Sources of Corruption in Authoritarian Regimes*

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Objectives. We seek to investigate the determinants of corruption in authoritarian polities. We hypothesize that corruption in nondemocratic settings will be greater where the ruling group is personalistic rather than a political party or a military clique and that it will be greater where rulers expect to remain in power longer. We construct a new operationalization of the selectorate theory advanced by Bueno de Mesquita et al. *Methods.* We use cross-sectional statistical analysis (OLS) to examine a sample of 40-odd authoritarian regimes as of 2000. *Results.* Our results indicate that personalistic and personalistic-hybrid regimes are more prone to corruption than single-party and military regimes and also that rulers who expect to remain in power for longer are less corrupt. Corroborating previous studies, we document that the availability of natural resources and higher levels of institutionalized autocracy are associated with greater corruption and that wealthier countries experience less corruption. Our results are consistent with previous studies, including that of Bueno de Mesquita et al., but because of our reconstruction of selectorate theory in terms of real-world regime types, they are more easily interpretable. *Conclusions.* Our study sheds light on why African countries are so notoriously corrupt. The personalistic authoritarian regimes that have arisen there in the postcolonial period appear especially prone to corruption, whereas military and single-party dictatorships are less corrupt.

The last decade has witnessed an explosion in studies of comparative corruption, thanks in part to the availability of new sources of cross-national data on perceptions of corruption.[1] Although nondemocratic regimes exhibit considerable variation in the extent of corruption and are on average more corrupt than regimes where political leaders are freely elected, the focus of the current literature has been heavily weighted toward democratic and not authoritarian countries. However, the patterns of corruption

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[1]For a comprehensive review, see Treisman (2007).

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observed in democratic settings are not likely to obtain under authoritarianism. Even when authoritarian regimes establish legislatures, political parties, and regular elections, political accountability is considerably more compromised than in competitive electoral democracies. For instance, if electoral authoritarianism exists in part to co-opt potential political opponents, corruption may well be used by rulers as part of a larger strategy of political patronage. As a result, elections may have the perverse effect of encouraging corruption rather than reducing it.[2] However, this is purely speculative. We know very little about corruption in nondemocratic polities, where political accountability is not regulated by the competitive struggle for political office and the routinized circulation of elites.

These considerations suggest that a useful analytic strategy for investigating the determinants of corruption should be tailored to the specific characteristics of nondemocratic regimes, at least at this still provisional state of knowledge. The chief goal of this article is to provide a preliminary empirical mapping of some correlates of corruption in the nondemocratic world. Drawing on existing theories of rent seeking in settings that lack genuine electoral competition and political accountability, we estimate empirical sources of variation in perceptions of corruption. The contributing factors that we investigate are especially pertinent to authoritarian regimes. Specifically, we examine whether the *time horizons* of the autocrat—the ruler's expectation of remaining in power for a shorter or longer duration—and the *nature of the ruling coalition* affect the level of corruption. We thereby contribute to the growing literature that studies the effects of institutional variations among nondemocratic polities on a wide range of consequential outcomes, including economic growth, popular protest and rebellion, regime stability and duration, and the economic activities of government.

Our main results are twofold. We find that, all else equal, personalistic and personalistic-hybrid regimes are significantly more corrupt than single-party and military regimes. We also document that shorter-lived regimes are more corrupt, although this is true for only one of three possible measures of the time horizons of the ruler. Our secondary results, which corroborate existing research, show, first, that the availability of natural resources, commonly known as the ''resource curse,'' is consequential for corruption and, second, that higher level of political competition and economic development are associated with less corruption. Our results are robust to the exclusion of potentially influential cases.

Our article proceeds in four parts. In the first, we provide additional information about our main concepts, theories, and hypotheses. A second section describes the measures and data we use. A third reports the results of our statistical analysis and robustness tests. A final section concludes with a

[2]For instance, Wright (2008) shows that nonbinding institutions reduce economic growth in authoritarian regimes.

discussion of theoretical implications and some considerations for further research.

Theory and Hypotheses: Regime Type, Time Horizons, and Corruption

The Weberian view of modernization predicts a rationalization of authority structures, legal procedures, and equality of outcomes. And, indeed, the level of development alone appears to account for about three-quarters of the cross-country variance in different measures of corruption, all of which are highly intercorrelated (see, e.g., Ades and di Tella, 1997:499, Table 1). Among democratic polities, numerous studies have made headway in specifying the precise institutional factors that promote or inhibit corruption (Chang and Golden, 2007; Gerring and Thacker, 2004; Kunicová and Rose-Ackerman, 2005; Lederman, Loayza, and Soares, 2005; Nyblade and Reed, 2008; Persson, Tabellini, and Trebbi, 2003). Such studies naturally focus on institutional features that are largely inherent to democratic regimes, such as relations between the executive and the legislature, the number of effective political parties, characteristics of the electoral system, and so forth. But if corruption is a premodern pathology and perhaps even a signature characteristic of poor and authoritarian societies, surprisingly little recent research has been done to understand its sources in these settings.[3] With only a few exceptions (e.g., Bueno de Mesquita et al., 2003), the growing literature unpacking the characteristics of authoritarian regimes (Brownlee, 2007; Gandhi, 2008; Gandhi and Przeworski, 2006; Levitsky and Way, 2002; Magaloni, 2006) attends little to how these affect the frequency of political corruption. This is surprising if, as economists believe (Mauro, 1995), corruption is consequential for growth, and a factor that contributes to keeping the less-developed countries of the world mired in poverty.

