



The Logic of Authoritarian Bargains

A Test of a Structural Model

Raj M. Desai
Anders Olofsgård
Tarik M. Yousef

THE LOGIC OF AUTHORITARIAN BARGAINS: A TEST OF A STRUCTURAL MODEL

Raj M. Desai

The Wolfensohn Center for Development
The Brookings Institution
Edmund A. Walsh School of Foreign Service
Georgetown University

Anders Olofsgård

Edmund A. Walsh School of Foreign Service
Georgetown University

Tarik M. Yousef

The Wolfensohn Center for Development
The Brookings Institution
Edmund A. Walsh School of Foreign Service
Georgetown University

JANUARY 2007

THE BROOKINGS INSTITUTION
1775 MASSACHUSETTS AVE., NW
WASHINGTON, DC 20036

The authors thank Michael Bailey, Carles Boix, Marc Busch, Thomas Carothers, Garance Genicot, James Habyarimana, Michael Hanmer, Steve Heydemann, Anna Maria Mayda, Kathleen McNamara, Mustafa Nabli, George Shambaugh, and David Strömberg for comments on earlier drafts. A previous version of this paper was also prepared for a World Bank report on labor market reform in the Middle East and North Africa. This paper benefited from presentations at the annual meeting of the American Political Science Association, Washington, D.C., and at seminars at the University of Chicago, the Center for Global Development, the Brookings Institution, and Georgetown University's Public Policy Institute. The authors are grateful to the Office of the Chief Economist for the Middle East and North Africa Department of the World Bank, and to the Edmund A. Walsh School of Foreign Service for financial support. Michael Robbins provided invaluable research assistance.

The views expressed in this working paper do not necessarily reflect the official position of Brookings, its board or the advisory council members.

© The Brookings Institution

ISBN: 978-0-9790376-2-7

Contents

Executive Summary	4
Introduction	4
Regime Support in Non-Democratic States	5
Redistribution and the Economics of Authoritarianism	6
Political Control and Authoritarian Breakdown	6
Political Rights and Economic Security: Is There a Tradeoff?	7
Formalizing the Authoritarian Bargain	8
Characterizing Equilibrium Bargains	8
Operationalization	10
Data and Results	12
Specification and Data	12
Basic Results	14
Public Sector Wages	15
Simultaneity and Endogeneity	16
Testing the Limits of the Authoritarian Bargain	16
Regional, Regime, and Ideological Effects	16
Military Rule and Repression	17
Decade Effects and Regime Durability	18
Conclusion	19
Appendix	21
Figures and Tables	24
Notes	31
References	33

Executive Summary

Dictatorships do not survive by repression alone. Rather, dictatorial rule is often explained as an “authoritarian bargain” by which citizens relinquish political rights for economic security. The applicability of the authoritarian bargain to decision-making in non-democratic states, however, has not been thoroughly examined. We conceptualize this bargain as a simple, repeated game between a representative citizen and an autocrat who faces the threat of insurrection, and where economic benefits and political rights are simultaneously determined according to the opportunity costs the regime faces in providing these “goods.” Our model yields precise implications for the empirical patterns that are expected to exist. Tests of a system of equations with panel data comprising over 45 non-democratic states between 1984 and 1999 confirm the generality of the authoritarian-bargain thesis. The bargain, however, tends to break down in military or in highly-repressive dictatorships.

Introduction

How do authoritarian regimes stay in power? Repression—the classic answer—is not enough, since repression also creates the “dictator’s dilemma” by which citizens feign support for the ruler even as they collude to rebel, increasing the degree of insecurity a dictator faces (Tullock 1987, Wintrobe 2002). More likely, some form of redistribution to citizens is necessary to secure and maintain their loyalty. Dictatorial regimes are therefore said to rely on an “authoritarian bargain,” or an implicit arrangement between ruling elites and citizens whereby citizens relinquish political freedom in exchange for public goods.¹

Much of the rationale explaining the persistence of such bargains has been induced from regional or case studies of policy-making in dictatorships and of authoritarian withdrawal. In addition, econometric studies of public spending or of democratization in dictatorial regimes examine the two sides of the “bargain” separately. By contrast, we aim to develop a framework that may be used to test the generality of the claim that political rights and public goods are substitutes in non-democratic states across these countries and over time. We develop a simple structural equation model of an authoritarian bargain, which predicts a distinct set of relationships between the two main variables that delineate the outcome of the bargain, on the one hand, and a wider set of explanatory variables on the other. The central purpose of our model—as with similar classes of structural equation models—is not to highlight a single, specific causal mechanism. Rather, it is to identify a set of interrelationships between variables based on some *a priori* principles, and to confirm whether these patterns are, in fact, present in the data.²

We proceed in two steps. We first develop a model of an equilibrium authoritarian bargain, based on the presumption that non-democratic states secure regime support through the allocation of two substitutable “goods” to the public: economic benefits and political rights. The former consists of explicit and implicit transfers, subsidies, protections, and regulations that guarantee profits, employment, or consumption above what would otherwise prevail. The latter consists of partial political liberalization or of expanding citizen participation in governmental decision-making.

We posit that economic benefits and political liberalization both impose different opportunity costs on the incumbent dictator, and that the unique combination of these two outputs reflects these cost constraints. All regimes, naturally, are limited in their capacity to spend. A fiscal crisis that raises the cost to the regime of delivering economic benefits to citizens, consequently, prompts the extension of political rights to previously denied segments of the population alongside a reduction in economic benefits. Conversely, political openings create opportunities for regime opponents. The credibility of any challenges to dictatorial opposition, however, will depend on the level of endemic support for the dictator. Rulers facing stronger and more credible opposition threats may be loath to expand political rights, but are also more likely to enlarge the public provision of economic benefits to the population as compensation. In a second step, therefore, we determine whether these hypothesized relationships are supported by cross-national time-series data drawn from non-democratic states over fifteen years.

