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Colonialism, Elite Formation, and Corruption

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Abstract

This paper argues that corruption in developing countries has deep historical roots which go all the way back to their colonial experience. We substantiate our thesis with empirical evidence showing how the degree of European settlement during colonial times is a powerful explanatory factor of present-day corruption. The rationale behind the use of this variable is a link between the degree of European settlement and the power of the local elite. Interestingly, our mechanism is different from the prevailing view in the literature on institutions and growth, where the degree of European settlement has only positive effects. We argue that European settlement leads to higher levels of corruption for all countries where Europeans remained a minority in the population, i.e., for all developing countries.

Keywords: Colonialism; Elite Formation; Corruption.

1 Introduction

This paper sits at the intersection of two empirical literatures that over the last two decades have greatly advanced our understanding of developing

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countries: the literature on the determinants of corruption and the literature on the socioeconomic consequences of colonialism.[1]

The literature on the empirical determinants of corruption has grown exponentially since its beginnings in the mid-1990s, when the first measures of the perception of corruption were made available and international aid donors like the World Bank named fighting corruption a policy priority.[2] Although much has been learned since then, the literature has always been challenged by the difficulty of establishing causality.

Causality is difficult to establish because many of the explanatory factors analyzed in the literature could plausibly be affected by corruption. To name but two examples, Brunetti and Weder (2003) argue that press freedom will deter corruption while Swamy et al. (2001) and Dollar et al. (2001) propose that a larger share of women in government will also lower corruption levels. In both cases one could well argue for the reverse effect, with corrupt governments constraining the press and limiting the access of women to government. These problems are well recognized in the literature, but convincing solutions are rare due to the difficulty of finding appropriate instruments.

The most powerful explanatory factor of corruption is the level of economic development as measured by GDP per capita. Current levels of GDP per capita typically show correlation coefficients with measures of corruption in the region of 0.8 (Treisman 2007, p. 223) and explain much of the variation in the data. The problem with this relationship is that reverse causality is evidently suspect. We may note, however, that tests carried out

[1] Lambsdorff (2006) and Treisman (2007) provide useful surveys of the corruption literature. Important contributions are Mauro (1995), Ades and Di Tella (1997), La Porta et al. (1999) and Treisman (2000). Among the many contributions to the literature on the socioeconomic consequences of colonialism we can mention La Porta et al. (1997, 1998), Acemoglu et al. (2001), Glaeser et al. (2004), Angeles (2007), Angeles and Neanidis (2009), Huillery (2009) and Dell (2010). See also the survey by Nunn (2009).

[2] The World Bank's World Development Report (1997) is devoted to how bureaucratic corruption leads to bad policies, while the relationship between corruption and aid is addressed in World Bank (1989, 1998).

instrumenting for GDP per capita with geographical or historical variables typically do not affect the results (Treisman 2000, 2007).

The literature has also explored the role of exogenous, historically determined variables, that may have a direct effect on corruption. The most important variables in this set are the legal origin of the country, the religions professed by its population, the degree of ethnic fractionalization, and the identity of the colonial power formerly established in its territory (if the country was colonized). Since all these variables are determined by events that took place in the distant past, they are usually considered as credible sources of exogenous variation to explain current levels of corruption.

It is thus the case that colonial heritage has been advanced as a potential determinant of corruption. The most careful analysis of this link is probably found in Treisman (2000), who finds that former British colonies have significantly lower levels of corruption.[3] No similar effect is found for former colonies of other European nations and - perhaps surprisingly - the simple fact of having been colonized appears to be unrelated to current levels of corruption. The main contribution of this paper is to argue that a particular aspect of the colonial experience, the degree of European settlement in colonial times, is not just a powerful determinant of corruption today but also that it matters more than other aspects of colonialism such as the identity of the former colonial power.

Turning to the literature on the socioeconomic consequences of colonialism, a large number of papers have stressed the long term effects of colonialism on institutional quality and economic development (Hall and Jones 1999, Acemoglu et al. 2001, 2002, Rodrik et al. 2004), on company law and the administration of justice (La Porta et al. 1997, 1998), on income inequality (Angeles 2007) and on aid effectiveness (Angeles and Neanidis

[3] Treisman (2000) adds that "This is not due to greater openness to trade or democracy, and is probably not explained by Protestant or Anglican religious traditions. It may reflect greater protections against official abuse provided by common law legal systems. But slightly stronger evidence suggests that it is due to superior administration of justice in these countries" (p. 426-427).

2009). It seems clear that the current situation of most developing nations is, if not historically determined, at least heavily path-dependent.

In much of this recent literature on the consequences of colonialism an important consideration is the type of colonial experience. While this can be potentially measured along different dimensions, an aspect that has attracted much attention is the degree of European settlement in the colonies. European settlement varied from very small numbers (most of Sub-Saharan Africa, India, South-East Asia) to large inflows (Latin America, Southern Africa); and in four cases Europeans actually became the vast majority of the population (the United States, Canada, Australia and New Zealand).

The most influential line of work within this literature has argued for a positive effect of the degree of European settlement on desirable socioeconomic outcomes. Indeed, according to Acemoglu et al. (2001) Europeans established "extractive institutions" wherever they set up in few numbers, and growth-promoting institutions when they settled in large numbers. The authors then use determinants of European settlement, such as mortality rates, as instruments for present-day institutional quality and are able to show a positive effect of institutions on economic development.

This paper advances a mechanism in the opposite direction: namely that European settlement may result in worse socioeconomic outcomes, in this case a higher level of corruption. This effect takes place in addition to the effect identified by Acemoglu et al. (2001) which works through the benefits of economic development. As we discussed above, the level of economic development is well-recognized as the most powerful determinant of corruption. If European settlement leads to economic development along the lines of Acemoglu et al. (2001), then it will also lead to lower levels of corruption. However, once we factor out the effect of economic development by controlling for GDP per capita, what we find is that higher European settlement leads to more corruption. The rationale for this relationship is discussed below.

In all colonized countries Europeans placed themselves at the top of the social structure. This, however, does not mean that their capacity to control and profit from a country's resources was similar everywhere. In countries where Europeans were but a small part of the total population, their grip on economic production was limited by their necessary reliance on local leaders to fill all middle and lower ranges of political and economic administration. In 1913, when the colonization of Sub-Saharan Africa had been completed, the number of Europeans in all French and British African colonies outside South Africa was a mere 75,000 people - most of whom were soldiers.[4] There were simply not enough Europeans to fill the ranks of tax collectors, public servants and middle managers for a whole continent. Power had to be shared between the European elite and the local leaders to have a functioning economy.