How are we to conceptualize mechanisms potentially underlying corruption in political systems in which competitive elections are not held or in which the ruler's hold over power is not compromised when they are? The literature on autocracies identifies at least two very general mechanisms that are plausibly consequential for corruption: the time horizons of the ruler and the nature of the ruling coalition.

Because the timing of succession is less routinized or predictable in autocratic than democratic polities, scholars have considered whether the time horizons of the autocrat might affect essential aspects of his or her strategies of rule. Theories that center on the ruler's time horizons most often follow Clague et al., who hypothesize that rent extraction rises as regime time horizons shrink. In this framework, ''a secure autocrat with a long time

[3]However, an older research tradition (represented by Huntington (1968) and Scott (1972)) offers interesting insights.

TABLE 1

Geddes's Coding of Authoritarian Regimes (2000)

Country	Regime Type
Algeria	Military
Angola	Single-party
Burkina Faso	Personalist
Burundi	Personalist/military hybrids
Cambodia	Personalist/single-party or single-party/military hybrids
Cameroon	Personalist
Chad	Personalist
China	Single-party
Congo, Dem. Rep.	Personalist
Congo, Rep.	Personalist
Cote d'Ivoire	Single-party
Cuba	Personalist/single-party or single-party/military hybrids
Egypt, Arab Rep.	Military/personalist/single-party amalgam
Ethiopia	Single-party
Gabon	Personalist/single-party or single-party/military hybrids
Guinea	Personalist
Guinea-Bissau	Personalist
Haiti	Personalist/single-party or single-party/military hybrids
Indonesia	Military/personalist/single-party amalgam
Iraq	Personalist
Kenya	Single-party
Korea, Dem. Rep.	Personalist/single-party or single-party/military hybrids
Lao PDR	Single-party
Libya	Personalist
Malaysia	Single-party
Mauritania	Personalist/military hybrids
Mozambique	Single-party
Myanmar	Single-party
Niger	Personalist
Nigeria	Personalist/military hybrids
Rwanda	Military
Senegal	Single-party
Sierra Leone	Personalist/military hybrids
Singapore	Single-party
Sudan	Personalist/military hybrids
Syrian Arab Republic	Military/personalist/single-party amalgam
Tanzania	Single-party
Togo	Personalist
Tunisia	Single-party
Uganda	Personalist
Vietnam	Single-party
Yemen, Rep.	Personalist
Zambia	Personalist/single-party or single-party/military hybrids
Zimbabwe	Single-party

horizon has an incentive to respect and protect property and contract rights'' (1996:270). Gandhi (2008) extends this idea to note that even if authoritarian rulers are predatory in nature, they have more to harvest if their countries are wealthier. Wright (2008) echoes this, arguing that an authoritarian ruler only invests in building institutional infrastructure if he or she expects to stay in office for a long time. By contrast, dictators who expect to lose power in the short term will extract more rents and engage more frequently in kleptocratic activities.[4]

This view hypothesizes that authoritarian regimes of longer duration will be less corrupt. This is intuitively plausible: faced with probable loss of office in the short term, rulers grab what they can. It is supported by the work of Clague and his colleagues, who estimate empirical models in which regime duration as well as regime type (democracy vs. autocracy) constitute key independent variables, with various measures of respect for property rights as their dependent variables.

Not all scholars agree. Robinson (2001) develops a formal model that generates the opposite prediction. In his account, authoritarian rulers with longer time horizons are less likely to invest in economic development and, by implication, more likely to engage in predatory behavior. His reasoning is that economic development induces changes in society that would upset the political equilibrium that allows the current ruling group to retain political power. The intuition underlying the model is that dictators who seek to retain power over the long term deliberately impede economic development because it would empower opposition groups. One way autocratic rulers block economic development is by underinvesting in public goods. For instance, they underinvest in roads and other infrastructure goods, with the goal of fragmenting civil society and making it difficult for political mobilization to occur. As historical examples of long-lived but predatory regimes, Robinson reminds us of the pre-French Revolution aristocracy as well as of 20th-century regimes running from the Marcos in the Philippines to the Somozas in Nicaragua. Robinson's argument predicts a sign in a model of time horizons and corruption opposite to that of the Clague et al. hypothesis.

Our own view is that Robinson identifies an idiosyncratic and probably small group of regimes. It is easier to list authoritarian regimes whose long-lived rulers have kept rent seeking and corruption in check than to think of dictatorships of long duration whose rulers have successfully prevented economic development in order to fend off the growth of potential political opponents. So while the mechanism Robinson investigates is intriguing, we expect that our analysis will corroborate the dominant view in the literature that longer-lived authoritarian regimes are less corrupt.