In most quantitative analyses, measures of democracy are regressed on economic variables, or measures of economic liberalization are regressed on regime variables. Our approach, however, is differently conceived in two respects. First, since decisions of rulers to liberalize the economy and loosen their grip on political participation are jointly determined, we estimate both as a system of dependent variables on a set of factors that determine the mix of the two. Second, we allow the first-order conditions of our model to determine the nature, impact, and functional relationship of the explanatory variables. Consequently, we do not begin with a reduced-form causal relationship that is then subjected to multiple re-estimations with different sets of explanatory variables. Rather, based on a model that encompasses the logic underlying the nature of dictatorial authority and citizen responses, we examine the extent to which the complete set of relationships is empirically justified.

We begin by examining prior research on support for regimes in autocratic states, which indirectly suggests that economic and political choices in dictatorships are jointly determined. We then develop a model that formalizes the basic problem of political tenure in non-democratic regimes, and that generates hypotheses according to which political rights and economic benefits are simultaneously affected by similar factors. The next section tests these hypothesized relationships with cross-national, time-series data from non-democratic states between 1984 and 1999. The final section concludes.

Regime Support in Non-Democratic States

Support for regimes is one of the central concepts in modern comparative politics, but rarely investigated in non-democratic states.³ Comparable conclusions about dictatorships tend to be based on assumptions of authoritarian stability and from evidence of their breakdown. In this regard, one of the better-known perspectives on authoritarian rule reflects the “contract” between dictators and different constituencies whereby the latter acquiesce to constraints on their political participation and liberties in exchange for economic security. Examples of these authoritarian bargains abound. In Mexico the ruling Institutional Revolutionary Party (PRI) for many years provided organized labor with numerous benefits while these labor groups, in turn, supported successive PRI-governments’ restrictions on political freedom (Collier 1992; Murillo 2000). In South Korea, rulers reached similar implicit and explicit agreements with major domestic investors and large conglomerates (Kang 2002). In the Middle East, authoritarian bargains have remained resilient particularly in oil-rich states, where welfare spending provided by earnings from

oil exports have historically granted rulers considerable autonomy from pressures to liberalize politically (Heydemann 2002). In non-democratic Sub-Saharan Africa, finally, the provision of private goods by rulers to groups on the basis of ethnic or linguistic solidarity has long been a hallmark of those regimes' survival (Olivier de Sardan 1999).

The nature of the bargain underpinning authoritarian rule is informed by two separate but related strands of empirical and theoretical work on decision-making in dictatorships. On the one hand, economic theories of dictatorship focus on the ruler's choice of fiscal or redistributive policies and other mechanisms ruling elites use to gain popular support. By contrast, other analyses of dictatorship have examined how rulers use political cooptation and internal political reform to maintain regime stability given exogenous economic conditions. We examine each in turn.

Redistribution and the Economics of Authoritarianism

Formal analyses of dictatorship have shown that, in addition to repression, autocracies are often sustained through a system of specialized patronage relationships and through a series of strategic transfers to, among others, the heads of armed forces, national and local government bureaucrats, individuals who control the apparatuses of the ruling party, and often segments within the business community. In most cases, these analyses presume that the characteristics of the specific dictatorial regime-type are given, and that the policy choices of dictators are influenced mainly by these regime characteristics.⁴

One of the central insights from models of dictatorial survival is that dictators must provide combinations of public and private goods in order to remain in power. Bueno de Mesquita et al. (2002) note that, in reality, all policies contain aspects of public and private goods, and that even expenditures on programs that purportedly benefit all of society (e.g., national defense) contain transfers to specific groups (e.g., defense contractors). Incumbents have a repertoire of policy instruments by which they can deliver benefits to different constituencies. Trade protection and regulations against entry into markets generate rents to domestic producers; labor regulations and welfare programs can be used to benefit workers; subsidies, transfers, and cheap credits can support specific economic sectors or firms. In this vein various models have examined the use of redistributive policies (Acemoglu and Robinson 2001; Grossman and Kim 1995, 1996), public employment (Alesina, Danninger, and Rostagno 2001), fiscal decentralization (Jin, Qian, and Weingast N.d.), or other benefits designed to shore up public support.

Political Control and Authoritarian Breakdown

A second set of analyses emphasizes how economic conditions shape the character of governing "pacts" between rulers and citizens, and how these bargains can break down. In particular, poor economic performance diminishes the bargaining power of autocrats, increases the strength of the opposition, destroys the bargains struck between leaders and their supporters, and leaves ruling groups vulnerable to defections.

Consequently, a consensus has emerged that an economic crisis poses a particular political problem: it erodes the ability of regimes to continue to secure public support through the provision of benefits. Recession, inflation, and currency collapse deny governments the resources needed to maintain critical support in the population (Haggard and Kaufman 1995). Economic crises also introduce a high degree

of uncertainty in governmental behavior, limit the availability of information to the public, blur political identities, and create a basis for a series of unexpected, unpredictable events (O'Donnell, Schmitter, and Whitehead 1986). “Crisis strata”—social groups that, due to deprivations, would be readily mobilized against existing regimes—are more likely to emerge in opposition to incumbents (Linz 1978; O'Donnell 1973).

Governments lacking resources to resolve these crises find themselves faced with disloyalty, organized violence, and a rapid loss of legitimacy. Political openings, in these situations, are believed to develop through negotiation, bargaining, and alliances between democrats and incumbents, moderates and extremists (Di Palma 1990; Gleditsch and Choung 2004). Under these conditions, restricted elections—elections in which party activities, candidate recruitment, or voter registration are limited—can serve as an effective means of granting limited voice to opposition groups. Indeed, dictators have managed to remain in power for long periods of time by holding “staged” elections (McFaul 2002).

Political Rights and Economic Security: Is There a Tradeoff?

These analyses raise two related questions. First, do dictatorships facing internal rebellion attempt to maintain legitimacy through a greater provision of economic benefits? Second, do dictatorships under economic stress tend to liberalize politically? On the first question, the evidence suggests that the stability of authoritarian regimes is bolstered through the redistribution of domestic wealth, particularly when that wealth derives from natural resources or “country-specific” capital (Boix 2003; Ross 2001). Oil-rich regimes, for example, tend to survive even when controlling for repression (Smith 2004). Governments in oil-rich nations, consequently, can secure citizen support through generous welfare provision and thereby contain public demands for political liberalization. On the second question, evidence on regime transitions seems to confirm that recessions have preceded regime transitions (in both democratic and non-democratic directions) from the 1950s to the 1980s (Gasiorowski 1995).

