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2009

### Corruption and Democracy

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#### Custom Citation

Michael T. Rock, "Corruption and Democracy," *The Journal of Development Studies*, 45 (2009), 55-75, DOI: 10.1080/00220380802468579

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# Corruption and Democracy

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*Final version received January 2008*

**ABSTRACT** *Most models and empirical tests of the relationship between corruption and democracy assume corruption falls as democracy matures. Yet recent theoretical developments and case evidence suggest an inverted U relationship between the two, although so far no one has tested for this relationship. By drawing on a panel data set covering a large number of countries between 1982–1997, substantial empirical support is found for an inverted U relationship between the durability (age) of democracy and corruption. Fortunately, the turning point in corruption occurs rather early in the life of new democracies – between 10–12 years.*

## I. Introduction

What is the impact of democracy on corruption? This is not an idle question both because of democracy's Third Wave (Huntington, 1991) and because of the growing interest in 'good' governance (Bardhan, 1997; Kaufmann et al., 1999; Khan and Jomo, 2000; Transparency International, 2003). Unfortunately, the existing econometric evidence on this relationship is mixed. Fisman and Gatti (2002: 336–338) and Ades and Di Tella (1999: 987) fail to find any positive association between the political or civil rights associated with democracy and corruption. In fact, as Ades and Di Tella (1999: 987) state, 'If anything, the lack of political rights seems to be associated with less corruption'. On the other hand, Goel and Nelson (2005: 127, 130) find that corruption declines with the degree of civil liberties associated with democracy, Chowdhury (2004: 96, 98) finds that corruption declines with Vanhansen's (1992) democracy index, while Treisman (2000: 417) finds that the age of a country's democracy reduces corruption.

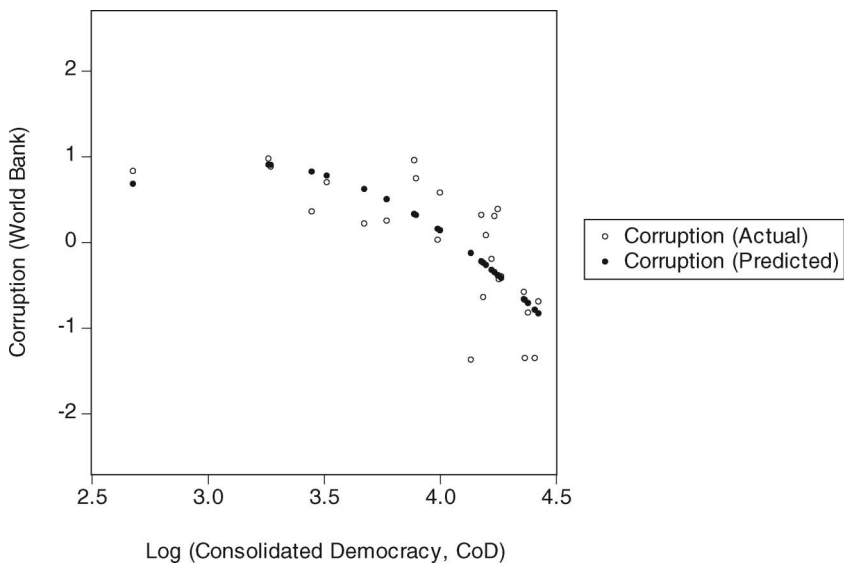
These results hardly inspire confidence. They are also inconsistent with a growing body of case evidence which suggests that corruption rises, at least initially, in newly democratizing countries, before falling as democracies become consolidated. Mohatdi and Roe (2003: 445) comment on this phenomenon in Russia, Turkey and Latin America. Knowledgeable observers in Indonesia (Rock, 2003; Robison

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and Hadiz, 2004; McLeod, 2005) and Thailand (Ammar 1997; Pasuk and Baker, 1998; Rock, 2000; Hicken, 2001; Case, 2002) agree that corruption rose in both countries following democratisation as the collapse of centralised networks of corruption gave way to more corrosive and decentralised corruption free-for-alls. More recent evidence shows that corruption has been falling in both countries (Kaufmann et al., 2007). What accounts for this apparent rise in corruption following democratisation and is there broader evidence that it subsequently falls with the consolidation of democracy, yielding an inverted U pattern? Mohatdi and Roe (2003) provide theoretical support for why corruption might follow an inverted U relationship with democracy. Case evidence for Indonesia and Thailand, which is broadly consistent with their theoretical argument, suggests why this might be so, at least, in these economies.

This still leaves open the question, is there robust empirical support for an inverted U relationship between democracy and corruption depicted in Figure 1, which plots the relationship between corruption and what Schneider and Schmitter (2004: 84) label the consolidation of democracy?<sup>1</sup> If so, which aspects of democracy matter: electoral competition,<sup>2</sup> rule of law,<sup>3</sup> effective governance<sup>4</sup> or the behaviour, attitudes and norms of political actors?<sup>5</sup> These questions are answered by using a panel data set for 1982–1997 (Political Risk Service, 2002) to demonstrate that after controlling for the other factors affecting corruption, corruption follows an inverted U relationship with the duration of democracy. The argument proceeds in three steps. Section II assembles the theoretical and case evidence in support of the inverted U hypothesis. Section III tests for this empirical relationship in a panel of data that controls for both the other variables affecting corruption and for endogeneity among several right-hand side regressors. Section IV closes by drawing implications.



**Figure 1.** Corruption and democracy

## II. Corruption and Democracy: What We Know

Economic analyses of corruption typically model corruption either in terms of crime and punishment (Becker, 1968; Becker and Stigler, 1974) or in terms of principal-agent problems (Rose-Ackerman, 1978; Klitgaard, 1988).<sup>6</sup> In crime and punishment models, rational, but corruptible, government officials are assumed to choose a level of corrupt activity that equates the marginal benefits from legal activities (government wages, promotion possibilities and a government pension) with the marginal benefits from corruption (the size of potential bribes net of the probability and punishment of getting caught). In this framework, reducing corruption depends on increasing the benefits from legal activity (government wages), increasing the probability of a corrupt official being caught and punished (because of openness and transparency and the monitoring of government officials) and/or reducing returns to corruption by limiting government intervention in the economy. In principal-agent models, corruption occurs because principals (citizens), who elect agents (politicians) to act on their behalf, lack the information to control the corrupt behaviours of politicians. Since asymmetry in information (Gurgur and Shah, 2005: 6) accords public officials monopoly control over their discretionary activities, principal-agent models of corruption emphasise better monitoring of public institutions and officials and increasing horizontal competition within government to reduce corruption.