A larger degree of European settlement implied a more powerful elite, as the control of these settlers over the country's resources increases and the capacity of the rest of the population to present a credible opposition diminishes. In regions such as Latin America or Southern Africa, European settlers were able to expropriate most of the land and mining resources and direct themselves their economic exploitation (either with the use of domestic labour or with slave labour). We note that such developments often took place despite the wishes and official policy of European governments. European settlers followed their own interests, which were usually in opposition to those of the domestic population. European governments were reticent to see these settlers becoming too powerful, taking a larger share of colonial production for their own use and potentially challenging the metropolis' authority. But their capacity to do something about it was in inverse proportion to the number and strength of the settlers.

As an example of this phenomenon, consider the difference in land policy between two British colonies in Africa: Nigeria and South Africa. In Nigeria, where European settlement was very limited and Britain's interest lay in the

[4] Etemad (2007, p. 191). French colonies had about 27,000 Europeans, British ones about 48,000.

expansion of the production of cash crops such as cotton, cocoa, groundnuts and palm oil, a 1917 law forbid the acquisition of land by *Europeans*. In South Africa, where European settlers were a sizeable part of the population and had the means to impose their interests, a 1913 law forbid the acquisition of land by *Africans* outside some strictly delimited "reserves" constituting 8% of the country's territory. The difference was not due to the identity of the colonial power, which was Britain in both cases, but arguably to the degree of European settlement. Thus, while an European elite was at the top of society in both Nigeria and South Africa, its capacity to benefit from the country's resources at the expense of the local population was much higher in South Africa.

Thus, the degree of European settlement determined the power of the elite in colonized countries and this elite was able to maintain its privileges up to the present - as shown by the relationship between European settlement in colonial times and inequality today (Angeles 2007). A more powerful elite is also more likely to engage in acts of corruption that procure a benefit for itself at the expense of the rest of society. Here we have in mind acts of "major corruption", such as the embezzlement of foreign aid funds or the mispricing of government projects. The negative consequences of such acts fall disproportionally on the non-elite, who are the main beneficiaries of foreign aid and public expenditures on health and education. If economic power translates into political power and control over institutions such as the judiciary, then the more powerful the elite, the less likely its members will be penalized for acts of corruption.[5]

This positive association between European settlement and elite power breaks down, however, in the four cases where European settlers became the majority of the population. In these cases the elite faced a population who could not be subdued or expropriated easily and had the knowledge, human

[5] This assumes that the elite cares little for the well-being of the non-elite. The assumption is made more credible by the fact that we are focusing on elites of a foreign extraction. Evidence supporting the idea that people are not willing to contribute in the provision of public goods if beneficiaries belong to ethnic groups other than their own can be found in Easterly and Levine (1997), Alesina et al. (1999) and Luttmer (2001).

capital, and political rights to form a credible opposition to any threats on their well-being. As Engerman and Sokoloff (2005, p.8) have pointed out, early attempts of social organization in the British colonies of North America were highly unequal, with land concentrated in a few hands and the use of European indentured labour in agricultural production. But the system quickly unraveled given that there was no way to stop European workers from establishing themselves in empty land and becoming their own bosses. The northern colonies of what was to become the United States evolved to a system of family-sized agricultural units with important limits on the power of the elite.

Our hypothesis is then that European settlement in colonial times has a positive effect on corruption levels today, as long as we limit our study to countries where European settlers remained a minority in the population (and would thus constitute an elite). Most of our analysis is therefore done without the four exceptions of the United States, Canada, Australia and New Zealand. We do, however, test the relationship between European settlement and corruption when these countries are included and find, intuitively, an inverted-U shape. Indeed, corruption would increase with European settlement over most of the sample as higher settlement leads to more powerful elites. After some point, however, Europeans themselves become part of the non-elite, leading to less power imbalances and lower corruption. Through most of the paper we chose to stress the linear relationship over the non-linear one as this last one depends on just four observations and may therefore be considered less robust. For most countries in our sample, and for all developing countries, European settlement and corruption are positively related.

Before turning to the presentation of our empirical methodology and results, a few additional comments are in order. First, our story provides an explanation for the unsatisfactory result, mentioned above, that the simple fact of having been colonized is not related to corruption. As we have argued, only some types of colonial experiences are unequivocally linked

to high corruption levels and the crucial factor is the degree of European settlement.

Second, we do not think that Europeans have a natural tendency towards corruption or that they are on average more corruptible than the rest of humanity. What we do believe is that people, irrespective of their ethnic background, tend to enter into acts of corruption when they have the chance to do so without much fear of punishment and when the consequences of these acts are felt by groups other than their own. Because of historical reasons Europeans found themselves in such a position in several parts of the globe, while peoples of other nations rarely did so. Moreover, after independence the elite of former colonized countries remained of European origin only in the cases of large European settlement (Latin America, Southern Africa). In most other cases the European elite was replaced by a domestic elite which took over the privileges of the departing one and whose power, in accordance with the above discussion, remained limited in comparison to the cases of large European settlement.

A third and final remark concerns the measures of corruption that our story relates to. As we already mentioned, the corruption of governing elites is "major corruption", very different from the petty corruption of police officers and traffic controllers. Thus, measures of "experienced corruption", based on surveys where people are asked if they have actually been forced to pay a bribe in the recent past, are not adequate for us. For the vast majority of surveyed people small bribes are all they will ever experience directly and participants of large corruption cases will have all the incentives not to report about them in a survey. We will thus use measures of "perceived corruption", based on the assessment of experts or business people. Although these measures suffer from the biases and priors of those asked for an opinion, by asking about the overall level of corruption in a country they tend to shift the attention towards the high-level corruption cases that we are meant to capture.

The rest of the paper is organized as follows. The next section presents

the data and the empirical methodology to be used. Sections 3 to 5 contain our econometric results and build up our case through a series of alternative tests and robustness checks. Section 6, finally, offers some concluding remarks.

2 Data and methodology

Our baseline econometric specification is the following:

$$C_i = \alpha + \gamma logy_i + \beta_1 Settlers_i + \sum_j \delta_j X_{ji} + \varepsilon_i. \quad (1)$$

In equation (1) C_i is a measure of corruption for country i, y_i is GDP per capita and X_{ji} is a set of additional determinants of corruption. Our main variable of interest is $Settlers$, a measure of the degree of European settlement in colonial times. This variable is taken from Angeles (2007) and Angeles and Neanidis (2009) and measures the percentage of European settlers with respect to total population in colonial times.[6] The variable takes a value of zero for non-colonized countries, a group that includes all European nations. Colonialism is understood here as the process of conquest of overseas territories, so the numerous and continuous conquests made by European nations within Europe are not part of it. $Settlers$ is assumed to be exogenous in our baseline regressions, but its potential endogeneity is discussed and addressed in the rest of our empirical analysis.

