 Dictatorial Institutions
 and their Impact on Policies

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Abstract
Dictators use legislatures and parties to coopt groups within society. In exchange for their support for the regime and their participation within these institutions, dictators must make some policy concessions and offer spoils to these groups. In this paper, I test whether institutions affect government expenditures in 138 countries that experienced dictatorship during the 1946-1996 period. The results show that when dictators are constrained by institutions, they are forced to allocate more resources to public goods, such as education, and less to the armed forces. In addition, institutions facilitate the distribution of rents in the form of government employment.

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1 Introduction

During the second half of the military dictatorship under General Babangida in Nigeria, educational expenditures as a percentage of total income were among the lowest in the world: as low as 0.47 percent. During the same period in the late 1980's - early 1990's, the dictatorship in Kenya was spending between 6 and 7 percent of GNP on education during the same period at a time when its per capita income was just below that of Nigeria’s. Does the fact that Daniel Arap Moi’s regime spent a larger portion of total income on education than Babangida’s have to do with the fact that a legislature and at least one party always operated freely in Kenya while they were banned in Nigeria? Do institutions under dictatorship affect policies?

Dictators use political institutions to coopt groups within society and broaden their bases of support. One result is that legislatures and parties lengthen the tenures of dictators (Gandhi and Przeworski 2003). Yet if dictatorial institutions effectively encapsulate the potential opposition, they must also have an impact on policy. Either because they represent the interests of groups within society or because they desire to transform the regime from within, these outsiders demand policy concessions in exchange for their participation within dictatorial institutions. Consequently, legislatures and parties are expected to have an impact on policies under dictatorship.

Dictators may be able to insure the support of outsiders through means other than policy concessions. They can distribute perks and privileges in exchange for support. Yet the relationship between institutions and patronage is not obvious. On the one hand, dictators may distribute spoils to avoid making institutional and policy concessions. On the other hand, institutions may be useful in distributing perks to targeted beneficiaries.

The effects of dictatorial institutions on policies is examined through statistical analysis of government spending on the military and education in 138 countries that experienced dictatorship from 1946 to 1996. To assess whether dictators successfully substitute spoils for policy concessions, I also analyze expenditures on government employment as a form of rent. Since central government expenditures are direct government actions for which much systematic information is available, they can be used to determine whether institutions affect policies and the distribution of spoils under dictatorship. The analysis is followed by a brief conclusion, summarizing the results and discussing the role of nominally-democratic institutions under dictatorship.

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1Dictatorship is defined and operationalized according to the criteria in Przeworski et al. (2000).

2Much of the empirical literature testing the effect of institutions confuses outcomes and policies. Objects of attention such as infant mortality rate, rate of economic growth, and number of hospital beds are not necessarily government policies, but the results of state policies and private actions. Expenditures, however, are direct government actions.
2 Dictatorial institutions

Dictators constantly live with threats not only to their rule, but also to their lives. To mitigate the threats stemming from within the ruling elite, dictators frequently set up inner sanctums where real decisions are made and potential rivals are kept under close scrutiny. Monarchs rely on consultative councils to give advice and on family members to staff key governmental posts. Khalifa in Qatar, for example, reshuffled his cabinet in 1992, installing his sons as Ministers of Defense, Finance and Petroleum, Interior, and Economy and Trade; his grandson in charge of Defense Affairs; and his nephews in Public Health and Islamic Affairs. In Oman, the Consultative Council includes only elites suggested by local “dignitaries” and “people of values opinion and expertise” (Banks 1993: 623).

Among military dictators, real power typically lies within the governing junta. A collegial body is necessary to incorporate key members of the armed forces, usually heads of the various branches, who may be peers of the dictator and who can guarantee the support of those they command. The junta may then be instrumental in delegating responsibilities among various branches and containing any internecine fights.3

Unlike monarchs and generals, civilian dictators do not have preexisting organizations, such as family or the armed forces, on which to rely. So they must create their own organization, as observed by Lenin when he claimed “that only the political party of the working class, i.e., the Communist Party, is capable of uniting, training and organizing a vanguard of the proletariat and of the whole mass of the working people that alone will be capable of... guiding all the united activities of the whole of the proletariat, i.e., of leading it politically, and through it, the whole mass of the working people. Without this the dictatorship of the proletariat is impossible” (Lenin 1921). A regime party, then, is crucial for civilian dictators, and a smaller body within the party is used to coopt rivals.

Consultative councils, juntas, and political bureaus are the first institutional trench for dictators. These smaller institutions neutralize threats from within the ruling elite. But when dictators must coopt larger groups within society, they turn to a second line of defense: parties and legislatures.

Why would dictators establish and maintain these institutions?

First, dictators need to solicit the cooperation of those they rule. Even if dictators act merely in their own interest, if they are “predatory,” they benefit more when the economy functions well and the country is militarily secure (Levi

3For fascinating accounts of the rules governing the Argentine junta from 1976 to 1983 and the Chilean junta under Pinochet, see respectively Fontana (1987) and Barros (2002).
1988, McGuire and Olson 1996). Unless they can rely on exporting mineral resources (Robinson 2000, Wantchekon 2001), they need to solicit economic cooperation. To obtain this cooperation, they must provide incentives for people to reveal their private information, to work, and to save. To secure his own borders, Machiavelli reminds, the Prince needs to turn peasants into soldiers, and then he must give them some rights, since otherwise the soldiers would turn arms against him (Holmes 2003). To mobilize cooperation, dictators need institutions.

Second, dictators must neutralize threats of rebellion. Unions, student groups, and professional organizations may refuse to cooperate with the regime, but they can do even more damage. Severe discontent with the government can come from any segment of society. In Ecuador, for example, military officers seized power in 1963, closed Congress, and issued a manifesto declaring their “intention to guarantee capital and labor in an atmosphere of reason and patriotism” (Needler 1964: 49). They intended to implement policies to spark industrialization which would benefit workers and capitalists. Yet two years later, general strikes were organized by the various Chambers of Commerce throughout the country. The very groups that were to benefit from the regime’s policies were protesting the lack of access to decision-making. Without institutions through which their demands could be made, there was nothing to prevent the regime from acting as arbitrarily against them as for them (Neuhouser 1996).

Certainly dictators use force to solicit cooperation and to eliminate threats of rebellion. But the use of force is costly and may not always be effective. Writing of military dictatorship in Latin America, Cardoso observes that the “State is sufficiently strong to concentrate its attention and repressive apparatus against so-called subversive groups, but it is not as efficient when it comes to controlling the universities, for example, or even the bureaucracy itself” (1979: 48). As a result, the dictator may find it useful to rely on other strategies to induce cooperation and avert rebellion.