Not surprisingly, empirical explanations of cross-country differences in corruption tend to focus either on those macro characteristics of countries or those micro characteristics of individuals that affect the marginal benefits of engaging in legal and corrupt activities. Thus Treisman's (2000) empirical work on cross-country differences in corruption, which is typical of much work in this field, can be interpreted as identifying a bundle of country characteristics – a British colonial and legal heritage, a Protestant religious tradition, a unitary central state, openness to trade, age of democracy, and income – that result in lower corruption because they increase the marginal benefits of legal activities and reduce the marginal benefits of corrupt activities. At the micro-individual level, van Rijckeghem and Weder (1997) and Gorodnichenko and Peter (2007) demonstrate that low public sector wages stimulate corruption among public sector workers. Similarly, Mocan (2004) demonstrates that corrupt public officials concentrate their bribe-asking on a particular set of individuals – wealthy and educated married men who live in larger cities. This, no doubt, reflects the bribe-askers calculus regarding the marginal returns to corruption.

How might democracy affect this calculus? Most analysts argue that more democracy translates into less corruption because it increases the costs of corrupt activity leading rent-seekers and corrupt public officials to increase investment in legal activities and reduce it in corrupt activities. However, as is noted above, empirical support for this hypothesis is thin. Until a recent theoretical paper by Mohtadi and Roe (2003), there was no good explanation for why it has been so difficult to corroborate a negative statistical relationship between corruption and democracy. They provide such an explanation and explicate an alternative hypothesis by developing a crime and punishment model of corruption where the level of corruption depends on the behaviour of rent-seekers outside of government, the behaviour of government officials who respond to rent seekers, and on the state

of a country's democracy. In their model, rent-seekers outside government choose a level of rent-seeking activity that maximises their incomes by equating the marginal benefits of rent-seeking to the marginal benefits of productive activities. Government officials respond to the demand for rents by choosing a level of corrupt activity (bribe-taking) that maximises their incomes. As in the case of rent-seekers, this requires bribe-takers to equate the marginal benefits from legal activity (the government wage) with the marginal benefits of corruption.

Democracy, or more precisely the state of democracy, enters the marginal calculations of rent seekers and corruptible public officials in three ways. To begin with, Mohtadi and Roe (2003: 450) assume that democracy increases both the flow of information available to rent-seekers and their access to government officials. Better information about where rents lie and greater access to corruptible government officials increase the returns to rent-seeking, driving it up. This encourages competitive entry into rent-seeking driving the returns to rent-seeking down while aggregate rents and corruption rise, at least for a while. Government officials in democracies respond to rising requests for rents by maximising the net income of the bribes they take from rent-seekers – the value of the bribes they collect minus the expected cost of being caught (Mohtadi and Roe, 2003: 451).

Yet democracy does more than increase information flow and access to public officials who control rents. As it normally entails greater transparency and accountability, sanctions against rent-seekers and corrupt public officials, or the costs of rent-seeking and corruption, rise with democracy reducing the returns to both rent-seekers and corruptible public officials. The ultimate impact of democracy on rent-seeking and corruption thus depends on how sensitive sanctions against rent-seeking and corruption are to the state of democracy. If the sensitivity of government sanctions to more democracy is small, then rent-seeking and corruption rise with more democracy simply because sanctions do not rise fast enough to choke off the marginal returns to rent-seeking and corruption (Mohtadi and Roe, 2003: 459). However, eventually increased competition among rent-seekers and increased sanctions against rent-seeking and corruption drive the returns to rent-seeking so low that aggregate rents (and corruption) fall when the state of democracy is sufficiently well developed. Taken together, this suggests that corruption follows an inverted U pattern with respect to democracy (Mohtadi and Roe, 2003: 459).

The case evidence, at least from Indonesia and Thailand, is broadly consistent with this picture. In both polities, corrupt patron-client networks were more or less tightly controlled by political elites in government, the bureaucracy and the army (Rock, 2000, 2003; Rock and Bonnett, 2004). As Rock (1994, 2000) argues with respect to Thailand's bureaucratic polity, democratisation led to the breakup of a centralised patron-client corruption network between political elites, senior bureaucrats and senior army officials on the one hand and the Sino-Thai entrepreneurs who drove the growth process following the growth coalition assembled by General Sarit in 1960 (Thak, 2007). In this centralised patron-client network, senior government officials provided protectionist rents to a small number of Sino-Thai entrepreneurs in exchange for kickbacks. As in Indonesia, the government protected private property and extracted rents at a low enough tax rate to entice entrepreneurs to invest, which they did.

A combination of rapid growth and democratisation ultimately led to at least a semi-democratic polity by the early 1980s (Chai-Anan, 1990). For a while, during the time Prem was the prime minister (1980–1988), Thailand's bureaucratic polity evolved toward both a broker polity (Ramsay, 1985) and a Northeast Asian style developmental state (Anek, 1988) as core economic agencies, peak business associations, and key business leaders met regularly in a high level Joint Public Private Sector Consultative Committee to work out problems associated with Thailand's policy shift favouring manufactured exports.

Yet this transformation did not last as unscrupulous up-country provincial politicians subsequently captured both the legislature and the prime minister's office (Callahan and McCargo, 1996; King, 1996). They used their control of both to build their own patron-client networks by carrying out a frontal and corrupt assault on the state so they could reward their supporters and build their coffers for the next election (King, 1996: 136–137).<sup>7</sup> They did so, by among other things, politicising the core institutions of macroeconomic policy – the Ministry of Finance, the Central Bank, and the national planning agency, the National Economic and Social Development Board (Murray, 1996; Rock, 2000: 197–198). This led at least one long time analyst (Ammar, 1997) to ask whether new democracies could manage their macroeconomies.

The rise of shadowy provincial businessmen in politics and their corrupt frontal assault on the state ultimately led bureaucratic and political elites in Bangkok to try and slow the rise in corruption by enacting a new constitution designed to reign in the corruption associated with money politics and rural vote buying (Callahan, 2005). Although it is difficult to know whether the new constitution, by itself, has been responsible for the fall in corruption in Thailand since 2000,<sup>8</sup> the new constitution re-centralised politics by significantly reducing the number of political parties (Hicken, 2006). One outcome of this process was the emergence of another provisional businessman, Thaksin Shinawata, who became prime minister in a government that for the first time in Thai history captured a majority in parliament for his Thak Rai Thai Party (McCargo and Ukrist, 2005).

Similar developments are visible in Indonesia. As McLeod (2005) argues, during Soeharto's New Order government, the President managed a franchise system that provided strong incentives for public officials, in a wide array of agencies, to pursue growth oriented policies that enabled those who played by Soeharto's rules to enrich themselves through corrupt activities. In this model, rents were collected by simple extortion and by public sector policies that enabled the regime's cronies to amass protectionist rents. Government officials – in political parties, the judiciary, the bureaucracy, the military – and Soeharto's family participated in this franchise system through kickbacks, awards of government contracts, and through the granting of monopolies to cronies. Soeharto's franchise system protected both private property and taxed economic activities at a low enough rate to encourage private sector actors to invest in productive activity.