GDP per capita will be present in most of our regressions as a control variable. Its inclusion is of particular importance not just because it is usually seen as the most powerful explanatory factor of corruption, but also to isolate the direct effect of European settlement on corruption that we focus on from the indirect one stemming from Acemoglu et al. (2001). Besides

[6] Different regions of the world were colonized at different times, and the values in *Settlers* correspond to the situation at the height of each country's colonial period. The original sources of *Settlers* are Etemad (2000) and McEvedy and Jones (1978). The variable measures European settlers in overseas colonies only (that is, it does not measure settlement in contiguous territorial conquests that may be classified as colonies such as the former Soviet Empire).

GDP per capita, a large set of additional control variables are considered in our analysis. Particular attention is given to other historically-determined explanatory factors of corruption which may be correlated with European settlement in colonial times. We then extend the analysis to incorporate contemporaneous factors which have figured in the literature on the determinants of corruption.[7]

Our baseline measure of corruption is the World Bank's control of corruption index for the year 2005 constructed by Kaufmann et al. (2009). We will also use alternative years and measures such as the Transparency International (TI) corruption index and the International Country Risk Guide (ICRG) corruption index. All these measures take higher values for better outcomes, i.e., they are actually measuring the absence of corruption. To avoid confusion, we transform them so that higher values denote more corruption. Thus, the expected sign for the coefficient of *Settlers* is positive. An initial assessment of this relationship is given in Figure 1, where a positive relationship between the degree of European settlement and corruption is apparent for countries where settlers constitute the minority in the population. This provides some visual support to our thesis before turning to a formal empirical analysis. Summary statistics for the most important variables in our analysis are provided in Table 1.

Our empirical examination uses cross-sectional regressions and not panel methods since corruption measures are not directly comparable over time, even when produced by the same agency, due to changes in sources and methodology (Treisman 2007).[8] Another reason for using cross-sectional techniques is because all control variables in the baseline regression, other than GDP per capita, are time-invariant. Ordinary Least Squares, Weighted

[7] The dataset of these control variables has been put together by Treisman (2007) and is available at:
http://www.sscnet.ucla.edu/polisci/faculty/treisman/Pages/publishedpapers.html

[8] Kaufmann and Kraay (2002) show that for the World Bank index of control of corruption about half the variance over time results from changes in the sources used and their respective assigned weights.

Least Squares and Instrumental Variables regressions are employed as alternative econometric methodologies.[9]

3 Baseline results

We begin by assuming that *Settlers* and GDP per capita are both exogenous determinants of corruption, an assumption that we will relax in the rest of the analysis. Under this assumption OLS estimation will result in unbiased and efficient estimates, and we report the results under this methodology in Table 2.

The first column of Table 2 presents the bivariate relationship between corruption and the degree of European settlement in the absence of any controls when the United States, Canada, Australia, and New Zealand *are included* in the sample. The coefficient on *Settlers* is negative and statistically significant, which we take as evidence of the powerful effect of European settlement on economic development and, as a side effect, on corruption - in accordance with Acemoglu et al. (2001). If this interpretation is correct, we would expect to see no relationship between European settlement and corruption once the intermediating channel is controlled for; that is, once GDP per capita is included in the regression. This is precisely what happens in column 2, with GDP per capita having a strongly negative and statistically significant effect on corruption while European settlement becomes statistically not significant.

The absence of a relationship in column 2, however, is masking a statistically significant effect that arises when the United States, Canada, Australia and New Zealand, the four countries for which Europeans represent the majority of the population, are excluded from the sample. This is done in the third column of the table, resulting in a positive effect of *Settlers* on corruption which is statistically significant at the 1% level, as we hypothesized.

[9] We opt using the two-step efficient GMM estimator, rather than the traditional two-stage least-squares estimator, because it generates efficient estimates of the coefficients as well as consistent estimates of the standard errors.

It follows that the degree of European settlement is associated with higher corruption for most of the sample - an effect that works in addition to the mechanism that can be derived from Acemoglu et al. (2001) and acts in the opposite direction.

Turning to the size of the effect, the estimated coefficient from column 3 implies that an increase in the percentage of European settlers of 30%, roughly the difference between areas where Europeans settled very lightly such as tropical Africa and areas where they settled in important numbers like Latin America, is associated with a level of corruption 0.48 points higher. This is a large effect, considering that the standard deviation of our measure of corruption is 1.

The first potential problem with this result is that it may be biased by the omission of other historical factors correlated with the degree of European settlement. We explore this possibility in the remaining columns of Table 2, where we control progressively for the identity of the colonial power, the legal origin of the country, religion and ethnolinguistic fractionalization.

The identity of the colonial power is probably the first variable that would come to mind for correcting an omitted variable bias. Our settlers variable may just be picking up the fact of having been colonized, which could have consequences for corruption levels independently of settlement patterns. To test for this possibility we introduce four dummy variables that identify the former colonies of Britain, France, Spain or Portugal, and any other nation - the excluded category being the set of non-colonized countries. For consistency with our *Settlers* variable, we consider as colonies only overseas territories. As the results in column 4 show, the relationship between settlers and corruption is essentially unaffected by this addition while none of the four dummy variables identifying a former colonial power has a statistically significant effect on corruption. This confirms our prior regarding the effects of colonialism on present-day corruption: namely, that the degree of European settlement is a far more important factor than whether a country was colonized by, say, France instead of Spain.

In a similar vein, column 5 of Table 2 adds the legal origin of the country as a control variable. The correlation between legal origin and the identity of the colonial power is positive but not too high, since many countries imitated the legal framework of a major European country without there being a colonial link. This time we find negative effects of legal origin on corruption, particularly large for countries associated with Scandinavian and German legal traditions (the excluded category being countries with a Socialist tradition). This does not, however, dissipate the existence of a positive relationship between corruption and European settlement: the coefficient of interest remains almost unchanged, albeit now significant at the 10% level.

Columns 6 and 7 of Table 2 also control for the percentage of the population professing the Catholic, Muslim and Protestant faith and for ethnolinguistic fractionalization. None of these variables presents a statistically significant effect on corruption and their coefficients are all very small. The effect of European settlement, on the other hand, remains large and significant. The same is true for column 8 in Table 2, which uses weighted least squares and weights countries by the inverse of their standard errors. This allows placing less emphasis on cases where perceived corruption is measured with less precision. As expected, WLS produces more precise estimates with the coefficient on *Settlers* being statistically significant at the 5% level.

The last column, finally, incorporates a squared value of *Settlers* and adds the four countries that experienced large levels of European settlement. In this case, we see that both *Settlers* and its square are highly statistically significant and that the signs of their coefficients are positive and negative respectively, giving rise to an inverted-U relationship between European settlement and corruption. As discussed above, larger levels of European settlement would engender a more powerful elite and increase corruption, but the relationship changes direction when European settlers become the majority of the population. The turning point for the resulting curve is found for a value of European settlers of about 37% of the total population.

