

# Why doesn't Capitalism flow to Poor Countries?

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## Abstract

We find evidence consistent with the hypothesis that governments in poor countries have a more left wing rhetoric than those in OECD countries. A possible explanation is that corruption, which is more widespread in poor countries, reduces the electoral appeal of capitalism more than that of socialism. The empirical pattern of beliefs within countries is consistent with this explanation: people who perceive corruption to be high in the country are also more likely to lean left ideologically and to declare to support a more intrusive government in economic matters. Finally, we provide a simple model where it is *assumed* that corruption under capitalism is informative about private sector productivity and honesty levels, whereas corruption under socialism contains less information (just reveals honesty levels). There is a negative externality in the sense that the existence of corrupt entrepreneurs hurts good entrepreneurs by reducing the general appeal of capitalism.

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## I. Introduction

Casual examination of right wing political rhetoric reveals large differences across countries. Right wing parties in poor countries extol the virtues of capitalism less often than their counterparts in rich countries. Instead, they appear tolerant of government intervention to regulate markets, of subsidies to contain income disparities and of industrial policy to promote growth. An intriguing possibility is that few people in poor countries want to have a US-style capitalist system. Since economists believe that such a system is the most conducive to growth, a puzzle is, why isn't capitalism, as a way to get a country out of poverty, a more attractive idea in poor countries?

The first objective of the paper, then, is to explore the possibility that governments in poor countries are in fact less capitalist than those in rich countries. There is some anecdotal evidence available. For example, a standard informal justification for military coups in Latin America in the 1970's is that they were the only way that right wing ideas could get to be implemented, given their small electoral appeal.<sup>1</sup> The case of Argentina, where the center-left Radical and Peronist parties have alternated in government during the last century, is another case in point.<sup>2</sup> A more systematic approach involves using data on the platforms of political parties around the world. The closest we have available is a recent database on political institutions created by Beck *et al* (2001) at the World Bank. Of particular interest are data on the intentions of political parties (platforms) and data on their relative electoral performance. Although the data are rough and approximate given our purposes, the basic patterns suggest that right wing, pro-capitalist political parties are in government less frequently in developing countries than in the industrial nations. Controlling for democratic differences, differences in levels of inequality, differences in the level of prevailing violence and differences in country size does not seem to affect the conclusion that governments in poor countries are, by and large, ideologically more to the left than rich countries.

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<sup>1</sup> The involvement of the "Chicago boys" with the military dictatorships of Chile and Argentina is sometimes discussed in these terms (e.g., Green (1995)). An alternative explanation is that some degree of authoritarianism is consistent with economic liberalism when pressure groups break the law (see Skidelsky (1988)). Section II for the general pattern of dictatorship and ideology.

<sup>2</sup> Peronists are often labeled right wing given the role of fascism in shaping Peron's ideology. Yet, over the last century, the labor share has been highest with Peronist administrations and the Peronist march intones "*the Peronist lads will fight capital*". Likewise it is claimed that the Menem administration in the 1990's turned right wing, which is plausible, but does not deny the fact that Menem was elected on a populist platform that included a massive wage hike or "*salariozo*".

One potential explanation for these patterns in the data is cultural differences across poor and rich countries. For example, it has been argued that capitalism spread in the countries that are rich today because the prevailing religious culture approved of success and the accumulation of individual wealth, whereas in today's poor countries other cultures (such as Catholicism) stood in the way of capitalism.<sup>3</sup> An alternative explanation, economic in nature, is that voters in poor countries are choosing left wing governments to redistribute the little income there is. More inequality, in this view, moves average income up relative to the median, and may introduce a desire for redistribution. A number of authors, however, have emphasized that, at least amongst advanced industrial nations more unequal countries seem to distribute less, not more.<sup>4</sup> Furthermore, since countries can move to the center, and redistribute within a market economy, it does not explain why so many countries loose faith in the private sector altogether.<sup>5</sup>

An alternative explanation can be found by taking at face value what political parties say. Simple inspection of the traditional platforms of established parties, such as the PT in Brazil and the PRI in Mexico, reveals that corruption of the capitalist class is invoked when justifying a more paternalistic role of government. Thus, a striking difference in the rhetoric of politicians that support redistribution across rich and poor countries is how often those in the latter group make reference to corruption. Thus, in the second part of the paper we explore empirical evidence bearing on the hypothesis that support for left wing parties originates in perceptions of corruption. We provide three types of evidence. The first is simply a reinterpretation of the work of Djankov *et al* (2002) on the regulation of entry. They find that countries with more regulation on the entry of firms, in terms of delays and money spent in the process, also have more corruption. This, we argue, is also consistent with the idea that corruption invites regulation (and other left wing policies). The second type of evidence concerns corruption levels aggregated at the country level. We show that there is a positive correlation within countries between the total amount of corruption and how left the government is. Finally, analysis of subjective data within countries reveals that individuals who

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<sup>3</sup> In some extreme cases, wealth was indicative of a person's moral standing (and likely after-life performance). A classic reference for the role of cultural affinities in the spread of capitalism is Weber (1958). For empirical evidence, see Iannaccone (1998), Grier (1997), La Porta *et al* (1997, 1999) and Guiso *et al* (2003).

<sup>4</sup> This is, for example, the starting point of Benabou (2000). We are unaware of systematic empirical evidence. In section II we present empirical evidence showing that more inequality is *positively* correlated with the election of right wing parties. This is also related to the literature on inequality and growth (Alesina and Rodrik (1994), Persson and Tabellini (1994), Perotti (1996)). See Benabou (1996) for a discussion of the main issues.

believe that there is more corruption are also more likely to be in favor of more government intervention in the economy. Moreover, there is no evidence that corruption is correlated with non-economic attributes of ideology.

In the third and final part of the paper we present a simple model that can help interpret the patterns in the data. Given a certain distribution of "moral costs" in society, capitalism and socialism are assumed to provide equal expected returns to voters. There is uncertainty regarding productivity under both systems. The observation of corruption under capitalism reveals information about firm productivity: voters' beliefs concerning productivity are updated when firms are observed to be choosing lobbying over production. In a socialist system, in contrast, the observation of corruption does not reveal information about socialist productivity (just about officials implementing it). If officials can be changed more easily than private sector productivity, socialism provides voters with higher expected returns.<sup>6</sup> There is a negative externality in the sense that the existence of corrupt entrepreneurs hurts good entrepreneurs by reducing the general appeal of capitalism.

Our paper builds on the literature studying the role of the social contract and how economic organization is built on beliefs (see Denzau and North (1993)). Two important papers are Piketty (1995) and Benabou (2000). The former shows that an initial distribution of beliefs concerning the importance of effort in determining performance can lead to two different types of equilibria, one (the other) with low (high) taxes and a belief, which holds in reality, that individual effort is (is not) important in determining income.<sup>7</sup> Benabou (2000), on the other hand, shows that for a class of interventions that increase output, such as public education when capital markets are imperfect, multiple steady states can arise. Finally, Alesina and Angeletos (2002) show how fairness can influence the choice of taxes: if a society believes that luck or corruption (rather than effort) determine wealth, it will choose high (rather than low) taxes, thus distorting allocations and making these beliefs self-sustaining. Alesina, Glaeser and Sacerdote (2002) review the contributions to this

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<sup>5</sup> A standard *definition* for a Center party (used in Beck *et al* (2001)) is one that advocates both redistribution and strengthening the private sector. Korea, for example, has increased public funding for education and health within a pro-capitalist system with respect to the organization of production. Interestingly, Korea is classified as *Right* in our sample.

<sup>6</sup> In the appendix we also discuss a rational model of taxes and a fairness model, with similar predictions.

<sup>7</sup> A recent paper by Benabou and Tirole (2002), shows how multiple equilibria out of a distribution of beliefs can arise when individuals have self-control problems. The advantage of this model over Piketty's is that beliefs have more "texture" in the sense that some individuals will believe that effort does not determine performance and will still want to persuade themselves that effort is important. For a discussion of American beliefs on distributive justice, see Hochschild

growing literature. In our model, different beliefs on the importance of corruption determine how much government intervention they will support. Since such intervention can increase corruption levels, it can be shown that this class of models also has the potential for multiple equilibria.

We also draw on the corruption literature. Of particular interest is work suggesting that corruption levels are tied to the legitimacy of a country's economic institutions and commercial organization. These can be affected by changes in the ideology of the government (partisanship), although, to our knowledge, work in this area has not yet made the connection to corruption.<sup>8</sup> Some authors have emphasized how corruption has undermined support for economic reforms, something that is connected with partisanship, at least over the short run.<sup>9</sup> Our work can be seen as formalizing these ideas in the context of general economic ideology (and not to views solely about reforms). A number of economists have emphasized how corruption may reduce growth (see Rose-Ackerman (1978), Shleifer and Vishny (1993); for empirical evidence see Mauro (1995) and Knack and Keefer (1995)). An important early paper is Andvig and Moene (1990) who describe how multiple equilibria in corruption can arise (see also Angeletos and Kollintzas (2000)). Work in this literature has also studied how government interventions may improve social welfare even when corruption originates in these very same interventions (see Banerjee (1997), Ades and Di Tella (1997), Acemoglu and Verdier (2000) and Djankov *et al* (2003)). An implication of this approach is that it may be hard to justify interventions in very poor countries that cannot afford to pay the high salaries necessary to control corruption, a point made explicitly in Acemoglu and Verdier (2000). Our paper is closer to Glaeser and Shleifer (2002). They explain the rise of regulation in America as the efficient response to the subversion of justice by robber barons during the Gilded Age, when the scale of business can be assumed to have grown (see also Djankov *et al* (2003)). Finally, a large literature has studied how countries may get to have bad institutions that retard growth (e.g., North and Thomas (1973), De Long and Shleifer (1993), Acemoglu, Johnson and Robinson (2001), *inter alia*), or get to choose bad policies (e.g., Alesina and Drazen (1990), Fernandez and Rodrik (1990), *inter alia*). But in all these

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(1981), as well as Klugel and Smith (1986) and Ladd and Bowman (1998). In the same spirit, we try to incorporate how perceptions of corruption are a component of beliefs about distributive justice.

<sup>8</sup> A large literature in political science has focused on the determinants of legitimacy in political representation, including the role of corruption. della Porta (2000) and Seligson (2002) provide empirical evidence based on exposure to corruption. See, also Dahl (1956), Huntington (1968), and Weatherford (1992). Work on partisanship, has studied how party identification moves over time in the US. See, for example, Jennings and Markus (1984) and MacKuen *et al* (1989).

<sup>9</sup> See Stiglitz (2000). Rajan and Zingales (2003) emphasize how economic downturns can allow capitalists to exploit public anger to restrict competition and access to capital.

models voters want to have good policies (and capitalism), and there is some impediment to their adoption. We are focused on the case where voters do not want capitalism.

Section II presents evidence consistent with the idea that poor countries are more left wing than rich countries. Section III explores the empirical connection between corruption and ideological position, both across and within countries, and across individuals within countries. Section IV presents a simple model where the observation of corruption changes citizens' beliefs about the productivity of private enterprise relative to government intervention. Section V concludes.