Encapsulation of outside groups within dictatorial legislatures and parties, however, comes at a price. Outsiders must have some, even if limited, influence on policy-making within these institutions. Otherwise, they have no incentive to bear the costs and stigma associated with cooperating with the regime.

For those who are willing to play along, legislatures are a forum for announcing preferences and organizing some policy compromises. King Hussein of Jordan, for example, offered the Muslim Brotherhood, a moderate Islamic group, influence over educational and social policies in exchange for cooperation with the regime (Schwedler 2000). Polish communists repeatedly sought participation of some Catholic groups: in a 1990 interview (Rolicki 1990), the former first secretary of the Polish United Workers’ (Communist) Party, Edward Gierek, revealed that he “intended to introduce to the Sejm [Parliament]
as a significant group of 25 percent of Catholic deputies. It would have permitted us ....,” Gierek continued, “to broaden the political base of the authorities” (italics supplied). For the opposition, in turn, participation in legislatures provides an opportunity to pursue its interests and values within the framework of the dictatorship.

In turn, as Friedrich and Brzezinski (1961: 29) observe, “it is the role of the party to provide a following for the dictator.” Members of a single party mobilize popular support and supervise behaviors of people unwilling to identify themselves with the dictator. A party is an instrument by which the dictatorship can penetrate and control the society (Gershenson and Grossman 2001). It is, in Mussolini’s phrase, the “capillary” through which the blood of the dictatorship diffuses through the society. In exchange, the party offers individuals willing to collaborate with the regime a vehicle for advancing their careers within a stable system of patronage. The party also extends access and legitimacy to particular groups in making demands on the government. The workers’ movement in Poland, for example, was able to mobilize in the first place because it had standing within the Communist Party.

A non-partisan legislature and a single party may serve as substitutes for each other, and if a legislature coexists with a single party or front, very often one institution takes precedence over the other. In communist dictatorships, for example, the Political Bureau of the Communist Party was the locus of real decision-making while legislative sessions were the place for pro forma speeches. Similarly in Kenya and Tanzania, important policy decisions were debated and amended within the regime party caucus, but then passed with little opposition on the legislative floor.

Sometimes, however, a single institution does not suffice. When the opposition sees a possibility of overthrowing a dictator, it must be given more to desist, namely, legislative representation of autonomous political parties. Of course, the presence of autonomous parties is a double-edged sword. They may not behave in ways favorable to the dictator. Brazilian military rulers, for example, established within the legislature what they thought would be a pro-government party, Aliança Renovadora Nacional (ARENA), and an official, but still loyal, opposition party, Movimento Democrático Brasileiro (MDB). In 1967-68, however, these parties in Congress rejected a government-sponsored tax bill, an international trade bill, and an effort to lift the immunity of a parliamentarian whom the military wished to prosecute for insulting the armed forces during a speech.

In the end, the Brazilian example is somewhat of an aberration, and dictators still manage to get over 96 percent of their initiatives passed in the legislature (Gandhi et al. 2003). While this figure does not capture the extent to which groups are able to amend legislation before it reaches the floor, it does reflect the degree to which the opposition is encapsulated by institutions. Participation
in the legislature absorbs their activities into the institutional framework of the dictatorship, according to the rules established by the dictator. Legalized opposition becomes domesticated opposition.

Institutions that matter are legislatures and parties. With them, dictatorships can be politically organized in three ways. In non-institutionalized regimes, the dictator relies on force or tradition alone. With a single institution, such as a non-partisan legislature or single party, the dictator can coopt effectively some segments of society. Finally, multiple legislative parties are indications of institutionalized pluralism. Table 1 shows the breakdown of dictatorships by institutional arrangement and type of dictator, distinguished as monarchic, military, and civilian rulers.

Note that overall, 19.3 percent of all dictatorships have neither a legislature nor parties. Over one-half have a single institution while 29.4 percent of years have multiple legislative parties. The ubiquity of a non-partisan legislature or a single party is due to civilian dictators: 64.2 percent of observations under civilian rule have a single institution. Kings and generals, in contrast, are more diverse in their institutional arrangements although monarchs are slightly more likely to govern without institutions.

3 Preferences for policies

Spending policies are expected to vary across these three institutional arrangements. Unconstrained by institutions, autocrats, as I will call such rulers, are free to enact policy that reflects solely their own preferences. But already with a single party or non-partisan legislature, the dictator must compromise with outside groups who participate within his institutional framework. Somewhat more autonomous multiple parties may pressure dictators to make even more policy concessions. Because institutions transmit information and provide a forum for negotiations, under institutionalized dictatorships policy outcomes are the result of compromises between the dictator and the potential opposition.

That policies will differ among institutional frameworks assumes that the dictator and outside groups hold dissimilar policy preferences. The dictator and the potential opposition disagree about government expenditures which have distributional consequences since spending decisions entail trade-offs: more

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4 This is meant to be a systematic way of thinking about all the various combinations of institutions under dictatorship, not a formal classification of these regimes which would require a much more extensive set of rules that take into account institutional arrangement, type of dictator, changes in heads, and possibly other factors.
allocations for $x$ means less spending on $y$. Yet in the end, we only observe the amounts spent on $x$ and $y$. The central question, then, is: who prioritizes what?

The idiosyncrasies of dictators are many, but the first priority of most rulers is to survive in power (Bueno de Mesquita et al. forthcoming). For this, all rulers ultimately rely on the loyalty of the military and its monopoly of force. The cooperation of the armed forces is especially critical for dictators who can rarely appeal to institutionalized rules or procedural legitimacy in maintaining power. Once the armed forces lend their support, even a blind cleric (e.g., Abdurrahman Wahid) or an octogenarian (e.g., Haile Selassie) can remain in power. Once they become dissatisfied with the dictator’s policies or their share of resources, however, they have the motivation and means to depose the ruler. Support from the military allows party members to oust their colleagues, as Edward Gierek did to Wladyslaw Gomulka in communist Poland, and sons to overthrow fathers, as Sheikh Hamad did in Qatar. With the power of the gun, small-time colonels can remove those who rule by God’s will, as Libya’s King Idris I discovered in 1969.

Because their tenures depend so crucially and tenuously on those who hold the monopoly on force, dictators work hard to cultivate support among the military. Dictators, of all types, often include military officers in decision-making either as advisors within cabinets or as members of military councils. Military officers and soldiers are well compensated, both monetarily and through separate housing and education for their children. Dictators may lavish still more funds on the armed forces for military hardware and technology. Otherwise, the young are left to rebel (Thompson 1973).