Democratisation witnessed the collapse of the patron-client networks that undergirded the franchise system, the rise of money politics and the re-emergence of franchise actors as participants in Indonesia's newly democratic polity (Robison and Hadiz, 2004: 223–249). Even though Indonesia's post-Soeharto democratic governments were able to break some of the most obvious elements of the franchise

system such as Bob Hasan's plywood monopoly, 'Tommy' Soeharto's clove monopoly and national car project, and Bulog's monopoly control of the distribution of a number of commodities (Robison and Hadiz, 2004: 200–201), because of decentralisation and democratisation, old franchise actors re-emerged as central players in a more or less corruption free-for-all (Hadiz and Robison, 2005: 231).

Thus the judiciary, which extracted large bribes from bank defaulters, played a key role in protecting defaulters from Indonesia's Bank Restructuring Agency (McLeod, 2005: 374). With the emergence of a confrontational relationship between newly empowered legislatures and embattled presidents, members of parliament extorted funds from the bureaucracy (McLeod, 2005: 373). Following decentralisation, local officials also participated in extorting and taxing private firms (Siregar, 2001: 300; Athukorala, 2002: 147; Rock, 2003: 45–46).

This combination led McLeod (2005) to argue that Indonesia's chief problem is restoring effective government by rebuilding the country's public sector bureaucracy. Without it he doubts that Indonesia will be able to return to the high growth rates achieved by the New Order. Without it, it is difficult to see how the government's interaction with rent-seekers can be made more transparent or how they can be made more accountable to the public that elected them. Yet despite a significant rise in corruption after the fall of the Soeharto regime, corruption peaked in 2002 before falling.<sup>9</sup>

### III. Data and Hypothesis Tests

#### *Data*

Hypothesis tests of an inverted U relationship between corruption and democracy are motivated by the theoretical and case literature reviewed in section II, by data availability and by the literature (Ades and Di Tella, 1999; Treisman, 2000; Fisman and Gatti, 2002; Chowdhury, 2004; Xin and Rudel, 2004; Goel and Nelson, 2005) on the other causes of corruption. The key argument that emerges from the theoretical and case literatures in section II is that the impact of democracy on corruption depends on how quickly new democratic governments can build the institutions of trust, transparency and accountability governing the rent seeking activities of private sector actors and the government officials they seek to bribe following democratisation. The sooner this happens, the sooner the cost of corrupt activities rises for both rent-seekers and government officials, and the sooner the turning point between corruption and democracy is reached.

Due to the importance of measuring both corruption and democracy in new democracies that face the problem of building the institutions of trust, transparency and accountability, a review of existing data sets on corruption and governance (Rock and Bonnett, 2004) focused on the degree to which they covered democracy's Third Wave (Huntington, 1991: 3). The only panel data set that comes reasonably close to covering this period is that provided by the IRIS project at the University of Maryland (Political Risk Service, 2002). Hence, the empirical analysis that follows is based on it. As the IRIS corruption variable is essentially a control of corruption variable (IRIS, n.d.; Knack and Keefer, 1995) where higher values indicate greater

control of corruption, this variable (CORR) was rescaled so that higher values indicate more corruption.

Unfortunately, there is no large scale and consistent cross-country data set measuring the degree to which new democracies have built and sustained transparent and accountable institutions to control corruption. What there are, are a number of measures of the degree, quality, and age of democratic and autocratic governments in the world. For some time, Freedom House (2007a) has been compiling annual ratings on the degree of political rights and civil liberties in countries – each captures a different aspect of democracy or what Dahl (1998) labels polyarchy. A number of researchers (Ades and Di Tella, 1999; Fisman and Gatti, 2002; Goel and Nelson, 2005) have used one or both to test the hypothesis that more democratic countries are less corrupt.

While the Freedom House data are attractive simply because they exist for a large number of countries over time, there is a major problem with these data. Both indices are contaminated by including assessments of the degree of corruption within them. This is particularly true of the political rights variable, which includes an extensive assessment of the degree of corruption within a country (Freedom House, 2007b).<sup>10</sup> While it might be attractive to simply use Freedom House's civil liberties variable as a measure of democracy, there are two problems with this variable. It fails to capture major elements of the electoral or procedural aspects of democracy that is captured in Freedom House's political rights variable and it too includes aspects of corruption within it.<sup>11</sup> Due to these problems, particularly the latter, using either the Freedom House variable as an independent variable in a regression equation on corruption is tantamount to regressing corruption on itself.

Fortunately, several good alternatives exist in the Polity IV data set maintained by the University of Maryland (Marshall and Jaggers, 2002). The Polity IV data set codes countries by their authority characteristics (Marshall and Jaggers, 2002: 1). Polity IV has three attractive political variables – an institutionalisation of democracy variable (DEM), an institutionalisation of autocracy variable (AUT), and the age in years or durability of political regimes (DUR).

The institutionalisation of democracy variable (DEM) is best thought of as a measure of electoral or procedural democracy. As such, a country's ranking (between 0 and 10) on DEM depends on the degree to which the chief executive is chosen through competitive elections, the degree to which chief executives face substantial legislative and judicial constraints on their authority, and on the degree to which citizen preferences for policy and leadership are based on 'relatively stable and enduring, secular political groups which regularly compete for political influence at the national level' (Marshall and Jaggers, 2002: 26).

Autocracy (AUT) is defined as a political system in which political participation is sharply restricted or repressed and where a chief executive, designated by a political elite, exercises power with few institutional constraints (Marshall and Jaggers, 2002: 14).<sup>12</sup> More precisely, a country's ranking (between 0 and 10) on AUT depends on the degree to which the chief executive is chosen, rather than elected, on the degree to which the chief executive has unlimited authority, on the degree to which 'significant groups, issues and/or types of conventional participation are . . . restricted' (Marshall and Jaggers, 2002: 25), and on the degree to which alternative preferences for policy and leadership are politically repressed.



