is granted power over the islands.	2002

Central African Republic	CAF	1899	The French settle at Bangui.	1960
Chad	TCD	1898	French troops occupy the area.	1960
Chile	CHL	1541	Pedro de Valdivia founds Santiago.	1818
Colombia	COL	1525	Rodrigo de Bastidas found Santa Marta.	1819
Comoros	COM	1843	France takes possession of Mayotte island.	1975
Congo, Republic of	COG	1880	De Brazza signs treaty that makes the area a French possession.	1960
Congo, Democratic Republic of	ZAR	1885	King Leopold's Congo Free State is recognized at the Berlin Conference.	1960
Cook Islands	COK	1821	British missionaries from London Missionary Society settle the island.	1965
Costa Rica	CRI	1502	Columbus reaches the area during his fourth Atlantic voyage and settlement is initiated.	1821
Cuba	CUB	1511	Diego Velázquez de Cuéllar founds Baraboa and settles the island.	1898
Djibouti	DJI	1862	A French colony is created.	1977
Dominica	DMA	1632	The French settle the island.	1978
Dominican Republic	DOM	1492	Columbus arrives on Hispaniola and settlement starts.	1821
East Timor	ETM	1642	Permanent settlement starts.	1975
Ecuador	ECU	1535	Second Inca capital Quito is conquered by the Spanish.	1822
Egypt	EGY	1882	British troops occupy the country.	1922
El Salvador	SLV	1524	Guatemala is incorporated into the Spanish colonial empire.	1821
Equatorial Guinea	GNQ	1778	The Spanish take over the Fernando Po island from the Portuguese.	1968
Eritrea	ERI	1890	Italian colony is created.	1993
Fiji	FJI	1874	British crown colony.	1970
French Guyana	GUF	1643	French colonists found Cayenne.	2002
French Polynesia	PYF	1842	Tahiti becomes a French protectorate.	2002
Gabon	GAB	1841	Local kings accept French sovereignty.	1960
Gambia	GMB	1816	Alexander Grant purchase Banjul Island.	1965
Ghana	GHA	1482	The Portuguese build Elmina castle which leads to a major change in the trading patterns and power relations in the interior.	1957
Grenada	GRD	1650	Jaques Dyel du Parquet establish a settlement at St. George's.	1974
Guadeloupe	GLP	1635	Léonard de L'Olive and Jean Duplessis d'Ossonville establish a French colony.	2002

Guam	GUM	1565	The Spanish claim the island.	2002
Guatemala	GTM	1523	Guatemala is incorporated into the Spanish colonial empire.	1821
Guinea	GIN	1881	Fouta Djallon place his country under French protection.	1958
Guinea-Bissau	GNB	1879	Portuguese colony.	1974
Guyana	GUY	1580	Dutch settlement begins.	1966
Haiti	HTI	1665	The French appoint a governor on Tortuga Island	1804
Honduras	HND	1524	Guatemala is incorporated into the Spanish colonial empire.	1821
Hong Kong	HKG	1842	Hong Kong Island is ceded to Britain by the Treaty of Nanking.	1997
India	IND	1750	Robert Clive defeats the nawab of Bengal and the East India Company becomes the dominant force in the country.	1947
Indonesia	IDN	1619	The Dutch East India Company found Batavia (Jakarta) on Java.	1945
Ivory Coast	CIV	1830	The French sign treaties and start building forts and trading posts.	1960
Jamaica	JAM	1509	Juan de Esquivel founds the town Sevilla la Nueva and the first settlement.	1962
Kenya	KEN	1895	East Africa Protectorate is formed.	1963
Kiribati	KIR	1892	Gilbert Islands become a British protectorate.	1979
Kuwait	KUW	1914	British protectorate.	1961
Laos	LAO	1893	Thailand gives up area to the east of Mekong River and Laos becomes a French protectorate.	1949
Lesotho	LSO	1868	King Monshoeshoe asks for British protection against the Boers and the country becomes a British protectorate.	1966
Liberia	LIB	1824	American Colonization Society founds Liberia and capital Monrovia.	1847
Libya	LBY	1912	The Ottomans cede the country to Italy after an Italian invasion.	1951
Macao	MAC	1887	The Portuguese establish a colony after having settled the peninsula since 1557.	1999
Madagascar	MDG	1895	French troops occupy Antananarivo, sends the prime minister into exile, and establish a French Protectorate.	1960
Malawi	MWI	1891	The British establish the Nyasaland district protectorate.	1964
Malaysia	MYS	1511	Portuguese admiral Afonso de Albuquerque conquers Malacca.	1957
Maldives	MDV	1887	British protectorate proclaimed.	1965
Mali	MLI	1893	Colonel Louis Archinard conquers Segou and the French then control the Niger.	1960
Marshall Islands	MHL	1886	British protectorate.	1986
Martinique	MTQ	1635	Pierre Belain d'Esnambuc and French settlers occupy the island.	2002