## II. The Color of Government Across Countries

### *II.a. Data Source*

We are unaware of the availability of data on political rhetoric across countries. An examination of voting records of legislators is a distant proxy since politicians sometimes change their “ideology” once in office (and we are interested in their proposed policies *while* they are running for office). Furthermore, data with that level of detail are not available beyond OECD countries. Closer to our needs is the data set compiled by Beck *et al* (2001). They use a two-step approach. First, they record the party identification of a country's political leaders. These include the chief executive (prime minister and/or president), the largest government party and the three largest parties in the government coalition. Second, they classify the parties following preferences regarding greater or less state control of the economy – the standard left-right scale. This is inferred by the name. Thus, parties that contain terms such as “conservative” or “Christian democratic” in their names are classified as right-wing. Similarly, if the party's name reveal them to be communist, socialist, or social democratic are classified left-wing and centrist if they are called centrist by their sources or if their position can best be described as centrist (e.g., because the party advocates the strengthening of private enterprise but also supports a redistributive role for government). Parties that cannot be classified in these categories are recorded as “other” and not included in our study (these are frequently parties in non-competitive electoral systems).<sup>10</sup> If the orientation of a party was not immediately obvious from the name, Beck et al checked a set of sources that included *The Europa Handbook* and Banks' *Political Handbook of the World* as well as *Political Parties of Africa and the Middle*

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<sup>10</sup> Beck *et al* also code governments as nationalistic, regional, rural and religious. They state “*These dimensions were chosen because they do not necessarily correlate with each other: religious or nationalistic parties adopt both left and right wing economic policies;...*”

*East: A Reference Guide* (1993), *Political Parties of Eastern Europe, Russia and the Successor States: A Reference Guide* (1994) as well as the website <http://www.agora.stmit/elections/parties.htm> maintained by Agora Telematica which provides short definitions of parties. In the rare case sources disagreed, Beck et al noted it in their data base (and we do not include them here). The sample includes a maximum of 136 countries over the period 1975 to 1997.

## *II.b. Results*

Perhaps the simplest measure to study initially is the color of the party to which the chief executive is affiliated. In 1997 there are data on 105 countries. If we divide this group of countries by income (real purchasing power), we find that within the richest third 44% are classified as left, 3% as center and 53% as right wing. Within the bottom (poorest) third, 63% are classified as left, 6% are center and 31% are right. If we use the world distribution of income, which gives us 49 (25) countries in the top (bottom) third, we find that within the richest group countries are evenly split with 24 left and 24 classified as right. Within the bottom group, 68% of countries are classified as left, 8% as center and 24% as right. Moving to a simple table of frequencies for the full 1975-97 sample presents similar results. There are 2,311 country/year observations. Of the 488 for OECD countries, 39% (50%) have a chief executive that is affiliated to a party classified as left (right) by Beck *et al.* Of the 1,823 observations for Non-OECD countries, 61% (33%) are classified as left (right).

Table A1 adopts a definition of government that follows more closely electoral appeal (as opposed to political maneuvering) based on color of the largest government party (and not on that of the chief executive). It also partitions the sample symmetrically by thirds on the basis of income. Again the data suggests that successful right wing parties are more frequent in rich countries. Their frequency relative to left wing governments is monotonically increasing in income. This is not affected when the data is analyzed at two moments in time in Table A2. Although during the early part of the sample (namely 1975-80) left wing governments were more common than later on in the sample (namely 1992-7), in both periods right wing governments are more common in rich countries.

Table A3 explores other metrics that can be used to define the color of government available from Beck *et al.* They are (a) the left/center/right designation of the party of the chief executive and (b) that of the 3 main parties in government. We also assign a cardinal scale to the parties (assigning 1 to

right wing parties, 0 to center parties and -1 to left wing parties) so as to represent the groups with simple averages. For all definitions of government a simple t-test strongly suggests that right wing parties are more common in richer countries. In other words, the data present a similar picture to that presented in Table A1.<sup>11</sup> This is still true even when we weigh data on party ideology by the proportion of the total available seats obtained.

Other variables may affect the relationship between government ideology and level of development. An obvious candidate is inequality. The frequencies of political color using data on the Gini from Deininger and Squire (1996) to partition the sample is presented in Table A4. Again it seems poor countries are more left wing and, if anything, more unequal countries seem to be more right wing.

The previous tables treat each country/year observation in our data set as independent. However since our data include repeated observations on the same country over time it is of interest to relax this assumption and give more weight to changes in government. A simple approach is to look at random effects regressions that allow for serial correlation in the error term.<sup>12</sup> Table A5 reports the results when we include inequality and also control for other variables. We include *Freedom*, a country's level of political rights as measured by the Gastil index, a control for whether the countries were experiencing civil war (from Doyle and Sambanis (2000)), and a control for inequality (see appendix 2 for data definitions). Data availability on these new controls reduces the sample to 80 countries. For clarity we also eliminate countries in the Soviet block prior to 1990 (so that only 75 remain) although the results are not affected by this choice.

Rich countries (i.e., in the top third of the income distribution) are again associated with more right wing governments across all definitions, even after controlling for other variables often associated with different color of government. It is worth noting that more unequal countries tend to have more right wing parties. This point, which has been made informally contrasting the US and European experiences, is the starting point of Piketty (1995) and Benabou (2000) and, to our knowledge, has not been documented before. The positive and significant coefficient on *War* in the

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<sup>11</sup> There do not seem to exist significant trends over time. For example, using the "*Chief Executive*" definition the biggest difference between OECD and non-OECD occurred in the 1980's (difference equals 0.57), while the smallest was in the 1990's (difference equals 0.21). In all periods the OECD had significantly more right-wing governments.

<sup>12</sup> Looking at partial correlation coefficients yield similar results. The need to eliminate the role of serial correlation may seem obvious. But rational voters in a democracy typically *intend* the government to stay the full length of the term.



last three columns shows there is a positive association between right-wing government and there being a civil conflict in the corresponding country. Results remain similar if we exclude the smallest 25% of countries based on population size.

More generally there is no correlation between *Freedom* and the ideological orientation of the government. One could still argue that controlling for democratic differences is not enough and that we should only look at countries with perfect degrees of freedom. This would be misleading for two reasons. First, countries that are perfectly democratic that are not in the richest third are still very rich relative to the rest of the sample. Thus, we would be studying if capitalism flows to countries that are rich (but not in the richest third). Second and more importantly, our Freedom data concerns how democratic are governments once in power, not if they got there through democratic means. Thus, a finding that dictatorships lean left more often than right would still be consistent with right wing parties being unattractive to voters. The reason behind the left/authoritarian correlation may be found in the left-wing view of pressure groups (the “forces of reaction”) as using violence and misinformation through the media (and not just offering bribes). Thus, repression of individual rights is necessary to carry out socialist reforms (Fidel Castro is a case of a left-wing politician that is initially popular and then becomes increasingly autocratic).

### **III. Corruption and Ideological Orientation: Evidence**

In this section we explore evidence bearing on the hypothesis that the resistance to adopting capitalism in the third world is correlated with perceptions of corruption. We propose three pieces of evidence. The first comes from re-examining the evidence on the regulation of entry presented in Djankov *et al* (2002). The second comes from examining the relationship between aggregate levels of corruption and political orientation of government within countries (using the Beck *et al* (2001) data set). And the third piece of evidence comes from examining subjective opinions on corruption and the role of government across individuals using World Values Survey data.

#### *III.a. A Reinterpretation of "The Regulation of Entry" by Djankov et al (2002)*

In their comprehensive study, Djankov *et al* collect data on the procedures regulating firm entry,

including the number of procedures, the time for putting the firm into operation, and total cost.<sup>13</sup> They report that they cannot reconcile the evidence available on the regulation of firm entry across countries with public interest theories of regulation. Instead their evidence is consistent with "tollbooth" theories whereby regulations are put into place to allow rent extraction by bureaucrats.

A basic finding is that the number of procedures enter positively in bad-performance regressions (i.e., where the dependent variable is water pollution, deaths from intestinal infection, etc). They then present corruption regressions where the number of procedures, time and cost measures all enter positively. They state, that *"While the data are noisy, none of the results support the predictions of the public interest theory"* (page 25), favoring instead the "tollbooth theory". Lastly they find that lack of political rights in the country enter positively in regulation regressions (dependent variable=number of procedures). Thus, regulation is heavy in autocratic countries, *"consistent with the public choice theory that sees regulation as a mechanism to create rents for the politicians and the firms they support"* (page 34).

This evidence can also help explain why capitalism doesn't flow to poor countries. When business people are perceived to be failing to deliver on their social contract, either because they are polluting the environment or because they are corrupting bureaucrats, offended citizens vote for more controls in the forms of more regulations. A simple way to distinguish this explanation from the "tollbooth" theory is to look at evidence at the individual level. A finding that people who perceive corruption to be widespread also want more government regulation would be difficult to explain if regulations were simply facilitating rent extraction by bureaucrats. As for the finding that autocrats regulate more, there seems to be an equally appealing interpretation to the one proposed by Djankov *et al*, namely that they are passing these laws and regulations to "buy" the legitimacy that they lack from a democratic electoral process. Remember that their paper focuses on written regulations. By increasing the amount of written regulations, more autocratic leaders strengthen the bargaining position of bureaucrats vis a vis firms. But why would they do that? One possibility is that they are simply trying to buy the support of the bureaucracy. But this approach would risk alienating the - typically - more powerful business community. A more plausible story, then, is that

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<sup>13</sup> The procedures include screening (to certify business competence, a clean criminal record, check name for uniqueness, etc), tax related and Labor/Social security requirements, safety as well as health and environment related requirements. See Table I, in Djankov *et al* (2002).

autocrats are regulating as a way to discipline business and get the support of the general population, because as Djankov *et al* emphasize, few dictators have a secure position.<sup>14</sup>

### *III.b. Corruption and Ideology at the Aggregate level*

A simple approach to see if corruption is playing a role in the appeal of capitalism is to examine the within-country correlation of measures of aggregate corruption and ideology of the government. Table B1 looks at the correlation between the Beck *et al* (2001) measure of government ideology and the International Country Risk Guide (ICRG) corruption index introduced into economics by Knack and Keefer (1995). The corruption variable is available since 1984 and indicates the opinion of analysts on each country regarding how widespread is corruption. We also use data on the level of development (GDP per capita and the education level) from the World Bank. See Appendix 2 for data definitions. The analysis is not designed to deal convincingly with problems of endogeneity, so it has to remain illustrative. (As a small step towards addressing these issues, we have lagged the right-hand variables two periods). We focus on fixed effect panel regressions. The dependent variables are transformed into continuous variables by multiplying the left-center-right variable by the proportion of the total number of seats in parliament.<sup>15</sup> For column one we focus on the seats obtained by the largest government party and for column two on those obtained by the 3 main government parties. The basic results show that high levels of corruption are correlated with less right wing governments (with a lag), for both definitions of government. The relationship is significant at conventional levels. Columns (3) and (4) show that the correlations survive controlling for two very basic indicators of development, the level of income and the level of education.

In the last two columns of Table B1 we interact the level of corruption with the level of income. The interaction is positive and significant, indicating that the correlation between corruption and how left the government is gets larger in size at low levels of income. This is consistent with the idea that a given level of corruption is more effective in moving the electorate left in poor countries.

### *III.c. Evidence on Individual Beliefs from the World Values Survey*

The source of the data for this section is World Values Survey Series (see Appendix 2). A large

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<sup>14</sup> Djankov *et al* argue, “dictators need the political support of various interest groups, and use the distortionary policies to favor their friends”. They then assert “the choice of distortionary policy is not mitigated by public pressure since he faces no elections.” (page 28).