Taken together, these findings suggest an important question that, thus far, has been little examined, namely, whether political liberalism and economic benefits are substitutes in autocracies. If true, it follows that when non-democratic governments are forced into bouts of fiscal retrenchment they may secure short-term political support through partial political liberalization—by extending certain basic rights and protections from arbitrary force or expropriation to citizens (O'Donnell and Schmitter 1986). Conversely, an authoritarian ruler facing greater demands for political inclusion—if faced with a credible opposition—may be forced to expand the provision of economic benefits to the population.

That economic and political goods may be substitutes, and that their provision may be jointly determined, has not been extensively examined. Moreover, recent cross-national survey research confirms that support for “revolutionary action” falls both with faster growth and with political liberalization—indeed, political liberalization is actually more legitimacy-affirming than economic growth (MacCulloch and Pezzini 2002). But if economic benefits and political liberalism are jointly determined the standard econometric approach of regressing measures of democracy on economic reform (or vice versa) suffers from simultaneity bias. Instead, a model that explicitly takes into account the joint nature of the decision is needed.

Formalizing the Authoritarian Bargain

Our model of an authoritarian bargain specifies, on logical grounds, a generalizable view of the relationship between dictators and citizens. The interaction between autocratic rulers and their citizens is modeled as a repeated game with an infinite horizon. Following other formal approaches to authoritarian decision-making, we model the dictator's choice as one that maximizes utility under an incumbency constraint, that is, under the imperative of remaining in power (e.g., Acemoglu and Robinson 2005; Jack and Lagunoff 2004; Gandhi and Przeworski 2006). Our intention, however, is to generate precise, testable hypotheses. We choose, therefore, specific rather than general functional forms, and examine a simplified representation of dictatorial decision-making in which the dictator minimizes a loss function instead of maximizing utility.⁵ Citizens, finally, value consumption and political rights, and consequently authoritarian rulers will use two instruments to remain in power: publicly-funded economic benefits (w) and partial political liberalization (p).⁶ Each of these instruments carries opportunity costs to the dictator who employs them.

The dictator is the residual claimant to fiscal resources left over after spending on economic benefits and the dictator's marginal utility of consumption is decreasing. It follows that, as fiscal resources available to the dictator dwindle, the dictator's opportunity cost of any given level of welfare expenditures will increase. Consequently we assume that the regime's fiscal burden for any level of economic benefits offered to the public will be $c(\cdot)w$, where the size of expenditures on public benefits is w , and the opportunity cost of foregoing these resources is $c(\cdot)$.

Meanwhile the dictator's cost of partial political liberalization—following Przeworski and Gandhi (2006)—will depend on the extent to which liberalizing political reforms force the dictator to make policy concessions in order to remain in power. That total cost will depend on two factors: the extent of liberalization $p \in [0, 1]$, and regime vulnerability. With no credible threat of sanctioning by citizens, autocrats are able to select their preferred policies. But political openings, naturally, permit opposition groups to mobilize, gain mass support, and challenge incumbent authorities. Wider political openings, naturally, increase the likelihood of this kind of mobilization. The further partial political liberalization proceeds, then, the more that dictators will be forced to deviate from their ideal policy choices in order to maintain regime adherents. The extent of the required deviation accompanying any degree of political liberalization will depend, additionally, on the vulnerability of the regime, i.e., the likelihood that an opposition will emerge and pose a credible challenge to the incumbent's authority. We characterize this vulnerability as $k(\cdot)$, and the dictator's total cost of political liberalization is therefore given by $k(\cdot)p$.

Characterizing Equilibrium Bargains

The dictator's loss function can therefore be represented as:

$$L_d(\cdot) = \sum_{t=0}^{\infty} \delta^t (-c(\cdot)w_t - k(\cdot)p_t) \quad (1)$$

where δ is the discount factor. In each period, the citizen decides whether to acquiesce to authoritarian rulership, or to rebel.⁷ Without rebellion, the citizen's instantaneous utility comes from the levels of welfare and political rights provided by the dictator (the superscript D denoting the dictatorial status quo):

$$U_c^D(\cdot) = w^\alpha p^{1-\alpha} \quad (2)$$

In the event of a rebellion, a revolution—the removal of the incumbent authoritarian government—fails with probability $1 - \mu(\cdot)$, and the citizen's utility is then normalized to zero. If the revolution succeeds, full political inclusion is the result ($p=1$) and welfare is then given by the value of the resources that can be captured and distributed to the public, taking any potential disruptions of the revolution into account. We denote this value as $\varphi(\cdot)$. A citizen's expected instantaneous utility in case of a revolution (denoted by superscript R) becomes:

$$U_c^R(\cdot) = \mu(\cdot) \varphi(\cdot)^\alpha \quad (3)$$

We focus on a stationary equilibrium in which the dictator chooses the same level of w and p in each period in order to avoid overthrow. In this case we can reformulate the dictator's loss function from equation (1) as

$$L_d(w, p) = \frac{-c(\cdot)w - k(\cdot)p}{1-\delta} \quad (4)$$

The problem that defines the equilibrium bundle, (w^*, p^*) , is then given by:

$$\underset{w, p}{Min} = \left(\frac{-c(\cdot)w - k(\cdot)p}{1-\delta} \right)$$

s.t.

$$w^\alpha p^{1-\alpha} \geq \mu(\cdot) \varphi(\cdot)$$

In sum, the dictator minimizes the loss from the provision of economic benefits and from partial political liberalization subject to the constraint that citizens prefer the dictatorial status quo to rebellion. From first-order conditions generated from this constrained optimization problem we can derive expressions of (w^*, p^*) as multiplicative expressions of the exogenous factors. Taking the natural log of these expressions, and solving for w and p , yields the following system of translog equations:

$$\ln w = (1-\alpha) \ln(\alpha/1-\alpha) + (1+\alpha) \ln k(\cdot) - (1-\alpha) \ln c(\cdot) + \mu(\cdot) + \alpha \ln \varphi(\cdot) \quad (5)$$

$$\ln p = -\alpha \ln(\alpha/1-\alpha) - \alpha \ln k(\cdot) + \alpha \ln c(\cdot) + \ln \mu(\cdot) + \alpha \ln \varphi(\cdot) \quad (6)$$

Our model consists of four functions: for the dictator, the severity of the fiscal constraint $c(\cdot)$ and of the policy accommodation constraint $k(\cdot)$; for the citizen, the economic benefit from regime overthrow $\varphi(\cdot)$, and the likelihood of successful insurrection $\mu(\cdot)$. Comparative statics from equations (5) and (6) show that economic benefits increase and political rights decrease as $c(\cdot)$ decreases and $k(\cdot)$ increases, respectively. On the other hand, both dependent variables increase when $\mu(\cdot)$ or $\varphi(\cdot)$, increase.

