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Corruption and Democracy

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Abstract

What is the impact of democracy on corruption? In most models, analysts assume a negative relationship, with more democracy leading to less corruption. But recent theoretical developments and case evidence support an inverted U relationship between corruption and democracy. By drawing on a panel data set covering a large number of countries between 1996 and 2003, substantial empirical support is found for an inverted U relationship between democracy and corruption. The turning point in corruption occurs rather early in the life of new democracies and at rather low per capita incomes.

JEL Classification: O12, D72, D73, H11, H77, K42

Keywords: corruption, electoral democracy, consolidated democracy, rule of law, government effectiveness

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Corruption and Democracy

Michael T. Rock

What is the impact of democracy or its polar opposite, autocracy, on corruption? Existing econometric evidence is mixed. Ades and Di Tella (1999: 987) and Fisman and Gatti (2002: 336-338) fail to find any positive association between the political and/or civil rights associated with democracy and corruption. In fact, as Ades and Di Tella (1998: 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 and 130) find that corruption declines with the degree of civil liberties associated with democracy, Chowdhury (2004: 96, 98) finds that corruption declines with Vanhanen's (1992) democracy index, while Triesman (2000: 417) finds that the duration of democracy, defined as the number of uninterrupted years in which a country is democratic, 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), among others, comment on this phenomenon in Russia, Turkey and Latin America. Knowledgeable observers in Indonesia (McLeod 2005, Robison and Hadiz 2004, Rock 2003) and Thailand (Case 2002, Hicken 2001, Rock 2000, Pasuk and Baker 1998, Ammar 1997) agree that corruption rose in both countries following democratization as the collapse of centralized networks of corruption gave way to more corrosive and decentralized corruption free for alls. What accounts for this apparent rise in corruption following democratization and is there broader evidence to suggest 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 presented below 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 as depicted in figure 1, which plots the relationship between corruption and what Schneider and Schmitter (2004: 84) label the consolidation of democracy?[1] If so, which aspects of democracy matter: electoral competition,[2] rule of law,[3] effective governance[4] or the behaviour, attitudes and

1 Schneider and Schmitter (2004: 67-68, 84) develop an empirical index of the consolidation of democracy for 25 countries between 1974 and 2000. This index is based on the ratings of country experts for 11 items. Their measure has an electoral bias, but it also includes a number of elements that go beyond free, fair, regular, and contested elections such as agreement on rules governing association formation and behaviour, territorial division of competencies, and rule of ownership and access to the media (Schneider and (Schmitter 2004: 68). Figure 1 plots the relationship between this measure of consolidated democracy (CoD) and a World Bank measure of corruption taken from (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 following simple OLS regression equation. $CORRWB = -9.73 + 6.76 \text{ Log (CoD)} – 1.07 \text{ Log (CoD)}^2$. Both regression coefficients are statistically significant at the .01 level (t = 3.16 and 3.63) as is the equation F statistic (F = 16.48). Adjusted R^2 is .56.

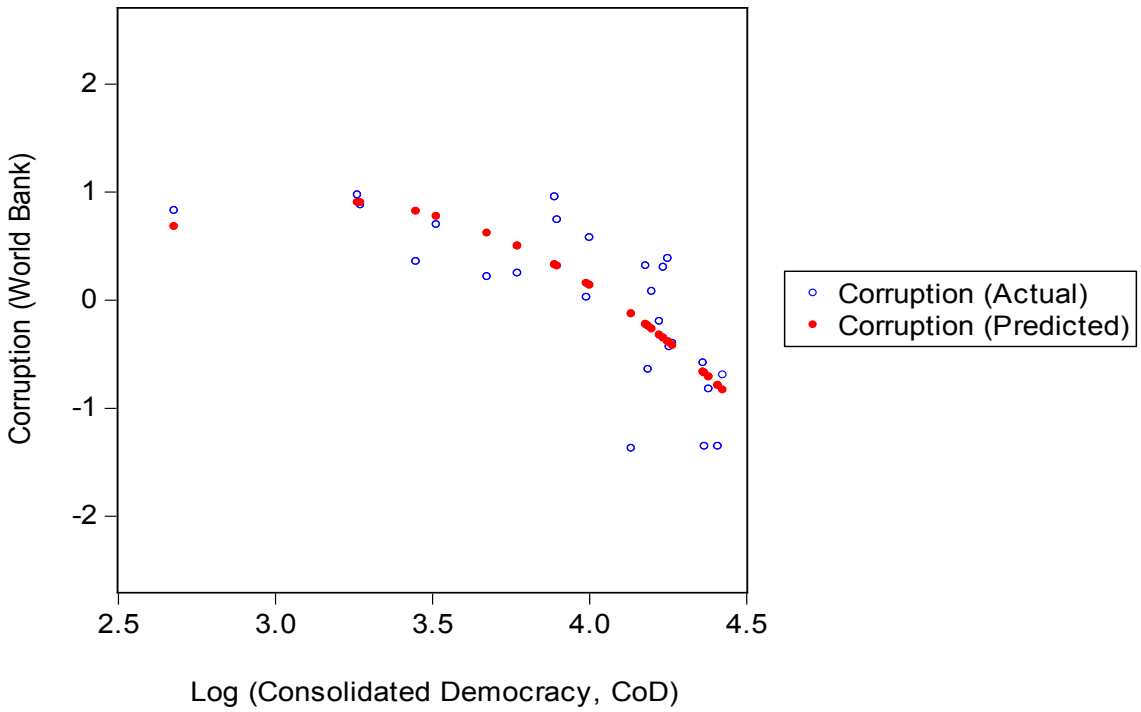
2 Schneider and Schmitter label this Dahl's procedural minimum (2004: 63), while Karl (1986: 9-36) labels it an 'electoralist fallacy'.

3 Linz and Stephan (1996: 10) identify the rule of law as one of five interacting arenas that must be in place for democracy to be consolidated. Diamond (1999: 111-112) also includes it as an important element in the consolidation of democracy.