<sup>15</sup> This is done so as to avoid having to run ordered probits with fixed effects. It also means we cannot use the color of the chief executive definition as we cannot use information on the number of seats.

random sample of individuals are interviewed and asked a series of questions to "contribute to a better understanding of what people all over the world believe and want out of life". The last wave includes a question to 67,416 people in 51 nations on corruption. It asks, "How widespread do you think bribe taking and corruption is in this country?" The four relevant response categories are: 1. *Almost no public officials are engaged in it.* 2. *A few public officials are engaged in it.* 3. *Most public officials are engaged in it.* 4. *Almost all public officials are engaged in it.* Accordingly, four dummy variables capturing each of these responses are created: *Perception of Corruption – almost none, - few officials, - most officials, - almost all officials.*

### Ideology and Perceptions of Corruption

Table C1 uses this variable to study ideological inclination. This is possible because individuals also answer a question on ideological self-placement: "In political matters, people talk of "the left" and "the right". How would you place your views on this scale, generally speaking?" The interviewer then shows a scale with numbers 1 to 10 written down with the word "Left" written below the number 1 and the word "Right" below the number 10. Accordingly, the variable *Right Wing* is created taking the values 1-10. A total of 51,810 people across 48 countries answer both questions of interest.

Regression (1-2) in Table 1 present ordered probit regressions, of the form:

$$Right_{ijt} = a Perception\ of\ Corruption_{ijt} + b Personal\ Controls_{ijt} + Country_j + \epsilon_{ijt}$$

where  $Right_{ijt}$  is the ideological position of individual  $i$  living in country  $j$ ,  $Perception\ of\ Corruption_{ijt}$  is the perception of corruption of individual  $i$  living in country  $j$  in year  $t$  while  $\epsilon_{ijt}$  is a standard error term (i.i.d.) and  $Country_j$  is a country dummy. We also include large set of personal controls,  $Personal\ Controls_{ijt}$ , such the age, sex and income of the respondent. When we use all this information the sample reduces further to 40,028 people across 43 nations.

Regression (1) in Table C1 shows that individuals who perceive corruption to be widespread are less likely to identify themselves as right-wingers. Regression (2) shows that the result survives the inclusion of personal controls, including gender, age, marital status, income, education, place of residence and employment status. They enter with the expected signs: people on higher income, men, the self-employed, those that are not divorced or separated, all tend to lean ideologically towards the right. In both regressions the effect of *Perception of Corruption* is monotonic and large. A

person who perceives corruption to be widespread (almost all officials engaged in it) is predicted to move toward the left-end of the left/right scale by 0.14 units of the underlying continuous variable relative to the base category (*Almost no public officials are engaged in it*). The size of this effect is bigger than a fall from the top to the bottom income quintile.

We also compared the coefficients on perception of corruption across rich and poor countries. In this case the evidence did not reveal significant differences across the two sub-samples concerning the effect of corruption on left wing ideology.

#### *Perceptions of Corruption and Economic Attitudes*

Table C2 investigates this correlation further by considering several economic dimensions of ideology. A similar regression to the one above is used but with different dependent variables that capture different dimensions of ideology. One can assume that a person decides on his/her ideology based on how much coincidence there is between his/her views and those of a typical right winger and a typical left winger on a basic set of issues, some economic in nature (like how business should be run) and some moral or political (like how acceptable is homosexuality). Table C2 has five regressions corresponding to five different economic views. For ease of exposition we treat the variable *Perception of Corruption* as cardinal (assigning the value 1 to “almost no officials” and 4 to “almost all officials”). We also attach the letter R (L) if, in the natural interpretation, higher values are associated with a right wing (left wing) ideological placement. The dependent variables in the first 3 columns deal with attitudes to poverty. Column (1) in Table C2 uses the answer to the question *Why, in your opinion, are there people in this country who live in need? Here are two opinions: which comes closest to your view? The two relevant options are 1. They are poor because of laziness and lack of willpower, OR 2. They are poor because society treats them unfairly.* The variable, which is called *Not Lazy-L* is positively associated with *Perception of Corruption*, suggesting that people who perceive corruption to be widespread are more likely to reject the idea that poverty is due to laziness in favor of the idea that the poor are unfairly treated by society, compared to those that do not think that corruption is widespread. Column (2) explores a different framing. Again those who perceive high levels of corruption also express a left wing view. Column (3) shows that people who perceive corruption to be widespread are also more likely to say that the government is doing too little to alleviate poverty. This is interesting for theories that see corruption arising from government intervention. One possibility is that individuals understand that the optimal intervention is larger when the bureaucrats

implementing them are corrupt, as there may be leaks.<sup>16</sup> Thus, the result in column (3) is consistent only with a sophisticated version of what Djankov *et al* (2002) call the "public interest" view and is inconsistent with the "tollbooth theory" where regulation is put into place to extract fees.

Column (4) in Table C2 turns attention to individual views on business. The dependent variable is the answer to the question, *"There is a lot of discussion about how business and industry should be managed. Which of these four statements comes closest to your opinion? 1. The owners should run their business or appoint the managers; 2. The owners and the employees should participate in the selection of managers. 3. The government should be the owner and appoint the managers; 4. The employees should own the business and should elect the managers."* Individuals who perceive corruption to be widespread are also less likely to say that business and industry should be managed in ways that are typical of capitalism.

Column (5) asks about the fairness of paying somebody in proportion to his or her output. The dependent variable is the answer to *"Imagine two secretaries, of the same age, doing practically the same job. One finds out that the other earns considerably more than she does. The better-paid secretary, however, is quicker, more efficient and more reliable at her job. In your opinion, is it fair or not fair that one secretary is paid more than the other?"* Individuals who perceive corruption to be widespread are more likely to say that it is not fair to pay more to the more efficient secretary. Columns (1b-5b) run the same set of regressions, but also including the same set of personal characteristics used in Table C1. The results remain similar.

#### *Perceptions of Corruption and Non Economic Attitudes*

Interestingly, if corruption is seen as costly and government intervention breeds corruption, people who perceive corruption to be high should want less intervention. Yet the opposite pattern is present in the data. A possible explanation is that individuals that lean to the left are also more likely to observe the high levels of corruption. In other words, it could well be that these characteristics go together (i.e., left-wingers happen to see corruption everywhere) and it is not the case that the observation of corruption moves otherwise similar individuals to the left. This means that there would not be a causal mechanism at play, but rather an omitted variable (left-wing-ness) driving the correlation. For the purposes of this paper, there would not be much difference. One would still have that the observation of corruption in society could give more prominence to those individuals

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<sup>16</sup> Ades and Di Tella (1997) call these "super-pigouvian" interventions (see also Banerjee (1997), Acemoglu and Verdier (2000) and Djankov *et al* (2003)).

who are worried about this problem (left-wingers), and make it more likely that other policies that they favor (e.g., favoring public over private ownership of industry) are implemented.

Table C3 investigates these issues further. The strategy consists simply of isolating non-economic attitudes that also have left/right divide, such as views on homosexuals, tradition, etc. If these are also correlated with perceptions of corruption one would be more inclined to think our correlations reveal that worrying about corruption is simply a left-wing activity, in the same sense that worrying about the moral effect of homosexuals in the community or emphasizing tradition are something that right-wingers do. Column (1) presents results using *Homosexual-L* as the dependent variable, where this is the answer to “Please tell me if homosexuality can always be justified, never be justified or something in between”. The scale reveals that 1 equals “Never justifiable” while 10 equals “Always justifiable”. The correlation with *Corruption* is negative and, once personal controls are included significant at the 1% level. Since accepting homosexuality is associated with liberal (or at least non conservative) ideology, we have a non-economic proxy for left-wing ideology. People who perceive corruption to be widespread are more likely to report the standard right-wing answer, not the left-wing. This is contrary to what was found in Table C2 where economic attitudes were used.

Using other attitudinal non-economic aspects of ideology yields more mixed results. This is due to the fact that sometimes the association with left-right positions is less clear-cut, or because the results sometimes have the opposite sign. For example, columns (2-3) yield similar results to column (1) using *Technology vs Tradition-L* and *Tolerance-R*. Again people who have high values of *Perception of Corruption* are less likely to be left-wing. Columns (4) and (5), considering the variables *Nature-L* and *Marriage Outdated-R* exhibit the opposite correlation with corruption as the first three variables.

In summary, there are two ways of interpreting the evidence. The first is that observing corruption *causes* people to become left-wing. This explains why people who perceive there to be widespread corruption are more likely to be on the left of the political spectrum (Table C1) and to have left-wing views on economic matters (Table C2). It also explains why the picture is so much more mixed when it comes to non-economic aspects of ideology (Table C3). The second interpretation is that belief in widespread corruption is *a part* of left-wing ideology. In other words, left-wingers have some core identity that leads them to believe simultaneously that firms should be managed by workers or the state (rather than owners and managers), for example, and that corruption is

widespread. The fact that the evidence coming from looking at the correlation between corruption and non-economic attributes is so mixed is harder to explain, but since the evidence is not overwhelming and the questions are often imprecise, one could attribute this to noise. If left wingers and right wingers compete for votes and the observation of corruption leads voters to think that the left winger is more likely to be correct on other aspects (like managing the economy) one would expect that there is a positive correlation between corruption and lack of capitalism.

#### **IV. Corruption and Ideological Orientation: Theory**

Informal evidence on the rhetoric of left wing parties in less developed countries, and the evidence presented in section III, suggests that perceptions of corruption play a role in their electoral success. It seems that a good theory explaining the patterns in the data should also include an explanation of why is it that right wing parties cannot convince voters that they will be (in the future) tough on capitalists. A preeminent example of this is the failed presidential bid of novelist and liberal candidate Mario Vargas Llosa in Peru in the early 1990's. His candidacy had everything one would expect is needed to achieve this separation.<sup>17</sup> Perhaps some insight can be gained by examining the few cases where there *is* separation between the pro-capitalist party and bad capitalists. An example is Theodore Roosevelt's presidency in the US. It is difficult to know how exactly he achieved this, although it has been pointed out that regulation was connected to morality in some of his writings where he was explicit that trust owners had become disproportionately prosperous relative to the employees (see Morris (2001)).

A possible answer for this "separation failure" is that people may vote by "emotional association". If capitalism in the past has been implemented by a ruthless dictator or by a colonial power, then voters in subsequent elections would find it hard to associate capitalism with freedom and respect for human rights. Likewise, voters in corrupt countries may emotionally associate the capitalist party with bad entrepreneurs, regardless of the policies the party proposes. This can be interpreted as a form of fairness motives in the utility function. Since it is (partially) backward looking, it explains why a right wing party that credibly promises to control corruption is still undesirable.<sup>18</sup> A model

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<sup>17</sup> For example, his wealth was clearly not derived from contracts with the state.

<sup>18</sup> More precisely, the evaluation of an outcome as fair or otherwise is made by comparison of payoffs and actions of individuals relative to some fair benchmark. Thus, voters are not attracted to a party that credibly promises to stop corruption from now on as what they want is someone that can reduce the payoff of the (corrupt) capitalists.



with such fairness components is developed in Appendix A. It predicts both that corruption is related to the success of left wing parties and that, for a given level of corruption, its effect in shifting preferences left is stronger in poor countries.