[4]Given the present underdeveloped state of the literature on autocratic regimes, we do not distinguish between theories that focus on rent seeking, corruption, or kleptocracy. As these are each somewhat different phenomena, it might eventually be useful to do so.

A second set of considerations potentially relevant to comparative corruption in nondemocratic regimes comes from recent work on the nature of authoritarian ruling groups. Geddes (2004) classifies authoritarian regimes as single-party, military, and personalistic (as well as mixed or hybrid). Without offering any specific expectations regarding the extent of corruption, Geddes contends that authoritarian regimes differ as much from each other as from democratic political systems and that the identity of the ruling group is consequential for many important outcomes, particularly for the duration of regime.

Intuitively, it seems most plausible that corruption should be most severe in personalistic regimes. Bratton and van de Walle (1997) persuasively posit that personalistic regimes differ fundamentally from other types of authoritarian regimes in their extraordinary reliance on the exchange of material rewards for political support. Building on their thesis, Wright (2008) suggests that personalistic rulers maintain formal political institutions not to constrain themselves but to strengthen patron-client networks and to weaken opponents. Moreover, Wright (2008) shows that personalistic rulers are less dependent on domestic revenues and that as a result, institutions under personalistic regimes tend to be nonbinding. In another contribution, Geddes (2004) also notes that institutions under personalistic regimes are less developed and less effective in constraining rulers from abusing their power. Taken together, these views suggest that in personalistic regimes resources are distributed on the basis of clientelism and patronage ties without institutional oversight, which in turn provides fertile breeding grounds for corruption.

Selectorate theory, developed by Bueno de Mesquita et al. (2003), lends some rigor to the idea that rates of corruption differ systematically across types of authoritarian regimes. Although primarily interested in the political survival of leaders, selectorate theory also proposes explicit hypotheses regarding corruption. Bueno de Mesquita et al. begin with two central concepts: the selectorate (*S*), by which they mean the politically relevant population, and the winning coalition (*W*), meaning the group whose support is essential for the leader to retain power. Bueno de Mesquita et al. hypothesize that corruption will be frequent in two circumstances: when *W* is small or as the ratio of *W* to *S* is small (2003:204); that is, corruption will rise as the size of the winning coalition falls or when it falls relative to the size of the selectorate. Their reasoning turns on the incentives of the leader to provide his or her followers private goods in order to secure loyalty. When the winning coalition is small, the value of private goods provided by the ruler to its members is large since a set quantity of private goods gives each member a larger amount when there are fewer members. As a result, Bueno de Mesquita et al. contend that with a small *W*, private goods are especially effective in ensuring group loyalty. On the other hand, for coalition members, the benefits of private goods are attenuated as coalition size increases. Under such circumstances, the leader has incentives to turn to public goods

provisions so as to maintain political support from coalition members. One implication of this is that corruption, which Bueno de Mesquita et al. link to the use of private goods, will be more frequent under small coalitions. Their study tests this, reporting corroborative results (2003:205; but see the subsequent controversy in Clarke and Stone (2008) and the reply in Morrow et al. (2008)).

Selectorate theory usefully focuses on how institutional configurations affect the incentives of political leaders and bears significant implications for understanding corruption under authoritarian regimes. Although it is not our purpose here to attempt to reconstruct selectorate theory in terms of real-world institutions, we can gain some theoretical leverage using selectorate theory to construct hypotheses about corruption in terms of Geddes's regime types.[5] Specifically, selectorate theory provides a driving mechanism—the ratio of the size of the winning coalition to the selectorate (*W/S*)—that forcefully connects regime types to corruption. As Bueno de Mesquita et al. note, while autocracies in general have small winning coalitions (*W*), the ratio of *W/S* varies across authoritarian regimes because the size of the selectorate (*S*) varies (2003:137). In particular, Bueno de Mesquita et al. contend that among authoritarian regimes, the size of *S* is smallest under military juntas and monarchies (2003:71). Indeed, the selectorate under military juntas consists only of some high- and middle-ranking military officials, whereas under monarchies, ''only a very small number of people have a routine prospect of becoming members of the wining coalition'' (2003:70). Single-party dictatorships have larger selectorates than military juntas and monarchies. Bueno de Mesquita et al. suggest that the size of selectorate may be as much as 10 percent of the total adult population in single-party authoritarian states. Even in communist states, where party membership is restricted to a privileged few, the size of the selectorate is nevertheless appreciable, and certainly much larger than under military juntas and monarchies.[6] Finally, while Bueno de Mesquita et al. do not explicitly discuss the size of the selectorate under personalistic regimes, we interpret their work as suggesting that *S* is largest under personalistic regimes because of the existence of the leader's large clientele that is characteristic of such settings. In highly competitive personalistic regimes, the size of the selectorate theoretically may approach even 50 percent.