4 Both Linz and Stephan (1996: 10-11) and Diamond (1999: 93-96) stress the importance of effective government. As Linz and Stephan (1996: 11) state, "Modern democracy…needs the effective capacity (of government) to command, regulate, and extract. For this it needs a functioning state and a state bureaucracy considered useable by the new democratic government.

norms of political actors?[5] These questions are answered by using a panel data set for 1996-2003 to demonstrate that after controlling for the other factors affecting corruption, corruption follows an inverted U relationship with more process oriented definitions of democracy, but not with the electoral aspect of democracy. The argument proceeds in three steps. The next section assembles the theoretical and case evidence in support of the inverted U hypothesis. The following section tests for this empirical relationship in a panel of data that controls both for other variables affecting corruption and for endogeneity. The final section closes by drawing implications.

Figure 1
Corruption and Democracy



Corruption and Democracy: What We Know

Both theory and case evidence provide compelling support for a democratization breeds corruption hypothesis, at least up to a point. At the theoretical level, Mohtadi and Roe (2003) model corruption as the monopolistically competitive behaviour of private sector agents who can either invest in productive activity or in rent-seeking (corruption). In their model, young democracies suffering from insufficient checks and balances and lack of transparency, provide rent-seekers with greater access to public officials and hence greater opportunities for collecting public sector rents, at least up to a point, without making the corrupt acts of rent-seekers and officials open to public scrutiny. Because of free entry into rent-seeking, competition among rent-seekers ultimately reduces returns to individual rent seekers even as it drives aggregate rents up. But as

5 Schneider and Schmitter (2004: 68) emphasize the behaviours of political actors; Linz and Stephan (1996: 6) emphasize behaviours and attitudes, while Diamond (1999: 69) emphasizes the behaviours, norms and beliefs of political actors. All three emphasize the importance of the time it takes for actors to learn democracy and become habituated to it.

the institutions of transparency and accountability in new democracies rise as they mature, aggregate rents and corrupt activity fall because rents per rent seeker fall and because the cost of rent-seeking (including the probability of getting caught and punished) to rent-seekers and the government officials, who accept bribes, rises. Taken together, this combination implies an inverted U pattern between corruption and the durability or maturity of new democracies.

The case evidence, at least from Indonesia and Thailand, is broadly consistent with this picture. In both polities, corrupt networks were more or less tightly controlled by political elites in government, the bureaucracy and the army (Rock 2003, Rock 2000, Rock and Bonnett, 2004). As Rock (1994, 2000) and Rock and Bonnett (2004) argue with respect to Thailand's bureaucratic polity, democratization led to the break-up of a centralized 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. In this centralized network, government officials, including army officers, provided protectionist rents to a surprisingly 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 democratization 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 (1980-88), Thailand's bureaucratic polity evolved toward both a broker polity (Ramsay 1985) and a North-east Asian style developmental state (Anek 1988) as core economic agencies, peak business associations, and key business leaders regularly met in a high level Joint Public Private Sector Consultative Committee to work our problems associated with Thailand's policy shift which favoured the export of manufactures.

But this transformation did not last as unscrupulous up-country provincial politicians subsequently captured both the legislature and the prime minister's office (Girling 1997; Callahan and McCargo 1996; King 1996). They used their control of both to carry out a frontal and corrupt assault on the state to reward their supporters and build their coffers for the next election (King 1996: 136-137).[6] They did so, by among other things, politicizing 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 (Rock 2000: 197-198; Murray 1996). This led at least one long time analyst to ask whether new democracies could manage their macro-economies (Ammar 1997). 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 spread of corruption by enacting a new constitution in the late 1990s designed to reign in the corruption associated with money politics and rural vote buying (Callahan 2005).[7] Although it is difficult to know whether the new constitution reduced corruption in Thailand, the new constitution re-centralized politics by significantly reducing the number of political parties (Hicken 2006). One outcome of this process was the rise 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).

6 McCargo and Ukrist (2005: 73-74) describe this process as related to the factional basis of Thai politics in which political parties and faction leaders within them are allocated cabinet positions and jobs on the basis of their electoral strength. Those holding cabinet posts are obliged to reward the faction leaders in their parties, usually through corrupt means.

7 They did so because corruption had become endemic as at least one Thai cabinet came to be described as little more than a 'Mafia Cabinet" (Murray 1996: 372).

Similar developments are visible in Indonesia. As McLeod (2005) argues during the country's New Order government, President Soeharto managed a 'franchise system' that provided strong positive and negative incentives for public officials in political parties, the judiciary, the bureaucracy, the military, the police, and in state owned enterprises, 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 and his family participated in this franchise system through kickbacks, awards of government contracts and through the granting of monopolies to cronies. Soeharto's franchise system both protected private property and 'taxed' economic activities at a low enough rate to encourage private sector actors to invest in productive activity.

Democratization witnessed the collapse of 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 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, the national logistics agency's monopoly control of the distribution of a number of commodities that rewarded both the Soeharto family and a favourite crony capitalist (Liem Sioe Liong) (Robison and Hadiz 2004: 200-201), because of decentralization and democratization, old franchise actors in the bureaucracy, judiciary, political parties and in the army have re-emerged as central players in a more or less corruption free for all in democratic Indonesia.[8] Thus the judiciary, which extracted large bribes from bank defaulters, played a key role in protecting those defaulters from Indonesia's Bank Restructuring Agency (IBRA) (McLeod 2005: 374). With the emergence of a confrontational relationship between newly empowered legislatures and embattled presidents, members of parliament, who needed ample war chests to win re-election, used their new political powers to extort funds from the bureaucracy (McLeod 2005: 373). Following decentralization, local officials also participated in extorting and taxing private firms (Rock 2003: 45-46, Siregar 2001: 300, Athukorala 2002: 147). And turf wars between the army and the police that look like the gang wars of the prohibition era in the U.S have emerged over control of illegal activity—particularly prostitution, gambling and drug running (McLeod 2005: 376-377). This combination has led McLeod (2005) to argue that Indonesia's chief problem is restoring effective government. 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 publics that elected them.

Data and Hypothesis Tests

Data

Hypothesis testing of an inverted U relationship between corruption and democracy is motivated by the theoretical and case literature reviewed in section 2, by data availability, and by the literature (Goel and Nelson 2005, Chowdhury 2004, Xin and Rudel 2004, Fishman and Gatti 2002, Triesman 2000, Ades and Di Tella 1999) on the other causes of corruption. The key argument that emerges from the theoretical and case literatures in section 2 is that the impact of democracy on corruption depends on how quickly newly 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 the demise

8 As Hadiz and Robison (2005: 231) say, "…it is the reorganization of the old predatory power relationships within a new system of parties, parliaments and elections that has been the central dynamic of power in the post-Soeharto era".

of authoritarian regimes and the rise of democracy. The sooner this happens, the sooner the cost of corrupt activities rises for both rent-seekers and government officials and, following Mohtadi and Roe (2004), the sooner the turning point between corruption and democracy is reached.