Interestingly, even with standard preferences, more corruption may move the electorate to the left. This is the case in the following model of corruption as a confession of low productivity.<sup>19</sup>

### *Preferences*

The economy consists of a large number of individual voters with preferences over income,  $y$ , given by  $U(y)$ , where  $U(\cdot)$  is assumed to be strictly increasing and  $U(0) = 0$ . Whenever they engage in corrupt activities they incur a moral cost  $m$ . This cost is distributed with cumulative function  $F(m)$ .

### *Government*

All individuals pay a lump sum tax to fund a total  $R$  of national defense expenditures.

### *Technology*

There is only one firm. Under capitalism, the firm chooses to produce private goods or public goods. The productivity of a firm producing private goods can be either high or low,  $p \in \{h, l\}$ . The ex ante probability that productivity is  $p$  is given by  $q^p$ . When producing public goods, the firm has productivity  $s + e$ , where  $s$  can be appropriated by the firm and  $e$  is an externality that can be big or insignificant,  $e \in \{b, i\}$ . The ex ante probability that the externality is  $e$  is given by  $g^e$ .

Under socialism the firm is ordered to produce the social good. We have that  $s < l$  and that  $s + b > l$ . In other words, the firm never chooses voluntarily to produce the public good, and private good production is less valuable than social good production when the firm has low productivity, at least in the case of big externalities.

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<sup>19</sup> The appendix develops a second intuition for the left/corruption association, namely that higher corruption may lower the incentive costs of taxes since people are evading. Thus, a *possible* answer is to increase taxes. One advantage of that model (as well of the “fairness” model) is that it predicts that the correlation between corruption and left-wing is larger at lower levels of income (see Table B1). It does not explain the “separation failure”, however.

### *Contracts and Information*

The manager of the private firm can produce goods or lobby the government. When she produces she obtains  $\alpha p$ . As an alternative she can lobby the government and obtain  $R - m$ .

There are two types of voters. Informed voters observe outcomes (and make inferences) before voting and uninformed voters who disregard information produced prior to voting. All such information is private to the firm.

### *Timing*

The timing is as follows. There is a trial period when both socialism and capitalism are tried and informed voters observe outcomes and make inferences. All voters are then asked to choose between the two systems for production and consumption. The game then ends.

### *Results 1: Capitalism in Practice*

When capitalism is tried out all managers for whom moral costs are lower than  $m^p = R - \alpha p$ , for  $p \in \{h, l\}$ , prefer to abandon production and lobby the government. In that case voters are left with 0 to consume. Otherwise they get  $(1 - \alpha) p$ .

Thus, voters experience one of three levels of utility (outcomes),  $U(0)$  or  $U((1 - \alpha)h)$  or  $U((1 - \alpha)l)$ . The last two are fully revealing concerning the level of  $p$ . They also know that a firm would never try out public good production voluntarily. Thus, when  $U(0)$  is experienced, voters know with certainty that the manager was corrupt. Using Bayes rule, voters estimate the probability that the firm has productivity  $p$  in the production of private goods as

$$z(p|_{\text{corrupt}}) = F(m^p) \frac{q^p}{q^h F(m^h) + q^l F(m^l)} \quad (1)$$

Thus,  $z(h|_{\text{corrupt}}) < q^h$ .

### *Results 2: Socialism in Practice*

When socialism is tried out public good production is ordered to the firm. All managers for whom moral costs are lower than  $m^s = R - \alpha s$  prefer to abandon production and lobby the government. In that case voters are left with  $0$  to consume. Otherwise they get  $(1 - \alpha) s + e$ .

Thus, voters experience one of three levels of utility (outcomes),  $U(0)$  or  $U((1 - \alpha)s + b)$  or  $U((1 - \alpha)s + i)$ . The last two are fully revealing concerning the level of  $e$ . When  $U(0)$  is experienced, voters know that the manager was corrupt with certainty, so the fact that it has  $m < m^s$  is fully revealed. Voters estimate the probability that the firm has productivity  $s + e$  in the production of public goods as  $g^e$ .

### *Results 3: Voter Strategy*

Uninformed voters maintain their priors concerning productivity levels in the two economic systems. Expected income under capitalism is given by

$$q^h(1 - F(m^h))(1 - \alpha)h + q^l(1 - F(m^l))(1 - \alpha)l . \quad (2)$$

While expected income under socialism is given by

$$g^b(1 - F(m^s))((1 - \alpha)s + b) + g^i(1 - F(m^s))((1 - \alpha)s + i). \quad (3)$$

It is assumed that they are equal so there is no reason for the uninformed voter to lean in any particular way ideologically.<sup>20</sup>

Informed voters observe outcomes. When they experience anything different than  $U(0)$  they know the productivity levels under either production system. If they retain the manager, who is known to be honest, then they can be certain to achieve the corresponding levels of income. For example, expected income if productivity is high is  $(1 - \alpha) h$ , which is achieved with certainty by retaining the

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<sup>20</sup> Our results still hold when we assume that capitalism is ex ante better.

manager. It can be assumed to be equal to  $(1 - \alpha) s + b$  so that voters are equally well off under a highly productive capitalist system as in a highly productive socialist system.

When the informed experience  $U(0)$  under capitalism they know that (if they fire the manager) they can expect to get

$$z(h|_{\text{corrupt}})(1 - F(m^h))(1 - \alpha)h + z(l|_{\text{corrupt}})(1 - F(m^l))(1 - \alpha)l . \quad (4)$$

When the informed experience  $U(0)$  under socialism they know that (if they fire the manager) they can expect to get

$$g^b(1 - F(m^s))((1 - \alpha)s + b) + g^i(1 - F(m^s))((1 - \alpha)s + i). \quad (5)$$

The following results can be established.

**Proposition 1:**

1. The probability of voting for the right wing party is lower when corruption is perceived to be widespread in a capitalist system.
2. The effect of observing corruption on voting behavior is larger for the observation of corruption in a capitalist system than for the observation of corruption in a socialist system.
3. If the right wing party credibly promises to control corruption it's appeal may still be lower than that of the left wing party.

Proofs:

To see 1., check that (4) < (2).

To see 2., check that (4) < (2), whereas (3) = (5).

To see 3., note that expected income under a capitalist system after observing corruption and after a (credible) promise to control corruption is given by

$$z(h|_{\text{corrupt}})(1 - \alpha) h + z(l|_{\text{corrupt}})(1 - \alpha) l . \quad (6)$$

Calculating the difference in expected income under a left wing party versus (6) and taking limits, we have

$$\lim_{z(h|_{corrupt}) \rightarrow 0} h [q^h (1 - F(m^h)) - z(h|_{corrupt})] + l [q^l (1 - F(m^l)) - z(l|_{corrupt})] > 0.$$

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### *Discussion*

The model highlights one possible channel through which the observation of corruption reduces the appeal of capitalism. It emphasizes the fact that disclosure on lobbying and corruption efforts by the firm reveal information about their production possibilities. More precisely, the fact that the firm has preferred to ignore production and concentrate on lobbying, together with information on the size of the potential gains from lobbying and the distribution of moral costs in society, allows the firm to update (down) their prior beliefs concerning the productivity under a capitalist system. This is true even if we assume that  $s < l$ , so that corruption is always higher under socialism.

Corruption is assumed to be a problem for the workings of both capitalism and socialism. Welfare would be higher under both systems if corruption were to be controlled. The model, however, shows that corruption may be more harmful for the electoral prospects of capitalism than for socialism. This is appealing because it predicts that, on average, in places where there is widespread corruption (e.g., the third world) capitalism will be less popular with voters. This is the result of *assuming* an asymmetry in the set up. The dimension over which there is asymmetric information (productivity levels) in the two economic systems can be appropriated in capitalism but not in socialism. Since the externality  $e$  does not affect managerial actions in socialism, observing corruption tells us nothing about whether the externality is high or low.

This asymmetry is connected to two types of phenomena. First, capitalist economies differ in the degree to which the productivity of private firms is connected over time. The productivity of large family firms can be expected to have a higher degree of persistence than managerial firms where shareholders can easily get rid of under performing managers.<sup>21</sup> Compare a corruption scandal in a

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<sup>21</sup> See, for example, Gersick et al (1997).

case such as Enron with a corruption scandal in a family-owned conglomerate in a Latin American country. After the scandal erupts and if management is changed in both cases, it seems that the new Enron manager will have an easier time arguing that they are now a highly productive firm than the family conglomerate.

Second, the asymmetry built into the model captures the idea that corruption in a capitalist economy reflects something about the technology whereas corruption under socialism reflects something about people who work in the state. Firms, their technology and their corporate culture, seem to be quasi-permanent features, with very slow patterns of change. People who work in politics can be changed in elections. Thus, parties can always claim that they represent change, that *this time* they will bring honesty and integrity to the public sector.

Finally, private sector performance can be expected to be more serially correlated than public sector performance because incentive contracts are more prevalent in the private sector. Thus, one would expect that managers who are income maximizers would behave similarly if the circumstances were similar. Thus, a promise of change is not really credible if the way incentives are provided does not change also. Of course, the right wing party can promise to reduce the size of government (reduce  $R$  in our model) so the temptation to engage in lobbying would fall. But the one receiving the proceeds from lobbying is the (right wing) politician, so this is not necessarily credible. And, as part 3 of the proposition shows, productivity levels have already been revealed.

## **V. Conclusion**

The paper makes three points. First, anecdotal evidence suggests that the political rhetoric of right-wing parties is *less* extreme in poor countries than in rich countries. It also suggests that the rhetoric of left-wing parties is *more* extreme in poor countries than in rich countries. Overall, this suggests that US-style, pro-capitalist political parties should have electoral difficulties in the third world. We do not have formal systematic evidence on this, but data on the ideological identification of political parties around the world from Beck *et al* (2001) is consistent with this view. Empirically, governments in OECD countries tend to be classified as right-wing more often than in non-OECD countries. Controlling for the level of democratic rights, the levels of inequality or if there is civil unrest, does not seem to affect this conclusion.

We conjecture that corruption plays a role in shaping ideologies. The second part of the paper provides empirical evidence that is consistent with the hypothesis that corruption moves the electorate to the left. We discuss three types of evidence.

1. First, we argue that some of the cross-country evidence showing that more regulation is correlated with more corruption presented in Djankov *et al* (2002) is consistent with our model (as well as with the model presented by these authors).
2. Second, we present evidence on the link at the aggregate level between corruption and ideology within countries. We show that there is a negative correlation between a country's aggregate level of corruption and how much to the right ideologically is the government. Interestingly, this correlation is larger in absolute value in poor countries.
3. Third, we look at data on beliefs across individuals within countries. We show that people who think that corruption is widespread in the country tend to be on the left of the political spectrum. The effect is monotonically increasing in corruption, well defined statistically, and comparable in size with other determinants of left-wing preferences, such as being on low income. We partition ideology into economic and non-economic attributes of ideology, and document their correlation with perceptions of corruption. People who perceive there to be widespread corruption also tend to think that the government is doing too little to fight poverty or to think that the government should run firms (rather than owners and managers). Attributes of ideology that are not economic in nature, such as views on homosexuals, are uncorrelated with corruption beliefs. More often than not, the attitude that is associated with right-wing ideology (e.g., homosexuality not being justifiable) is correlated with the perception that corruption is widespread. This is suggestive of the view that an exogenous increase in corruption leads to more left-wing views in the electorate.