Military expenditures, however, are just one segment of the government’s overall budget. And the more resources allocated to the armed forces, the less there remains for other priorities, such as education and public investment. Yet these are precisely the items for which unions, business associations, and religious organizations want government funding. Leaders of these civil groups who participate within dictatorial institutions have both the incentives and access to demand these types of expenditures. More resources to Islamic education and social services in Jordan, for example, were beneficial to the Muslim Brotherhood and their constituents. The Polish railway union was able to deliver raises to workers in 1960’s, arguing to the communist government that their members had larger families. Expenditures on “butter,” rather than on “guns,” are tan-

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5It is true that not all interest groups or social classes within society may have different preferences from the dictator. Yet it must be true that the majority of society does; otherwise, the dictator would have been elected and the regime would be a democracy.

6Arguably, some dictators prioritize other goals, such as political stability or integrity of the armed forces, over their own personal survival in power. Yet even if they have goals other than survival, dictators, at least, want to be able to choose the time of their departure from power.
gible benefits for group members and allow their leaders the chance to claim
credit for them.7

Education, in particular, may be supported by a broad coalition, encompass-
ing the poor or unskilled who support education as a vehicle for reducing in-
come inequality (Kaufman and Seguro-Ubiergo 2001) and the middle and upper
classes who are often the beneficiaries of publicly-subsidized programs (Fernan-
dez and Rogerson 1995). The complementarity of physical and human capital
may also lead firms to support publicly-financed education since an educated
workforce may be necessary to sustain the rate of return to physical capital
and consequently, profits.8 Because groups within civil society can articulate
these demands within legislatures and parties, greater institutionalization under
dictatorship is expected to lead to greater spending on education.

Dictators, however, may have mixed feelings. Some dictators have an ex-
plicitly developmentalist outlook: they take it upon themselves to modernize
their societies no matter what the cost. Embarking upon “the Revolution from
Above” in which a system of state ownership of the means of production and
a centrally planned economy were to be established, Stalin proclaimed that “a
country like the USSR with its ruined and in general rather backward econ-
omy must pass through a period of primitive socialist accumulation in which
the forces provided by the pre-socialist forms of the economy... must be drawn
upon very freely.”9 No one could have imagined how much of a euphemism
“drawn upon very freely” would turn out to be. But Stalin was not the only
one. History is littered with dictators who came to power with grand nation-
alist visions and sought to develop their countries to fulfill them. For some of
these regimes, repression and forced mobilization of resources were not the only
requirements; investments in human and physical capital were also key compo-
nents of development. The success of the East Asian “miracles,” such as Korea
and Taiwan, for example, was driven by an educated workforce and state-led

Other dictators, in contrast, may not wish to allocate funds for education
for reasons independent of the opportunity costs. King Hassan of Morocco
summarized their concerns when he said: “There is no danger for the state
as grave as that of the so-called intellectual. It would be better if you were

7 Evidence on whether there is a direct trade-off between military and other expenditures is mixed (Russett 1982, Domke et al. 1983). From the stylized facts and assumptions about preferences, it may seem that I intend to weigh in on this debate. My intention, however, is not to determine the extent of the trade-off among dictatorships, but to show that dictatorial institutions have an impact on policies.

8 Galor and Moav (2002), for example, claim that capital-skill complementarity was behind entrepreneurs’ support for public education in 19th century western Europe.

9 Quoted in McAuley (1992: 38).

10 For other analysts, economic growth in East Asia was the result of market forces and laissez-faire policies rather than government investment or intervention (Krueger 1990). Yet no one disputes the importance of an educated workforce in these cases.
Indeed, schools and universities often are hotbeds of dissent. University students in South Korea were among the first to agitate against the dictatorship under Generals Park and Chun. Young radicals within Egypt’s medical and law schools were among those who plotted Sadat’s assassination. Education not only empowers the young, but may also augment the ranks of the middle class. If this class serves as the agent of liberalization and possibly of regime change (Lipset 1959), then dictators may better safeguard their chances of remaining in power by not allocating resources to education in the first place.

But is not the survival of these institutions linked to that of the dictator? If yes, then members of these institutions should seek to appease the military as much as the dictator does.

While these institutions are not wholly independent of the dictator, they frequently survive changes in dictatorial rulers. Table 2 shows the probability of institutions changing during a given year when one dictator is replaced by another. In almost 74 percent of cases in which a non-partisan legislature or single party exists, that institution remains even though the dictator who governed with it, relinquished power. When multiple legislative parties exist, they are likely to remain in almost 70 percent of the cases despite the change in ruler. The probabilities in the diagonal cells are always higher than the ones in other cells of the same row, indicating that even with changes in the effective head of government, the likelihood that the institutional arrangement remains the same is high under all political organizations of dictatorships.

*** Table 2 here ***

Because legislatures and parties frequently survive beyond the ruler who maintained them, their members may feel free to hold and express preferences different from his.12

4 Estimating the effect of institutions

If we are to determine the impact of dictatorial institutions on expenditures and revenues, we must first ask under what conditions these institutions exist. Unless this question is asked first, we will be unable to distinguish the effect of exogenous conditions from the effect of these institutions. Suppose that we observe that Kuwait, a non-institutionalized monarchy rich in oil with per

11Quoted in Herb (1999: 11).
12From these figures, of course, we cannot be certain that the same legislature or parties are retained from one dictator to the next. A dictator may close his predecessor’s single party and open one of his own. In Table 2, this situation is counted as retention of the same institutional arrangement even though the body’s membership may have changed. Nevertheless, the new institution may look similar to the old one since leaders of these groups have a comparative advantage in negotiating policy compromises between the government and their members.
capita income of just over $11,000, spent 8.2 percent of its total income, or almost twice the average, on the armed forces in 1988. What would the Kuwaiti dictatorship have spent on its soldiers had it governed with a legislature and political parties? This is what we want to know when we ask about the impact of dictatorial institutions on policies. But we do not observe 1988 Kuwait as an institutionalized dictatorship, only a non-institutionalized one.

The next best option is to have a case which was like 1988 Kuwait in every aspect other than its absence of institutions, but we will not find one: there are no other resource-rich monarchs with per capita income of $11,000 who govern with institutions.

Suppose, however, we could find a case to compare to 1988 Kuwait that has institutions, but also lower per capita income. Moreover, suppose that non-institutionalized and institutionalized regimes differ systematically in their income: average per capita income is $2372 under institutionalized dictatorships, lower than under non-institutionalized regimes ($3216). If what distinguishes institutionalized and non-institutionalized dictatorships are observable factors, such as income, these exogenous conditions can be controlled for in statistical analysis. If higher income, rather than their lack of institutions, is really what motivates higher spending in these regimes, we can disentangle these effects because they are observable and measurable.