Unfortunately, there is no large scale and consistent cross country data set by which to measure the degree to which new (and old) democracies have built and sustained transparent and accountable institutions to control corruption.[9] What there are, are a number of measures of the degree or quality of democratic and autocratic governments in the world. For some time, Freedom House (2007a) has been compiling annual ratings (on scales varying from 1 to 7) 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 the sum of 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).[10] While it might be attractive to simply use Freedom House's civil liberties variable as a measure of democracy, as several researchers have done, 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.[11] Because of these problems, particularly the latter problem, using either 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) and in the governance data set maintained by the World Bank (Kaufmann, *et al*. 2007a, 2007b). The Polity IV data set codes countries by their authority characteristics (Marshall and Jaggers 2002: 1). Polity IV has three attractive political variables—an institutionalization of democracy variable, an institutionalization of autocracy variable, and the age or durability of political

9 Researchers at the World Bank (Kaufmann, *et al.* 2007a) have developed a measure of the degree to which governments control corruption, but this measure is really a measure of the perception of corruption within a country.

10 This is no simple problem as Freedom House says one aspect of political rights is "Is the government free from pervasive corruption?" To answer this question, Freedom House asks: "Has the government implemented effective anticorruption laws or programs to prevent, detect, and punish corruption among public officials, including conflict of interest? Is the government free from excessive bureaucratic regulations, registration requirements, or other controls that increase opportunities for corruption? Are there independent and effective auditing and investigative bodies that function without impediment or political pressure or influence? Are allegations of corruption by government officials thoroughly investigated and prosecuted without prejudice, particularly against political opponents? 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 The major procedural aspects of democracy included in the political rights index are: a competitive multi-party system, universal adult suffrage, regularly contested elections, major political party access to the media so they can reach the electorate, and a significant opposition with a chance to win elections (Freedom House 2007b)? Corruption enters Freedom House's Civil Liberties Index in two places (Freedom House 2007b). Under the right to own private property, Freedom House asks: Are bribes or other inducements needed to obtain the necessary legal documents to operate private businesses? Under equality of opportunity aspects of civil liberties, Freedom House asks: Is entrance to institutions of higher education or the ability to obtain employment limited by widespread nepotism and the payment of bribes?

regimes (democracy, DEM or autocracy, AUT). The World Bank governance data set has two additionally attractive political variables—a government effectiveness variable (GE)[12] and a rule of law variable (ROL).[13]

The institutionalization of democracy (DEM) variable, which ranges from 0 to 10, is conceived, as Marshall and Jaggers (2002: 13) state,

> "…as three essential interdependent elements. One is the presence of institutions and procedures through which citizens can express effective preferences about alternative policies and leaders. Second, is the existence of institutionalized constraints on the exercise of the power of the executive. Third, is the guarantee of civil liberties to all citizens in their daily lives and in acts of political participation."

Because DEM does not include coded data on civil liberties, it is best thought of as a measure of electoral or procedural democracy. As such, a country's score on DEM depends on the degree to which the chief executive is chosen through competitive elections, the degree to which chief executives faces 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).[14] More precisely, a country's score on AUT, which also varies from 0 to 10, 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.

Because Schneider and Schmitter (2004), Diamond (1999) Linz and Stephan (1996), O'Donnel and Schmitter (1986) and O'Donnell, Schmitter and Whitehead (1986) view democratization as a process with at least three distinct, but interrelated aspects—liberalization of autocracy, transition to democratic rule, and consolidation of democracy—they, among others (Karl 1986) are critical of simply defining democracy in electoral terms. Instead, they emphasize both the contingent and learned nature of democracy. For example, Linz and Stephan (1996: 3) 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*."

12 Kaufmann, *et al.* (2007a: 3) define Government effectiveness as "…measuring the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formation and implementation, and the credibility of the government's commitment to such policies…"

13 Kaufmann, *et al.* (2007a: 4) define the rule of law to include "…the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence."

14 Neither the definition nor the measurement of autocracy overlaps with the definition or measurement of democracy in Polity IV. As Marshall and Jaggers (2002: 15) state, "… the two scales do not share any categories in common.

For them, democracy is consolidated *behaviourally*, *attitudinally* and *constitutionally*

> "when no significant national, social, economic, political or institutional 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 a strong majority of public opinion holds the belief that democratic procedures and institutions are the most appropriate way to govern collective life;…(and) when governmental and nongovernmental forces alike…become subjected to and habituated to, the resolution of conflict within the specific laws, procedures, and institutions sanctioned by the new democratic process (Linz and Stephan 1996: 6).

Or as Diamond (1996: 69) says, for democracy to be consolidated, elites must come to believe that democracy is the best form of government and they must act this way by eschewing violence, obeying laws, and avoiding rhetoric that incites their followers to violence. For their part, organizations in civil society need to enshrine the legitimacy of democracy in their charters and they must avoid seeking to overthrow democracy (Diamond 1999: 69). And a significant majority of the mass public must consistently believe that democracy is the best form of government, eschew violence, fraud or other unconstitutional means to achieve their ends, and they must not support any significant anti-democratic actors (Diamond 1999: 69).

For Linz and Stephan (1996: 7), successful consolidation of democracy depends, first and foremost, on the existence of a state with monopoly control over the use of force. In addition, consolidated democracies "…need to have in place five interacting areas to reinforce one another" (Linz and Stephan 1996: 7). These are a free and lively civil society, a relatively autonomous and valued political society, a rule of law,[15] a state bureaucracy that is effective[16] and an institutionalized economic society (Linz and Stephan 1996: 9)

But how do the actors in new democracies come to change their norms, beliefs, attitudes, and behaviours? Diamond (1999)[17] and Linz and Stepan (1996)[18] have a straight-forward answer to this question—they do so through their actual practice and experience with democracy. Said another way, the consolidation of democracy as manifest by changes in norms, beliefs, attitudes and behaviours among elites, organizations in civil society and mass publics, takes time. While the procedural aspects of electoral democracy matter, what ultimately matters, if democracy is to be consolidated, is the degree to which elites, organizations 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 Stephan 1996: 5).