In the third and final part of the paper, we present a simple model that can account for some of these correlations. We also ask that the model is consistent with what can be called the “separation failure” (i.e., the fact that even right-wing parties that credibly promise to control corruption have electoral difficulties). A simple possibility is that voters are willing to pay to punish corrupt capitalists for fairness considerations (as in the ultimatum game). An alternative with rational preferences can be constructed around the idea that corruption is like a confession of low productivity. Given a certain expectation of corruption amongst bureaucrats, capitalism and socialism are assumed to

provide equal expected returns to voters. There is uncertainty regarding productivity under both systems. The observation of corruption under capitalism reveals the beliefs that firms have concerning their own productivity -relative to the returns to lobbying. In a socialist system, in contrast, the observation of corruption does not reveal anything about productivity (only about the honesty of officials). If officials and politicians can be changed more easily than private sector productivity, socialism provides voters with higher expected returns. There is a negative externality in the sense that the existence of corrupt entrepreneurs hurts good entrepreneurs by reducing the general appeal of capitalism. Perhaps the most important aspect of the model is that it points out that corrupt entrepreneurs have a negative effect on *all* entrepreneurs by undermining the electorate's faith in markets. A limitation of our model is that good entrepreneurs have no way of disciplining corrupt entrepreneurs. In reality there may be ways of making these entrepreneurs internalize the costs of their actions (e.g. through social checks such as membership of social clubs, or more vague social norms).

Overall, the paper suggests that corruption could be an important determinant of economic performance through its influence on the electoral performance of pro-capitalist parties. After the 1961 military coup, Korea's new leader Major General Park Chung Hee passed the Illicit Wealth Accumulation Act. He then arrested the country's more prominent businessmen and paraded them through the streets of Seoul carrying placards with legends such as "*I am a corrupt swine*". During the next 40 years Korea grew rich operating under what is, by world standards, a pro-capitalist system. The main argument in this paper is that Park's policies may have led to the belief that capitalism is not run for the benefit of a few powerful businesspeople. And that this may have made right-wing policies more attractive and his regime more stable, in turn making economic growth more likely.



**Table A1: Frequency of Political Color of Government by Income**

	Top income (1 <sup>st</sup> )	Middle Income (2 <sup>nd</sup> )	Bottom Income (3 <sup>rd</sup> )
<i>Left</i>	244 (37.7 %)	290 (45.0 %)	436 (67.6 %)
<b>Center</b>	78 (12.1 %)	59 (9.2 %)	62 (9.6 %)
<b>Right</b>	325 (50.2 %)	295 (45.8 %)	147 (22.8 %)
<b>Total</b>	647 (100 %)	644 (100 %)	645 (100 %)

**Note:** Frequencies of government (definition used is "largest government party") for 136 countries over the period 1975 to 1997. Percentiles within income group in parentheses.

**Table A2: Frequency of Political Color, Beginning and End of the Sample Period.**

1975-80	Top income (1 <sup>st</sup> )	Middle Income (2 <sup>nd</sup> )	Bottom Income (3 <sup>rd</sup> )
<i>Left</i>	65 (44.2 %)	69 (50.4 %)	73 (67.6 %)
<b>Center</b>	21 (14.3 %)	10 (7.3 %)	7 (6.5 %)
<b>Right</b>	61 (41.5 %)	58 (42.3 %)	28 (25.9 %)
<b>Total 1975-80</b>	147 (100 %)	137 (100 %)	108 (100 %)
1992-97	Top income (1 <sup>st</sup> )	Middle Income (2 <sup>nd</sup> )	Bottom Income (3 <sup>rd</sup> )
<i>Left</i>	68 (36.1 %)	92 (40.2 %)	143 (64.7 %)
<b>Center</b>	14 (7.5 %)	23 (10.0 %)	34 (15.4 %)
<b>Right</b>	106 (56.4 %)	114 (49.8 %)	44 (19.9 %)
<b>Total 1992-97</b>	188 (100 %)	229 (100 %)	221 (100 %)

**Note:** Same as Table A1 above.

**Table A3: Political Color of Government: Three Alternative Definitions**

	Chief Executive	Largest Government Party	3 Main Government Parties
<i>Richest (Top Third)</i>	0.13	0.13	0.11
<i>Poorest (Bottom Third)</i>	-0.44	-0.45	-0.42
<b>t-statistic</b>	11.4	11.6	11.8
<b>significance</b>	<0.1%	<0.1%	<0.1%

**Note:** Averages are obtained assigning value 1 to the right wing party, 0 to the center party and -1 to the left wing party. *t*-statistic refers to the difference in means test between Top Third and Bottom Third.

**Table A4: Frequency of Political Color, by Income and Inequality Levels**

		Top income (1 <sup>st</sup> )	Bottom Income (3 <sup>rd</sup> )
Low Inequality	<i>Left</i>	111 (44 %)	43 (96 %)
	<b>Center</b>	24 (10 %)	0 (0 %)
	<b>Right</b>	116 (46 %)	2 (4 %)
	<b>Total</b>	251 (100 %)	45 (100 %)

		Top income (1 <sup>st</sup> )	Bottom Income (3 <sup>rd</sup> )
High Inequality	<i>Left</i>	19 (27 %)	68 (58 %)
	<b>Center</b>	24 (34 %)	8 (7 %)
	<b>Right</b>	27 (39 %)	42 (35 %)
	<b>Total</b>	70 (100 %)	118 (100 %)

**Note:** Political color defined with color of *Largest Government Party*. *Top (Bottom) Income* denotes that the country is in the richest third of the sample *Inequality* is measured by the Gini coefficient, Deininger and Squire (1996).

**Table A5: Political Color, Random Effects Regressions, 75 Countries, 1975-1997.**

	(1) Chief Executive	(2) Largest Gov't Party	(3) 3 Main Gov't Parties
<i>Middle (center third)</i>	<b>-0.41*</b> (0.17)	<b>-0.39*</b> (0.16)	<b>-0.38**</b> (0.15)
<i>Poorest (bottom third)</i>	<b>-0.46*</b> (0.20)	<b>-0.50**</b> (0.19)	<b>-0.44**</b> (0.18)
<b>Freedom</b>	-0.02 (0.03)	-0.01 (0.04)	0.01 (0.03)
<b>War</b>	0.21 (0.23)	0.24 (0.20)	<b>0.37*</b> (0.17)
<b>Inequality</b>	<b>0.02**</b> (0.01)	<b>0.02**</b> (0.01)	<b>0.02*</b> (0.01)
<i>R<sup>2</sup> overall</i>	0.06	0.07	0.07
<i>Number of observations</i>	662	694	694

**Notes:** [1] Standard errors are in brackets. Bold-face denotes significant at the 10 per cent level, starred-bold at the 5 percent level, double-starred bold at the 1 per cent level. [2] Dependent Variable: Column (1) *Chief executive* is a variable that takes value -1 if chief executive is left wing, 0 if center and 1 if right wing. Column (2) same but orientation of the largest government party, Column (3) that of the 3 main government parties and Column (4) that of the Largest government and largest opposition parties. [3] *Middle (center third)* is a dummy denoting if the country has real (PPP) income in the centre third of the sample, *Poorest (bottom third)* is a dummy denoting if the country has real (PPP) income in the poorest one-third of the sample. The base category is countries in the top third of incomes. Freedom is the rating of political rights from the *Freedom House Organization* but rescaled to range from 1 (least rights) to 7 (most rights). *War* is defined as a civil war of over 1,000 battle deaths per year from Doyle and Sambanis (2000). *Inequality* is measured by the Gini coefficient from the Deininger and Squire (1996) data set. See Appendix 2 for more information.

**Table B1: Political Color and lagged Corruption within Countries.**

	(1) Largest Gov't Party - Seats	(2) Three Main Gov't Parties - Seats	(3) Largest Gov't Party - Seats	(4) Three Main Gov't Parties - Seats	(5) Largest Gov't Party - Seats	(6) Three Main Gov't Parties - Seats
<i>Corruption (t-2)</i>	<b>-0.07**</b> (0.02)	<b>-0.07**</b> (0.02)	<b>-0.06*</b> (0.03)	<b>-0.06*</b> (0.03)	<b>-0.12**</b> (0.04)	<b>-0.11**</b> (0.03)
<i>GDP per head (t-2)</i>			0.09 (0.12)	0.10 (0.11)	-0.26 (0.18)	-0.21 (0.17)
<i>Education (t-2)</i>			-0.40 (0.62)	-0.74 (0.57)	-0.31 (0.62)	-0.65 (0.57)
<i>Corruption (t-2)</i> <i>* GDP per head(t-2)</i>					<b>0.18**</b> (0.07)	<b>0.16*</b> (0.07)
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
<i>Adjusted R<sup>2</sup></i>	<i>0.71</i>	<i>0.70</i>	<i>0.71</i>	<i>0.70</i>	<i>0.71</i>	<i>0.70</i>
<i>Number of observations</i>	<i>640</i>	<i>659</i>	<i>640</i>	<i>659</i>	<i>640</i>	<i>659</i>

**Note:** Standard errors in parentheses. Regressions include country fixed effects. Dependent Variable: Columns (1), (3) and (5) are a variable that takes the proportion of seats of the largest party in government and multiplies it by the value -1 if the party is left wing, 0 if center and 1 if right wing. Columns (2), (4) and (6) do the same but is an average across the orientation of each of the 3 main government parties. *Corruption* is the ICRG corruption measure. *(t-2)* indicates the variable has been lagged by one year. See the Appendix for more information. Real GDP per capita is scaled down by a factor of 10,000.