Yet suppose that the motivations of dictators affect both their decision to have institutions and to devote resources to the military: dictators who act as enlightened political caretakers are less likely to spend on the military so that they can devote those funds to welfare-enhancing projects for the population. Because the researcher can neither observe nor measure these motivations, they must be considered buried in the error term, $u$, in:

$$Expenditures = \beta \text{Institutions} + X\gamma + u$$

where $X$ is a vector of observable factors, such as income, that determines military expenditures. Since we know that these motivations also influence the decision to have institutions, it is also true that $\text{Cov}(\text{Institutions}, u) \neq 0$. In this case, our estimates of the effect of institutions on military spending, $\beta$, will be biased.

Therefore, to distinguish the conditions, both observable and unobservable, under which dictatorial institutions exist from the effect of these institutions, we need to understand the circumstances under which they exist. We must model the decision to have institutions:

$$\text{Institutions} = Z\alpha + v$$

where $Z$ is a vector of observed factors, such as income, and $v$ includes unobserved factors, such as motivations. Heckman (1979) found that under certain
distributional assumptions, the inverse Mill ratios that come from estimating a model of (2) can approximate \( E(v) \). So by including the inverse Mill ratio which summarizes the unobservable factors affecting expenditures, the selection bias and endogeneity problem are resolved, and now \( Cov(\text{Institutions}, u) = 0 \).\(^{13}\)

Heckman’s two-step selection model, then, consists of first estimating

\[
\Pr(\text{Institutions} = j) = \alpha Z_{it} + v_{it}
\]

where \( i \) stands for country, \( t \) for year, and in this case, \( j = 0, 1, 2 \) (i.e., no, single, and multiple institutions). I use an ordered probit to estimate the first-stage selection equation which produces the inverse Mill ratios, \( \lambda_{itj} \).\(^{14}\)

The second-stage performance equation is

\[
Y_{itj} = \gamma_j X_{itj} + \lambda_{itj} + \epsilon_{itj}
\]

which is estimated for each \( j \) at a time.

For the subsample, \( j = 0 \), for example, we obtain an unbiased estimate of \( \gamma_0 \) due to the inclusion of \( \lambda_{it0} \). The estimate, \( \hat{\gamma}_0 \), is then applied to the entire sample to create \( \hat{Y}_{it} = \hat{\gamma}_0 X_{it} \). For each observation, \( \hat{Y}_{it} \) tells us what the value of \( Y \) would have been in that country-year, had \( j = 0 \), or had the dictatorship had no institutions. \( \hat{Y}_{it} \) is simply the average of these counterfactual observations, or the “average value of \( Y \) had all observations existed under no institutions.” The procedure is repeated for \( j = 1 \) and \( j = 2 \), producing average values of \( Y \) had all observations existed under a single institution or multiple institutions, respectively. These are the selection-corrected averages produced in the tables to follow.

The tables show selection-unbiased averages that are generated by estimating the performance equation in various ways: first, in a pooled time series and second, in fixed-effects models that takes into account unobserved country- and period-specific traits. Correction for serial correlation is included when appropriate. Finally, differences in average spending across differently-organized dictatorships are calculated, quantifying the impact of institutions.

\(^{13}\)Alternative estimation for coping with selection bias are reviewed by Winship and Morgan (1999).

\(^{14}\)For reasons discussed in Przeworski and Gandhi (2003), dictatorial institutions emerge for systematic reasons: namely, how badly the dictator needs cooperation from outside groups and the strength of the potential opposition. Proxies for the dictator’s need for cooperation include the type of dictator (\textit{MILITARY}, \textit{CIVILIAN}), possession of natural resources (\textit{RESOURCE}), and involvement in foreign war (\textit{WAR}). Strength of the potential opposition is indicated by the number of political parties inherited from the previous dictator (\textit{INHERIT}), sum of past transitions to authoritarianism (\textit{STRA}), and religious fractionalization (\textit{RELD}). The number of legislative parties, \textit{LPARTY}, is modeled as a function of these factors. See Przeworski and Gandhi (2003) for details.
Dictators are less constrained than democratic leaders in their ability to modify their institutional arrangements. During the post-war period, of the 418 dictators who survived in power for more than one year, 134 changed their legislatures or parties. Furthermore, 84 of these rulers revised their institutional arrangements more than once during their tenures. We can exploit these dynamics in another attempt to measure the effect of institutions on government spending through diachronic analysis.

Suppose our hypothesis is that having a legislature leads dictatorships to spend less on the armed forces. We can look at the military spending of a dictatorship that during its life has existed both with and without a legislature. Changes in spending should coincide with institutional changes.

The military dictatorship in Brazil serves as an example. From 1964 to 1967, when the junta kept the legislature inherited from the democratic period, average military spending was 2.33 percent. In response to challenges from parliamentarians, the generals closed the legislature for the next two years. Military expenditures climbed to 2.6 percent. After the legislature was reestablished in 1970, average spending on the armed forces fell precipitously to 1.41 percent for the remainder of the dictatorship. Military expenditures were lower during both periods of institutional rule than when the junta ruled without an assembly. Since using a single dictatorship controls for country-specific or regime-specific traits, these differences are likely due to changes in institutions. A similar procedure can be used to assess spending when countries are pooled.

5 Military expenditures

If the dictator wants to devote more resources to the military to win their support, when he governs without institutions, he has a free hand to act on this preference. Institutions, however, force him to take into consideration the preferences of outside groups who have other budgetary priorities. In this case, military expenditures are expected to be lower, and the presence of a dictatorial legislature and/or party will have influenced policy.

The dependent variable, military expenditures as a percentage of GDP, or $MILEXP$, is provided by the Stockholm International Peace Research Institute (SIPRI). Its figures are based (wherever possible) on the NATO definition that includes all current capital expenditure on the armed forces, including peacekeeping forces, the defense ministry and other government agencies engaged in defense projects, and paramilitary forces. The activities of these bodies that are covered include military operations and maintenance, military space activities, military research and development, and military aid (for the donor country). Finally, the pensions of retired military and civilian members of these organizations are also included in the SIPRI figure.
Coverage of the data is extensive, including almost 100 countries sometimes to as early as 1952. The sample includes 2737 observations under dictatorship. Military expenditures as a percentage of GDP range from 0.2 percent in Fiji, Guinea-Bissau, Togo, and Uganda to 48.5 percent in Kuwait during the Iraqi invasion. Over 90 percent of the observations spend 10 percent or less on the armed forces; for the entire sample, average military spending is 4.2 percent of total output.

To estimate the effect of institutions on military spending, I use the methods outlined in the previous section: first, comparison of selection-unbiased average military spending across differently-organized dictatorships and second, diachronic analysis.

Yet spending on the armed forces is not determined by dictatorial institutions alone. Government expenditures, in general, are highly dependent on a country’s wealth since governments in poor countries have little to spend on anything. Consequently, per capita income in PPP dollars (LEVEL) is included as a control variable.