Overall, when we examine the results of the last two columns of Table

2 we notice that, besides European settlement and GDP per capita, the only variables with a statistically significant effect on corruption at the 5% level are the dummy for British colonies and the Scandinavian and German legal origins (all with a negative effect on corruption). The result for British colonies is in line with the findings in Treisman (2000), but comes in addition to the role of European settlement identified here.

4 Addressing endogeneity

A concern with the above reported baseline results is the potential endogeneity of our variable of interest, *Settlers*, and of our main control variable, GDP per capita. Reverse causality is a concern for GDP per capita, since corruption may hinder economic development. The same does not apply to European settlement in colonial times, which should not have been influenced by present-day corruption, but an endogeneity bias may still exist through an omitted factor. For instance, European settlers may have been attracted by high levels of corruption in colonial times, as they expected to benefit from embezzlement opportunities. Past corruption would then persist into present-day corruption through self-sustaining social practices.

We address these concerns by using a set of instruments which we can credibly argue exerts no direct influence on current levels of corruption around the world, yet had an impact on the patterns of European settlement and on long-term economic development. Our instruments measure either geographic characteristics or historical conditions, and are therefore credible sources of exogenous variation.

Start by considering European settlement during colonial times. As argued by Easterly and Levine (2012), Europeans were attracted towards temperate regions that resembled their own climate rather than the heat and humidity of the tropics. Thus, the latitude of a country in absolute value would have a positive effect on European settlement. Easterly and Levine (2012) also advance that regions which experienced large indigenous mortality following their first contact with Europeans (namely the Americas and

Oceania) were easy to conquer and offered no resistance to settlement.[10] A dummy variable taking a value of 1 for these regions would then be a strong predictor of European settlement. In a similar vein, densely populated areas would have been more difficult to settle as Europeans would need to deal with existing claims on the land and other resources. Population density in the year 1500, just before the European colonial expansion, can then be expected to be a negative determinant of settlement.

Turning to GDP per capita, a number of credible instruments is also at our disposal given the effect of some geographic characteristics on economic development. Malaria prevalence is well-recognized as a hindrance for economic development (McNeill 1976, Sachs 2001), and its area of influence is largely determined by climate. Access to the sea, which we measure here by the fraction of a country within 100 km of the sea, will also be of consequence as it improves the prospects of integration with the world economy and the gains from trade. Absolute latitude, finally, will also be of relevance as temperate areas may benefit from importing advanced agricultural technologies from Europe, technologies which would be much less adequate for tropical climates. We thus have a set of five instrumental variables (absolute latitude, dummy for indigenous mortality, population density in 1500, malaria prevalence, access to the sea) for the two endogenous ones influencing corruption. This is a rich set of exogenous variation which we put to work in what follows.

Table 3 demonstrates that our set of instruments is indeed capable of explaining a large fraction of the variation in our two endogenous variables. Panel A shows the result of progressively regressing the percentage of European settlers against our instrumental variables, whereas panel B shows the equivalent exercise for GDP per capita. In all regressions the F test easily rejects the null hypothesis of no effect from the instrument set and R^2 coefficients are higher than 0.3 and rising with the number of instruments. As

[10] It is important to note that episodes of large indigenous mortality were essentially the result of lack of previous contact between the population in question and Europeans' germs. Thus, they do not reflect socioeconomic differences and can be considered truly exogenous.

expected, latitude and the indigenous mortality dummy have a positive and statistically significant effect on *Settlers* while population density in 1500 has a negative and statistically significant effect. We also confirm our priors regarding the effects of latitude, risk of malaria transmission and fraction of land close to the sea on GDP per capita.

Table 4 presents the results when we instrument *Settlers* and GDP per capita with the instrumental variables described above – the bottom of the table lists the variables being instrumented and the instruments used. The number of both the instrumented variables and the instruments used increases as we move to the right of the table. This allows assessing whether results depend on a large set of instruments that yield a high R^2 coefficient as a way of counteracting the inefficiency of instrumenting. This is particularly relevant for cross-sectional regressions. Standard specification tests indicate the validity of the instruments. Other than the high F statistics reported in Table 3 showing the strength of the instruments, we find that both the Kleibergen-Paap (2006) LM and F tests reject the null hypotheses of underidentification and weak identification, respectively, of the excluded instruments. Further, we use the Hansen overidentification J-test to examine whether the instruments are orthogonal to the error process in the regression, i.e., whether the instruments explain corruption beyond their effects on *Settlers* and GDP per capita. The high p-value suggests that the instruments do not reject the overidentification test meaning that they are indeed jointly valid. We also report the Shea partial R-square for the instrumented variables, of which the relatively large values point to the relevance of the instruments in explaining the instrumented variables.

The first column of Table 4 presents results based on the instrumentation only of *Settlers* with population density in 1500 and the indigenous mortality dummy. We continue to find a positive relationship between the degree of European settlement and corruption, with *Settlers* being statistically significant at the 5% level.[11] This result is retained (while significance

[11] The high F statistic of 21.48 on the overall strength of the first stage due to Kleibergen

rises to the 1% level) in column 2 when we add latitude to the instrument set. Instrumenting also for GDP per capita with the full set of instruments in column 3 offers further support to our thesis. In these three regressions the coefficient on European settlers is considerably larger than in the OLS and GLS regressions of table 2.

The rest of Table 4 reports a series of regressions in which the effects of European settlement are taken into account by using alternative measures of settlement. All regressions continue to instrument for both European settlement and GDP per capita. Columns 4 and 5 use two alternative measures of European settlement. As discussed above, our preferred measure refers to the number of European settlers as a percentage of total population at the height of each country's colonial experience, which took place at different points in time for different countries. An alternative would be to measure the percentage of European settlers or European descendants at some common date for all countries. We pursue this route here by considering data on European settlement for the year 1900 (column 4) and 1975 (column 5) from Acemoglu et al. (2001). Although for most countries the percentage of European settlers or their descendants did not change much following independence, a few cases exist where large population movements meant this was not the case (Argentina, Chile, Uruguay). The results further reinforce our evidence, as the estimated coefficients of these alternative measures are very similar to those obtained with our original measure of European settlement in columns 1-3.