**Table C1: Corruption Perceptions and Ideology**

Dependent Variable: Right Wing Voter	(1)	(2) (2 continued)	
		Coefficients	Std. error
<i>Perception of Corruption</i>			
- Few officials	-0.029 (0.026)	-0.040	(0.030)
- Most officials	<b>-0.068**</b> (0.026)	<b>-0.091**</b>	<b>(0.030)</b>
- Almost all officials	<b>-0.127**</b> (0.027)	<b>-0.141**</b>	<b>(0.031)</b>
<i>Personal Income Quintile</i>			
- Second		<b>-0.032*</b>	<b>(0.015)</b>
- Third		-0.007	(0.017)
- Fourth		<b>0.042*</b>	<b>(0.019)</b>
- Fifth (top)		<b>0.116**</b>	<b>(0.022)</b>
<i>Work Status</i>			
- Unemployed		-0.003	(0.020)
- Self employed		<b>0.097**</b>	<b>(0.019)</b>
- Retired		<b>-0.057**</b>	<b>(0.023)</b>
- Student		<b>0.054*</b>	<b>(0.024)</b>
- Housewife		<b>0.109**</b>	<b>(0.020)</b>
- Other		0.045	(0.039)
<i>Marital status</i>			
- Married		<b>0.031*</b>	<b>(0.016)</b>
- Divorced		0.014	(0.031)
- Separated		-0.017	(0.040)
- Widowed		<b>0.070**</b>	<b>(0.028)</b>
Age		<b>-0.006**</b>	<b>(0.002)</b>
Squared Age		<b>9.5e-5**</b>	<b>(2.5e-5)</b>
Male		<b>0.040**</b>	<b>(0.011)</b>
<i>Age Finished School</i>			
12-14 years old		0.012	(0.031)
15-18 years old		-0.039	(0.030)
19-21 years old		-0.040	(0.032)
> 21 years old		-0.082	(0.031)
Country Dummies	Yes	Yes	
No of Observations	51,810	40,028	
Pseudo R <sup>2</sup>	0.02	0.02	

**Note:** [1] All regressions are Ordered Probits. [2] Standard errors in parentheses. [3] Bold-face denotes significant at the 10 percent level; Single-starred bold-face at the 5 per cent level; Double-starred bold face at the 1 percent level. [4] The cut points (standard errors) for column (1) are: *\_cut1*=-1.58 (0.08), *\_cut2*=-1.18 (0.08), *\_cut3*=-0.77 (0.08), *\_cut4*=-0.46 (0.08), *\_cut5*=0.38 (0.08), *\_cut6*=0.74 (0.08), *\_cut7*=1.03 (0.08), *\_cut8*=1.39 (0.08) and *\_cut9*=1.62 (0.08). The cut points for column (2) are: *\_cut1*=-1.58 (0.11), *\_cut2*=-1.32 (0.11), *\_cut3*=-0.90 (0.11), *\_cut4*=-0.59 (0.11), *\_cut5*=0.24 (0.11), *\_cut6*=0.61 (0.11), *\_cut7*=0.90 (0.11), *\_cut8*=1.28 (0.11), *\_cut9*=1.52 (0.11). [5] Appendix 2 gives data definitions [6] Dependent variable is the answer to the question *In political matters, people talk of "the left" and "the right". How would you place your views on this scale, generally speaking?* Interviewer shows scale with numbers 1 to 10 written down with the word Left written below the number 1 and the word Right below the number 10. [7] *Perception of Corruption* is the answer to the question *How widespread do you think bribe taking and corruption is in this country?*

1. *Almost no public officials are engaged in it*
2. *A few public officials are engaged in it*
3. *Most public officials are engaged in it*
4. *Almost all public officials are engaged in it*

**Table C2: Corruption Perceptions and Economic Attributes of Ideology**

<i>Dep. Variable has L (R) extension if higher numbers mean more Left (right)</i>	(1) Not Lazy-L	(2) Escape-L	(3) Govern. Poor-L	(4) Business Own-L	(5) Fair Pay-L
<i>Perception of Corruption</i> 1= almost no official 4= almost all officials	<b>0.155**</b> <b>0.032</b>	<b>0.251**</b> <b>0.031</b>	<b>0.331**</b> <b>0.041</b>	<b>0.047**</b> <b>0.018</b>	<b>0.138**</b> <b>0.026</b>
Personal Controls	No	No	No	No	No
No of Observations	52,446	58,180	55,103	56,873	58,810
Pseudo Rsq	0.098	0.111	0.105	0.041	0.079

	(1b)	(2b)	(3b)	(4b)	(5b)
<i>Perception of Corruption</i> 1= almost no official 4= almost all officials	<b>0.168**</b> <b>0.040</b>	<b>0.264**</b> <b>0.036</b>	<b>0.372**</b> <b>0.041</b>	<b>0.047*</b> <b>0.020</b>	<b>0.134**</b> <b>0.021</b>
Personal Controls	Yes	Yes	Yes	Yes	Yes
No of Observations	37,864	43,673	39,995	41,184	44,392
Pseudo Rsq	0.087	0.110	0.114	0.049	0.092

**Note:** [1] Name of dependent variable has L (R) extension if higher numbers mean more Left (right) [2] All regressions are Ordered Probits [3] Standard errors in parentheses [4] Bold-face denotes significant at 10 percent level; Single-starred bold-face at 5 per cent level; Double-starred bold face at 1 percent level. [5] *Perception of Corruption* is the cardinal version of the question defined in the note to Table C1. [6] Dependent variables in first 3 columns are answers to the question: Now I'd like you some questions about the problem of poverty, in this country and in other countries:

**Column (1)** Why, in your opinion, are there people in this country who live in need? Here are two opinions: which comes closest to your view? 1. They are poor because of laziness and lack of willpower, or 2.They are poor because society treats them unfairly.

**Column (2)** In your opinion, do most poor people in this country have a chance of escaping from poverty, or there is very little chance of escaping? 1. They have a chance or 2. There is very little chance.

**Column (3)** Do you think that what the government is doing for people in poverty in this country is about the right amount, too much, or too little? 1. Too much or 2. About the right amount, or 3. Too little.

**Column (4)** There is a lot of discussion about how business and industry should be managed. Which of these four statements comes closest to your opinion?

1. The owners should run their business or appoint the managers
2. The owners and the employees should participate in the selection of managers.
3. The government should be the owner and appoint the managers
4. The employees should own the business and should elect the managers.

**Column (5)** Imagine two secretaries, of the same age, doing practically the same job. One finds out that the other earns considerably more than she does. The better paid secretary, however, is quicker, more efficient and more reliable at her job. In your opinion, is it fair or not fair that one secretary is paid more than the other? 1. Fair or 2. Not fair.

**Columns (1b-5b)** run the same set of regressions, but also controlling for the identical set of personal characteristics included in Table C1. See Appendix 2.

**Table C3: Corruption Perceptions and Non-Economic Attributes of Ideology**

<i>Dep. Variable has L (R) extension if higher numbers mean more Left (right)</i>	(1) Homosex-L	(2) Technology vs Tradition-L	(3) Tolerance-R	(4) Nature-L	(5) Marriage Outdated-R
<i>Perception of Corruption</i> <i>1= almost no official</i> <i>4= almost all officials</i>	-0.037 0.023	<b>-0.054*</b> <b>0.023</b>	<b>0.093**</b> <b>0.018</b>	<b>0.077**</b> <b>0.024</b>	<b>-0.139**</b> <b>0.032</b>
Personal Controls	No	No	No	No	No
No. Observations	61,165	52,342	54,969	56,731	61,324
Pseudo R <sup>2</sup>	0.087	0.063	0.065	0.114	0.075

	(1b)	(2b)	(3b)	(4b)	(5b)
<i>Perception of Corruption</i> <i>1= almost no official</i> <i>4= almost all officials</i>	<b>-0.067**</b> <b>0.025</b>	<b>-0.054*</b> <b>0.025</b>	<b>0.075**</b> <b>0.021</b>	<b>0.092**</b> <b>0.027</b>	<b>-0.123**</b> <b>0.035</b>
Personal Controls	Yes	Yes	Yes	Yes	No
No. Observations	49,777	38,030	39,903	41,144	45,115
Pseudo R <sup>2</sup>	0.127	0.092	0.070	0.104	0.108

**Notes:** [1] All the regressions are Ordered Probits. [2] Standard errors in parentheses. [3] Bold-face denotes significant at the 10 percent level; Single-starred bold-face at the 5 per cent level; Double-starred bold face at the 1 percent level. [4] *Perception of Corruption* is the cardinal version of the question defined in the note to Table C1. [5] Dependent Variables:

**Column (1)** Please tell me if homosexuality can always be justified, never be justified or something in between, using this card. Card shows a scale from 1 to 10 where 1= Never justifiable, 10= Always justifiable.

**Column (2)** For the following pair of statements, please tell me which one comes closest to your own views. 1. We should emphasize tradition more than high technology, OR 2. We should emphasize high technology more than tradition.

**Column (3)** For the following pair of statements, please tell me which one comes closest to your own views. 1. To build good human relationships, it is most important to try to understand other's preferences; OR 2. To build good relationships, it is most important to express one's own preferences clearly.

**Column (4)** For the following pair of statements, please tell me which one comes closest to your own views. 1. Human beings should master nature; OR 2. Humans should coexist with nature.

**Column (5)** Do you agree or disagree with the following statement? "Marriage is an out-dated institution"  
1. Agree; 2. Disagree

**Columns (1b-5b)** run the same set of regressions, but also controlling for the identical set of personal characteristics included in Table C1.

## Appendix 2: Data Definitions and Sources

### Country Level Variables

**Survey Descriptions** The ideology variables *Right*, *Left* and *Center*, are defined Beck *et al* in two steps. First, they identify the party of key political players. Then they asked whether the orientation of a party (regarding greater or less state control of the economy) was immediately obvious from the name. Otherwise they checked sources, including *The Europa Handbook* and Banks' *Political Handbook of the World*. Information on party orientation comes from *Political Parties of Africa and the Middle East: A Reference Guide* (1993), *Political Parties of Eastern Europe, Russia and the Successor States: A Reference Guide* (1994) and the Web site maintained by Agora Telematica ([www.agora.stm.it/elections/parties.htm](http://www.agora.stm.it/elections/parties.htm)). Countries: Afghanistan, Albania, Algeria, Angola, Argentina, Australia, Austria, Bahamas, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Cambodia, Canada, Cape Verde, Central African Republic, Chile, China, Colombia, Comoro Islands, Congo, Costa Rica, Croatia, Cuba, Cyprus, Czech, Denmark, Dominican Republic, Ecuador, El Salvador, Ethiopia, Fiji, Finland, France, Gambia, East Germany, West Germany, Georgia, Ghana, Greece, Grenada, Guatemala, Guinea, Guinea Bissau, Guyana, Haiti, Honduras, Hungary, Iceland, India, Ireland, Israel, Italy, Jamaica, Japan, Kazakhstan, Korea, Laos, Latvia, Lebanon, Lesotho, Liberia, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Mali, Malta, Mauritius, Mauritania, Mexico, Moldova, Mongolia, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Norway, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Russia, Senegal, Sierra Leone, Slovakia, Slovenia, Solomon Islands, South Africa, USSR, Spain, Sri Lanka, St Lucia, Sudan, Suriname, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Thailand, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, USA, Uganda, Ukraine, United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Western Samoa, Yemen, Yugoslavia, Zambia.

*Right*: Parties on the right are those with the terms “conservative” or “Christian democratic” in their names, or are labeled right-wing in their sources.

*Left*: Similarly, parties classified as left if their names reveal them to be communist, socialist, or social democratic or if the sources label them as left-wing.

*Center*: Similarly, centrist parties are those called centrist by their sources or if their proposed policies can best be described as centrist (e.g., because the party advocates strengthening private enterprise but also supports a redistributive role for government).

*Chief Executive*: A discrete variable that refers to the political orientation of the party of the chief political decision-maker in the country. Assigned three numerical codes: -1 if the *Chief Executive* is left wing, 0 if center and 1 if right wing.

*Largest Government Party*: A discrete variable that refers to the political orientation of the Governing party with most seats in the legislature. It is assigned three numerical codes: -1 if the largest government party is left wing, 0 if center and 1 if right wing.

*Largest Government Party (by seats)*: A continuous variable capturing the political orientation of the largest Governing party as above, but now weighted by the proportion of seats it occupies in the legislature.

*Three Main Government Parties*: The political orientation of the government parties with the first, second and third largest number of seats in the legislature, obtained by taking a simple average across the political orientation of each of these parties. The government parties are assigned three numerical codes: -1, 0 and 1 depending on whether they are left, center or right-wing assigned equal weights.

*Three Main Government Parties (by seats)*: A continuous variable capturing the political orientation of the three largest government parties as above, but where each one is weighted by the number of seats it occupies in the legislature.