Potential equilibria defined by this structural model are visualized in the two graphs in figure 1, which also show how changes to exogenous factors shift these equilibria. For both graphs, the x-axis represents the level of political rights, and economic benefits vary along the y-axis. Citizens' indifference curves show combinations of political rights and per-capita economic benefits that make the representative citizen marginally prefer the status quo. The straight lines are the dictator's iso-cost lines—combinations of welfare spending and political liberalization that impose the same loss on the regime. These become steeper as the cost of providing political rights increases, and flatter as the per-capita cost of providing welfare increases. The equilibrium at tangent represents the least-cost bundle of welfare and political rights that secures regime support, i.e., the unique authoritarian bargain.

The first graph illustrates the effect on the authoritarian bargain as the fiscal constraint becomes more binding. At point A, an authoritarian regime provides w_A in economic benefits and p_A in political rights. An economic crisis, a loss of revenue, or other shock that increases the cost of economic benefits will make the iso-cost line flatter. The bundle (w_A, p_A) will prevent a rebellion, but it is no longer efficient. The equilibrium shifts to point B, assuming no changes in citizens' reservation utility, and the regime allows partial political liberalization in exchange for reduced benefit provision.

The second graph depicts changes to the authoritarian bargain in the event of an increase in the likelihood of regime overthrow. Starting now at point B, if the payoff to citizens from rebellion increases (due to, for example, a greater perceived likelihood of success) the citizens' indifference curve shifts away from the origin. This time the initial bundle of economic benefits and political rights no longer assures the regime of continued legitimacy, and the equilibrium shifts to C. While the regime increases the provision of both economic benefits and of political rights, the slope of the iso-cost line remains the same.

Operationalization

The model yields a clear, log-linear empirical specification (equations 5 and 6). Measurement of the central explanatory constructs in the model (the factors that constitute the dictator's and citizen's opportunity costs), on the other hand, is less straightforward. These opportunity costs determine the composition of economic benefits and political liberalization but cannot be directly observed—they are “latent variables” that require measurable proxies in testable hypotheses. Below are hypotheses in which we have identified six observable proxies for the key concepts derived from our model. Perfect proxies are, of course, unattainable; our aim is to select measures that are consistent with the observable implications of the model, informative of the central concepts, and broadly comparable.

H1: An increase in rents available to the incumbent regime raises per-capita economic benefits and contracts political rights.

Rent streams in the form of revenue sources that do not impose tax burdens on the population (since any taxes will be netted out in citizens' calculations of benefits) enable rulers to extend welfare, to deliver social services and other goods, and to provide public-sector jobs (Levi 1988; Ross 2004). The use of economic patronage has been intensively examined in "rentier" states, in which funding for the public sector depends not on the domestic tax base but on externally generated revenues in the form of, for example, natural resource export earnings, worker remittances, foreign aid, (see, e.g., Chaudhry 1997; Lam and Wantchekon 2003; Moore 1998). Governments in countries where these rents constitute a significant portion of total revenues tend to "purchase" political support through generous public benefits. As rents increase, the opportunity cost of state-funded economic benefits declines, and thus an increase in per-capita economic benefits is expected. Our model also predicts that, in non-democratic states, increases in rents will allow an accompanying contraction in political rights.

H2: An increase in the relative size of the labor force lowers per-capita economic benefits and prompts partial political liberalization.

The marginal cost of providing public economic benefits depends not only on available fiscal resources, but on the size of the group receiving the benefits. Recent evidence suggests that the demographic shifts accompanied by an increase in the proportion of the working-age population (due to the movement of youth into the labor force) has increased pressures on states in middle-income countries to provide welfare and guarantee public-sector employment (see, e.g., World Bank 2004b). Together with rents, the size of the labor force represents the main factor influencing the marginal cost of economic benefits $c(\cdot)$. Additionally, as the model predicts, a decrease in benefits will require a compensating expansion in political rights.

H3: An increase in corruption raises per-capita economic benefits and contracts political rights.

We consider the policy accommodation constraint $k(\cdot)$ to be an increasing function of regime corruption. The necessary policy accommodation following partial political liberalization depends on the regime's vulnerability to opposition groups. Although this political vulnerability depends on numerous factors, it is widely held that corruption erodes trust in and support for governments, and increases the susceptibility of regime to potential challengers (e.g., Kaufmann 1998; Seligson 2002). As a result, partial political liberalization represents a greater cost to incumbents in more corrupt regimes (where the inherent legitimacy of the state is lower) because more predatory dictators will be forced to make greater policy accommodations to remain in power. As a result, corruption reduces political rights, and the narrowing of political rights will require a compensating expansion in economic benefits.

H4: An increase in the level of per-capita income expands both per-capita economic benefits and political rights.

A common assumption of “rational” explanations of collective political violence is that citizens are more likely to reject incumbent authority where the prospective benefits to be captured from replacing the regime are high (Keen 1997; Popkin 1988).⁸ These benefits $\varphi(\cdot)$ are generally assumed to be a function of the total size (per-capita) of the economy, since political power entails not merely control over rents, but over the public purse. Higher national income will thus shift out the citizen’s indifference curve in our model. In other words, securing the loyalty of citizens in wealthier countries will require a higher level of both economic benefits and political rights. Consequently per-capita income will positively affect both benefit provision and political liberalization.