Due to O'Donnell and Schmitter (1986), O'Donnell et al. (1986), Linz and Stepan (1996), Diamond (1999) and Schneider and Schmitter (2004) viewing democratisation as a process with three distinct, but interrelated aspects – liberalisation of autocracy, transition to democratic rule, and consolidation of democracy – they and Karl (1986) are quite critical of defining democracy simply in electoral, procedural, or authority terms. Instead, they emphasise both the contingent and learned nature of democracy. For example, Linz and Stepan consider the transition to democracy complete when,

sufficient agreement has been reached about political procedures to produce an elected government, when a government comes to power that is the result of a free and popular vote, when this government has *de facto* authority to generate new policies, and when the executive, legislative and judicial power generated by the new democracy does not have to share power with other bodies *de jure*. (Linz and Stepan, 1996: 3)

For them democracy is consolidated behaviourally, attitudinally and constitutionally:

when no significant . . . actors spend significant resources attempting to achieve their objectives by creating a nondemocratic regime or turning to violence or foreign intervention to secede from the state; . . . when . . . public opinion holds the belief that democratic . . . institutions are the most appropriate way to govern collective life; . . . (and) when governmental and nongovernmental forces . . . become . . . habituated to, the resolution of conflict . . . by the new democratic process. (Linz and Stepan, 1996: 6)

Or as Diamond (1996: 69) says, for democracy to be consolidated, elites, organisations in civil society and mass publics must believe that democracy is the best form of government and they must act this way by eschewing violence, fraud or other unconstitutional means to achieve their ends. For Linz and Stepan (1996: 7) consolidation of democracy depends on the existence of a free and lively civil society, a relatively autonomous and valued political society, a rule of law,<sup>13</sup> a state bureaucracy that is effective<sup>14</sup> and an institutionalised economic society (Linz and Stepan, 1996: 9).

How do the actors in new democracies come to change their political norms, beliefs, attitudes, and behaviours? Diamond (1999)<sup>15</sup> and Linz and Stepan (1996)<sup>16</sup> have a straightforward answer to this question – they do so through their actual practice and experience with democracy. From this perspective, while the procedural aspects of electoral democracy matter, what ultimately matters, if democracy is to be consolidated, is the degree to which elites, organisations in civil society and mass publics learn from their positive experiences with democracy to trust it as the ‘. . . only political game in town’ (Linz and Stepan, 1996: 5).

Requisite levels of trust require democratic deepening, political institutionalisation, and strong regime performance (Diamond, 1996: 74). Deepening depends on greater accountability of chief executives and the military to the rule of law, the legislature, and the public (Diamond, 1996: 75). Political institutionalisation requires moves toward more routinised, recurrent, and predictable patterns in political

performance (Diamond, 1996: 75). Performance requires solid economic performance, (Prezowski et al., 2000), but there is an equally strong need for good political performance (Diamond, 1996: 88–93), particularly the ability to deliver ‘decent, open, relatively clean governance’ (Diamond, 1996: 89). Delivering honest, open and clean governance depends on the rule of law (Linz and Stepan, 1996: 10) and the ability of democratic leaders to effectively govern by using a high quality and capable state bureaucracy to implement their policies and programmes (Linz and Stepan, 1999: 11).

The differences between an electoral definition of democracy and a process oriented definition can be seen most clearly by reference to specific cases such as Indonesia. As Webber (2006: 397–398) says, if Indonesia is to be judged by an electoral definition of democracy, it ‘may be described as a democracy that has completed its democratic transition.’ If it is to be judged by the concept of democratic consolidation, ‘...Indonesia has most of the attributes of a consolidated democracy’ (Webber, 2006: 398). That said, democratic governments in Indonesia have not yet overcome ‘the constraints exercised on the behavior of “elected officials and representatives” by “non-elected veto groups”’ (Webber, 2006: 400), particularly the military. Nor have democratic governments demonstrated that they can deliver decent, honest and clean government by institutionalising a rule of law and holding government officials and private sector actors accountable to it (Webber, 2006: 402). To make matters worse, with democratisation, Indonesia lost effective government (McLeod, 2005). This is important simply because it is difficult to see how a democratic government can deliver decent, honest and clean government if it lacks a capable public sector bureaucracy.

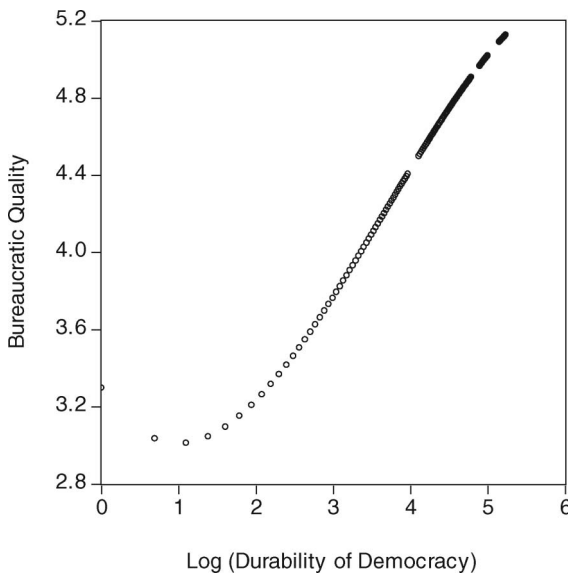
Although there is no easy and straightforward way to operationalise a process-oriented definition of democracy across a large number of countries over time, the discussion above provides some guidance. To begin with, a process-oriented definition of democracy requires time for elites, organisations in civil society and mass publics to learn about and gain trust in the democratic process. Due to this, a process-oriented definition should, as Schneider and Schmitter (2004: 85)<sup>17</sup> argue, include some time dimension such as the age of uninterrupted democracy in years.<sup>18</sup> Data on this variable, the durability of democracy (DUR) is taken from Polity IV.

Since trust in democracy follows, at least partly, from the ability of democratic governments to effectively deliver decent, honest, and relatively clean government, it should also include some measure of the bureaucratic quality of a government’s public sector bureaucracy (BQ).<sup>19</sup> This variable is taken from Political Risk Service (2002). Since Linz and Stepan (1996) view the rule of law as a central element in consolidated democracies, some measure of the rule of law (ROL)<sup>20</sup> is needed. This variable is also available from Political Risk Service (2002). Taken together, these three variables – durability of democracy (DUR), bureaucratic quality (BQ), and the degree to which governments adhere to the rule of law (ROL) are used to measure the degree to which democracies are consolidated and hence, able to control corruption.