*Freedom*: A scale from 1 to 7 measuring the extent of political rights. Nations with a rating of 7 come closest to the ideals of free and fair elections. Those who are elected rule, there are competitive parties or other political groupings, and the opposition plays an important role and has actual power. Nations with the lowest numbers have systems ruled by military juntas, religious hierarchies, or autocrats. A

rating of 1 means political rights are virtually nonexistent. The data is produced in an annual survey produced by regional experts, consultants, and human rights specialists. Source Freedom House.

*War:* A dummy variable equal to one when there is a civil war in that country/year. A civil war is defined as a domestic conflict involving of over 1,000 battle deaths per year. From Doyle and Sambanis (2000).

*Inequality:* The Gini Ratio, obtained from the Deininger and Squire (1996) World Bank “high quality” data set.

*Corruption:* The International Country Risk Guide (ICRG) corruption index has been produced annually since 1982 by Political Risk Services, a private international investment risk service. It is measured on a 0 to 6 scale. The index is based on the opinion of experts, and intends to capture the extent to which “high government officials are likely to demand special payments” and “illegal payments are generally expected throughout lower levels of government” in the form of “bribes connected with import and export licences, exchange controls, tax assessments, police protection, or loans”.

*GDP per head:* GDP per capita, in 1992 US\$, from the World Development Indicators of the World Bank.

*Education:* The percentage of the population over the age of 15 years who are illiterate, from the World Development Indicators of the World Bank.

#### Individual Level Variables:

**Survey Description** World Values Survey and European Values Survey (Third wave: 1995-7). The Combined World Values Survey is produced by the Institute for Social Research, Ann Arbor, MI, USA. The series is designed for cross-national comparison of values and norms. Both national random and quota sampling were used. All of the surveys were carried out through face-to-face interviews, with a sampling universe consisting of all adult citizens, aged 18 and older. The countries surveyed in the 1995-7 wave which have data on both corruption and ideology include: Argentina, Armenia, Australia, Azerbaijan, Bangladesh, Belarus, Bulgaria, Bosnia-Herzegovina, Brazil, Chile, Colombia, Croatia, Dominican Republic, Estonia, Finland, Georgia, Germany, India, South Korea, Latvia, Lithuania, Macedonia, Mexico, Moldova, Nigeria, Norway, Peru, Philippines, Poland, Puerto Rico, Russia, Moscow, Slovenia, South Africa, Spain, Andalusia, Basque, Galicia, Valencia, Sweden, Switzerland, Taiwan, Turkey, Ukraine, United States of America, Uruguay, Venezuela, Serbia-Montenegro.

*Personal Income Quintile:* This heading refers to a set of 4 dummy variables which take the value 1 depending on which income quintile the respondent’s family income belongs to. The base category is the lowest income quintile (from World Values Survey).

*Right Wing Voter:* Dependent variable is the answer to the question “*In political matters, people talk of “the left” and “the right”. How would you place your views on this scale, generally speaking?*” Interviewer shows scale with numbers 1 to 10 written down with the word “Left” written below the number 1 and the word “Right” below the number 10. (from World Values Survey).

*Perception of Corruption:* A categorical variable that is the answer to the question “How widespread do you think bribe taking and corruption is in this country?”. The answers are (1) *Almost no public officials are engaged in it* (2) *A few public officials are engaged in it.* (3) *Most public officials are engaged in it.* (4) *Almost all public officials are engaged in it.* (from World Values Survey).

*Work Status:* A set of dummy variables taking the value 1 depending on the respondent’s employment status: “Unemployed”, “Self-employed”, “Retired”, “Student”, “Housewife” or “Other”. The base category is “Employed” (from World Values Survey).

*Marital Status:* A set of dummy variables taking the value 1 depending on the respondent’s marital status: “Married”, “Divorced”, “Separated” or “Widowed”. The base category is “Never Married”.

*Age:* A set of dummy variables corresponding to the respondent’s age: “Middle” which corresponds to 26-50 years old, “Old” which corresponds to greater than 50 years old. The base category is “Young” which corresponds to less than 26 years old (from World Values Survey).

*Male:* A dummy variable equal to 1 if the respondent is male and 0 otherwise (from World Values Survey).

*Age Finished School:* This heading refers to a set of dummy variables which take the value 1 depending on the age at which the respondent finished full-time education: up to “12-14 years old”, “15-18 years old”, “19-21 years old” or up to “more than 21 years old”. The base category is education up to, but not including, 12 years old (from World Values Survey).



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### *Appendix A: Copper Eggs and Fairness Models*

These models emphasize two possible explanations. First, corruption, which is more widespread in poor countries, may reduce the appeal of capitalism. A second possibility is that the negative effect of a given amount of corruption on the appeal of capitalism is bigger in poorer countries. The two models explored here emphasize different channels through which corruption reduces the appeal of capitalism. In the "copper eggs" model, workers can vote to supplement their income by taxing firms. This desire is tempered by the knowledge that fully taxing business people would leave no incentives to invest for the future, the knowledge that high stakes in the taxation game would lead to the corruption of tax inspectors and tax evasion. In the "fairness" extension of the model a role is given to the knowledge that this would hurt the voters sense of fairness.<sup>22</sup> When voters have a preference for "fairness", corruption can be seen as an attempt by businesspeople to obtain more than their fair share. Thus, a move towards the left is just an attempt by the median voter to return to the payoffs proposed by the social contract.

Concerning the "Roosevelt paradox" discussed above, the fairness model predicts that pro-capitalist parties will not convince voters because they need to set taxes high to compensate the high profits obtained by firms through corrupt means (i.e. it has an element of backward looking). The copper eggs model cannot explain why a right wing party with a credible anti corruption policy will still fail to get elected.

#### *Copper Eggs Model*

##### A.1. Preferences and technology

There are three actors in our model: entrepreneurs, bureaucrats and workers. Entrepreneurial activity brings about an amount of profits,  $L$ , with certainty and an extra amount of profits,  $m$ . For simplicity  $m$  can take only two values,  $m \in \{0, M\}$ , and  $p$  is the probability that the good state occurs. The entrepreneur can invest the amount,  $e$ , in order to increase the odds of this favorable event occurs, so we have  $p(Ae)$ . The properties of  $p(\cdot)$  include  $p(0)=0$ ,  $p_e > 0$ ,  $p_{ee} < 0$  and  $p \in [0,1]$ , where subscripts denote derivatives. The parameter  $A \in \{\alpha, \beta\}$ , measures the effectiveness of investment when the entrepreneur is engaged in honest "schumpeterian" activities and when it is engaged in corrupt activities, respectively. Workers are needed for the project. In good times workers and entrepreneurs strike a bargain that a share  $s$  of the profits will be kept by entrepreneurs.<sup>23</sup> Firms are subject to a proportional tax  $t$ . In other words, in good times entrepreneurs keep  $L(1-t) + Ms - Mst$  of reported profits.

Bureaucrats collect taxes and earn a wage of  $w$ . They are paired with firms to evaluate if the good state has occurred, in which case the firm must pay  $Lt + Mst$  of reported profits, or if the bad state has occurred, in which case they must pay only  $Lt$ . Bureaucrats can misreport the state of the world in exchange for a bribe  $b$ , at personal cost of  $h/c$  which is private information.<sup>24</sup> The parameter  $h$  varies across bureaucrats according to the distribution function  $K(h)$ , with associated density  $k(h)$ . Where needed, subscripts  $h$  and  $c$  will denote activity related to honest and corrupt bureaucrats, respectively.

Workers vote on taxes and do not have access to other ways of claiming money from entrepreneurs (i.e. provided they do not revolt). They simply take their income from the government based on what the firm

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<sup>22</sup> An emphasis on tax evasion as a response to tax increases (versus, for example, labor supply responses) is fully justified given the empirical evidence available (see, for example, Auerbach and Slemrod (1997)), although it implies a departure from much of the recent work in political economy (e.g. Persson and Tabellini (2000)).

<sup>23</sup> This reflects the fact that the labor share does not collapse with development, and is obtained from first principles in a variety of models, an example being when wages are determined by some form of bargaining.

<sup>24</sup> Opportunities for corruption could originate in the collection of taxes to fund a public good (and in the expenditures associated). Or in the use of redistributive taxes, as in this case. Our model is designed so that when no intervention is desired, no corruption is possible and capitalism is legitimate. On the assumption that firms engaged in corruption hide output, see the evidence presented in Johnson, Kaufman, McMillan and Woodruff (2000). The large literature on tax evasion, which includes Reinganum and Wilde (1985), Besley and McLaren (1993) and Mookherjee and Png (1995), often emphasize the role of corrupt inspectors.

reports,  $y^R$ , which equals  $Lt$  in bad times and  $Lt+M(1-s)+Mst$  in good times. The median voter is assumed to be a worker, so we assume that taxes are chosen by workers. Their preferences are given by the weighted sum of their expected utility and a term that introduces a taste for outcomes to reflect the social contract that demands firm to honestly report their earnings. Thus, their utility is given by EU which is defined as

$$EU = (1 - K(h))[(1 - p(\alpha e_h))Lt + p(\alpha e_h)(Lt + M(1 - s + st))] + K(h)Lt$$

With honest bureaucrats firms report income to workers of  $y^B=0$  in bad times and  $y^G=M(1-s)$  in good times. However with dishonest bureaucrats firms report income to workers of  $y^B=0$  in bad and good times so in both cases taxes are equal to  $Lt$ .

Lastly, the model presumes a social contract exists. Economics does not offer a good guide on what are the elements of this social contract, and we can expect that there is not a simple way of capturing a large number of these elements (e.g. moral aspects, etc). Yet, a reasonable assumption is that, given the contributions of workers and entrepreneurs, they agree that part  $s$  of  $M$ , when it does take place, goes to entrepreneurs, and that proportion  $1-s$  goes to workers.<sup>25</sup> For the purposes of the paper some of these details are less important than the assumption that the social contract is made in advance.

The timing of the problem is as follows: First, entrepreneurs and workers organize the economy around a "social contract" which determines what entrepreneurs and workers get from the economy.<sup>26</sup> Second, workers vote on taxes. Then, firms decide how much to invest. Last, firms and bureaucrats observe the state of nature and agree on what to report and payments are made.

#### A.2. Equilibrium

We solve the problem backwards. If  $m=0$  then, firms and bureaucrats have no option but to report the truth.

When  $m=M$ , all bureaucrats with  $w \leq w + b - \frac{h^*}{c}$  will be corrupted in the sense that they will allow the firm to report  $m=0$  in exchange for  $b$ . Since types are private information,  $b$  does not vary with  $h$ . We assume that bribes are determined through a bargaining process that leaves  $x$  of the surplus with the bureaucrat, so  $b = xM(1 - s + st)$ .

The level of investment in the economy is determined by entrepreneurs. It is more realistic to assume that they know if they will engage in corruption at the time of investment, although results that are similar in spirit obtain if we assume that the type of bureaucrats faced by the firm are unknown at the time of investment.<sup>27</sup> The entrepreneur's problem (facing an honest bureaucrat) is

$$Max_e \quad \pi_h = -e_h + (1-t) [L + p(\alpha e_h)Ms]$$

The first order condition characterizing the level of investment of honest entrepreneurs is

$$-1 + (1-t) p_{e_h} \alpha Ms = 0$$

The problem of a corrupt entrepreneur (facing a corrupt bureaucrat) is

<sup>25</sup> A bargaining model would certainly pin down the shares precisely, and then our results would simply have to be re-scaled by the difference between the fair outcome and the bargained shares.