Engagement in conflict is another obvious determinant of military expenditures (Gupta et al. 2001). Governments defending their territories against aggressors or attacking as belligerents need sufficient arms and personnel. Hence, included as a control is a dichotomous variable, WAR, coded 1 if the state is engaged in an armed conflict (either civil or interstate wars) on its territory or abroad, 0 otherwise.

Even states not fighting a war, however, may amass large militaries if they are involved in an arms race with neighboring rivals. To measure these regional tensions, REGAVE is the unweighted average of the military expenditures (as a percentage of GDP) for all the other countries within a region for a given country during the current year. REGAVE does not measure direct dyadic rivalries between states, but is a proxy for regional tensions. Alternatively, it measures regional cooperation if states within a region are part of an alliance in which they share defense costs. Hungary, for example, may adjust its military spending according to that of its neighbors, not out of fear of other Eastern European countries, but because it is a member of the Warsaw Pact.

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15 Other measures of military expenditures from the World Bank’s World Development Indicators (based upon the World Expenditures and Arms Transfers figures) and the IMF’s Government Finance Statistics (taken from national accounts) exist, but do not offer as complete coverage. A consistent time-series does not appear for the WDI until 1980 and for the GFS until 1970.

16 When the number of observations is different in statistical analysis, it is because some other variables are missing data.

17 Davoodi et al. (1999) use a measure of regional tension that is the unweighted average of the military expenditures of all states bordering country i. For convenience, REGAVE is a regionally-based average.

18 What determines alliance members’ contributions to collective defense is the subject of
Finally, military rulers are thought to favor the interests of their own men and the organization of which they are members, possibly resulting in greater spending on the armed forces (Nordlinger 1977, Perlmutter 1977). Therefore, the type of dictator may influence how much resources are devoted to the military. Dummy variables, MILITARY and CIVILIAN, are included to determine whether military rulers have institutional interests (monarchs are omitted category).

As they are observed, dictators who rule with neither a legislature nor parties spend on average 5.244 percent of total output on the military while those who rule with a single institution spend 0.998 percent less. Multiple legislative parties reduce average spending even further: 0.837 percent less. Average military expenditures decline monotonically with greater institutionalization. Table 3 provides these observed averages and their differences along with selection-corrected averages.19

Once the conditions under which institutions exist are taken into account and control variables included, the selection-corrected averages confirm that non-institutionalized regimes spend the most on the military. This finding holds regardless of method of estimation: whether the time-series cross-sectional observations are pooled correcting for first-order serial correlation, whether country effects are included, and whether period effects are added as well. Because F-tests indicate that country-specific effects are necessary, I focus on the results of this model.20 The results show that had all dictators relied on force or tradition alone, they on average would have spent 5.962 percent of total income on the armed forces. Outside groups participating within a non-partisan legislature or single party press for policy concessions from the dictator, lowering

19 Because I present other tables with the same structure, here is a short guide to reading them, first by row, then by column. The first row provides observed values. Then follow various selection-corrected average predicated values of the dependent variable under the three types of dictatorship. The correction for selection is always based on the ordered probit described in Footnote 13. The performance models are estimated in various ways: first, in a pooled time series correcting for first-order serial correlation. Second, a fixed-effects model that takes into account unobserved country-specific traits along with serial correlation. Finally, a two-way fixed effects model that takes into account heterogeneity across both countries and years, but serial correlation is not corrected. The first three columns show the averages under dictatorships with no, single, and multiple institutions. “N” stands for number of cases in each category. The final three columns compare the averages under different types of dictatorship, indicating the difference that having institutions makes.

20 The following are true for this analysis and those to follow: first, the one-way and two-way fixed effects model does not include the variables MILITARY and CIVILIAN since both are time invariant for several countries. Consequently, the F-tests compare the results of the one-way fixed effects model with those of a pooled model that also excludes these variables. Second, results are similar if fixed effects by dictator, rather than by country, are included.
average military spending by almost 2 percent. The strength of the potential opposition in semi-autonomous parties, however, forces the dictator to compromise even further. Had all dictators governed with multiple legislative parties, they would have devoted on average only 3.170 percent of GDP to the military.

Diachronic analysis is both a check on these findings and a way of disaggregating the institutional source of the variation in expenditures. The analysis examines observed values to determine whether institutions still have an impact regardless of their timing. The difference in average spending between dictatorships with and without institutions should persist whether those institutions followed or preceded non-institutionalized regimes. Row 1 of Table 4 shows observed average military spending in dictatorships with and without legislatures.\footnote{Table 4 here}

Overall, a legislature reduces average military spending by 1.174 percent of total income. More interesting are the results when these cases are further disaggregated. These assemblies, however, have the greatest impact in countries that have had a legislative tradition throughout years of dictatorships. Dictators who never ruled with a legislature spend on average 15.898 percent of total income on the armed forces.\footnote{This subsample is composed of observations from only three countries: Oman, Saudi Arabia, and Tonga.} In contrast, countries under dictatorship that have always had a legislature spend just 3.869 percent. When dictators open legislatures after they have been closed, these assemblies seem not to be able to make a dent in the military budget. These regimes, in fact, have slightly higher average military spending than their non-institutionalized counterparts. Yet once dictators close assemblies that they either inherited or previously established themselves, they spend almost 1 percent more on the armed forces. Without institutions, their survival depends on the military more than ever.

Parties also are expected to reduce military expenditures. A single party provides outside groups some access to decision-making while semi-autonomous parties reflect the potential opposition’s full strength in extracting policy concessions. The result should be lower military spending. Table 5 provides diachronic analysis of military spending by dictatorial parties.
The overall averages show that dictators who ban parties on average spend 5.152 percent on the military, and average spending declines with the number of parties. Yet again, what is striking is what happens in countries with stable political organization over time. In those countries which never allowed parties, average military spending is as high as 10.288 percent of GDP. Stable single party dictatorships devote 8.185 percent of total income to the military while multiparty regimes spend only 2.484 percent. About one-half of the observations of no party dictatorships occur in countries with per capita income above $7000, suggesting that differences in military spending reflect differences in country wealth rather than in institutional arrangements. Wealthier countries may just devote a higher share of resources to the military. Yet the differences in military expenditures by the number of parties remain among lower income countries: no party dictatorships on average spend 14.500 percent, single party regimes spend 6.251 percent, and multiparty dictatorships provide 1.487 percent. These differences in policy towards the armed forces are not due to income alone.

So far we have learned that institutions under dictatorship reduce military spending, a finding that survives after controlling for other factors and correcting for correlation among observations and selection-bias. The diachronic analysis corroborates the evidence from the selection-unbiased averages and provides an additional finding: institutional stability within dictatorships provides groups within society the greatest chance to extract policy concessions from the regime.