We can thus rank the size of the selectorate across authoritarian regimes in the following order: military juntas and monarchies $<$ single-party dictatorships $<$ personalistic regimes. Importantly, since the size of *W* is more or less identical across all authoritarian countries—it is small under authoritarianism regardless of the subregime type—we expect the value of *W/S* to

[5]The lack of direct correspondence between its main concepts—selectorate and winning coalition—with political institutions that are observed in real-world polities is an evident weakness of selectorate theory. Geddes's classification, by contrast, is intuitively more meaningful, thereby generating results that are easier to interpret.

[6]For instance, Bueno de Mesquita et al. document that party membership in Vietnam is roughly 3 percent of the total population.

follow the reverse order; that is, *W/S* is largest under military juntas and monarchies, moderately large under single-party dictatorships, and smallest under personalistic regimes. Data analysis corroborates this: we find that in our data set (described below), personalistic regimes register a significantly lower value of *W/S* ($p < 0.01$) than a category containing military and single-party regimes.[7] We therefore expect that corruption will be more frequent in personalistic dictatorships, where the ratio of *W* to *S* is smaller than in single-party autocracies, military regimes, or monarchies.

The two theories reviewed above generate two hypotheses for empirical analysis.

H1: *As the time horizons of the ruler shorten, the frequency of corruption increases*.

H2: *Corruption should be more frequent under personalistic than under single-party and military regimes or under monarchies*.

Data and Operationalization

To test these two hypotheses, we need to operationalize the time horizons of the ruler, the scope or nature of the ruling group, and the concept of corruption. We also need to incorporate standard control variables, such as the level of economic development, into our model. We discuss each in turn.

We begin our analysis with the regime typology developed by Geddes (2004). She offers a straightforward classification of regimes as military, personalistic, and single-party:[8]

> In military regimes, a group of officers decides who will rule and influence policy. In single party regimes, one party dominates access to political office and controls policy . . . In personalist regimes, access to office and the fruits of office depends [sic] on the discretion of an individual leader.(Geddes, 2004:5)

Geddes codes all authoritarian regimes (excluding monarchies)[9] lasting at least three years with populations of more than 1 million that became independent prior to 1990 for each year from 1946 to 2000. In addition to the three pure types, she codes many country-years as mixed types to capture

[7]Because there are only three military regimes in our data set, we cannot consider them as a separate category. We thus fold them into single-party regimes.

[8]Cheibub and Gandhi (2004) provide an alternative classification of nondemocratic polities, distinguishing civilian dictatorships, military dictatorships, and monarchic dictatorships. We have chosen to use the Geddes classification because of her distinction between personalistic and single-party rule, which are conflated in the Cheibub and Gandhi coding. A thorough comparison of the two classification schemes would be useful but is not possible here.

[9]Note that by excluding monarchies, Geddes effectively excludes many of the Middle East oil nations and also precludes inclusion of that category in our analysis.

the mixture between personalistic regimes and other types, including personalistic/military hybrids, personalistic/single-party hybrids, and personalistic/military/single-party amalgams. To the best of our knowledge, the literature on authoritarian regimes, including Geddes's own work, offers little theoretical guidance on how to properly code these mixed cases. Geddes suggests that the mixed regimes, especially the personalistic/military and personalistic/single-party hybrids, are ''not very different from personalistic regimes'' (2004:21) and hence likely to enjoy similar longevity to personalistic regimes. The difficulty in allocating regimes to pure types reinforces our earlier claim that authoritarian polities are often weakly institutionalized. Hence, we base our coding decision on Bueno de Mesquita et al.'s theory and we consider the treatment of these mixed cases an empirical question. Specifically, we first compare the mean value of *W/S* for all hybrid cases and personalistic regimes and we find no statistically significant difference ($p = 0.41$). We then repeat the same exercise, comparing the mean value of *W/S* for all mixed cases to military and single-party regimes, and we find that *W/S* is indeed significantly larger in the latter category ($p = 0.03$). These results suggest that Geddes's mixed and personalistic regimes are indistinguishable regarding the scope of ruling coalition, thereby corroborating our claim of a similarity between her coding of mixed and personalistic regimes. By inference, their causal connection to corruption should also be identical. We therefore set up a dummy variable that groups personalistic and hybrid regimes into a single category to compare against a baseline category comprised of military and single-party regimes. This effectively operationally stretches the concept of personalistic regimes compared with single-party and military regimes, which is more narrowly constructed.

Once we merge the available corruption data for 2000 with Geddes's coding of authoritarian regimes, we have 44 observations in our core data set. We drop four countries from our analysis because Freedom House (among others) classes them as fully democratic, in contrast with Geddes. The countries we drop are Taiwan, Botswana, Ghana, and Mexico.[10] Table 1 presents Geddes's coding of nondemocratic regimes as of 2000, the year we use in our statistical analysis.