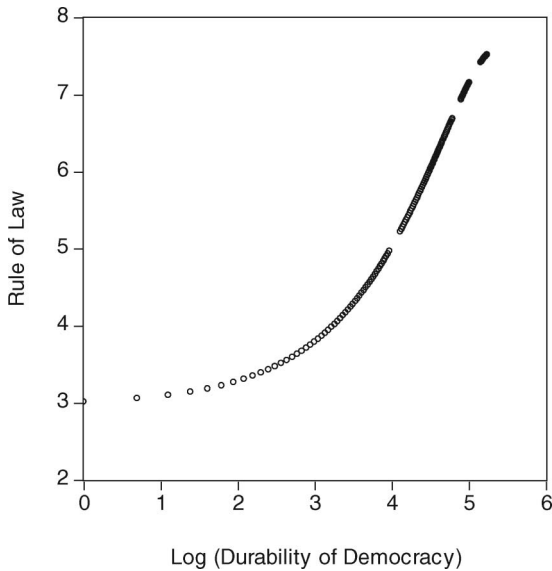
Given these considerations, in the empirical work that follows, focus is centred on a simple process-oriented definition of democracy, the age in years of a democracy

for each year between 1982–1997, or the log of the durability of democracy (LDUR) taken from POLITY IV. We focus on this variable rather than on the measures of the electoral quality of democracy in POLITY IV for three reasons. First, in a cross section context, Treisman (2000: 417) shows that corruption declines with the duration of democracy. Second, as the data on DEM for Indonesia demonstrates, it is possible to have a high quality electoral democracy (DEM for Indonesia ranks eighth out of 10 possible places following democratisation in 1999) without having the high quality transparent and accountable institutions, such as a high quality public bureaucracy or a high quality rule of law necessary to control corruption. Finally, as the consolidation of democracy literature makes clear, it takes time to build these institutions. Moreover, if Indonesia's experience is any guide, these institutions might well deteriorate in the early years of a new democracy. In fact, the evidence we have based on our panel data and presented in Figure 2 suggests that this happens, for bureaucratic quality.<sup>21</sup> It also suggests that bureaucratic quality deteriorates during the first three years of a new democracy, but recovers by the eighth year rising dramatically after that. A similar relationship is visible for rule of law (Figure 3). As a rule of law and high quality public sector bureaucracies are likely to be necessary to control corruption, the pattern they follow with respect to the duration of countries' democratic governments appear to be consistent with the argument in Mohtadi and Roe (2003: 459) that corruption may rise in the early stages of democracy, simply because the sanctions designed to curb rent seeking and corrupt behaviours do not rise fast enough to choke off the returns to rent-seeking and corruption.

Since corruption has been shown to be affected by a range of other variables (Ades and Di Tella, 1999; Treisman, 2000; Fisman and Gatti, 2002; Chowdhury, 2004; Xin and Rudel, 2004; Goel and Nelson, 2005), as many of these as possible are used



**Figure 2.** Bureaucratic quality in democracies and durability of democracies



**Figure 3.** Rule of law in democracies and durability of democracy

as control variables. Goel and Nelson (2005), Fisman and Gatti (2002), Treisman (2002) and Ades and Di Tella (1999) find corruption to be negatively related to per capita income. Treisman (2002: 404) argues that income per capita is a good proxy for a host of other factors – including ‘the spread of education, literacy, and de-personalized relationships’ – each of which raises the odds that an abuse will be noticed and challenged. The level of economic development may well be capturing one other aspect of development – the government sector wage – a variable that van Rijckeghem and Weder (1997) argue affects corruption. There is some evidence to suggest that income per capita may be a reasonable proxy for the government wage.<sup>22</sup>

Ades and Di Tella (1999) and Treisman (2000) hypothesise that countries with higher fuel exports as a share of total exports, or with higher ore and mineral exports as a share of total exports, have higher corruption simply because there are more rents to be had in these economies and, hence, more opportunities for corruption. Both also use imports as a share of GDP as a measure of trade openness, while Chowdhury (2004: 95) uses the Sachs-Warner (1995) openness index. All three argue, following Krueger (1974), that those economies that are more open tend to be less corrupt than their more closed counterparts.

Treisman (2000: 430–433) finds that federal political systems are more corrupt, while Fisman and Gatti (2002) argue that decentralised or federal governments are less corrupt than their more centralised counterparts. Goel and Nelson (2005) and Fisman and Gatti (2002) also use some measure of the size of government, either the fiscal burden of government or government expenditures as a share of GDP in their corruption equations. Treisman (2000) also tests for the influence of a variety of other variables, including whether a country has a common law system, whether it

was a former British colony, and the degree of ethno-linguistic fractionalisation within countries.

After reviewing these studies, the following variables are used as control variables – the log of real income per capita (LYN), fuel exports as a share of total exports (FXTX), ore and mineral exports as a share of total exports (OMXTX), the degree of ethnic tensions in a country (ETHTEN),<sup>23</sup> the share of government consumption expenditures in GDP (GCY), openness to trade defined as exports plus imports divided by GDP (TRDY), whether or not a country has a federal political system (FED) and whether it has a British legal system (BLS).

Thus we test the hypothesis that corruption follows an inverted U pattern with respect to the log of the durability of a democracy (LDUR), after controlling for virtually all the variables others have used to explain the long run trend in corruption. Prezworski et al. (2000) have demonstrated that the durability of democracy rises with income per capita, Equations 2, 4 and 6 in Table 3 instrument the durability of democracy and its square with the latitude (LAT) of a county's capital city and the percent of a country's population that is protestant (PROT). The logic behind both instruments is fairly straightforward. It is well known that democracy has not been particularly stable in the tropics.<sup>24</sup> In addition, Huntington (1996) argues that Christianity has been essential to the development of democracy in Western Europe, while Lopez-Guerra (2004) has argued that Catholicism has made it difficult to develop free institutions in Latin America. Taken together, this suggests that Protestantism may be particularly conducive to the development of democracy. First stage regressions suggest both of these variables are good instruments.<sup>25</sup> The data collected provides for an unbalanced panel of between 74–84 developing and developed countries between 1982–1997. Table 1 lists the variables, their definitions and sources. Table 2 provides descriptive statistics for each variable. The countries in our sample are listed in Appendix A.

### *Hypothesis Tests*

Hypothesis testing is rooted in the insights from section II and the findings from other studies on the determinants of corruption. Panel regressions are reported in Table 3. Since Hausman  $\chi^2$  test statistics decisively reject random effects models, panel regressions are estimated by feasible generalised least squares (FGLS) with fixed period effects. White's period standard errors and covariance are used to correct for serial correlation and GLS period weights are used to correct for heteroskedasticity. As the period of estimation (1982–1997) is one where interest in democracy (the Third Wave) and good governance have been on the rise, FGLS period fixed effects models are estimated to capture the impact of this particular *Zeitgeist* on corruption. Given this and the fact that country specific fixed effects drain estimations of statistical power, a one-way period fixed effects model is estimated.<sup>26</sup>

Testing moves from estimating the impact of what is best labelled a core 'consolidated democracy' model that includes the duration of democracy, its square, and income per capita (Equations 1 and 2 in Table 3). Initial robustness checks are made by adding a list of economic (FXTX, OMXTX, TRDY, GCY)