Another finding from this analysis concerns the effect on military spending of the civilian or military character of the leader. On the one hand, military rulers are thought to favor the interests of their own men and the organization of which they are members, possibly resulting in greater spending on the armed forces. On the other hand, little evidence of this partiality exists (Hayes 1975, Jackman 1976, McKinlay and Cohen 1975, 1976, Remmer 1978).

I find, however, that whether military and civilian dictators behave similarly depends on the presence of institutions. The effect of the type of dictator on military spending is measured by the coefficients on the dummy variables indicating the military or civilian character of the dictator (MILITARY and CIVILIAN, respectively) in the second-stage performance regressions. Table 6 shows these coefficients along with those on the other control variables.

\[23\text{Of the observations for which per capita income data exist, 151 are stable no party regimes, 55 are single party dictatorships, and 70 are multiparty regimes. Of the 151 no party regimes, 85 have incomes over $7000. The above averages are the result of removing these wealthy observations.}\]
Among autocrats, the negative coefficients on MILITARY and CIVILIAN indicate that military and civilian dictators actually spend less on the armed forces than monarchs (the omitted category). The finding supports Ross (2001) who reminds that Gulf monarchs use their oil rents not only to buy political acquiescence through provision of social programs, but also to construct a strong coercive apparatus used to fight both internal and external enemies. In addition, without institutions, civilian and military rulers do not behave differently from each other.24

When ruling with a single institution, civilian dictators have a positive impact on military spending, but less than their military counterparts. Within a broadened dictatorship, civilian rulers go even further: they actually reduce military expenditures in comparison to military dictators who continue to spend although less so than had they governed with a single institution. When confronted with institutionalized pluralism, civilian dictators respond more dramatically to the demands of outside groups to cut military spending. Perhaps this is out of necessity. Unlike their military and royal counterparts, civilians have no separate base of organization other than that provided by parties.

6 Educational expenditures

We now have evidence that dictatorial legislatures and parties have an impact on military expenditures, but does lower military spending extracted as a policy concession by outside groups within institutions translate into higher spending in other areas, such as education? If there is a trade-off in spending that legislatures and parties can influence, we should see educational expenditures rise with the degree of institutionalization under dictatorship. The methods previously used to assess the impact of institutions on military spending are employed here.

The dependent variable is educational expenditures as a percentage of GNP, EDUCEXP. The data are compiled by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) from official responses to surveys and from reports provided by education authorities in each country. They include all central government expenditures on public education plus subsidies to private education at the primary, secondary, and tertiary levels.

Data on educational expenditures appear every five years, from 1960 to 1980 when a continuous time-series finally begins. Coverage across regions is

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24The result of an F test indicates that at the 0.01 significance level, the null hypothesis that the coefficients on MILITARY and CIVILIAN are equivalent can not be rejected [0.0751 < F(1,516)].
sporadic: East Asian, East European, and Southern European dictatorships are severely underrepresented. The sample includes 1149 observations under dictatorship for which average educational spending is 4.178 percent of total output. Educational expenditures as a portion of GNP range from a low of 0.270 percent in 1984 Laos to a maximum of 12.910 percent in Mongolia on the eve of the democratic transition in 1990.

First, as with military spending, how much is spent on education again depends on a country’s wealth, measured by per capita income (LEVEL). In addition, the dummy variables for types of dictator, MILITARY and CIVILIAN, are included.

Demographic factors, such as the number of school-age children, serve as a barometer of demand for education. Since no measures of this subsample of the population are available, however, the percentage of the population under the age of fifteen is included as a rough proxy (UNDER15). A large cohort under the age of fifteen translates into significant demand for education which should be met by greater educational expenditures.

How well the government can meet this demand depends on how constrained are its finances. Developing nations, of which many are dictatorships, are frequently saddled with crushing debt payments. Failure to service their debt can result in default and punishment by international lenders. Debt repayment, however, often occurs at the expense of social programs. Consequently, as debt service as a percentage of GDP, DEBTSERV, increases, educational expenditures are expected to decline.

Finally, how motivated is the dictator to educate the population depends on whether he has developmentalist goals and how easily he can implement them. Content with a largely agricultural society, the dictator may not provide education to farmers located in far-flung villages. Greater industrialization, however, results in migration to cities of formerly agricultural workers, and a developmentalist dictator may devote resources to transform the unskilled labor pool into an educated, and potentially more productive, workforce. The percentage of the labor force involved in agriculture, LFAGRIC, then, captures the fact that the decline of agriculture and migration to cities provide an opportunity to some dictators for investment in human capital that can drive development.

Table 7 shows average educational spending in differently-organized dicta-

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25 Cross-national time-series data on educational expenditures are scarce, but not nearly as problematic as other education-related measures, such as levels of school enrollment and literacy (Behrman and Rosenzweig 1994).

26 Average educational spending is roughly the same as average military expenditures: 4.2 percent of total output. But the number of observations of educational data is much smaller, and the distribution of cases is less right-skewed. The median observation of educational spending is 3.9 percent of total output while for military expenditures, it was 2.7 percent.
torships. From the observed cases, it is apparent that educational spending increases with institutionalization. Dictatorships with multiple legislative parties spend on average 0.671 percent more on education than regimes with a single institution and 1.004 percent more than non-institutionalized regimes.

*** Table 7 here ***

After correction of selection bias and inclusion of controls for wealth and demand and supply of education, the results indicate that non-institutionalized dictatorships on average spend the least on education regardless of the method of estimation. Results from the model incorporating country-specific effects indicate that had all dictators been unconstrained by institutions, they on average would have devoted only 2.076 percent of GNP on education.27 Workers, firm owners, and professionals incorporated within a non-partisan legislature or single party can pressure the dictator to spend even more: 3.494 percent. These groups, however, have the most impact when they have their own legislative parties. Had all dictators governed with multiple parties, they would have spent 6.876 percent of total income on schools and teachers.

Diachronic analysis again allows for further investigation of the role of legislatures in determining educational spending.28 Table 8 confirms about legislatures what we learned more generally about institutions: institutions and educational expenditures are positively correlated.

*** Table 8 here ***

Average educational spending among dictators who must contend with a legislature is 0.628 percent higher than among those who are unconstrained by an assembly. Table 8 also shows that legislatures really make a difference only when they are established after a period of not having had one.

7 Government salaries and wages

The findings on spending on the armed forces and education suggest a trade-off between these goods that dictatorial legislatures and parties are able to influence. When the dictator is unconstrained by institutions, average military spending is high while educational expenditures remain low. In contrast, when governing with institutions, the dictator must take into account the preferences of others who have agreed to support him and make policy concessions in the form of lower military expenditures and higher educational spending.