To tap into the survival probability of the ruler, we use three possible measures. The reason for using multiple measures is that there is a large gap between the concept we seek to measure and our ability to operationalize it, and we are unsure how to construct a valid measure. First, we follow Londregan and Poole's lead (1990) and include in our model the number of previous regime interruptions during the past decade.[11] Londregan and

[10]Geddes is aware that she codes these countries as single-party regimes although they are often considered democratic by the period we analyze. In any event, inclusion or exclusion of these cases does not substantially affect the results we report.

[11]We experimented with alternative timespans and results are insensitive to the choice of timespan used.

Poole (1990:152) report that regime interruptions, especially successful coups, elevate the propensity for another coup for up to six years. Hence, we consider a decadal window of regime interruptions to see if this lower survival likelihood affects the frequency of corruption. In our data set, nine out of 44 countries experienced at least one regime interruption.

The Londregan and Poole measure of regime interruption might not fully capture the expectations of rulers about their likely tenure in office. Even rulers who remain in power for decades could conceivably worry about their ability to retain power. Involvement in civil war is another way to capture the expectations of regime duration that rulers hold. Any involvement in serious civil conflict is likely to produce uncertainty about the ability to retain power, thereby shrinking the time horizons of the current regime. Civil war may thereby induce rulers to turn to more kleptocratic politics. We use the PRIO (International Peace Research Institute)/Uppsala Armed Conflict Dataset, which codes conflicts by state location. We use all internal conflicts between government and opposition groups with no outside intervention that result in more than 25 battle-related deaths per year in any year between 1990 and 2000. In our data set, 14 out of 44 countries experienced at least one internal conflict.

A third way to operationalize the ruler's expectation of remaining in power is simply to use actual regime duration. The intuition underlying this measure is that rulers have the advantage of information asymmetry, and this may allow them to accurately estimate how much longer they have in power. To gauge this possibility, we use the variable *DURABLE* from the Polity IV data set. Conceptually, this variable captures the notion of regime durability. More concretely, the *DURABLE* variable "provides a running measure of the durability of the regime's authority pattern for a given year" (*Polity IV User's Manual*:13). Empirically, the variable measures the number of years since the last substantive authority change.[12] It is also worth noting that the *DURABLE* variable exhibits large variation: it has a mean of 15.53 and a standard deviation of 19.40 years.

Our analysis also includes other covariates that appear potentially important for understanding the frequency of corruption, not necessarily exclusively in autocratic regimes. The hypothesis that greater foreign aid may generate higher frequencies of corruption has been investigated by Svensson (2000) and by Alesina and Weder (2002). The natural resources hypothesis (also discussed in Robinson (2001)) builds on an extensive literature that has studied the impact of resources, especially for growth (Sachs and Warner, 1995; Ross 1999; Haber and Menaldo, 2002; Mehlum, Moene, and Torvik, 2005). This literature has argued that an abundance of resources such as oil and minerals may be detrimental for developing countries. Access to such

[12]A substantive authority change is defined by a three-point change in the Polity score over a period of three years or less. For more detailed discussion, see *Polity IV User's Manual*, pp. 13–16.

resources may fund rebel groups, making civil conflict more likely. In addition, the mere availability of natural resources means there are more lootable goods and higher rents easily accessible to predatory rulers. We incorporate these hypotheses into our study by including measures of foreign aid and natural resources.

We use two different measures of natural resource rents. The first is the total value of oil and mineral rents in current USD as of 2002. We scale these by population, for reasons discussed by Ross (2006). We also use a log transformation to handle right-skewedness. Data on this variable are available from the World Bank for 42 of our 44 core countries. The second measure of natural resource rents is a dummy variable coding whether the country is known to have alluvial (i.e., lootable) diamonds, taken from the Conflict Diamonds Dataset (reported in Gilmore et al., 2005). Only eight countries in our sample are so characterized. Our expectation is that higher rents should be positively associated with greater corruption.

Data on foreign aid, which is believed to drive up corruption, are taken from the World Bank. The measure reflects the annual average amount of per-capita foreign aid for the years 1996 to 2000 in current USD. We have data on 43 of our core countries.[13]

In addition, we control for the level of economic development, which prior studies consistently report as the single most important predictor of corruption. Extensive research shows that poor countries are associated with substantially more corruption than their wealthier counterparts. Hence we include the logged average per-capita GDP in our model. We exclude data for per-capita GDP in the year 2000 and use the average from 1996 through 1999 to avoid the potential threat of endogeneity between corruption and economic development. Data on economic development are missing for Iraq, North Korea, Libya, and Mynamar.[14]

Finally, another important theme in the corruption literature posits that democracy—or, more specifically, political competition—reduces political corruption. According to this view, political competition increases the chances of public exposure of wrongdoing since political opponents and the mass media have incentives to investigate and publicize incumbents' malfeasance. In addition, political competition represents a sanctioning device that allows voters to throw the rascals out (Montinola and Jackman, 2001). Thus, the threat of losing office induced by higher levels of competition reduces politicians' incentives to engage in corruption.