Table 1. Data: definitions and sources

Variable	Definition	Source
CORR	Corruption measures the extent to which public power is exercised for private gain.	Iris-3 File (n.d.)
DEM	Democracy measures the degree to which chief executives are chosen by competitive elections, face substantial constraints on their authority, and citizen preferences are based on political groups which compete for national political influence.	Marshall and Jagers (2002)
AUT	Autocracy measures the degree to which political participation is sharply restricted and where a chief executive, designated by a political elite, exercises power with few institutional constraints.	Marshall and Jagers (2002)
LDUR	The log of the durability of democracy in number of years.	Marshall and Jagers (2002)
ROL	Measures degree to which the citizens of a country are willing to accept the established institutions to make and implement laws and adjudicate disputes.	Political Risk Service (2002)
BQ	Higher scores indicate: 'sound political institutions, a strong court system, and provisions for an orderly succession of power.' High scores indicate 'an established mechanism for recruitment and training,' 'autonomy from political pressure,' and 'strength and expertise to govern without drastic changes in policy or interruptions in government services' when governments change.	and IRIS-3 File (n.d.) Political Risk Service (2002)
LYN	The log of real GDP per capita in 2000 (US\$).	World Bank (2004)
ETHTEN	This variable 'measures the degree of tension within a country attributable to racial, nationality, or language divisions.'	Political Risk Service (2002)
GCY	Government consumption expenditures as a share of GDP.	IRIS-3 File (n.d.)
FXTX	Fuel exports as a percentage of total exports.	World Bank (2004)
OMTX	Oil and minerals exports as a share of total exports.	World Bank (2004)
TRDY	Openness to trade defined as exports plus imports as a share of GDP.	World Bank (2004)
FED	A dummy variable = 1 if country has a federal political structure and =0 otherwise.	Triesman (2000)
BLS	A dummy variable = 1 if country has a British legal system and =0 otherwise.	La Porta et al. (1998)
LAT	Latitude of a country's capital city.	La Porta et al. (1998)
PROT	Percent of a country's population that is Protestant.	La Porta et al. (1998)
ASIA	Dummy variable for countries in Asia.	World Bank (2004)
SSA	Dummy variable for countries in sub-Saharan Africa.	World Bank (2004)
MENA	Dummy variable for countries in the Middle East/North Africa.	World Bank (2004)

**Table 2.** Descriptive statistics

Variable	Mean	Standard Deviation	Maximum	Minimum
CORR	2.65	1.47	6	0
DEM	4.20	4.29	10	0
DURABLE	25.94	30.30	188	0
AUT	3.30	3.59	10	0
LDUR	2.99	1.18	5.23	0
LYN	8.17	1.56	10.73	4.68
ROL	3.44	1.64	6	0
BQ	3.24	1.57	6	0
ETHTEN	2.19	1.60	6	0
FXTX	17.95	28.57	100	0
OMXTX	7.53	13.34	88.8	0
TRDY	65.95	40.16	296	2.15
GCY	16.07	7.08	76.2	2.98
FED	0.12	0.32	1	0
BLS	0.33	0.47	1	0
LAT	0.2689	0.1817	0.7222	0
PROT	12.41	21.09	97.8	0
ASIA	0.14	0.35	1	0
SSA	0.12	0.32	1	0
MENA	0.05	0.22	1	0

and political variables (ETHTEN, FED and BLS) to Equations 1 and 2. These appear as Equations 3 and 4. Final robustness checks are made by adding several regional dummy variables, one for Asia (ASIA), one for the Middle East and North Africa (MENA), and one for sub-Saharan Africa (SSA). These appear as Equations 5 and 6 in Table 3. Endogeneity between the durability of democracy variable and its square (LDUR and LDUR<sup>2</sup>) and income per capita is corrected by estimating two stage FGSL fixed effects regressions (2SFGLS) (Equations 2, 4 and 6) that instrument democracy and its square with the latitude of a country's capital city (LAT) and the percentage of a country's population that is Protestant (PROT).

Table 3 reports results of estimation. To begin with, the log of the durability of democracy variable (LDUR) and its square exhibit an inverted U pattern in all six equations in Table 3, and the regression coefficients on both are always statistically significant. This offers powerful evidence for the hypothesis that the consolidation of democracy matters not just for democracy itself but also for controlling corruption. Figures 2 and 3 suggest why the durability of democracy is so important for reducing corruption – it provides time for new democracies to build those public sector institutions (rule of law and a high quality public sector bureaucracy) necessary to control corruption. The core 'consolidated democracy' model (Equations 1 and 2) also performs reasonably well as the income per capita variable is statistically significant with the expected sign (negative) in both equations. As Equation 1 in Table 3 shows, these three variables alone account for 60 per cent of the variation in corruption in our sample. Taken together, these three variables along with Figures 2 and 3 offer powerful evidence that controlling corruption depends on the ability of governments in new democracies to survive and to build the transparent and

Table 3. Fixed (time) effects panel regressions on the durability of democracy (LDUR)

Equation	1	2	3	4	5	6
Estimated by	FGLS	2SFGLS	FGLS	2SFGLS	FGLS	2SFGLS
C	6.34	3.15	5.88	3.33	6.74	2.72
LDUR	0.36 (2.01)**	3.65 (2.69)**	0.41 (2.39)**	3.64 (2.50)**	0.40 (2.26)**	3.74 (2.60)**
LDUR <sup>2</sup>	-0.12 (-3.25)**	-0.74 (-3.07)**	-0.13 (-3.97)**	-0.68 (-2.59)**	-0.13 (-3.72)**	-0.80 (-3.08)**
LYN	-0.51 (-8.63)**	-0.51 (-1.80)*	-0.33 (-3.81)**	-0.42 (-1.88)*	-0.42 (-4.07)**	-0.27 (-1.02)
FXTX			0.005 (0.99)	0.001 (0.19)	0.004 (0.86)	-0.004 (-0.50)
OMXTX			0.002 (0.44)	0.01 (1.39)	0.001 (0.38)	0.003 (0.54)
TRDY			-0.003 (-1.27)	-0.01 (-1.88)*	-0.003 (-0.137)	-0.009 (-1.53)
GCY			-0.07 (-5.52)**	-0.07 (-3.14)**	-0.07 (-4.56)**	-0.06 (-2.37)**
ETHTEN			0.07 (1.23)	0.01 (0.11)	0.09 (1.94)*	0.02 (0.21)
FED			-0.13 (-0.78)	-0.01 (-0.05)	-0.09 (-0.57)	0.29 (0.67)
BLS			0.37 (1.98)*	0.58 (0.99)	0.42 (1.99)**	1.59 (2.16)**
SSA					-1.06 (-2.74)**	-0.36 (-0.75)
ASIA					-0.51 (-1.75)*	-1.51 (-2.74)**
MENA					0.12 (0.43)	-0.64 (-0.85)
TSL	16	16	16	16	16	16
NCS	84	84	74	74	74	74
N	909	908	771	771	771	771
Equation F	75.57***	78.83***	73.59***	62.84***	73.54***	69.13***
Adjusted R <sup>2</sup>	0.60	-0.18	0.70	0.09	0.73	0.05

Notes: Numbers in parentheses are t values. \*\*\* indicates significant at 0.01, \*\* indicates significant at 0.05, \* indicates significant at 0.10 levels. TLS = number of time series. NCS = number of cross sections. Estimated with no degrees of freedom correction and with standard errors that are robust to serial correlation and heteroskedasticity.



accountable institutions necessary to control corruption while they grow their economies.