27 I focus on results from the model with one-way fixed effects since F-tests again indicate that country-specific effects are necessary.

28 Due to the general dearth of observations on educational expenditures, diachronic analysis by number of parties is not possible. In some categories, sample size is too small as to make inferences meaningless.
Dictators, however, can insure the support of outsiders through means other
than policy concessions. They can distribute spoils, and as heads of government,
they are in an especially good position to use the state apparatus to exchange
material benefits for support. Government employment is the most common
form of patronage.29 As an observer of Kuwait’s expanding bureaucracy noted,
“Some of the inefficiency is deliberate, because civil service appointments are
viewed as a vehicle for distributing oil wealth among the citizenry and as a
means of giving idle Kuwaitis a job. Consequently, most offices are grossly
over-staffed; five people are commonly employed to do work that one could
perform.”30

Yet the relationship between institutions and this form of patronage is not
obvious. The dictator may trade off between policy compromises and spoils
in coopting outsiders in which case government employment should increase
with less institutionalization. Rather than make important concessions on
institutional autonomy and policies, dictators provide pure rents while outside
groups accept this trade-off. This substitution of spoils for policy concessions is
the central idea in the rentier state literature (Crystal 1989, Luciani 1987, Karl
1997). Yet participation within a legislature provides these groups with a forum
in which they may lobby for additional rents. And once they are organized in
semi-autonomous parties, their demand for more perks and privileges may be
overwhelming so that the distribution of spoils is as high under institutionalized
regimes as it is under non-institutionalized ones.

The dependent variable is government salaries and wages as a percentage of
GDP, GOVTEMP, which consists of all payments in cash, but not in kind,
to employees in return for services rendered, before deduction of withholding
taxes and employee contributions to social security and pension funds. The
observations range from 0.76 percent in 1992 Belarus to 23.46 percent in 1985
Suriname.

In addition to their need to coopt potential opposition, governments may
face other competing pressures for and against public employment. How well
dictators can pay their wage bill may again depend on budget constraints. Debt
service can eviscerate spending on government employment as it does social
expenditures. Consequently, debt service as a percentage of total income,
DEBTSERV, again is included as a control variable.

Yet as their economies are exposed to increasing external risk in the forms
of trade volatility and globalization, rulers may expand government spending
to mitigate the risks confronting their citizens (Rodrik 1998). Dictators may

29 Dictators seem to rely more on this form of patronage than their democratic counterparts. Average spending on government salaries and wages as a percentage of GDP is 6.085 (s.d. = 3.279; n = 1133) in democracies and 7.429 (s.d. = 3.826; n = 1035) under dictatorships.
focus, in particular, on providing employment opportunities through the state to cushion workers against these risks. In Egypt, for example, the state has always been the employer of last resort, guaranteeing jobs for university graduates. Since exposure to external risk increases with trade openness, the percentage of total income from imports and exports, $TR_{TOTAL}$, is included. As trade openness increases, spending on government wages and salaries should increase to mitigate the impact of globalization and outside shocks on domestic economies.

In distributing government largesse, however, dictators do not treat everyone equally. Frequently, they favor their own ethnic, religious, or cultural groups. Their own ethnic group may have constituted their original basis of support, as in the cases of Assad and the Alawites in Syria and Kérékou and the Bariba in Benin. Various perks and spoils, such as government employment, may be distributed to members of this group to both reward and maintain their support. Leaders may resort to this favoritism particularly if the competition among ethnic groups is fierce (Bates 1974, Olzak 1992). Therefore, as ethnic polarization ($ETHPOLAR$) increases, the amount of spoils given as compensation for government employment is expected to rise.

Finally, as with previous analyses, per capita income ($LEVEL$) is included to control for the fact that the amount of resources the government has to devote to public employment is highly dependent on the country’s overall wealth. Dummy variables for type of dictator, MILITARY and CIVILIAN, again are included.

Observed averages by institutional arrangements show that dictatorships vary little in the amount of spoils they offer through public employment: the means by regimes are all close to the overall average of 7.400 percent. Table 9 shows the observed and selection-corrected averages of spending on government employment by differently-organized dictatorships.

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31 Whether these external risks actually translate into higher demand for public employment and greater spending on government salaries depends on additional factors. If private sector wages are sufficiently high as to compensate for the increased risks, workers may decide that the opportunity costs entailed in government jobs are too high (Fogel and Lewin 1974). In addition, the role of public sector unions is important. Trade openness may result in increased government transfers only if unions are there to demand compensation for the increased risk (see Cameron 1978 regarding democracies).

Unfortunately, systematic cross-national time-series data for private sector wages do not exist. Furthermore, in dictatorships, it is difficult to determine whether compensation is a direct result of increased pressure by labor. Union density rarely corresponds to strength of the labor movement under dictatorship (Rudra 2002). China, for example, has one of the highest union density among dictatorships, yet labor has little bargaining power (Collier and Collier 1991).

32 Their continued support may be crucial. Londregan et al. (1995) find that in Africa, a leader is most likely to be replaced by a member of his or her own ethnic group. These replacements were more likely to have been challengers rather than designated successors.

33 Note that tensions are expected to be high when two similarly-sized groups rather than several small groups, are competing for resources.
Once country-specific effects are taken into account, however, the results show that dictators do behave differently, but they do not substitute spoils for policy concessions in coopting outside groups. Had all dictators relied on tradition or force alone, they on average would have spent 7.539 percent of total income on government employment. But dictators with multiple legislative parties spend even more: 9.129 percent. Average spending on government salaries is lowest in dictatorships with a single party or non-partisan legislature. Single institution dictatorships may spend less on administrative salaries and wages, in part, because they offer a different form of spoils: employment in state-owned enterprises. The percentage of economic activity due to state-owned enterprises is highest in dictatorships with a single institution: 12.278 percent. Those with multiple institutions spend 11.656 percent, and those without institutions allocate 8.418 percent.34

Dictators who are strong enough the resist institutionalization can also get away with providing few perks and privileges. When the potential opposition is strong enough, however, dictators must provide policy concessions and spoils, the distribution of both of which are facilitated by institutions.

8 Conclusion

We have seen that institutions under dictatorship have an impact on government policies. The increase in investments in human capital taken together with the decline in average military spending shows that dictatorial institutions affect the mix of military and productive expenditures.

Within an assembly or party congress, leaders of religious groups, entrepreneurial associations, labor organizations, and other groups who participate within these institutions can express their preferences on policies. Shouted on the streets, these demands would have appeared as acts of resistance to the regime; within institutions, they constitute normal legislative debate. The dictator can hear them, express his own preferences, and bargaining can proceed efficiently with maximum information and minimum uncertainty between both sides. In addition, if proceedings are secret; each side can each claim victory afterwards. Institutions “enable” policy concessions by providing information to both sides and a secure forum in which they may bargain (Holmes 1995).