Although political competition may be sharply restricted or even completely suppressed under authoritarianism, it nevertheless remains interesting to examine whether it matters for corruption in this setting, as research on multiparty authoritarianism suggests may be the case (Gandhi and Przeworski, 2006). Controlling for political competition also guards against the possibility

[13]The source of the data is ⟨http://devdata.worldbank.org/dataonline/⟩.
[14]Myanmar is also missing data on foreign aid and natural resource rents.

of a spurious relationship between corruption and our key independent variables; for instance, Geddes's regime type measure may simply reflect levels of competition. To measure political competition, we use Polity IV's variable of institutionalized autocracy (*AUTOC*). This variable is a composite index derived from various authoritarian characteristics, including the competitiveness of executive recruitment, the openness of executive recruitment, constraints on the chief executive, and the competitiveness of political participation. Operationally, institutionalized autocracy is a 0–10 additive index, with higher values indicating less competition and higher levels of autocracy.

Our measure of the dependent variable is based on the index of "Control of Corruption" from the World Bank's Governance Indicators, which is one of the standard sources used in the cross-national literature.[15] The measure is designed to capture "the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests" (Kaufmann, Kraay, and Massimo, 2006:4).[16] The index reflects a statistical compilation by World Bank economists of responses on the quality of governance given by a large number of enterprise, citizen, and expert survey respondents in industrial and developing countries, as reported by a number of survey institutes, think tanks, nongovernmental organizations, and international organizations.[17] We use the index pertaining specifically to corruption for the year 2000.

The corruption index (as well as other indexes included in the Governance Indicators) is normalized with a mean of 0 and a standard deviation of 1. For ease of interpretation, we scale observations so that more corruption is represented by higher values. Across our sample of autocratic polities, the index runs from -2.50 (Singapore) to $+1.48$ (Zaire).

We use data on corruption for the year 2000 because they are both recent and temporally proximate to the coding available on other important variables that we include in our study, especially for authoritarian regime types. Our analysis is confined to a single cross-section because the cross-national corruption indices that are available are not usable for time-series analysis. There are a number of reasons for this, among which is that the underlying surveys used to construct the indexes have changed over time.

[15]Available at ⟨http://info.worldbank.org/governance/kkz2005/pdf/2005kkdata.xls⟩.

[16]Because it draws on perceptions of corruption, the measure we use cannot by its nature be especially precise in what it means by corruption. The standard definition of corruption as the illicit use of public office for personal gain, however, is likely to shape responses to the surveys. For an illuminating discussion of the weaknesses of the measure we use, see Arndt and Oman (2006).

[17]In our preliminary analysis, we explored the possibility of using alternative indexes, such as the Corruption Perception Index (CPI) developed by Transparency International. However, the CPI only covers 20 countries in our data set and hence almost cuts our sample size in half. We use the World Bank indicator in the interests of sample size. Nevertheless, we should emphasize that even with only 20 observations in our sample, the two indexes are highly correlated ($p = 0.95$).

In Table 2, we lay out the various measures we use, their meaning, and the data sources. Descriptive statistics and a correlation matrix are presented in Tables 3 and 4.

Statistical Results

Utilizing our data on corruption across 44 authoritarian regimes, we examine the empirical validity of the two main theories that we have laid out regarding the ruler's time horizons and the scope of the ruling coalition. We begin by constructing a baseline model that relates our corruption variable to the full battery of theoretically relevant control variables. Then we test our main theory by adding measures of regime type and the ruler's time horizons into expanded models. Results are reported in Table 5. We use the OLS estimator with robust standard errors.

The first column of results in Table 5 presents our baseline Model 1, which incorporates the various control variables we have presented. As the results reported there show, our baseline model exhibits a good fit to the data. It accounts for more than 50 percent of the variation in corruption. All the coefficients for our control variables except foreign aid are significant with the expected signs. For instance, the variable of logged GDP per capita is negative and highly significant, corroborating the traditional wisdom that the frequency of corruption decreases with increasing national wealth. In addition, countries with higher per-capita values of oil, mineral rents, and lootable diamonds are more prone to corruption. Our result thus corroborates the existence of a resource curse: more resource abundance generates greater corruption and predation. Finally, the results show that political competition, despite its limitations in authoritarian regimes, remains statistically influential in constraining corruption.

We now move to Model 2 of Table 5, which adds a personalistic-mixed regime dummy to test the effect of regime type on corruption. As we can see, the coefficient for the personalistic and personalistic-hybrid regime variable is positive and significant, indicating that personalistic and personalistic-hybrid regimes are more corrupt than their single-party and military counterparts. Additionally, the effect of regime type is substantively important: moving from a single-party regime such as that in Vietnam to a personalistic regime like the Congo's (holding everything else constant) is likely to increase the level of corruption by 0.29 units, which equals roughly half of the standard deviation (0.64) of the corruption index. This is a substantively large impact.