H5: An increase in the repressive capacity of the regime lowers both per-capita economic benefits and political rights.

H6: An increase in the level of political instability increases both per-capita economic benefits and political rights.

Our final two hypotheses address the likelihood of successful regime overthrow $\mu(\cdot)$. We consider this to depend equally on prevailing levels of political violence and instability, as well as on repressive capacity (i.e., the ability of the regime to deter rebellion). Political turmoil and limited repressive capacity both serve as signals of governmental weakness, as well as potential predictors of imminent collapse (Kuran 1995; Lohmann 2000). Less instability and greater repressive capacity will dampen the necessary provision of both per-capita economic benefits and political liberties.

Data and Results

Specification and Data

We do not derive the usual linear specification with adjustable and replaceable explanatory variables. Rather, we use our model to generate a sparser set of more stable constraints and then test the validity of this complete set of constraints. In sum, we aim to trace the movement of authoritarian bargains depicted in figure 1 over time and across countries. Our basic structural model and the accompanying hypotheses, then, generate the following system of log-linear equations:

$$\ln(\text{Economic Benefits}_{it}) = \alpha_0 + \alpha_1 \ln(\text{Rents}_{it}) + \alpha_2 \ln(\text{Labor}_{it}) + \alpha_3 \ln(\text{Corruption}_{it}) + \alpha_4 \ln(\text{Income}) + \alpha_5 \ln(\text{Capacity}_{it}) + \alpha_6 \ln(\text{Instability}_{it}) + \alpha_7 t + \mu_t \varepsilon_{it} \quad (7)$$

$$\ln(\text{Political Rights}_{it}) = \beta_0 + \beta_1 \ln(\text{Rents}_{it}) + \beta_2 \ln(\text{Labor}_{it}) + \beta_3 \ln(\text{Corruption}_{it}) + \beta_4 \ln(\text{Income}) + \beta_5 \ln(\text{Capacity}_{it}) + \beta_6 \ln(\text{Instability}_{it}) + \beta_7 t + \mu_t \varepsilon_{it} \quad (8)$$

For the dependent variable in equation (7), *Economic Benefits*, we consider the most widely available measure of state-provided economic benefits, i.e., public spending on social services including health, education, housing, unemployment benefits, pensions, and community amenities. Both the composition and total amount of welfare spending have been used elsewhere as general measures of welfare-state policies (Kaufman and Segura-Ubiergo 2001). We also consider *Wages* to public-sector employees in

subsequent estimations. Both measures are expressed in constant US dollars per capita. For *Political Rights* in equation (8) we use the composite Polity index of democracy and autocracy (Marshall and Jaggers 2001).⁹

Given the prominence of natural resource wealth in authoritarian bargains, it might seem appropriate to include standard measures of oil and mineral exports per capita as a proxy for Rents. In many developing countries, however, greater portions of natural resource extraction and sales are now managed through private corporations. The revenues to government accounts in middle and lower-income nations from natural resource production dwindled significantly throughout the 1990s—when several of these companies were privatized—even though the total export earnings from natural resource production may have remained constant (or increased). This inability to distinguish between private and public revenues, for our purposes, limits the usefulness of the natural resource exports measure.

Instead, we rely on the broader measure of non-tax revenue (in constant US\$ per capita) from the IMF's *Government Finance Statistics* database as a proxy for Rents. Non-tax revenue to the consolidated government budget covers receipts from government services as well as fees from permits, licenses, and fines, and income streams from the ownership of state assets. Consequently, non-tax revenue also includes transfers, dividends, and profits from all parastatal companies as well as from all partially state-owned companies, including those companies that manage the export of natural resources.

For *Labor* we use the ratio of the labor force (employed and unemployed) to the population, a measure of labor supply. As a measure of *Corruption* we use the *International Country Risk Guide's* (ICRG) index of corruption.¹⁰ Our measure of *Income* is GDP per capita in constant US\$. To measure the repressive capacity of the regime (*Capacity*), we use data from the Stockholm International Peace Research Institute (SIPRI) on military expenditures, also in constant US\$ per capita.¹¹ To capture the effect of threats to the incumbency and the strength of the opposition, we use an index of political instability generated through a principal-components weighting of general strikes, assassinations, major demonstrations, purges, guerrilla wars, attempted coups, and revolutions taken from the *Cross-National Time-Series Data Archive* (Banks 2001). Finally, all estimations include time dummies and a trend. With the exception of any dummy variables and the trend, all variables are in natural logarithms (see appendix for variable definitions, sources, and summary statistics).¹²

Since the hypotheses relate exclusively to non-democratic regimes, our data are restricted to countries whose composite Polity score is 6 or less. For the full sample of countries (democratic and non-democratic) this is approximately the mean plus one standard deviation. We use this cutoff as our principal interest lies not merely in those regimes in which political life is tightly controlled, but in the vast number of partial or “illiberal” democracies around the world in which periodic, contested elections may be held, but where protections of basic political rights have yet to be consolidated, or where ruling elites remain relatively free of constraints on their exercise of political power. Our sample is further constrained by the limited availability of reliable public expenditure data—from which the welfare spending amounts are taken. Additionally, our data are constrained by the limited availability of the ICRG corruption indicator, which is only reported since 1984. Our resulting core data, then, consist of an unbalanced panel of approximately 300 – 450 observations, depending upon the specification, covering 45 – 50 countries between 1984 and 1999.

As noted above, our model of the authoritarian bargain suggests that economic benefits and political liberalization are jointly determined by a similar set of exogenous variables. Under this assumption, single-equation estimation by ordinary least squares (OLS) is consistent but inefficient since OLS assumes no correlation in the error structure across equations. Instead, we jointly estimate equations (7) and (8) using seemingly-unrelated regression (SUR).¹³ SUR permits the joint estimation of welfare expenditures and political rights while allowing disturbances from one equation to affect the other as would be expected where dependent variables are jointly determined. We initially maintain that the explanatory variables are exogenous, but in subsequent estimations we relax this assumption.