Requisite levels of trust require democratic deepening, political institutionalization, and strong regime performance (Diamond 1996: 74). Deepening depends on greater accountability of chief executives

15 Linz and Stephan (1996: 10) argue that in consolidated democracies, all significant actors respect and uphold the law and a "…clear hierarchy of laws, interpreted by an independent judicial system …supported by a strong legal culture in civil society" exists.

16 As Linz and Stephan (1996: 11) say, "To protect the rights of citizens and to deliver the other basic services that citizens demand, a democratic government needs to be able to exercise effectively its claim to the monopoly of the legitimate use of force… Even if the state had no other functions …, it would have to tax compulsorily. Modern democracy, therefore, needs the effective capacity to command, regulate, and extract. For this it needs a functioning state and a state bureaucracy usable by the new democratic government."

17 Diamond (1999: chapter 5) emphasizes how the successful practice and experience of democracy contributes to changes in political culture that are supportive of democracy.

18 Linz and Stephan (1996: 3-7) emphasize how successful experiences in reaching agreement on the forms of democracy (federalism versus a unitary state, republicanism versus a constitutional monarchy) contribute to changes in behaviour and attitudes that reinforce support for democracy. They also emphasize how successful experiences with democracy habituate all political actors to resolve political conflict through democracy. In this was democracy is routinized and deepened.

and the military to the rule of law, the legislature, and the public (Diamond 1996: 75). Political institutionalization requires moves toward more routinized, recurrent and predictable patterns in political performance (Diamond 1996: 75). Performance requires solid economic performance, as Prezworkis, *et al.* (2000) demonstrate, but there is an equally strong need for good political performance (Diamond argues 1996: 88-93), particularly the ability to deliver "…decent, open, relatively clean governance (Diamond 1996: 89). But, of course, delivering honest, open and clean governance surely depends on the rule of law (Linz and Stephan 1996: 10) and the ability of democratic leaders to effectively govern by using the state bureaucracy (Linz and Stephan 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 behaviour of 'elected officials and representatives' by 'non-elected veto groups (Webber 2006: 400), particularly the military.[19] Nor have democratic governments demonstrated that they can deliver decent, honest and clean government by institutionalizing a rule of law and holding government officials and private sector actors accountable to it (Webber 2006: 402). To make matters worse, with democratization, 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 the effectiveness to do so.

Although there is no easy and straight-forward way to operationalize a process oriented definition of democracy across a large number of countries over time,[20] the discussion above provides some guidance. To begin with, a process oriented definition of democracy requires time for elites, organizations in civil society and mass publics to learn about and gain trust in the democratic process. Because of this, a process oriented definition should, no doubt, as Schneider and Schmitter (2004: 85) [21] argue include some time dimension such as the duration or durability of democracy, defined in terms of the number of years democratic government has been in existence.[22] Data on the durability of democracy (DUR) is taken from Polity IV. Because 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 government effectiveness (GE); this variable is taken from Kaufmann, *et al.* (2007b). Because Linz and Stephan (1996), among others, view the rule of law as a central element in consolidated democracies, some measure of the rule of law (ROL) is needed. This variable is also available from Kaufmann, *et al.* (2007b). Taken together, these three variables—durability of democracy (DUR), effectiveness of democratic governments (GE), and the degree to which they adhere to the rule of law (ROL) are used to measure the degree to which democracies are consolidated.

19 This, of course, implies that not all relevant political actors have come to see democracy as the only game in town.

20 For one attempt to do so as well a discussion of the problems associated with doing so for a small number of countries see Schneider and Schmitter (2004).

21 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."

22 Triesman (2000) found a similar variable, the number of years of uninterrupted democracy to be negatively correlated with corruption. A simple 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 following results: CoD = 3.23 + .45 LADUR. Both the regression coefficient on LADUR (t=3.69) and the equation F statistic (11.47) are significant at the .01 level and adjusted R^2 = .30. This result suggests that consolidation of democracy is, in fact, dependent on time.

That said; it is important to be careful not to draw too fine a distinction between procedural and process oriented definitions of democracy. As two of the architects of process oriented definitions of democracy argue, even process oriented definitions have an 'electoralist bias' simply because "…no one has been able to come up with a vision of a consolidated …democracy that does not reflect this set of (electoral) assumptions" (Schneider and Schmitter 1996: 68).[23]

Given this consideration, in the empirical work that follows, five analytically distinct measures of democracy are employed: a simple electoral measure (DEM), a simple process measure (DUR), a process measure that takes account of the durability and quality of democracy (DURDEM),[24] a measure of the effectiveness of democratic governments (GE), and a measure of the degree to which democratic governments adhere to the rule of law (ROL). In the regression tables that follow, the focus is on three combinations of these democracy variables: (1) DEM, DEM^2, GE, ROL; (2) DUR, DUR^2, GE, ROL; and (3) DURDEM, $DURDEM^2$, GE, ROL. The rationale for testing this way is two fold. To begin with, our initial hypothesis is that no democratic government can control corruption without having an effective government that adheres to the rule of law. For this reason, GE and ROL are included in all regression equations. We test for an inverted relationship between democracy and corruption by regressing each of our democracy variables (DEM, DUR and DURDEM) and its square on corruption, controlling for the impact of government effectiveness and adherence to the rule of law.

Since the Polity IV dataset stops in 2003, the panel dataset used for hypothesis testing ends in 2003. The task then becomes to assemble a panel data set on corruption for some period prior to 2003. While there are a number of measures of corruption available, the most reliable appear to be those provided by Kaufmann, *et al*. (2007a). These corruption data, along with several other variables noted below, were downloaded from http: //info.worldbank.org/governance/wgi2007/resources.htm. The corruption data were rescaled so that an increase in corruption was measured by a rise in corruption (CORR).