Two other findings emerge in Equations 3–6. Of all the other variables thought to affect corruption, only two – government consumption as a share of GDP and having a British legal system – are either always (GCY) or usually (BLS) statistically significant. While we do not have good explanations for either of these results, the finding of a robust and positive relationship between a country having a British legal system and corruption is likely to be quite troubling, particularly to those who favour such a legal system. Finally, to provide additional evidence that durability matters, but only in democratic regimes, Equations 1–6 in Table 3 were re-estimated for autocracies. The hypothesis is that more durable authoritarian political regimes might also be better at controlling corruption than less durable authoritarian regimes. Neither the regression coefficient on LDUR or on its square (LDUR<sup>2</sup>) for autocracies are even close to being statistically significant and in five out of six instances regression coefficients on both variables have incorrect signs.<sup>27</sup>

#### **IV. Conclusions**

A number of researchers have argued that the relationship between corruption and democracy follows an inverted U relationship with corruption rising with democracy, up to a point, and then declining, but no one has formally tested for it. Mohtadi and Roe (2003) develop a parsimonious rational agents' model of this relationship, while a number of others have argued this for the country case evidence. Evidence presented here, based on a panel of data for the period 1982–1997, a period during which an apparent demonstration effect ushered in both democracy's Third Wave and a good governance agenda, found strong support for this inverted U relationship between corruption and the durability of democracy. Support was also found to suggest that durability of democracy matters because it provides time for new democracies to build those transparent and accountable institutions (rule of law and a high quality public sector bureaucracy) necessary to control corruption. Finally, the statistical significance of the income per capita variable suggests that it is equally important for new democracies to grow their economies. In fact, taken together, a very parsimonious model of three variables – durability of democracy and its square and income per capita – which might best be labelled a 'consolidated democracy' model, accounted for a very large share of the variability in corruption in this sample of countries.

One final finding deserves mention. The turning point in corruption occurs relatively early in the life of new democracies. Based on the regression coefficients for the durability of democracy and its square in Equations 2 and 6 in Table 3, the turning point occurs during the tenth and twelfth years in the life of the new democracies. This is encouraging news because it means that governments do not have to wait until they reach a rather high threshold level of development before they tackle the difficult task of ameliorating corruption and the political delegitimation that accompanies it.

## Acknowledgements

I would like to thank Sumana Shrestha, Danny Tang and two anonymous references for their assistance and helpful comments on an earlier draft of this paper.

## Notes

1. Schneider and Schmitter (2004: 67–68, 84) measure the consolidation of democracy (CoD) in terms of the degree to which elections are free, fair, regular and contested, as well as by political agreements on the rules governing association formation, territorial division of competencies, and ownership of the media. Figure 1 plots the relationship between CoD and a World Bank measure of corruption (Kaufmann et al., 2007). The World Bank measure has been rescaled so that an increase in the variable implies more corruption. The predicted value for corruption in Figure 1 is based on the OLS regression equation:  $\text{CORRWB} = -9.73 + 6.76 \text{ Log (CoD)} - 1.07 \text{ Log (CoD)}^2$ . Both regression coefficients are statistically significant at the 0.01 level ( $t = 3.16$  and  $3.63$ ) as is the equation F statistic ( $F = 16.48$ ). Adjusted  $R^2$  is 0.56.
2. Schneider and Schmitter (2004: 63) label this Dahl's procedural minimum.
3. Linz and Stepan (1996: 10) and Diamond (1999: 111–112) identify the rule of law as one of the critical elements in the consolidation of democracy.
4. Both Linz and Stepan (1996: 10–11) and Diamond (1999: 93–96) stress the importance of effective government. As Linz and Stepan state, 'Modern democracy... needs... a functioning state and a state bureaucracy considered useable by the new democratic government' (Linz and Stepan, 1996: 11).
5. Schneider and Schmitter (2004: 68) emphasise the behaviours of political actors; Linz and Stepan (1996: 6) emphasise behaviours and attitudes, while Diamond (1999: 69) emphasises the behaviours, norms and beliefs of political actors. All three emphasise the importance of the time it takes for actors to learn democracy and become habituated to it.
6. What follows draws on Gurgur and Shah (2005: 6–7).
7. This process is the outcome of factional politics within parties (McCargo and Ukrist, 2005: 73–74).
8. Thailand's corruption score rose by 12 per cent between 1996–2000, but fell by 35 per cent thereafter (Kaufmann et al., 2007). An OLS regression of Thailand's corruption score on the duration ( $\text{DUR} = \text{age in years}$ ) of democracy and its square yielded the following  $\text{CORR} = 2.80 + 0.03 \text{ DUR} - 0.009 \text{ DUR}^2$ . The  $t$  values for  $\text{DUR}$  and  $\text{DUR}^2$  are 3.73 and  $-5.26$  respectively. Both are statistically significant at the 0.05 and 0.01 level respectively. Adjusted  $R^2 = 0.75$ .
9. Indonesia's corruption score rose 140 per cent between 1996–2002 before declining by 72 per cent through 2005 (Kaufmann et al., 2007). The OLS regression of corruption on the duration of democracy ( $\text{DUR}$ ) and its square yielded the following:  $\text{CORR} = 3.25 + 0.26 \text{ DUR} - 0.05 \text{ DUR}^2$ . Both regression coefficients have the expected signs and are statistically significant at the 0.05 level and adjusted  $R^2$  is 13 per cent.
10. Freedom House measures political rights by asking: 'Is the government free from pervasive corruption?' 'Has the government implemented effective anticorruption laws... to prevent, detect, and punish corruption...?' 'Is the government free from excessive bureaucratic regulations, registration requirements, or other controls that increase opportunities for corruption?' 'Are there independent and effective auditing... bodies that function without... political pressure or influence?' 'Are allegations of corruption by government officials thoroughly investigated and prosecuted without prejudice...?' 'Are allegations of corruption given wide and extensive airing in the media?' 'Do whistleblowers, anticorruption activists, investigators, and journalists enjoy legal protections that make them feel secure about reporting cases of bribery and corruption?' 'What was the latest Transparency International Corruption Perceptions Index score for this country?' (Freedom House, 2007b).
11. With respect to corruption and civil liberties, Freedom House (2007b) asks two questions: 'Are bribes or other inducements needed to obtain the necessary legal documents to operate private businesses?' and 'Is entrance to institutions of higher education or the ability to obtain employment limited by widespread nepotism and the payment of bribes?'
12. There is no overlap in definition or measurement of autocracy and democracy (Marshall and Jaggers, 2002: 15).