We next probe the empirical consequences of the ruler's time horizons. As we have already noted, because of the difficulties of measuring the main concept directly, we tap into (expected) time horizons using three different variables: the number of years since the last substantive authority change, the number of previous regime interruptions, and a measure of civil war that

TABLE 2

Information on Variables and Data

Variable	Description	Source	Hypothesized Sign
Corruption	Survey data on perceptions of corruption. See Kaufmann, Kraay, and Massimo (2006) for discussion.	World Bank's Governance Indicators	Dependent variable (scaled from less to more)
Personalistic regime	Regimes coded 1 = personalistic regime and its hybrids. See Geddes (2004) for discussion.	Geddes (2004)	+
Regime durability	Number of years since last substantive authority change.	Polity IV Project	–
Interruptions	Number of regime interruptions between 1990 and 2000.	Geddes (2004)	+
Civil war	Coded 1 = civil war for conflict between state and internal opposition group with no outside intervention if at least 25 battle-related deaths per year occurred in any year between 1990 and 2000.	PRIO/Uppsala Armed Conflict Dataset (Version 3–2005b)	+
Natural resources	Total value of oil and mineral rents in current USD per capita as of 2002.	World Bank	+
Lootable diamonds	Known deposits of alluvial diamonds, coded 1 = diamonds, 0 = no diamonds. See Gilmore et al. (2005) for discussion.	Conflict Diamonds: A New Dataset, Center for the Study of Civil War	+
Foreign aid	Per-capita foreign aid in current USD, average for 1995–2000.	World Bank	+
Economic development	Log of average per-capita GDP from 1996 to 1999 (in USD at PPP).	Penn World Table	–
Institutionalized autocracy	0–10 additive composite index derived from various authoritarian characteristics.	Polity IV Project	+

captures the degree of expected political stability. Models 2, 3, and 4 of Table 5 test the effect of the ruler's time horizon using each of the three different measures.

TABLE 3

Descriptive Statistics of Variables

Variable	*N*	Mean	*SD*	Min.	Max
Corruption	44	0.631	0.649	−2.506	1.485
Personalistic regimes	44	0.613	0.492	0	1
Regime durability	44	16.022	19.453	0	76
Regime interruption	44	0.204	0.408	0	1
Civil war	44	0.318	0.471	0	1
Natural resources	42	2.014	2.517	0	7.506
Lootable diamonds	44	0.181	0.390	0	1
Foreign aid	43	27.056	22.163	−3.042	88.917
GDP (log)	40	7.485	0.912	5.755	10.190
Institutional autocracy	43	4.304	2.332	0	9

Only the Polity measure of regime durability registers a significant effect on corruption. Specifically, the results in Model 2 of Table 5 accord with Clague et al. and show that corruption is more common in short-lived, fragile authoritarian regimes. We interpret this finding as evidence that rulers are likely to grab whatever they can when they realize their days in office are numbered. However, we find regime interruption and the outbreak of civil war have no significant effects on corruption.

To ensure the validity of our results, we perform a series of robustness checks and diagnostics. Especially since our analysis is based on a subsample of developing countries, one might reasonably ask whether our results are driven by only a few influential cases. We pay special attention to cases with large residuals, high leverage, and strong influence. Various diagnosis tools (including the leverage vs. squared residual plot, Cook's distance, and DFITS) all identify Singapore as an extreme and unusual case. Indeed, Singapore has been known for its exceptional success in achieving both economic development and for cleaning up politics. We rerun our estimation without Singapore in Model 5 of Table 5 and our main findings remain unchanged.

Interpretation and Conclusions

Our findings show that not all dictatorial regimes are alike in their propensity to extract rents and the frequency with which they engage in corrupt practices. Personalistic and other similar authoritarian subregimes are significantly more corrupt than single-party and military regimes. This is likely a result of the structure of the ruling coalition itself. As Beuno de Mesquita et al. argue, regimes with smaller ratios of the size of the winning coalition to the selectorate are likely to be more corrupt. Personalistic

TABLE 4

Correlation Matrix of Independent Variables

	Personalistic Regime	Regime Durability	Regime Interruption	Civil War	Natural Resources	Lootable Diamonds	Foreign Aid	GDP Log	Institutionalized Autocracy
Personalistic regime	1								
Regime durability	− 0.1075	1							
Regime interruption	0.0808	− 0.4199	1						
Civil war	0.0364	− 0.3846	0.2817	1					
Natural resources	0.0055	0.2545	− 0.2289	0.0096	1				
Lootable diamonds	− 0.0174	− 0.2843	0.2071	0.2588	0.0902	1			
Foreign aid	0.1487	− 0.1973	− 0.1428	0.0322	− 0.3319	0.0328	1		
GDP log	− 0.1804	0.4673	− 0.2759	− 0.0786	0.5218	0.0558	− 0.3475	1	
Institutionalized autocracy	− 0.0543	0.6075	− 0.1604	− 0.2492	0.282	− 0.1539	− 0.1926	0.2627	1

TABLE 5

Results of Multiple Regressions of Determinants of Corruption in Autocratic Regimes