Because corruption has been shown to be affected by a range of other variables (Goel and Nelson 2005, Chowdhury 2004, Xin and Rudel 2004, Fishman and Gatti 2002, Triesman 2000, Ades and Di Tella 1999) as many of these as possible were used as control variables. Goel and Nelson (2005), Fisman and Gatti (2002) and Ades and Di Tella (1999), among others, find corruption to be negatively related to per capita income (YN). Triesman (2002: 404) argues that income per capita is a good proxy for a host of other factors—including "…the spread of education, literacy, and depersonalized 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 equally important aspect of development—the government sector wage—a variable that Van Rijckeghan 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.[25]

Triesman (2000) and Ades and Di Tella, among others, hypothesize that countries with higher fuel, ore and mineral exports as a share to total exports (FOMXTX) have higher corruption because there are more rents to be had in these economies, and hence more opportunities for corruption. Both also use im-

23 Not surprisingly, their empirical index for consolidated democracies includes 7 electoral measures (Schneider and Schmitter 2004: 68).

24 DURDEM is arrived at by multiplying the age of democracy in years by its electoral or procedural quality.

25 The simple OLS regression equation of the relative government wage (RGW), taken from Van Rijckeghan and Weder 1997: 40), on real GDP per capita (YN) for a sample of 22 developing countries between 1982 and 1994 yields the equation RGW = .57 + .0001 YN. The regression coefficient (t = 3.71) on YN and the equation F statistic (13.79) are statistically significant at the .01 and adjusted R^2 equals .38.

ports 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 more open economies tend to be less corrupt than their more closed counterparts.

Triesman (2000) and Fisman and Gatti (2002) argue that decentralized or federal governments are less corrupt than their more centralized 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. Triesman (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 fractionalization within countries, while Mocan (2004) tests for the influence of political instability on corruption.

After reviewing these studies, the following variables are used as control variables—real income per capita (YN), fuel and mineral exports as a share of total exports (FMXTX), ethno-linguistic fractionalization (ELF), the share of government consumption expenditures in GDP (GCY), political stability (PS), openness to trade, or exports plus imports divided by GDP (TRDY), and whether or not a country has a federal political system (FED), whether it has a British legal system (BLS). Finally, a time variable (YEAR) was used to capture the influence of any other omitted variables. Because of possible endogeneity between our measures of democracy and government effectiveness and/or the rule of law, democracy and its square are instrumented with the latitude (LAT) of a county's capital city and with the percent of the population that is protestant (PROT). First stage regressions suggested both were good instruments.[26] The data collected provides for an unbalanced panel of between 75 and 104 developing and developed countries between 1996 and 2003. Table 1 lists the variables, their definitions and sources. Table 2 provides descriptive statistics for each variable.

Hypothesis tests

Hypothesis testing is rooted in the insights from the preceding section and the findings from other studies on the determinants of corruption. Panel regressions are reported in a series of tables (3, 4 and 5). Tables begin with the simplest testing procedures by, for example, regressing corruption on the quality of institutionalized democracy (DEM) and its square (table 3), the durability of democracy (DUR) and its square (table 4), and the durability and quality of democracy (DURDEM) and its square (table 5). Subsequent panel regressions in each table add four lists of control variables: (1) a base set of control variables (GE, ROL and YN); (2) a base plus an additional set of economic control variables (GE, ROL, YN, plus GCY, FXOMXTX and TRDY); (3) a base plus economic plus political control variables (GE, ROL, YN, GCY, FXOMXTX, TRDY, plus ELF, FEDERAL, BRITISH and PS); and (4) all of the above plus a variable, YEAR, to capture the effects of other possible omitted variables. These subsequent panel regressions test for robustness of the inverted U relationship by adding the various lists of control variables. Estimation of panel regressions is either with a feasible generalized least squares (FGLS) estimation technique, or with a two stage feasible generalized least squares (TSFGLS) technique that controls for endogeneity in right hand side variables. As noted above, in TSFGLS estimation, democracy and its square are instrumented by the percent of the population in a country that is protestant and the latitude of a country's capital city. All equations are estimated with White's standard errors and covariance.

26 In first stage regressions of DEM, DUR, DURDEM and their squares, on either LAT or PROT both were statistically significant at the .01 or .05 level as were all equation F statistics.

Table 1.
Data: Definitions and Sources

Variable	*Definition*	*Source*
CORR	Corruption measures the extent to which public power is exercised for private gain.	Kaufmann, et al. (2007b)
DEM	Institutionalized democracy measures the degree to which chief executives are chosen through competitive elections, face substantial constraints on their authority, and citizen preferences for policy and leadership are based on political groups which regularly compete for national political influence	Marshall and Jaggers (2002)
AUT	Institutionalized 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 Jaggers (2002)
DUR	Durability of democracy in number of years: Defined in terms of no more than a 3 point change in POLITY, a variable scaled from -10 to +10 which measures the degree of autocracy/democracy in a country in a year	Marshall and Jaggers (2002)
GE	Government effectiveness: Measures perceptions of the quality of public service provision and the bureaucracy, the competence of civil servants, the independence of the civil service from political pressures, and the credibility of the government's commitment to policies.	Kaufmann, et al. (2007b)
ROL	Rule of law measures the extent to which agents have confidence in/ abide by the rules of society. Includes perceptions of the incidence of crime, the effectiveness/ predictability of the judiciary, and enforceability of contracts.	Kaufmann, et al. (2007b)
LYN	The log of real GDP per Capita in 2000 USD	World Bank (2004)
YEAR	Year from 1996 to 2003	World Bank (2004)
ELF	Ethno-linguistic fractionalization: A variable that ranges from 0 to 1 that measures the degree of ethnic and linguistic diversity with a country.	La Porta, et al. (1998)
GCY	Government consumption expenditures as a share of GDP	World Bank (2004)
PS	Political stability measures perceptions of the likelihood that government will be destabilized or overthrown.	Kaufmann, et al. (2007b)
FOMTX	Fuel, oil and minerals exports as a share of total exports	World Bank (2004)
TRDY	Openness to trade defined as the sum of 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 county's capital city.	La Porta, et al. (1998)

Table 3 reports results for the quality of institutionalized democracy variable, in logs (LDEM and $LDEM^2$). Table 4 reports results for the durability of democracy variable in logs (LDUR, $LDUR^2$). Table 5 reports results for the durability and quality of democracy variable in logs (LDURDEM, $LDURDEM^2$). Estimation is with a random effects model.

Results for the quality of institutionalized democracy variable (LDEM and $LDEM^2$)[27] from Polity IV reported in table 4 are extremely poor. LDEM is never statistically significant and $LDEM^2$ is only statistically significant once (in equation 8). In numerous instances, regression coefficients on one or both of these variables have the incorrect sign. In addition, none of the other independent variables is every very robust to alternative specifications, although both the government effectiveness and the rule of law variables come close.