Mauretania	MRT	1903	The territory becomes a part of French West Africa.	1960
Mauritius	MUS	1715	French colony, referred to as Ile de France.	1968
Mexico	MEX	1521	Hernan Cortes conquers capital Tenochtitlan.	1824
Micronesia	FSM	1650	Approximate date of Spanish colonization.	1986
Morocco	MAR	1912	French protectorate by the Treat of Fez.	1956
Mozambique	MOZ	1505	The Portuguese conquer Sofala.	1975
Myanmar	MMR	1886	The country becomes a province of British India after the Third Anglo-Burmese War.	1948
Namibia	NAM	1884	German protectorate.	1990
Nauru	NRU	1888	German protectorate.	1968
Netherlands Antilles	ANT	1527	The Spanish seize Curacao island.	2002
New Caledonia	NCL	1853	The French claim the islands.	2002
New Zealand	NZL	1840	British annexation after the Treaty of Waitangi.	1907
Nicaragua	NIC	1524	Francisco Hernandez de Cordoba starts permanent colonization.	1824
Niger	NER	1922	The French establish a regular colonial administration.	1960
Nigeria	NGA	1851	The British replace the local king in Lagos after a naval attack.	1960
Niue	NIU	1830	British missionaries from London Missionary Society settle the island.	1974
Pakistan	PAK	1750	See India.	1947
Palau	PCI	1886	The Spanish claim the islands.	1994
Panama	PAN	1510	The Spanish establish the first permanent settlements Nombre de Dios and San Sebastian de Uraba.	1821
Papua New Guinea	PNG	1884	Southeastern part of the island becomes a British protectorate.	1975
Paraguay	PRY	1537	The Spanish found Asuncion and settle the area.	1811
Peru	PER	1531	Francisco Pizarro and his Spanish forces execute Inca emperor Athuallpa and start conquering the territory.	1821
Philippines	PHL	1565	Miguel Lopez de Legazpi establishes first permanent Spanish settlement.	1898
Puerto Rico	PRI	1508	Juan Ponce de Leon founds Caparra.	2002
Qatar	QTR	1916	Treaty gives Britain the power to handle foreign policy.	1971
Reunion	REU	1650	The French settle the island in the mid-seventeenth century.	2002
Rwanda	RWA	1899	Burundi and Rwanda are included in German East Africa.	1963
Samoa	SAM	1899	The island is annexed by Germany and the United States.	1962
Sao Tome and Principe	STP	1522	The Portuguese establish a colony.	1975
Senegal	SEN	1638	The French establish a trading station at the mouth of the Senegal.	1960

Seychelles	SYC	1756	The French annex the territory.	1976
Sierra Leone	SLE	1808	The British navy takes over a former slave settlement at Freetown.	1961
Singapore	SGG	1819	Thomas Stamford Raffles of the East India Company buys land and establishes a British trading post.	1963
Solomon Islands	SLB	1885	The British and the Germans establish protectorates.	1978
Somalia	SOM	1888	The British and the French sign treaties that recognize the borders of their respective protectorates in the area.	1960
South Africa	ZAF	1652	The Dutch East India Company found found Cape Town trading post.	1910
Sri Lanka	LKA	1619	The Portuguese annex the kingdom of Jaffna and establish control of the territory.	1948
Saint Kitts and Nevis	KNA	1623	Thomas Warner establishes a British colony.	1983
Saint Lucia	LCA	1650	French settlers from Martinique establish control of the island.	1979
Saint Vincent and the Grenadines	VCT	1762	British general Robert Monckton occupies the island.	1979
Sudan	SDN	1898	Horatio Herbert Kitchener defeats the Mahdist army in the Battle of Omdurman and establishes British rule over the area.	1956
Suriname	SUR	1667	The Dutch receive the area as compensation for losing New Amsterdam (New York) to the British.	1975
Swaziland	SWZ	1903	The British governor of Transvaal is empowered legislative powers by the Foreign Jurisdiction Act.	1968
Tanzania	TZA	1886	Anglo-German Agreement recognizes the territory as a German possession.	1961
Togo	TGO	1885	Gustav Nachtigal establishes a German protectorate.	1960
Tonga	TON	1900	British protectorate.	1970
Trinidad and Tobago	TTO	1592	Spaniard Antonio de Berrio takes possession of the island and founds St Joseph.	1962
Tunisia	TUN	1881	The French invade the territory and assume power by the Treaty of Kasser Said.	1956
Turks and Caicos Islands	TCA	1678	Colonists from Bermuda settle the islands.	2002
Tuvalu	TUV	1892	British protectorate.	1978
Uganda	UGA	1890	Captain F.D. Lugard of the Imperial British East Africa Company signs a treaty with king Mwanga that puts the country under British protection.	1962
United Arab Emirates	UAE	1892	The British assume control of foreign policy.	1971
United States	USA	1607	British Virginia Company founds Jamestown colony.	1776
Uruguay	URY	1680	The Portuguese found town Colonia del Sacramento.	1825

Vanuatu	VUT	1906	Anglo-French Condominium establishes joint rule of the territory.	1980
Venezuela	VEN	1523	Permanent Spanish settlement at Cumana.	1821
Vietnam	VNM	1859	French troops led by Rigault de Genouilly capture Saigon.	1945
Virgin Islands	VIR	1555	A Spanish invasion force claims the islands.	2002
Yemen	YMN	1839	Aden is captured by the British.	1967
Zambia	ZMB	1890	Cecil Rhodes' British South Africa Company signs a treaty with king Lewanika.	1964
Zimbabwe	ZWE	1890	Cecil Rhodes' British South Africa Company arrives in the area.	1980

Data summary

	Colonized		**Independence**
Observations	143		143
Min	1462		1776
25 % quartile	1607		1948
Median	1819		1963
75 % quartile	1886		1978
Max	1922		2002
Std. Dev.	152.85		57.44
Pearson corr.		0.43	

Sources:
Britannica (2006)
CIA World Factbook (2006)
Nationalencyklopedin (2006)