Yet it does not seem to be the case that institutions affect policies for reasons purely related to efficiency. The enabling story can not explain why policies

34 An indicator of the extent to which state-owned enterprises is not included in the statistical analysis due to the dearth of observations.
differ between dictatorships with a single institution and those with multiple legislative parties. To explain these differences, we must return to the reason why dictators establish and maintain institutions in the first place: to coopt outside groups within society. When the potential opposition is strongest, to incorporate it, the dictator must offer participation within somewhat autonomous legislative parties. From these parties, outside groups are strong enough to extract the most in terms of policy concessions and spoils. These concessions in policy and rents decrease the dictator’s utility, but are made to avoid rebellion against the regime. When the potential opposition is slightly weaker, the dictator is more able to control negotiations within a single party or non-partisan legislature. But still, outside groups manage to influence some policy-making while the dictator is at the height of his power only when he need not concede institutions.

The fact that institutions affect policies means that institutions are not meaningless “window-dressing.” Furthermore, if institutions influence policies, they should also determine outcomes.
9 Codebook

COUNTRY: 138 countries that experienced dictatorship at any point during the 1946-1996 period. The following 4 countries are not included due to the collective nature of leadership: Bosnia - Hercegovina (after 1995), Lebanon, Serbia - Montenegro, and Yugoslavia (after 1979).

YEAR: From 1946 or year of beginning of regime to 1996 or respective end date of country.

CIVILIAN: Civilian effective head. Dummy variable coded 1 if the effective head is a civilian (neither a monarch nor a military ruler). Compiled from Banks’ Political Handbook and various historical sources.

DEBTSERV: Debt service as a percentage of GDP. Source is World Bank (2000).

EDUCEXP: Total public spending on education by the central government as a percentage of GNP. Source is World Bank (2000).

ETHPOLAR: Ethnic polarization, measured as

\[ 1 - \sum (0.5 - p_i)^2 \times \frac{p_i}{0.25} \]

where \( p_i \) is the proportion of each ethnic group within the population, following Reynal-Querol (2002). The data on ethnic group proportions come from Fearon (2002).

GOVTEMPL: Spending on government wages and salaries by the central government as a percentage of GDP. Spending on government wages and salaries as a percentage of total expenditures is multiplied by total expenditures as a percentage of GDP; both series are from World Bank (2000).

INHERIT: Number of political parties inherited from the previous ruler. Created from LPARTY.

LEVEL: Per capita income in 1985 PPP constant dollars. Penn World Tables 5.6a is the source from 1950 to 1992. When data are missing or post-1992, the source is Easterly and Sewadeh (2001).

LFAGRIC: Labor force in agriculture as a percentage of the population. Source is World Bank (2000).

LPARTY: Number of political parties in the legislature. Coded 0 if there are no political parties or if there are multiple political parties but no legislature, 1 if one party exists even if there is no legislature, 2 if two or more political parties exist in the legislature. When multiple parties present themselves to voters as a single list, LPARTY = 1. Compiled from Banks’ Political Handbook,
Banks (1996), Beck et al. (2000), Przeworski et al. (2000), and other historical sources.

**MILEXP**: Military expenditures as a percentage of GDP. Source is annual SIPRI Yearbooks.

**MILITARY**: Dummy variable coded 1 if the effective head is or ever was a member of the military by profession, 0 if civilian. Note that retired members of the military are coded as MILITARY = 1 since the shedding of a uniform is not necessarily enough to indicate the civilian character of a leader. Also note that rulers who come to power as head of guerilla movements are not considered as military.

**NONTAX**: Nontax revenues of the central government. Created from a measure of nontax revenues as a percentage of current revenues available in World Bank (2000). Nontax revenue includes required nonrepayable receipts for public purposes, such as fines, administrative fees, or entrepreneurial income from government ownership of property and voluntary, unrequited nonrepayable receipts other than from governmental sources. Proceeds of grants and borrowing, funds arising from the repayment of previous lending by governments, incurrence of liabilities, and proceeds from the sale of capital assets are not included.

**OPENL**: Open legislature. Dummy variable coded 1 if a legislature is open, 0 otherwise. The legislature must contain at least twenty members, so that a military junta with legislative power does not count as a legislature. Second, the body must have some legislative power to consider ordinary pieces of legislations. Therefore, constituent assemblies do not count as legislatures unless they consider both constitutional matters and ordinary legislation. Consultative Councils particularly in the Gulf states and Councils of the Nation (in Uruguay and Nicaragua) are not considered legislatures because they exist only in an advisory capacity. Compiled from Banks' *Political Handbook*, Banks (1996), Beck et al. (2000), and other historical sources.

**REGAVE**: Regional average of military spending, measured as a percentage of GDP. This variable is created by averaging the military expenditures of all countries within the same region as country i (excluding country i's own expenditures). Regions include: South Asia, East Asia, Southeast Asia, Pacific Islands and Oceania, Middle East and North Africa, Sub-Saharan Africa, Latin America, Caribbean and non-Iberic America, Eastern Europe and the former Soviet Union, Industrial countries (primarily Western Europe), and Oil countries (primarily Persian Gulf).

**RELD**: Index of religious fractionalization. This is a time invariant variable, calculated as $1 - \sum p_i^2$ where $p_i$ indicates the share of the population that is Catholic, Protestant, Moslem, or of “other” religions. The primary source is
Przeworski et al. (2000) with updated information provided by Encyclopedia Britannica’s on-line Statistical Info for Countries.

RESOURCE: Mineral resource endowment of countries. This is a time invariant variable coded 1 if the average ratio of mineral exports (including oil) to total exports exceeds 50 percent. Sources include IMF (1999) and World Bank (2000).

STRA: Sum of past transitions to authoritarianism in a country. If a country experienced a transition to authoritarianism before 1946, STRA is coded 1 in 1946. Source is Przeworski et al. (2000).

TRTOTAL: Imports and exports as a percentage of GDP. Source is Easterly and Sewadeh (2001).

UNDER15: Population under fifteen years of age, as a percentage of total population. Constructed by dividing level of the population between zero and fourteen years of age from World Bank (2000) by total population from Przeworski et al. (2000).

WAR: Involvement in war. Dummy variable coded 1 if the country is involved in an inter-state or civil war during the current year, whether conflict is occurring on its own territory or not, 0 otherwise. Source: Correlates of War website.

λ: Inverse Mill ratio generated from Heckman’s selection equation used to account for non-random missing data and the unobservable factors affecting policies in the outcome equations.
10 Works cited


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