13. Linz and Stepan (1996: 10) argue that in consolidated democracies, all significant actors respect and uphold the law.
14. As Linz and Stepan say, 'To protect the rights of citizens and... deliver the... services that citizens demand, a democratic government needs to be able to exercise... its claim to the monopoly of the legitimate use of force... it would have to tax compulsorily. For this it needs a functioning state and a state bureaucracy usable by the new democratic government' (Linz and Stepan, 1996: 11).
15. Diamond (1999: chapter 5) emphasises how the successful practice and experience of democracy contributes to changes in political culture that are supportive of democracy.
16. Linz and Stepan (1996: 3–7) emphasise how successful experiences in reaching agreement on the forms of democracy contribute to changes in behaviour and attitudes that reinforce support for democracy. They also emphasise how successful experiences with democracy habituate all political actors to resolve political conflict through democracy.
17. Schneider and Schmitter (2004: 85) include time in their measurement of consolidated democracy and argue that the '... extent of consolidation is positively related to the amount of time that democratic institutions have been in place.'
18. Treisman (2000) found that the number of years of uninterrupted democracy is negatively correlated with corruption. An OLS regression of the log of the Schneider and Schmitter (2004) consolidated democracy variable (LCoD) on the log of the average number of years of uninterrupted democracy (LADUR) yields the followings:  $LCoD = 3.23 + 0.45 LADUR$ . Both the regression coefficient on LADUR ( $t = 3.69$ ) and the equation F statistic (11.47) are significant at the 0.01 level and adjusted  $R^2 = 0.30$  suggesting that consolidation of democracy is dependent on time.
19. Knack and Keefer (1995) in IRIS (n.d.) define bureaucratic quality to indicate the degree to which public sector bureaucracies have 'an established mechanism for recruitment and training,' have 'autonomy from political pressure' and have 'strength and expertise to govern without drastic changes in policy or interruptions in government services' when governments change.
20. Knack and Keefer (1995) in IRIS (n.d.) define the rule of law to reflect '... the degree to which the citizens of a country are willing to accept the established institutions to make and implement laws and adjudicate disputes.' Higher scores indicate '... a strong court system', while lower scores indicate '... a tradition of depending on physical force or illegal means to settle claims.'
21. Figure 2 is based on the following fixed effects panel regression for democracies:  $BQ = -1.34 - 0.61 LDUR + 0.35 LDUR^2 - 0.032 LDUR^3 + 0.58 LYN$ . The  $t$  values for LDUR, LDUR<sup>2</sup> and LDUR<sup>3</sup> are  $-2.40$ ,  $2.45$  and  $-1.71$ . These values are significant at the 0.05, 0.05, and 0.10 levels. Adjusted  $R^2$  is 0.73 and the equation F is statistically significant at the 0.01 level ( $F = 133.00$ ).
22. An OLS regression equation of the relative government wage (RGW) from van Rijckeghan and Weder (1997: 40) on real GDP per capita (YN) for a sample of 22 developing countries, between 1982–1994, yields  $RGW = 0.57 + 0.0001 YN$ . The regression coefficient ( $t = 3.71$ ) on YN and the equation F statistic (13.79) are statistically significant at the 0.01 and adjusted  $R^2$  equals 0.38.
23. Knack and Keefer (1995) in IRIS (n.d.) define ethnic tensions to measure '... the degree of tension within a country attributable to racial, nationality, or language divisions. Lower ratings are given to countries where racial and nationality tensions are high... Higher ratings are given to countries where tensions are minimal...'. ETHTEN was rescaled so that a rise in tensions is reflected in a higher score.
24. Huntington (1991: 16–21) identifies two waves of reversal of democracy that were centred in the tropics. Van de Walle (2001: chap. 3) details the emergence and consolidation of authoritarian neo-patrimonial regimes in sub-Saharan Africa. Monga 1997 and Ottaway 1997 have identified the role of ethnic strife in undermining democracy there.
25. The first stage regression on LDUR for Equation 2 in Table 3 is given by  $LDUR = -1.96 + 0.01 PROT - 0.96 LAT + 0.58 LYN$ . The  $t$  values are 7.42,  $-4.03$ , and 19.48 respectively and they are significant at the 0.01 level. Adjusted  $R^2$  is 0.45. The equation F is 42.46 and it is significant at the 0.01 level. The first stage regression on LDUR<sup>2</sup> is given by  $LDUR^2 = -14.14 + 0.07 PROT - 2.44 LAT + 2.80 LYN$ . The  $t$  value for the regression coefficient on PROT is 8.52, that on LAT is  $-1.94$ , and that on LYN is 17.85. All three coefficients are statistically significant at the 0.01, 0.05 and 0.01 level respectively and adjusted  $R^2 = 0.45$ . The equation F is 43.56 and it is significant at the 0.01 level.
26. Country specific fixed effects require estimation of between 74 and 84 country specific coefficients.
27. These panel regression equations are available from the author.

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## Appendix A

### List of countries

Albania	El Salvador	Liberia	Romania
Algeria	Finland	Madagascar	Senegal
Argentina	France	Malawi	Singapore
Australia	Gambia	Malaysia	South Africa
Austria	Ghana	Mali	Spain
Bangladesh	Greece	Mexico	Sri Lanka
Belgium	Guatemala	Mongolia	Sudan
Bolivia	Guinea-Bissau	Mozambique	Sweden
Botswana	Guinea	Netherlands	Switzerland
Brazil	Guyana	New Zealand	Tanzania
Bulgaria	Haiti	Nicaragua	Thailand
Cameroon	Honduras	Niger	Togo
Canada	Hungary	Norway	Trinidad and Tobago
Chile	India	Pakistan	Tunisia
Colombia	Ireland	Panama	Turkey
Congo	Israel	Papua New Guinea	Uganda
Costa Rica	Italy	Paraguay	United Kingdom
Cyprus	Jamaica	Peru	United States
Denmark	Japan	Philippines	Uruguay
Dominican Republic	Jordan	Poland	Zambia
Ecuador	Korea	Portugal	Zimbabwe