Basic Results

The empirical estimates of our base specification are shown in table 1. Each column reports one part of a simultaneous estimation of two equations. The first and second columns report results with *Welfare and Polity* as dependent variables. In this first joint estimation, all parameter estimates are statistically significant and consistent with the hypotheses outlined above.

The cost constraints affecting the provision of economic benefits and political liberalization have, as expected, opposite effects on these sources of regime support. An increase in the labor supply makes it harder for authoritarian states to sustain current levels of welfare spending per capita and thus increases the likelihood of political liberalization. More corrupt authoritarian regimes, on the other hand, are less likely to extend the political franchise or constrain executive authority, and are more likely to secure regime support through the provision of welfare. Meanwhile, the availability of non-tax revenues expands welfare spending and, in so doing, allows authoritarian states to restrain political liberalization. We also find that political rights and welfare expenditures are both decreasing in response to an increase in the repressive capacity of the regime, suggesting that autocratic regimes with larger militaries will rely less on either economic benefits or political openings to secure political support. And as expected, regimes facing greater instability are prompted to expand both welfare and political rights. The positive relationship between per-capita income and political liberalization, finally, supports “modernization-theory” predictions, while similar positive effects on welfare are consistent with the consensus on wealth and the expansion of the welfare state (Lindert 1994).

To test whether our results are specific to non-democratic regimes—i.e., whether the bargain is, in fact, an authoritarian one—columns 3 and 4 report the same empirical estimates for country-year observations with a composite Polity score greater than or equal to 7. In terms of the statistical significance and magnitude of the coefficients, these estimations do not support our hypotheses. The coefficient on non-tax revenues is insignificant. The same is true for political instability whose significance is inconsistent across the equations or whose sign is wrong. There is no repression effect from military expenditures to political liberalization in the advanced democracies although, as in authoritarian countries, military expenditures affect economic benefits negatively. Similarly, corruption has no effect on welfare but exerts the expected negative effect on the level of democracy. The only variables whose sign and significance are identical to those of the estimates from columns 1 and 2 are per-capita income and the share of the labor force in the total population. The former should not come as a surprise given the strong empirical relationship between wealth and democracy in upper-middle and high-income countries, while the latter is

consistent with the effects of demographic shifts on per-capita welfare expenditure in richer countries.

Note that corruption (as given in H3) is intended as a measure of the dictator's policy accommodation constraint—the extent to which a dictator, when faced with a viable opposition, needs to grant concessions in order to remain in power—and thus as a measure of the cost to a dictator of partial political liberalization. A direct indicator of this constraint would be an accurate measure of dictatorial “popularity” among citizens—an unattainable measure even in relatively open, non-democratic states. Corruption is an obvious proxy for this constraint, since predatory dictators rely on a smaller base of support than more benevolent rulers, and thus predatory dictators face a higher opportunity cost of partial political liberalization. Dictators who engage in greater amounts of domestic political repression, similarly, should expect to rely on a smaller core of support than more benevolent dictators. In columns (5) and (6) in table 1, then, we substitute *Political terror* for corruption. We use the “Political Terror Scale,” which measures domestic human rights violations by the state (Gibney and Dalton 1996). The coding of this variable extends back to 1980, and thus expands our sample size. But the signs, significance, and magnitude of the estimated parameters are consistent with the results in columns (1) and (2), indicating that the cost of political liberalization to dictators may be broadly considered a function of the severity of the means used by dictators to remain in power—whether through the use of spoils or the use of terror.

Public Sector Wages

This perspective on authoritarian bargains is based on the presumption of a social contract between dictators and all citizens, and thus we do not model relationships between rulers and specific groups or strategic constituencies.¹⁴ To be sure, there is evidence in comparative analyses of dictatorial survival that these specific groups may matter more than citizens at large. But the nature of these relationships varies considerably across different types of dictatorships. We can however, determine whether the authoritarian bargain functions with respect to a particularly salient group: public sector employees. There is widespread evidence that the public sector has historically constituted an important distributive vehicle in the developing world, with shares of public employment in the total population exceeding that of OECD countries.

In columns 5 and 6 of table 1, we consider an alternative measure to welfare spending, i.e., public sector wages per capita. The sign and significance of three variables are inconsistent with what we found previously: corruption, military expenditures, and instability. The positive correlations between military expenditures and public sector wages may be due to the fact that wages of military personnel in most developing countries are not netted out of public sector wage data (Schiavo-Campo, De Tommaso, and Mukherjee 1997). Hence, the correlation may reflect the impact of the military's budget on the wage bill. The negative correlation between the ICRG corruption score and public sector wages is consistent with public sector reforms in many developing countries which have aimed at reducing official corruption by raising the salaries of civil servants. The negative correlation between public sector wages and regime instability could be another case of reverse causation where freezes or reductions in the government wage bill—as commonly mandated by international financial institutions during economic crises—provokes protests from military personnel and/or civil servants.

Simultaneity and Endogeneity

Because we hypothesize that political rights and welfare are jointly determined in the authoritarian bargain, our results have been based on the simultaneous estimation of equations (7) and (8) using SUR regression, allowing shocks influencing the provision of welfare to affect the provision of political rights. The joint estimation of different dependent variables with a common set of explanatory variables, however, raises questions regarding the validity of the standard errors.

First, it has been suggested that, in many applications, SUR can perform poorly because the contemporaneous variance-covariance matrix is poorly estimated (Beck 2001). Under these conditions, OLS with error correction for contemporaneous correlation (panel-correct standard errors) is recommended.¹⁵ Although OLS equation-by-equation testing allows tests of hypotheses within an equation, it does not permit adequate testing of cross-equation restrictions. Nevertheless, to ensure that our results hold in single-equation estimations, we re-estimate equations (7) and (8) using OLS with panel-correct standard errors. These results are in columns 1 – 2 in table 2. The signs and significances of the coefficients are identical to results we obtained using SUR, indicating that we do not need to relinquish the efficiency gains of SUR—a more efficient estimator of systems of equations.