<sup>26</sup> This is important only when fairness matters.

<sup>27</sup> See Ramalho (2002), who finds that the effect of Collor's impeachment in Brazil in the early 1990's reduced the stock market price of firms that were directly linked with the family of the ex president, without a significant effect on other firms that were then later found out to be politically connected. This suggests that firms have a stable set of political links that do not depend on the political coalition in power.

$$\text{Max}_{e_c} \pi_c = -e_c + L(1-t) + p(\beta e_c)(M-b)$$

The first order condition characterizing the level of investment of corrupt entrepreneurs is

$$-1 + p_{e_c} \beta (M-b) = 0$$

In both cases, the second order condition for a maximum follows from the assumption of concavity of  $p(\cdot)$ . Thus total investment in the economy is given by

$$I = K(h^*) e_c^* + [1 - K(h^*)] e_h^*$$

As the model is set up, corrupt entrepreneurs are taxed less than honest entrepreneurs, particularly if their bargaining power relative to bureaucrats increases (i.e., when  $x$  falls). The reason here is that by under-reporting profits, entrepreneurs can pay less tax and share less of the real profits with workers. This could introduce a tendency for higher investment by corrupt entrepreneurs, leaving the differences in the quality of the investment ( $\alpha$  and  $\beta$ ) the only way in which corrupt entrepreneurs would not be the drivers of the economy. One can certainly imagine two ways in which one could obtain a different result. The first is that there could be uncertainty in the amount of bribe exactions that bureaucrats will be subjecting firms to, so that more corruption means more uncertain returns and with some type of entrepreneurs, particularly those that are risk averse, there would be less investment.<sup>28</sup> A second possibility is that corrupt entrepreneurs are failing to report profits to shareholders. This type of intra private sector corruption could lead to a situation where more corruption means less investor confidence and lower funds available to entrepreneurs for investment.

The median worker votes on taxes to

$$\text{Max}_t EU(e_h^*, e_c^*, t)$$

such that

$$e_h^* = \arg \max \pi_h$$

$$e_c^* = \arg \max \pi_c$$

If we denote with  $EU|_h$  the expected utility of the individual when entrepreneurs are all honest, and  $EU|_c$  that when all are corrupt, we can write the first order condition as

$$0 = (1-K) \left[ L + p(\alpha e_h) Ms + p_{e_h} \alpha \frac{de_h^*}{dt} M(1-s+st) \right] + KL - k[EU|_h - EU|_c] cxMs$$

and the second order condition is denoted by  $S_v$ . Voters balance the benefits and costs of taxing honest entrepreneurs (in terms of tax collections and negative incentive effects) with the benefits of taxing corrupt entrepreneurs (in terms of tax collections) and the costs in terms of higher corruption. The latter occurs because when taxes increase, more bureaucrats are tempted to allow entrepreneurs to misrepresent profits and avoid paying taxes and sharing with workers. If the voters anticipate this last effect they may want to

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<sup>28</sup> Decentralized corruption may be particularly harmful, as studied in Shleifer and Vishny (1993). See also Wei (1997).

adjust bureaucratic wages to reduce corruption.<sup>29</sup> In other words, voters would fully tax entrepreneurs but if they do this they will not invest and there will be fewer tax collections.

### A.3. Comparative Statics

The main results of the paper can now be established. The effect of corruption on voting is summarized in the following proposition,

#### Proposition 1:

1. The effect of corruption on equilibrium taxes is ambiguous.
2. In poorer countries, the effect of corruption on taxes is positive.

Proof:

To see part 1 simply compute

$$\frac{dt}{dc} = \frac{xM^2}{S_v} \left\{ p(\alpha e_h) s(1-s+st) \left[ 2k + \frac{dk}{dh} cxM(1-s+st) \right] + k\alpha(1-s+st)^2 p_{e_h} \frac{de_h^*}{dt} \right\}$$

To see part 2, compute

$$\lim_{c \rightarrow 0} \frac{dt}{dc} = \frac{xM^2}{S_v} k\alpha(1-s+st)^2 p_{e_h} \frac{de_h^*}{dt} > 0$$

#

Part 1 shows that under some distributions of types, the effect cannot be signed. Part 2 shows that in poor countries, where investment can be expected to be low (and consequently also  $p(\alpha e_h)$ ) the negative effect of taxes on investment will dominate. In a poor country, investment is low and the size of the adverse effect of taxes on investment ( $de_h/dt$ ) can be expected to be large. In the voting equilibrium, taxes are kept low so as to protect investment. When corruption increases voters become convinced that it is not worth giving entrepreneurs the incentive to invest: the few times that investment results in higher profits the entrepreneurs will under-report profits and avoid sharing them with workers and taxpayers. In other words there is a form of dynamic discipline on the desire of voters similar to the reason why chickens that lay golden eggs do not get eaten. When there is corruption, the value of dynamic discipline is lower as with a chicken that lays copper eggs. The profits of entrepreneurs are inter-dependent as corrupt acts give a bad name to capitalism (see Velasco and Tornell (1992) for different type of externality). Note the important role played by the assumption that the entrepreneur cannot hide all of the proceeds of its investment from the public (i.e., the part,  $L$ , is always visible to the public).<sup>30</sup> And that of the assumption concerning how the public cannot target the taxes exclusively to one group of entrepreneurs (those that are corrupt). Note also that we have assumed that individual utility is linear. With concave preferences, workers have even more reasons to vote for higher taxes in the presence of increased corruption because it is worst when workers are in bad times, where the marginal utility of income is greater

### Fairness Model

#### B.1. Preferences and technology

<sup>29</sup> If there is full compensation (voters find it optimal to give officials a raise equal to the higher temptation), then this term drops out. In general however, there will be less than full compensation, particularly when there are extreme types. Since our results do not depend on the way wages adjust, we assume they are fixed. In general, it will be too expensive to avoid corruption of very infrequent types. See Besley and McLaren (1993).

<sup>30</sup> On corruption and firm investment, see Pil Choi and Thum (2001) and Svensson (2001). Fisman and Svensson (2000) present evidence on the relative role of taxes and bribe demands in reducing investment.

The only difference with the model presented in the main body of the paper is that worker preferences are assumed to reveal a taste for outcomes that reflect the social contract demanding firms to honestly report their earnings. Thus, their utility is given by  $EF$  where  $E$  denotes expectations and  $F=F(y^f-y^R, T)$  where  $F_{y^f} \geq 0$ ,  $F_T \leq 0$  and  $F(0,T)=0$  so that tax revenues,  $T$ , can correct any departures of  $y^R$ , the income reported to the workers, from  $y^f$ , the income going to workers determined by the social contract in that state of the world. It is assumed that taxes must be strictly positive (a justification is derived in the non-fairness model in Section III).  $EF$  is defined as

$$EF = (1 - K(h)) \left\{ (1 - p(\alpha e_h)) F(y^f|_B - y^B, T) + p(\alpha e_h) F(y^f|_G - y^G, T) \right\} \\ + K(h) \left\{ (1 - p(\beta e_c)) F(y^f|_B - y^B, T) + p(\beta e_c) F(y^f|_G - y^B, T) \right\}$$

where  $y^f|_B$  denotes the level of income that the workers would deem fair in the bad state (i.e. when we have  $m=0$ ), and  $y^f|_G$  is that deemed fair in the good state (i.e. when we have  $m=M$ ). Thus, taxes will tend to restore the fair outcome when voter's sense of fairness is hurt in those states when the entrepreneurs are corrupt and profits are high. This expression can be reduced to

$$EF = K(h) p(\beta e_c) F(M(1-s), Lt)$$

where  $y^f|_B = 0$ ,  $y^f|_G = M(1-s)$ . With honest bureaucrats firms report income to workers of  $y^B=0$  in bad times and  $y^G=M(1-s)$  in good times. However with dishonest bureaucrats firms report income to workers of  $y^B=0$  in bad and good times so in both cases taxes are equal to  $Lt$ .<sup>31</sup>

## B.2. Equilibrium

The level of investment in the economy (given taxes) is similar to that in the main body. The median worker votes on taxes to

$$\text{Max}_t \quad EF(e_h^*, e_c^*, t)$$

such that

$$e_h^* = \arg \max \pi_h$$

$$e_c^* = \arg \max \pi_c$$

We can write the first order condition as

$$0 = \left\{ K(h) \beta p_{e_c} \frac{de_c^*}{dt} F(M(1-s), Lt) + K(h) F_t(M(1-s), Lt) p(\beta e_c) + k(h) p(\beta e_c) F(M(1-s), Lt) x Msc \right\}$$

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<sup>31</sup> The model can be extended so that any positive level of taxes set when  $y^f=y^R$  is considered unfair and  $F_T$  cannot be signed without knowledge of the report. Usually in fairness models (e.g., Rabin (1993)) there are two ad hoc assumptions that need to be made: the way fairness enters the utility function, and the target fair income. In our model the problem of what is the fair level of income is less important as what matters to our argument is the deviation from it thanks to corruption. In this case, the departure from the fair level is whatever amount of income the capitalists are able to hide from workers, so as not to share it with them.



and the second order condition is denoted by  $S_v$ . Workers only want to tax capitalists when they are being cheated by non-disclosure of income. They certainly take into account that higher taxes generate even more corruption in the economy (the last expression inside the brackets), but that is a price worth paying when they get less than the level they perceive as fair. Higher taxes allow them to redress the balance by clawing back income on the part of profits that are visible,  $L$ , and also make corrupt activities less profitable (the first two terms in brackets).

### B.3. Comparative Statics

In a model in which preferences reflect a desire for fair outcomes, the effect of corruption on voting is summarized in the following proposition,

**Proposition 2:**

1. The effect of corruption on equilibrium taxes is ambiguous.
2. In poorer countries, the effect of corruption on taxes is positive.

Proof:

To see part 1 simply compute

$$\frac{dt}{dc} = \frac{xM}{S_v} \left\{ p(\beta e_c) \left( sF(M(1-s), Lt)(k(h) + cxM(1-s+st)\frac{dk}{dh}) + k(h)(1-s+st)F_t(M(1-s), Lt) \right) + (1-s+st)k(h)\beta p_{e_c} \frac{de_c^*}{dt} F(M(1-s), Lt) \right\}$$

To see part 2, note that

$$\lim_{e \rightarrow 0} \frac{dt}{dc} = \frac{xM}{S_v} \left\{ (1-s+st)k(h)\beta p_{e_c} \frac{de_c^*}{dt} F(M(1-s), Lt) \right\} > 0$$

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Part 1 shows that under some distributions of types, the effect cannot again be signed. More corruption makes it more important on fairness grounds to try to get back undeclared income from dishonest entrepreneurs by taxing visible income more, as well as try to discourage such investment (by reducing effort,  $e_c^*$ , due to a higher cost of bribes). However there is an opposing force whereby higher taxes drive a greater fraction of profitable investment underground, aggravating workers' fairness problem. Part 2 says that in poorer countries a higher proportion of corrupt entrepreneurs unambiguously make voters want to increase taxes since this latter effect can assumed to be relatively small (e.g., due to a low probability of investment succeeding).