The last two columns of Table 4 expand on the choice between measuring European settlers at the height of the colonial period or at a fixed date for all countries. We compare the predictive power of our preferred measure by including it simultaneously with the percentage of European settlers in the population for 1900 (column 6) or 1975 (column 7). The results clearly corroborate our choice of measure for European settlement. While our pre-

and Paap (2006) far exceeds the frequently used critical values tabulated by Stock and Yogo (2005). For a 10% tolerable bias, the smallest bias Stock and Yogo (2005) consider, for i.i.d. errors with one endogenous variable, is 19.93, while for a 20% bias it is 8.75.

ferred measure has the expected positive and statistically significant effect on corruption, we see that the two alternative measures are no longer significant and their coefficients become small and negative. We interpret this as further evidence in favour of our story, whereby elite power was determined during the colonial period and was thus a function of European settlement in those times.

5 Robustness checks

Having found consistent support for our thesis in the previous sections, we test the robustness of our results by considering alternative measures of corruption and by including a large number of alternative determinants of corruption. All regressions include the standard set of control variables considered in Tables 2 and 4 and instrument for European settlement and GDP per capita as discussed above. To save on space, however, we do not report the coefficient estimates of the control variables included in set X_{ji}: identity of former colonial power, a country's legal origin, religion, and ethnolinguistic fractionalization.

We start by considering different measures of corruption. While all our previous results have used the World Bank corruption index for 2005, Table 5 considers this same index for the years 1998, 2002 and 2004, together with the Transparency International index of corruption and the International Country Risk Guide measure for the same years. These additional corruption indicators are also popular in the literature, and all three of them are typically found to be highly correlated. This is indeed the case in our sample as their pairwise correlations vary between 0.71 and 0.99.

In all cases we find the result of a statistically significant positive relationship between *Settlers* and measures of corruption. If we compare the estimated coefficients for the different years of the World Bank index we note that the magnitude of the effects is about the same as in our previous tables, where the World Bank index for 2005 was used. But for both the Transparency International and International Country Risk Guide indexes

the effects are larger, with an increase in European settlement of 30% leading to an increase in corruption of one standard deviation or more.

We next consider a large number of additional control variables that have figured in the literature on the determinants of corruption. Most of these variables are not obviously related to the degree of European settlement so their omission would not have created any bias, which is why we have not considered them so far. We do so in what follows in order to bring additional support to our story.

Results are reported in tables 6 and 7, which roughly follow the different tests proposed by Treisman (2007). In Table 6 we consider variables that can be grouped under the heading of political institutions: an index of current political rights, the number of years under democracy, an index of freedom of the press, a measure of newspaper circulation, and different measures of the type of political and electoral system in place. Among the papers that have argued for the importance of some of these variables we can cite Montinola and Jackman (2002), Treisman (2000), Brunetti and Weder (2003), Adsera et al. (2003), Panizza (2001) and Persson et al. (2003) among many others.

As could be expected, political rights and freedom of the press are both consistently associated with lower corruption; though the direction of causality is open to discussion.[12] For most other political variables we find effects that are not statistically significant. Our central result, however, proves to be robust to the inclusion of these controls. For most regressions, European settlers are statistically significant at least at the 5% level and the estimated coefficients are remarkably stable.

A similar outcome is presented in Table 7, where we consider the roles of being a fuel-exporting country, openness to trade, education, measures of the importance of women in the government, inflation, income inequality

[12] Table 6 does not consider political rights and freedom of the press simultaneously since both measures come from the same source (Freedom House) and are highly correlated. We have also used the Polity IV measure of political rights with similar results.

and dummies for Latin America and Sub-Saharan Africa. The literature has analyzed the effects of these different factors on corruption in papers like Dollar et al. (2001), Swamy et al. (2001), Braun and Di Tella (2004), Van Rijckgehem and Weder (2001) or Ades and Di Tella (1999).

Some of these variables present a statistically significant association with corruption, notably fuel exports, the percentage of women in government at ministerial level and the dummy for Sub-Saharan Africa. But in all cases we continue to find the positive and statistically significant effect of European settlement on corruption that we hypothesize. In fact, the coefficient on European settlers does not change by much. Worthy of notice are the results from the last column of table 7, where dummy variables for Latin America and Sub-Saharan Africa are included. These show that controlling for the specificities of these two regions does not eliminate the effect of European settlement that we capture.

Overall, then, this section has clearly demonstrated the robustness of our results when controlling for a wealth of additional explanatory factors of corruption proposed in the literature. As a final exercise we have tested our thesis using experienced-based measures of corruption which, as discussed in the introduction, have no reason to be related to European settlement. The measures available come from surveys conducted by Transparency International (Global Corruption Barometer survey), the World Bank (World Business Environment survey), and the United Nations' Interregional Crime and Justice Research Institute (crime victims survey). As expected, we find that none of these measures reflect a relationship between settlers and experienced corruption. Results are available upon request.

6 Concluding remarks

In this paper we have argued that corruption in developing countries has deep historical roots and that colonialism is of paramount importance to its understanding. While we are clearly not the first to associate colonialism

with corruption, we do take the literature forward by differentiating colonial experiences by the degree of European settlement they brought to the country. As emphasized by the growing literature on the socioeconomic effects of colonialism, the degree of European settlement is often of greater importance than the identity of the colonial power.

The link between European settlement and corruption works through the formation of local elites and their power over the country's resources. Europeans formed more powerful elites where they settled in larger numbers, and this allowed them to benefit from acts of corruption with impunity since punishment was all too unlikely. Elites tend to perpetuate themselves - particularly when powerful. That is why the effects of colonial history on elite formation can be felt on corruption practices today.

Our results present convincing evidence that the above thesis holds in practice. Controlling for the level of development and a set of exogenous determinants of corruption we find that the degree of European settlement is a powerful explanatory factor of corruption. The result continues to hold when we address the potential endogeneity of European settlement and of GDP per capita by using instrumental variables and when we add a large number of additional explanatory factors of corruption found in the literature.

Overall, then, this paper contributes to our understanding of why corruption is so persistent in some societies and to our growing awareness of the implications of the colonial experience on developing countries up to this day.