Second, our estimations thus far have assumed that the five common explanatory variables— non-tax revenue, labor supply, corruption, per-capita income, military expenditure, and instability—are exogenous. In columns 3 – 4 in table 2 we relax this assumption. There are reasons to suspect some reverse causality in the case of each explanatory variable: greater welfare spending may reduce labor supply and reduce military spending; political liberalization may reduce corruption and may affect instability in indeterminate ways. Identifying exogenous, time-varying instruments for each endogenous variable is especially challenging in a system of equations, and where panel (rather than cross-sectional) data are used. We use a Generalized Method of Moments (GMM) estimator in which lagged values of each explanatory variable are used as an instrument for the current value of each variable. No parameter shifts in direction or significance occur, suggesting that our empirical results that do not explicitly control for endogeneity are valid.

Testing the Limits of the Authoritarian Bargain

Regional, Regime, and Ideological Effects

Dictatorships are highly diverse, characterized by different types of relationships between rulers, party cadres, the military, other elites, and citizens. Classic theories of dictatorship, notably, distinguished between “totalitarian” systems—ideologically-based regimes, which interwove control over the economy, civil society, and the state—and various “authoritarian” regimes, characterized by non-ideological, personalistic or dynastic rule (see, e.g., Friedrich and Brzezinski 1956; Linz 2000). Modern dictatorial regimes, moreover, vary along multiple dimensions (Geddes 2000).

We explore, consequently, whether regional effects, ideological disposition, or regime type influences the hypothesized results, and whether these variables have additional effects beyond those captured by the structural model on welfare and political rights. Including five regional dummies in the first estimations in table 3 does not alter the statistical significance or the direction of the main coefficients (in

this estimation, the constant term is not included, allowing us to include regional dummies that cover the entire sample of countries). Non-democratic Sub-Saharan African states—also the poorest in our sample—tend to be the least generous in terms of welfare payments, followed by similar regimes in East Asia. Meanwhile, Middle Eastern/Northern African authoritarian states are the most likely to withhold political rights (Bellin 2004). By contrast, formerly socialist states in Eastern Europe and the Commonwealth of Independent States (CIS) that have not fully democratized are the biggest spenders—consistent with findings that the accumulation of liabilities in these countries has supported pre-transition social programs (World Bank 2004a).

In the next estimation, we include dummy variables signifying whether the political party of the chief executive is considered left-wing or right-wing (the omitted category consists of regimes with centrist or broad-based parties, or in which political parties do not exist).¹⁶ We do this on the assumption that ruling party traits may shift the dependent variables in ways not explained by our model of an authoritarian bargain—particularly in the case of social spending, which has been empirically linked to leftist parties (e.g., Huber, Mustillo, and Stephens 2004). By contrast, we find that among less-than-fully democratic states right-wing parties have an additional, positive effect on both welfare spending and political liberalization. The inclusion of these ideological dummies does not alter our basic results.¹⁷

Columns 5 and 6 of table 3 augment the benchmark specification with a set of dummy variables indicating regime type: monarchical or presidential. The inclusion of these regime effects does not alter our main results, suggesting that basic character of authoritarian bargains is not affected by the type of government. The coefficients of the individual effects, however, indicate that monarchical and presidential regimes tend to tolerate less political liberalization than other non-democracies with mixed systems or assembly-elected presidents. With the exception of the labor supply—which loses significance in the political rights equation—the benchmark results remain intact.

The last two sets of estimations examine the effects of single-party rule and nationalism. In separate estimations in columns (7) through (10) in table 3 we add variables coded 1 if only a single political party exists (or if all political parties are banned), and if the ruler's or the ruler's party is considered “nationalist” (see appendix). The addition of these variables does not alter the basic authoritarian bargain. The effects of both variables are positive in the welfare equation, negative in the Polity equation, suggesting that authoritarian bargains in single-party or nationalist non-democracies tend to involve more politically restrictive governments, but more generous welfare states.

Military Rule and Repression

A possible objection to our focus on the tradeoff between economic benefits and political rights in the authoritarian bargain is that we ignore repression, often considered an additional regime “output” used to solve the problem of dictatorial insecurity (Wintrobe 1998).¹⁸ We do not consider repression as a policy output in the authoritarian bargain for several reasons. First, evaluating the conditions under which dictators spend a dollar on the apparatus of repression vs. a dollar on public welfare, however, would require that the level of repression be fully endogenized. When do dictatorships choose the carrot and when do they choose the stick? Second, doing so would also require that the specific instrument of repression be defined. Regimes, after all, can spend money on developing repressive capacity—increas-

ing the number of state-security and military personnel, enhancing the ability of the state to conduct internal surveillance and monitoring, and expanding the scale and scope of the repressive apparatus by other means—or they can exile, jail, torture, or kill more citizens. Repressive capacity is not associated with the actual level of repression in non-democratic states. Finally, the effect of repression on dictatorial survival is unclear. Repression may solidify the regime's hold on power by neutralizing regime challengers, or it may make non-democratic regimes more vulnerable by decreasing the citizen's utility under the dictatorial status quo.

Although we do not consider repression as an explicit output, we can nonetheless assess whether the authoritarian bargain holds in regimes more likely to engage in repression. Table 4, therefore, extends our analysis of regime effects by separating the sample between regimes with greater or lesser resources for repression. In columns (1) – (4), we segment the sample between those observations for which the chief executive is a serving military officer, and those for which the chief executive is a civilian. Turning to active repression, in columns (5) – (8) we segment the sample between those regimes that engage in high levels of repression (defined as having a Political Terror Scale rating greater than 3 out of a maximum of 5, roughly equal to the mean plus one standard deviation for all observations) and those that do not. In military and highly-repressive dictatorships, expenditures on military and security services are likely to constitute a *de facto* form of “welfare” spending, and larger portions of the public wage bill are likely to be directed towards military and security personnel (see, e.g., Collier and Hoeffler 2004). For these reasons the authoritarian bargain may fail to function in these types of regimes.

The results in table 4 confirm these doubts, and suggest that the authoritarian bargain we have detailed here is less applicable to both military and repressive regimes. We replicate columns 1 – 2 from table 1. In the joint estimation of welfare spending and political rights, several coefficients lose their significance, and the coefficient for non-tax revenues switches signs—now carrying a positive influence on political rights. When restricting the sample to civilian and non-repressive dictatorships, on the other hand, the benchmark results from table 1 hold.