Close inspection of the panel data offers some clue as to why results for the electoral democracy variable in table 4 are so poor. For example, Indonesia is recorded by Polity VI as having a rather high quality democracy since 1999. It scores 8 out of 10 on DEM in every year from 1999 to 2003, yet Indonesia also scores quite high on corruption with a mean value of +.96 on the World Bank's corruption index, which

27 Results do not noticeably change if DEM and its square are regressed on corruption.

Table 2.
Descriptive Statistics

Variable	*Mean*	*Standard Deviation*	*Maximum*	*Minimum*
CORR	-.184	1.081	1.909	-2.46
DEM	7.37	2.85	10	1
DUR	25.60	34.20	194	0
DURDEM	230.50	347.61	1940	0
AUT	4.86	2.71	10	1
GE	.298	.99	2.39	-1.55
ROL	.15	.99	2.06	-1.82
YN	9083	10464	38200	140
GCY	16.03	5.64	33.76	4.40
FOMXTX	16.52	20.78	99.66	.13
TRDY	77.32	36.84	228.87	16.29
ELF	.29	.27	.89	0
FED	.24	.42	1	0
BLS	.28	.44	1	0
PS	.006	.91	1.64	-2.44
PROT	14.71	23.64	97.8	0
LAT	.35	.20	.75	.01

varies from roughly -2.5 to +2.5. Similarly, Thailand has a high score on DEM (9 out of 10 for every year between 1996 and 2003), yet it too is quite corrupt with a mean value of +.26 on the World Bank measure of corruption.[28]

Because there is no variability in DEM during the period under study for both Indonesia and Thailand, either there is no democratic learning going on in either, or DEM fails to capture it. More importantly, because Indonesia and Thailand fare so poorly on both government effectiveness[29] and the rule of law,[30] despite the high quality of their electoral democracies, it is likely that they have limited ability to control corruption. Said another way, it appears that the electoral democracy variable fails to capture those aspects of democracy most likely to impact on corruption.

Table 4 replaces the electoral democracy variable (DEM) in table 3 with the duration of democracy variable (DUR). Results in table 4 are remarkably different from table 3. To begin with, durability of democracy (DUR) and its square exhibit an inverted U pattern; both variables have the correct sign and are statistically significant in 8 of the 9 equations in table 4, while LDUR is significant in all equations and $LDUR^2$ is close to significance in the one equation where it is not statistically significant. Similarly, the government effectiveness variable (GE) is always significant with the correct (expected) sign, while the rule of law variable (ROL) is significant half of the time. Equation F statistics are always significant at the .01 level and in the feasible generalized least squares (FGLS) equations, which don't control for endogeneity, adjusted R^2 varies from a low of .06 (in equation 1) to .89 in several equations (6 and 8). These results offer substantial evi-

28 As measured by the World Bank, corruption in Indonesia and Thailand is more than one standard deviation above the mean value of corruption in the OECD (-1.40).

29 The mean value for GE in democracies with a DEM = 8 as in Indonesia is -.14. The mean value for GE in democratic Indonesia is -.54. The mean value for GE in democracies with a DEM = 9 as in Thailand is .35, while it is only .21 in Thailand.

30 The mean value for ROL in democracies with a DEM = 8 as in Indonesia is -.28. The mean value for ROL in democratic Indonesia is -.93. The mean value for ROL in democracies with a DEM = 9 as in Thailand is .24, while Thailand does better at .33.

Table 3.
Random Effects Panel Regressions for Electoral Democracy (DEM) With White's Cross Section Standard Errors and Covariance

Equation	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
Estimation By	*FGLS*	*FGLS*	*TSFGLS*	*FGLS*	*TSFGLS*	*FGLS*	*TSFGLS*	*FGLS*	*TSFGLS*
C	.17	.72	20.64	.91	26.80	1.13	6.86	8.31	21.96
LDEM	-.04 (-.42)	.10 (.88)	-27.87 (-.07)	.12 (.73)	-31.38 (-.29)	.06 (.43)	-7.20 (-.94)	.05 (.39)	-9.56 (-1.06)
LDEM2	-.05 (-1.31)	-.03 (-.99)	.28 (.01)	-.05 (-.93)	14.54 (.28)	-.03 (-.69)	2.76 (1.43)	-.02 (-.62)	3.36 (1.13)
GE		-.33 (-7.97) [a]	-5.75 (-.09)	-.32 (-6.22)[a]	1.71 (.22)	-.35 (-7.13)[a]	-.16 (-.33)	-.34 (-6.89)[a]	-.17 (-.33)
ROL		-.57 (-17.94)[a]	7.99 (.07)	-.57 (-18.87)[a]	-2.58 (-.33)	-.55 (-12.07)[a]	-.70 (-2.71)[a]	-.58 (-12.63)[a]	-.69 (-1.05)
LYN		-.09 (-2.79)[a]	3.83 (.08)	-.10 (-2.88)[a]	-2.98 (-.27)	-.12 (-3.09)[a]	-.51 (-.99)	-.11 (-3.42)[a]	-.45 (-1.09)
GCY				-.001 (-.26)	-.09 (-.28)	-.001 (-.26)	-.01 (-1.33)	-.001 (-.25)	-.01 (-1.05)
FOMTX				-.001 (-2.05)[b]	.02 (.19)	-.0006 (-1.31)	.001 (.09)	-.0005 (-.96)	.0007 (.04)
TRDY				-9.39E-05 (-.14)	-.0006 (-.24)	-.0003 (-.46)	.0006 (.86)	-.0001 (-.33)	.0002 (-.12)
ELF						-.004 (-.05)	-.03 (-.12)	.006 (.06)	-.08 (-.16)
FED						.06 (.79)	.42 (.80)	.05 (.75)	.49 (.74)
BLS						-.02 (-.27)	.12 (.34)	-.01 (-.20)	.24 (.71)
PS						.05 (2.37)[b]	-.03 (-.16)	.05 (2.13)[b]	-.01 (-.04)
Year								-.003 (-1.41)	-.006 (-.14)
TSL	5	5	5	5	5	5	5	5	5
NCS	104	100	98	91	89	76	76	76	76
N	489	371	363	337	330	304	304	304	304
Equation F	8.67[a]	459.76[a]	654.56[a]	294.42[a]	187.13[a]	170.67[a]	126.29[a]	160.51[a]	76.30[a]
R2	.03	.86	-250.38	.87	-64.13	.87	-.38	.87	-1.12

Numbers in parentheses are t values. **a** indicates significant at .01, **b** 05, **c** and at .10 levels. TLS = time series length. NCS = number of cross sections.

dence that learning in democratic governments with effective governments subject to the rule of law are less corrupt than those with less democratic experience, less effective governments and less subject to the rule of law.