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Figure 1
European Settlement and Corruption

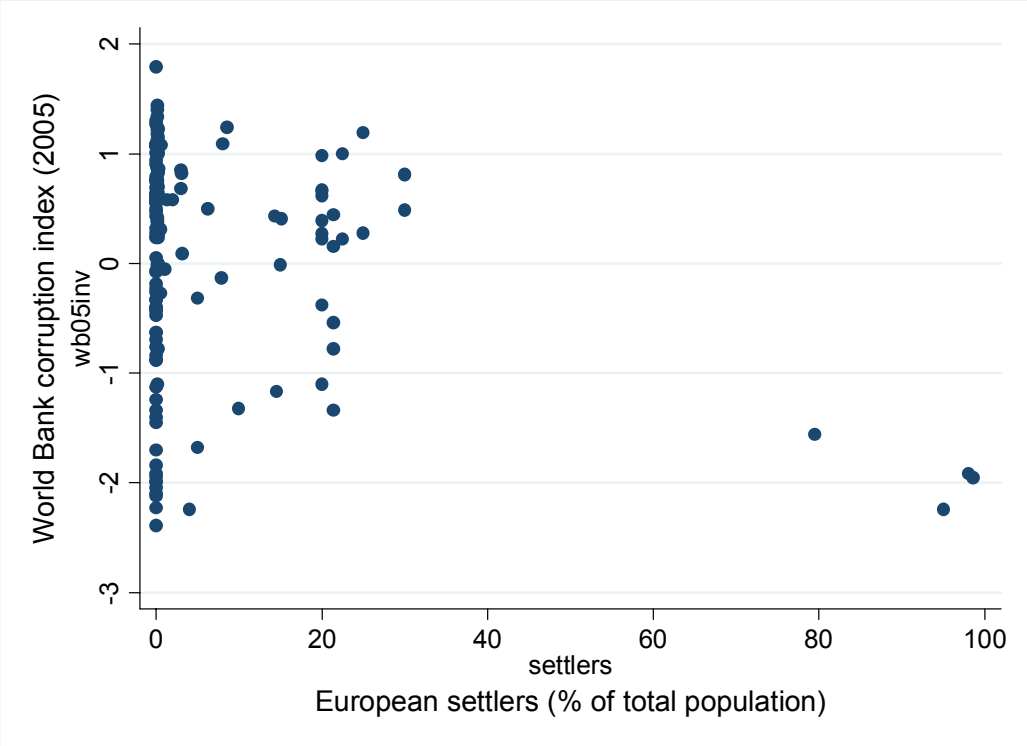

Table 1
Summary Statistics

	Mean	Std Dev	Min	Max	Obs
World Bank corruption index (2005)	0.121	1.01	-2.39	1.4	128
GDP per capita (log)	8.42	1.18	6.35	11.02	128
Former British colony	0.281	0.451	0	1	128
Former French colony	0.179	0.385	0	1	128
Former Spanish or Portuguese colony	0.187	0.392	0	1	128
Former colony of other power	0.211	0.309	0	1	128
British legal origin	0.273	0.447	0	1	128
French legal origin	0.476	0.501	0	1	128
Scandinavian legal origin	0.031	0.174	0	1	128
German legal origin	0.039	0.194	0	1	128
Protestant	12.13	20.41	0	97.8	128
Catholic	29.80	34.88	0	96.6	128
Muslim	23.63	35.01	0	99.4	128
Ethnolingusitic fractionalization	0.487	0.270	0	0.98	128
European settlers	7.19	17.57	0	98.6	128

Note: The source of the dataset is Treisman (2007) with the exception of European settlers which come from Angeles (2007). The number of observations is based on the benchmark regression column (9) of Table 2 below.

Table 2
Benchmark Findings

	Dependent variable: World Bank corruption index (2005)								
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
	OLS	**OLS**	**OLS**	**OLS**	**OLS**	**OLS**	**OLS**	**WLS**	**WLS**
European settlers	-0.016	-0.003	0.016	0.016	0.014	0.014	0.015	0.016	0.025
	(0.000)	(0.310)	(0.002)	(0.032)	(0.082)	(0.085)	(0.064)	(0.038)	(0.012)
European settlers squared									-0.0003
									(0.001)
GDP per capita (log)		-0.699	-0.689	-0.685	-0.622	-0.606	-0.608	-0.629	-0.627
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Former British colony				-0.004	-0.210	-0.194	-0.286	-0.314	-0.321
				(0.982)	(0.184)	(0.244)	(0.060)	(0.041)	(0.038)
Former French colony				0.015	-0.219	-0.149	-0.140	-0.154	-0.162
				(0.940)	(0.237)	(0.427)	(0.455)	(0.421)	(0.401)
Former Spanish or Portuguese				0.116	-0.094	-0.054	-0.012	-0.048	-0.071
colony				(0.633)	(0.702)	(0.825)	(0.961)	(0.853)	(0.784)
Former colony of other power				0.285	-0.171	-0.104	-0.084	-0.058	-0.062
				(0.112)	(0.338)	(0.608)	(0.674)	(0.774)	(0.758)
British legal origin					-0.378	-0.269	-0.180	-0.135	-0.152
					(0.057)	(0.245)	(0.420)	(0.550)	(0.504)
French legal origin					-0.362	-0.382	-0.377	-0.314	-0.330
					(0.003)	(0.024)	(0.027)	(0.072)	(0.059)
Scandinavian legal origin					-1.57	-1.12	-1.13	-1.00	-0.968
					(0.000)	(0.004)	(0.005)	(0.008)	(0.009)
German legal origin					-1.01	-0.920	-0.881	-0.770	-0.769
					(0.004)	(0.015)	(0.016)	(0.030)	(0.032)
Protestant						-0.005	-0.005	-0.006	-0.006
						(0.201)	(0.230)	(0.117)	(0.091)
Catholic						0.001	-0.001	-0.001	-0.001
						(0.775)	(0.968)	(0.860)	(0.933)
Muslim						0.001	0.001	0.001	0.001
						(0.655)	(0.581)	(0.683)	(0.651)
Ethnolingusitic fractionalization							0.011	-0.030	0.009
							(0.952)	(0.872)	(0.962)
Countries	156	142	138	135	128	126	124	124	128
R-square	0.072	0.705	0.706	0.709	0.776	0.780	0.787	0.792	0.819

Notes: Dependent variable is the World Bank corruption index (2005) which measures the *presence* of corruption. Regressions based on Ordinary Least Squares (OLS) and Weighted Least Squares (WLS). p-values in parentheses based on White-corrected standard errors, which for WLS are weighted by the inverse of the standard error. Constant term not reported.