	Model 1	Model 2	Model 3	Model 4	Model 5
Personalistic/ hybrid regime		0.294** [0.139]	0.300** [0.143]	.301* [0.150]	.269* [0.133]
Regime durability		−0.011* [0.005]			−0.101** [0.004]
Regime interruption			0.069 [0.124]		
Civil was				0.001 [0.168]	
Natural resources	0.119** [0.046]	0.104** [0.046]	0.107** [0.047]	0.108** [0.049]	0.039 [0.029]
Lootable diamonds	0.411*** [0.142]	0.316** [0.126]	0.405*** [0.116]	0.421*** [0.129]	0.262* [0.137]
Foreign aid	0.001 [0.003]	0.001 [0.002]	0.001 [0.002]	0.001 [0.003]	−0.000 [0.002]
Economic development	−0.639*** [0.175]	−0.522*** [0.171]	−0.599*** [0.171]	−0.602*** [0.168]	−0.271* [0.133]
Institutionalized autocracy	0.064* [0.035]	0.109** [0.045]	0.069* [0.035]	0.066* [0.034]	0.094*** [0.032]
Constant	4.769*** [1.202]	3.753*** [1.166]	4.306*** [1.182]	4.346*** [1.153]	2.159** [0.925]
N	39	39	39	39	38
Adjusted R^2	0.532	0.606	0.564	0.562	0.369

*Significant at 10 percent level; **significant at 5 percent level; ***significant at 1 percent level.

NOTE: Model 5 is identical to Model 2 but excludes Singapore. Robust standard errors in brackets.

regimes are governed on the basis of larger selectorates than other types of autocracies. At the same time, the ruler's winning coalition in personalistic regimes is small and often held together thanks to the distribution of patronage and private goods rather than by the sheer charisma of the leader. Personalistic regimes thus typically establish networks in which corruption easily flourishes. As one study of personalistic dictatorships in Africa has commented: "Corruption constitutes an important means by which individual wants and needs in a personal regime can be satisfied; it is a black market mode of conduct quite consistent with personally appropriated government yet fundamentally at odds with state rules and regulations, whose violation or evasion corrupt conduct entails" (Jackson and Rosberg, 1982:45). Using the more easily interpretable regime measures created by Geddes, our results are consistent with and corroborate the findings of Bueno de Mesquita et al. This translation of Bueno de Mesquita et al. using a regime classification that is closer to what we observe in the real world lends credence to selectorate theory, while also suggesting that selectorate

theory may be restated with only some loss of generality and considerable gain in interpretability.

Our findings also shed some light on why sub-Saharan African countries appear especially susceptible to corruption. Of the 49 authoritarian countries that Geddes (2004) codes in year 2000, 12 are classed as personalistic, and of these dozen nations, nine are located in sub-Saharan Africa. Single-party regimes, by contrast, are not regionally clustered. Adding an Africa dummy to the equation estimated in Model 2 of Table 5 does not change our results and the dummy does not attain conventionally acceptable levels of statistical significance. (Results not reported.) This implies that our model of regime type does not leave something significant about the African nations unexplained. We interpret this as corroboration of the importance of personalistic authoritarian regimes for that region of the world. There are many reasons that Africa attracts so much scholarly and public attention: its failure to develop economically, the spread of HIV and correspondingly high death toll, the prevalence of civil wars and ethnic conflicts. Our results single out the significance of the type of authoritarianism largely in place in the African nations as consequential for the high levels of corruption observed there. In fact, the average African nation would improve its score on the corruption index that we use by 7.5 percent if its political regime switched from personalistic to single-party authoritarianism. Even without adopting democratic competition, African governments could substantially reduce the incentives of political leaders to engage in and facilitate corruption by constructing larger, more impersonal leadership groups.

In this article, we studied the determinants of corruption in nondemocratic polities. Our enterprise is motivated by the intuition that these differ significantly for authoritarian as opposed to democratic regimes. In democratic regimes, institutional details affecting competition among political elites for public office are important determinants of corruption. In authoritarian systems, by contrast, these formal institutional characteristics are not usually present. Instead, we find that regime duration and scope of the ruling group affect the propensity for corruption. Personalistic regimes generate significantly more corruption than other authoritarian institutions. Countries whose authoritarian rulers face shorter terms in office are also more corrupt. While neither may seem surprising, ours is one of the first studies to document this using systematic data.

Our results would be complemented by micro-level case studies of corruption under personalistic authoritarianism. What processes and phenomena characteristic of these settings generate such relatively high frequencies of corruption? Knowing this might offer some leverage to international organizations in reining in corruption in personalistic regimes. At the same time, our study also calls for additional research into the variation across personalistic regimes. They are not all equally plagued by corruption. How do some countries—Egypt, Cuba, Guinea—exhibit values ranging from 0.1 to

0.4 on the corruption index we use, whereas other personalistic regimes—Burundi, the Democratic Republic of the Congo—exhibit values of 1.1 and 1.4? Why do only some personalistic rulers create patronage regimes, whereas others seem less tempted? Many important questions about authoritarianism and corruption remain to be answered.

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