When the duration of democracy variable is modified to take account of both the age of a democracy and its quality (DURDEM), the results are surprising good. Although DURDEM and its square are not always statistically significant, they are in 15 out of 18 instances and they are always so in those equations that correct for endogeneity. This offers additional evidence for an inverted U relationship between corruption and a process oriented definition of democracy that also takes account of the quality of a country's electoral democracy. Two other surprising findings emerge in from tables. To begin with, at the values of the regression coefficients in equations 1 and 9 in table 4, the turning point in corruption occurs quite early in the life of new democracies—between 4 years (equation 1) and 15 years (equation 9). Because this occurs at

Table 4.
Random Effects Panel Regressions for Duration of Democracy (DUR) With White's Cross Section Standard Errors and Covariance

Equation	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
Estimation By	*FGLS*	*FGLS*	*TSFGLS*	*FGLS*	*TSFGLS*	*FGLS*	*TSFGLS*	*FGLS*	*TSFGLS*
C	-.02	.57	-.98	.78	-.31	.72	-1.95	6.76	14.46
LDUR	.21 (2.47)[b]	.09 (2.70)[a]	1.27 (6.61)[a]	.09 (2.39)[b]	2.01 (1.79)[b]	.10 (2.00)[b]	1.86 (2.29)[b]	.10 (2.10)[b]	1.91 (2.39)[b]
LDUR2	-.08 (-5.08)[a]	-.02 (-3.43)[a]	-.24 (-7.77)[a]	-.02 (-3.53)[a]	-.37 (-1.32)	-.02 (-2.74)[a]	-.35 (-2.28)[b]	-.02 (-2.91)[a]	-.36 (-2.35)[b]
GE		-.33 (-6.85)[a]	-.40 (-4.45)[a]	-.32 (-5.70)[a]	-.42 (-4.00)[a]	-.36 (-6.77)[a]	-.36 (-2.90)[a]	-.36 (-6.78)[a]	-.35 (-3.11)[a]
ROL		-.56 (-20.86)[a]	-.52 (-12.57)[a]	-.57 (-21.34)[a]	-.25 (-.96)	-.55 (-12.54)[a]	-.41 (-1.60)	-.57 (-12.57)[a]	-.45 (-1.49)
LYN		-.07 (-2.68)[a]	-.03 (-1.30)	-.08 (-2.87)[a]	-.16 (-.38)	-.08 (-2.92)[a]	.02 (.22)	-.07 (-3.22)[a]	.04 (.50)
GCY				-.0008 (-.21)	-.02 (-1.45)	-.001 (-.29)	-.01 (-1.35)	-.001 (-.30)	-.02 (-1.36)
FOMTX				-.001 (-1.82)[c]	.004 (.67)	-.0007 (-2.39)[b]	.001 (.34)	-.0006 (-1.95)[b]	.001 (.45)
TRDY				-.0001 (-.26)	-.003 (-1.10)	-.0002 (-.42)	-.002 (-1.64)[c]	-.0001 (-.34)	-.002 (-1.44)
ELF						.05 (.60)	.57 (1.59)	.06 (.66)	.61 (1.73)[c]
FED						.08 (1.25)	.22 (1.54)	.08 (1.22)	.21 (1.25)
BLS						.02 (.20)	.30 (2.57)[b]	.02 (.22)	.32 (2.97)[a]
PS						.04 (1.71)[c]	-.03 (-.30)	.04 (1.58)	-.03 (-.21)
Year								-.003 (-1.27)	-.008 (-.79)
TSL	5	5	5	5	5	5	5	5	5
NCS	103	99	97	90	88	75	75	75	75
N	468	363	355	329	322	297	297	297	297
Equation F	18.29[a]	493.98[a]	1640.05[a]	320.48[a]	37.12[a]	196.07[a]	192.91[a]	182.58[a]	163.75[a]
R2	.07	.87	.82	.89	-4.00	.89	.22	.89	.10

Numbers in parentheses are t values. **a** indicates significant at .01, **b**.05, **c** and at .10 levels. TLS = time series length. NCS = number of cross sections.

quite low income levels—about $1400 in the 4 year turning point and $2800 in the 15 year turning point—this suggests that even low income countries can get on with the battle against corruption. Given the evidence that corruption reduces growth and investment (Mauro 1995; Knack and Keefer 1995) in all but a few countries where it may be growth and investment enhancing (Rock and Bonnett 2004) this is encouraging.

The other surprising finding is that except for government effectiveness and the rule of law variables, none of the other variables in the equations in tables 3, 4 and 5 appear to be robust. In fact, when a redundant variables test is carried out on all of these variables, the F statistic does not reject the null hypothesis that these variables are redundant.[31] After eliminating these variables, the FGSL and TSFGLS equations in

31 The F statistic for the redundancy of all these variables in equation 9 in table 3 is only .39. The F statistic for the redundancy of all these variables in equation 9 in table 4 is only .45. The F statistic for the redundancy of all of these variables in equation 9 in table 5 is only .93.