Table 3
Determinants of European Settlement and GDP per capita

Panel A	Dependent variable: European settlers				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
	OLS	**OLS**	**OLS**	**OLS**	**OLS**
Population density in 1500 (log)	-6.063	-3.199	-3.556	-3.291	-3.200
	(0.000)	(0.018)	(0.015)	(0.017)	(0.021)
Indigenous mortality dummy		21.33	22.07	29.38	29.62
		(0.000)	(0.000)	(0.000)	(0.000)
Latitude			0.231	0.321	0.317
			(0.021)	(0.061)	(0.073)
Risk of malaria transmission				6.606	6.260
				(0.215)	(0.278)
Fraction of land area within					-1.222
100km of sea cost					(0.751)
Countries	122	122	120	114	114
R-square	0.311	0.505	0.551	0.613	0.613
Prob > F	0.0002	0.0000	0.0000	0.0000	0.0000
F test	14.51	22.96	16.54	15.60	15.63

Panel B	Dependent variable: GDP per capita (log)				
Latitude	0.040	0.017	0.023	0.030	0.031
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Risk of malaria transmission		-1.53	-1.16	-1.17	-1.09
		(0.000)	(0.000)	(0.000)	(0.000)
Fraction of land area within			0.997	0.782	0.751
100km of sea cost			(0.000)	(0.000)	(0.001)
Population density in 1500 (log)				-0.039	-0.022
				(0.378)	(0.693)
Indigenous mortality dummy					0.143
					(0.608)
Countries	162	136	136	113	113
R-square	0.351	0.537	0.615	0.687	0.688
Prob > F	0.0000	0.0000	0.0000	0.0008	0.0000
F test	93.80	100.54	112.02	83.51	67.62

Notes: Dependent variable in Panel A is European settlers which measures the share of Europeans in the colonial population, while in Panel B is log of GDP per capita. Regressions based on Ordinary Least Squares (OLS). p-values in parentheses based on White-corrected standard errors. Constant term not reported. The null hypothesis of the F test is that the coefficients on all the explanatory variables equal zero.

Table 4
Benchmark Findings: Using instrumental variables and alternative ways to proxy for European settlers

	Dependent variable: World Bank corruption index (2005)						
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
European settlers	**0.029**	**0.035**	**0.022**			**0.048**	**0.043**
	(0.034)	**(0.007)**	**(0.031)**			**(0.035)**	**(0.019)**
European settlers 1900				**0.021**		**-0.011**	
				(0.009)		**(0.450)**	
European settlers 1975					**0.015**		**-0.006**
					(0.020)		**(0.511)**
GDP per capita (log)	-0.645	-0.690	**-0.789**	**-0.833**	**-0.802**	**-0.834**	**-0.842**
	(0.000)	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Former British colony	-0.406	-0.473	-0.512	-0.659	-0.616	-0.645	-0.657
	(0.038)	(0.013)	(0.010)	(0.001)	(0.001)	(0.001)	(0.001)
Former French colony	-0.218	-0.305	-0.365	-0.403	-0.338	-0.466	-0.478
	(0.269)	(0.106)	(0.071)	(0.076)	(0.128)	(0.042)	(0.041)
Former Spanish or Portuguese colony	-0.217	-0.297	-0.195	-0.312	-0.198	-0.469	-0.492
	(0.451)	(0.296)	(0.473)	(0.257)	(0.464)	(0.071)	(0.063)
Former colony of other power	-0.035	-0.089	-0.189	-0.205	-0.191	-0.166	-0.175
	(0.860)	(0.645)	(0.340)	(0.313)	(0.349)	(0.393)	(0.370)
British legal origin	-0.179	-0.284	-0.215	-0.002	0.010	0.042	0.035
	(0.478)	(0.242)	(0.386)	(0.992)	(0.966)	(0.866)	(0.886)
French legal origin	-0.361	-0.404	-0.423	-0.285	-0.278	-0.234	-0.242
	(0.066)	(0.038)	(0.038)	(0.197)	(0.210)	(0.268)	(0.255)
Scandinavian legal origin	-1.11	-1.18	-1.09	-1.08	-1.16	-0.995	-0.982
	(0.004)	(0.002)	(0.006)	(0.006)	(0.003)	(0.006)	(0.009)
German legal origin	-0.800	-0.794	-0.751	-0.655	-0.691	-0.624	-0.619
	(0.017)	(0.018)	(0.032)	(0.065)	(0.053)	(0.055)	(0.060)
Protestant	-0.005	-0.004	-0.003	-0.003	-0.002	-0.004	-0.004
	(0.197)	(0.301)	(0.363)	(0.399)	(0.470)	(0.261)	(0.267)
Catholic	-0.001	-0.001	0.001	-0.001	-0.001	-0.001	-0.001
	(0.619)	(0.619)	(0.755)	(0.800)	(0.769)	(0.682)	(0.722)
Muslim	0.001	0.001	0.001	0.001	0.001	0.001	0.001
	(0.742)	(0.620)	(0.463)	(0.777)	(0.826)	(0.871)	(0.858)
Ethnolingusitic division	-0.005	-0.032	-0.335	-0.440	-0.397	-0.478	-0.487
	(0.980)	(0.882)	(0.151)	(0.072)	(0.098)	(0.046)	(0.049)
Countries	105	105	103	96	96	96	96
R-square (centered)	0.783	0.776	0.775	0.744	0.747	0.782	0.776
Shea partial R-square (settlers)	0.447	0.448	0.482	0.542	0.554	0.333	0.344
Shea partial R-square (GDP pc)			0.632	0.578	0.581	0.540	0.535
LM test (p-value)	0.0014	0.0020	0.0005	0.0017	0.0003	0.0599	0.0119
F test	21.48	14.02	13.41	16.21	19.68	2.36	2.68
Hansen J-test (p-value)	0.243	0.165	0.188	0.200	0.155	0.276	0.262
Instrumented variables	European	European	European settlers, GDP	European	European	European	European

	settlers	settlers	per capita (log)	settlers 1900, GDP per capita (log)	settlers 1975, GDP per capita (log)	settlers, European settlers 1900, GDP per capita (log)	settlers, European settlers 1975, GDP per capita (log)
Exogenous variables used as instruments	Population density in 1500 (log), indigenous mortality dummy	Population density in 1500 (log), indigenous mortality dummy, latitude	Population density in 1500 (log), indigenous mortality dummy, latitude, risk of malaria transmission, fraction of land area within 100km of sea cost	As in regression 3	As in regression 3	As in regression 3	As in regression 3

Notes: Dependent variable is the World Bank corruption index (2005) which measures the *presence* of corruption. p-values in parentheses based on White-corrected standard errors, weighted by the inverse of the standard error. Constant term not reported. Instrumented variables are in bold type. Regressions based on two-step efficient GMM estimation with instruments as described in the penultimate row. The Hansen J-test p-value refers to the overidentification test of all instruments, with null hypothesis that instruments are uncorrelated with the error term. The LM test p-value refers to the LM Kleibergen-Paap (2006) rk statistic, which is a generalization to non-iid errors of the LM version of Anderson canonical correlations likelihood-ratio test, with null hypothesis that the first-stage regression is underidentified. The F test refers to the Kleibergen-Paap (2006) rk Wald F statistic which tests weak identification of the excluded instruments. The null hypothesis is that the first-stage regression is weakly identified.