Table 5.
Random Effects Panel Regressions for Duration and Quality of Democracy (DURDEM) With White's Cross Section Standard Errors and Covariance

Equation	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*
Estimation By	*FGLS*	*FGLS*	*TSFGLS*	*FGLS*	*TSFGLS*	*FGLS*	*TSFGLS*	*FGLS*	*TSFGLS*
C	.006	.47	-1.33	.64	-2.14	.58	-5.14	8.01	32.50
LDURDEM	.15 (1.80)[c]	.11 (1.84)[c]	.72 (3.07)[a]	.12 (1.54)	1.83 (3.32)[a]	.13 (1.29)	2.50 (3.63)[a]	.13 (1.34)	2.47 (3.50)[a]
LDURDEM2	-.03 (-3.42)[a]	-.01 (-2.29)[b]	-.10 (-5.31)[a]	-.01 (-2.12)[b]	-.20 (-2.84)[a]	-.01 (-1.73)[c]	-.27 (-3.28)[a]	-.01 (-1.78)[c]	-.27 (-3.01)[a]
GE		-.34 (-7.63)[a]	-.60 (-5.78)[a]	-.32 (-5.80)[a]	-.29 (-3.95)[a]	-.36 (-6.93)[a]	-.24 (-2.09)[b]	-.36 (-6.71)[a]	-.22 (-2.92)[a]
ROL		-.56 (-20.74)[a]	-.31 (-2.93)[a]	-.57 (-22.73)[a]	-.45 (-2.49)[a]	-.55 (-12.43)[a]	-.55 (-1.69)[c]	-.58 (-11.48)[a]	-.63 (-1.61)
LYN		-.07 (-2.75)[a]	.05 (1.44)	-.08 (-2.58)[a]	-.15 (-.60)	-.08 (-2.61)[a]	.02 (.37)	-.07 (-2.92)[a]	.06 (1.06)
GCY				-.0009 (-.22)	-.01 (-1.00)	-.001 (-.27)	-.01 (-1.87)[c]	-.001 (-.29)	-.01 (-1.79)[c]
FOMTX				-.001 (-1.70)[c]	.002 (.69)	-.0007 (-1.87)[c]	.004 (1.77)[c]	-.0006 (-1.30)	.004 (1.93)[c]
TRDY				-.0001 (-.25)	-.002 (-1.00)	-.0003 (-.47)	-.003 (-3.57)[a]	-.0002 (-.39)	-.002 (-2.77)[a]
ELF						.06 (.55)	.74 (2.98)[a]	.07 (.63)	.77 (2.49)[b]
FED						.07 (1.09)	.10 (1.07)	.07 (1.04)	.07 (.53)
BLS						.01 (.17)	.37 (3.26)[a]	.01 (.20)	.38 (2.68)[a]
PS						.04 (2.06)[b]	.04 (.28)	.05 (1.82)[c]	.05 (.35)
Year								-.003 (1.19)	-.01 (-1.33)
TSL	5	5	5	5	5	5	5	5	5
NCS	103	99	97	90	88	75	75	75	75
N	468	363	355	329	322	297	297	297	297
Equation F	18.13[a]	487.42[a]	1663.76[a]	315.38[a]	109.36[a]	192.17[a]	321.05[a]	179.39[a]	207.07[a]
R2	.07	.87	.90	.88	-.08	.88	.49	.88	.34

Numbers in parentheses are t values. **a** indicates significant at .01, **b**.05, **c** and at .10 levels. TLS = time series length. NCS = number of cross sections.

tables 3, 4 and 5 were re-estimated and results are reported in table 6. They show that this small cluster of 4 variables—democracy and its square, government effectiveness and adherence to the rule of law—provide a strong 'explanation' for the variability in corruption across countries and over time. All of the independent variables in these equations are statistically significant, in most cases at the .01 level, with the expected signs, as are equation F statistics. Moreover, these equations account for between 80% and almost 90% of the variability in corruption in this sample of countries. This is powerful evidence that corruption exhibits an inverted U shape with respect to democracy and that government effectiveness and adherence to the rule of law reduce corruption. Finally, to provide additional evidence that durability matters, but only in democratic regimes, equation 9 in table 3 was re-estimated for autocracies. The hypothesis here 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 nor on its square ($LDUR^2$) was statistically significant.

Table 6.
Base Model Random Effects Regressions Without Redundant Variables
White's Cross Section Standard Errors and Covariance

Equation	*1*	*2*	*3*	*4*	*5*	*6*
Estimation By	*FGLS*	*TSFGLS*	*FGLS*	*TSFGLS*	*FGLS*	*TSFGLS*
C	-.04	-8.68	-.05	-1.14	-.22	-.88
LDEM	.17 (.97)	10.68 (1.88)[c]				
LDEM2	-.06 (-.84)	-2.89 (-1.43)				
LDUR			.15 (1.83)[c]	1.19 (5.92)[a]		
LDUR2			-.03 (-2.42)[b]	-.23 (-7.89)[a]		
LDURDEM					.17 (2.20)[b]	.73 (2.51)[b]
LDURDEM2					-.02 (-2.55)[a]	-.10 (-5.46)[a]
GE	-.35 (-24.05)[a]	.23 (1.52)	-.39 (-21.56)[a]	-.43 (-5.43)[a]	-.39 (-34.62)[a]	-.42 (-6.79)[a]
ROL	-.64 (-10.43)[a]	-1.82 (-4.19)[a]	-.56 (-8.97)[a]	-.53 (-8.34)[a]	-.57 (-10.52)[a]	-.38 (-2.45)[b]
Time Series Length	5	5	5	5	5	5
Number of Cross Sections	104	99	103	98	103	98
N	488	368	468	360	468	360
Equation F	520.23[a]	1863.34[b]	534.93[a]	1970.49[a]	557.16[a]	1384.25[a]
R2	.81	-3.08	.82	.83	.83	.87
Numbers in parentheses are t values. **a** indicates significant at .01, **b**.05, **c** and at .10 levels.						

Moreover, both had incorrect signs offering additional evidence that durability and the democratic learning that goes with it reduce corruption.[32]

Conclusions

A number of researchers have argued that the relationship between corruption and democracy within and among countries follows an inverted U relationship, with corruption rising with democracy up to a point, and then declining, but no one has 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 1996-2003 for a large number of countries, found strong support for this inverted U relationship in a sample that included a substantial number of developed and developing countries. But it is important to note that support was found for an inverted U relationship only between corruption and two process oriented definitions of democracy, not between corruption and electoral definitions of democracy. In addition, both government effectiveness and adherence to the rule of law were found to reduce democracy. Taken together, a very parsimonious model of these four variables accounted for a very large share of the variability in corruption in our sample of countries. Our results also suggest that the turning point in the relationship between corruption and durability of democracy occurs at a relatively young age—between 4 and 15 years. These conclusions suggest that at least some low income countries have been able to reduce corruption in the early years of their democratic transitions.

32 This random effects regression equation is available on request from the author.

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