Table 5
Alternative Measures of Corruption

	Dependent variable: corruption indicators								
	World Bank			**Transparency International**			**ICRG**		
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
	2004	**2002**	**1998**	**2004**	**2002**	**1998**	**2004**	**2002**	**1998**
European settlers	**0.019**	**0.029**	**0.026**	**0.040**	**0.054**	**0.079**	**0.033**	**0.039**	**0.039**
	(0.073)	**(0.009)**	**(0.016)**	**(0.086)**	**(0.017)**	**(0.004)**	**(0.046)**	**(0.019)**	**(0.038)**
GDP per capita (log)	**-0.760**	**-0.771**	**-0.755**	**-1.69**	**-1.90**	**-1.93**	**-0.603**	**-0.622**	**-0.739**
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.001)**	**(0.001)**	**(0.000)**
Includes control variables in set *X*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Countries	103	103	103	92	85	64	93	93	93
R-square (centered)	0.771	0.746	0.795	0.856	0.871	0.843	0.598	0.601	0.443
LM test (p-value)	0.0006	0.0005	0.0007	0.0005	0.0058	0.1475	0.0015	0.0015	0.0015
F test	13.73	13.17	13.13	11.07	10.41	12.54	9.02	9.02	9.02
Hansen J-test (p-value)	0.401	0.530	0.200	0.555	0.781	0.888	0.835	0.743	0.458

Notes: Dependent variable is the World Bank (WB) corruption index, the Transparency International (TI) corruption perception index, and the International Country Risk Guide (ICRG) corruption index, all in various years. All indexes measure the *presence* of corruption. p-values in parentheses based on White-corrected standard errors, weighted by the inverse of the standard error. Constant term not reported. Instrumented variables are in bold type. Regressions based on two-step efficient GMM estimation with instruments as in Table 4, column (3). For the definitions of the LM test, F test, and Hansen J-test see notes of Table 4.

Table 6
Accounting for Political Institutions

	Dependent variable: World Bank corruption index (2005)									
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
European settlers	**0.019**	**0.019**	**0.020**	**0.019**	**0.025**	**0.025**	**0.028**	**0.026**	**0.024**	**0.033**
	(0.048)	**(0.054)**	**(0.041)**	**(0.061)**	**(0.029)**	**(0.046)**	**(0.035)**	**(0.001)**	**(0.040)**	**(0.000)**
GDP per capita (log)	**-0.621**	**-0.614**	**-0.572**	**-0.570**	**-0.642**	**-0.654**	**-0.716**	**-0.732**	**-0.657**	**-0.752**
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Political rights	-0.104	-0.121	-0.101	-0.102						
	(0.001)	(0.420)	(0.000)	(0.000)						
Political rights squared		0.002								
		(0.914)								
Democratic since 1930 (number of years)			-0.002							
			(0.666)							
Democratic since 1950 (dummy)				-0.156						
				(0.458)						
Freedom of press					-0.010	-0.011	-0.009	-0.016	-0.010	-0.018
					(0.001)	(0.000)	(0.034)	(0.000)	(0.004)	(0.018)
Newspaper circulation 1996						0.001				
						(0.975)				
Presidential democracy							-0.038			
							(0.661)			
Pure plurality system								0.244		
								(0.226)		
Open-list system								0.011		
								(0.914)		
District magnitude								0.001		
								(0.611)		
Open-list * District magnitude								-0.002		
								(0.792)		
Federation									0.156	
									(0.207)	
Fiscal decentralization										-0.001
										(0.860)
Includes control variables in set *X*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Countries	103	103	103	103	103	99	102	53	103	36
R-square (centered)	0.811	0.812	0.814	0.814	0.817	0.815	0.810	0.920	0.819	0.928
LM test (p-value)	0.0006	0.0014	0.0010	0.0005	0.0043	0.0034	0.0073	0.0122	0.0048	0.0574
F test	8.21	7.56	922	7.91	5.51	4.59	4.25	6.55	5.63	3.27
Hansen J-test (p-value)	0.146	0.145	0.145	0.153	0.251	0.252	0.256	-	0.213	-

Notes: Dependent variable is the World Bank corruption index (2005) which measures the *presence* of corruption. P-values in parentheses based on White-corrected standard errors, weighted by the inverse of the standard error. Constant term not reported. Instrumented variables are in bold type. Regressions based on two-step efficient GMM estimation with instruments as in Table 4, column (3). For the definitions of the LM test, F test, and Hansen J-test see notes of Table 4. In column (10) Former French colony is automatically dropped due to collinearities.

Table 7
Controlling for Rents, State Regulation, Market Competition, Gender, Inflation, and Other Factors

	Dependent variable: World Bank corruption index (2005)								
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
European settlers	**0.030**	**0.023**	**0.021**	**0.021**	**0.024**	**0.022**	**0.023**	**0.031**	**0.018**
	(0.013)	**(0.096)**	**(0.079)**	**(0.067)**	**(0.024)**	**(0.017)**	**(0.070)**	**(0.013)**	**(0.074)**
GDP per capita (log)	**-0.914**	**-0.878**	**-1.12**	**-0.875**	**-0.945**	**-0.871**	**-0.913**	**-0.885**	**-1.05**
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Fuel exports	0.008	0.008	0.009	0.008	0.008	0.008	0.008	0.006	0.009
	(0.000)	(0.003)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.017)	(0.000)
Imports (% of GDP)	-0.002								
	(0.518)								
Year opened to trade		0.004							
		(0.662)							
Education			0.088						
			(0.184)						
Women in lower house of parliament (%)				-0.001	0.007	0.006			
				(0.849)	(0.322)	(0.381)			
Women in government at ministerial level (%)					-0.010	-0.012			
					(0.040)	(0.022)			
Government party's margin of victory						-0.462			
						(0.165)			
Fractionalization of parties						-0.310			
						(0.298)			
Inflation rate							-0.027		
							(0.746)		
Inequality (Gini, 2002)								0.005	
								(0.540)	
Dummy for Latin America									-0.135
									(0.697)
Dummy for Sub-Saharan Africa									-0.378
									(0.040)
Includes control variables in set *X*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Countries	86	80	73	77	66	65	75	67	777
R-square (centered)	0.814	0.835	0.859	0.833	0.861	0.876	0.832	0.846	0.820
LM test (p-value)	0.0060	0.0096	0.0033	0.0012	0.0414	0.0114	0.0011	0.0098	0.0036
F test	9.13	8.82	6.01	11.78	10.57	10.72	10.53	12.86	5.21
Hansen J-test (p-value)	0.067	0.380	0.432	0.476	0.372	0.245	0.501	0.077	0.776

Notes: Dependent variable is the World Bank corruption index (2005) which measures the *presence* of corruption. p-values in parentheses based on White-corrected standard errors, weighted by the inverse of the standard error. Constant term not reported. Instrumented variables are in bold type. Regressions based on two-step efficient GMM estimation with instruments as in Table 4, column (3). For the definitions of the LM test, F test, and Hansen J-test see notes of Table 4.