Decade Effects and Regime Durability

Table 5 extends the sensitivity analysis along two other dimensions by dividing the sample according to decade (1980s and 1990s) and according to regime longevity. The truncated samples allow us to assess whether our results are driven by decade-specific effects (for example, democratization trends or fiscal austerity levels that may have differed between the 1980s and 1990s). The results (reported in columns 1 – 4 of table 4) do indicate some weakening of the overall authoritarian bargain as we have conceived it into the 1990s. Nevertheless, all statistically-significant parameters are unchanged from benchmark results, and the empirical model is generally consistent across the two decades.

Similarly, it may be the case that long-lived dictatorships are less prone to rely on providing welfare and political rights in the same manner as newer dictatorships. Older dictatorships, for example, might rely on stronger appeals to national identity, shared history, culture, or other norms. The second half of table 4 divides the sample according to the tenure of the regime based on the number of consecutive years in office held by the chief executive (we split the sample into observations at or below, and above, the median of seven years). Although there are some changes in the significance of some of the estimates

(although no changes in signs), the effects of the explanatory variables appear consistent across regime durability.

Conclusion

Analyses of political legitimacy in post-WWII autocracies are generally based on a presumed “authoritarian bargain,” by which citizens exchange rights of political inclusion for economic security. Analyses of these bargains imply a link between redistributive policies and political control, as well as tradeoffs between the two in explaining autocratic decision-making. And they have been invoked by comparativists in explaining the stability or breakdown of various types of non-democratic states, from military and “bureaucratic-authoritarian” dictatorships in Latin America to state-socialist regimes in Eastern Europe to oil-funded monarchies in the Middle East. Whether the authoritarian bargain is a valid means of understanding the nature of state-society relations in authoritarian regimes more broadly, however, has not been systematically tested.

If logical models do not precede statistical analysis, of course, the latter can produce results that bear little relevance to the true underlying relationships of key variables. With this concern in mind, our model advanced a highly-generalizable view of the game between rulers and citizens in non-democratic states. We formalized a model of the authoritarian bargain whereby leaders in non-democratic regimes select the least-cost bundle of economic benefits and political liberties necessary to sustain their rulership and to secure public support. We found that these bargains are generally sustained by the availability of rents allowing dictators to maintain generous welfare and public-employment programs, while retaining tight controls over political life. Our results lend strong, if preliminary, support to the argument that political rights and welfare expenditures in non-democratic states are simultaneously determined by a common set of explanatory factors. These results were robust to various sensitivity checks, to the inclusion of additional controls, and to adjustments for the potential endogeneity of our explanatory variables. Our joint estimation, moreover, allows us to explain how decisions regarding political liberalization and public expenditures are related across a diverse set of non-democratic regimes.

These findings can encompass a number of different explanations of authoritarian survival, breakdown, and transition that have often been examined piecemeal. It is widely expected that windfalls from oil revenues, for example, will allow greater spending on economic welfare and thus strengthen the grip of non-democratic, oil-rich states. Meanwhile the negative relationship between oil wealth and democracy has usually been examined in a separate vein. Both findings can be readily accommodated by our framework. Similarly, one of the cornerstones of the comparative study of regime transitions is that recessions or financial crises that provoke fiscal crises can potentially deprive autocrats of needed resources to sustain generous welfare programs. Likewise, episodes of authoritarian withdrawal in good economic times seem to be rarer. Again, both findings are explained by our authoritarian-bargaining framework in which partial democratization is the flip-side of a waning welfare state.

Our approach also explains why, in contrast to democratic states, welfare spending and political liberalization are negatively related in authoritarian states. Additionally, our results indicate that partial political liberalization may actually forestall transitions to genuine democracy. Partial liberalization—of the

kind seen in Russia in the mid 1990s or recently observed in Egypt and in the Kyrgyz Republic—can co-opt opposition groups during periods of economic downturns, but is often reversed as revenues have recovered. Finally, our framework and our empirical findings can shed some light on current debates on democratic prospects in the Middle East and North Africa, where approximately 60% of the populations are under the age of 25. A burgeoning labor supply is generally expected to strain public service provision severely. But our findings suggest that a rapidly increasing labor force may also prompt greater political inclusion in regimes as compensation for the reduction in public spending.

No structural model is without its limitations, of course, and ours is no exception. We mention two such limitations here, each of which can highlight directions for further investigation of decision-making in dictatorships. First, as mentioned earlier, dictators in our framework do not choose the level of repression. Rather, they have a fixed amount of repressive capacity at their disposal. But of course, one of the enduring questions involving modern dictatorships is what makes them more or less repressive. Determining the opportunity cost of spending fiscal resources on repression rather than on public welfare or employment may be a complicated task, but can potentially identify sources of variation in dictatorial regime type. Second, in our model incumbent autocrats do not, obviously, choose the probability of insurrection they face. But different regimes do, in fact, choose to tolerate different degrees of ambient risk, and this choice can influence whether a country follows a relatively peaceful transition towards democracy or one characterized by violence. Understanding the effects of different discrete choices within an expanded authoritarian bargain can potentially illuminate these diverse paths to democracy.

Appendix

Table A1. Variable Definitions and Data Sources

Variable ^a	Definition	Source
<i>Public welfare spending^b</i>	Public expenditure on health, education (primary, secondary, and tertiary levels), and welfare (compensation to the unemployed, payments to the sick, disabled, and elderly, and allowances for family, maternity, and children).	World Bank, World Development Indicators
<i>Public sector wages^b</i>	Cash payments to employees before deduction of withholding taxes and employee contributions to social security and pension funds.	IMF, Government Financial Statistics
<i>Polity</i>	Index of political rights based on democracy D and autocracy A scores, rescaled as $(10 + D - A)/20$.	Marshall and Jaggers (2001)
<i>Non-tax revenue^b</i>	Includes required non-repayable receipts for public purposes, such as fines, administrative fees, or entrepreneurial income from government ownership of property and voluntary, unrequited non-repayable receipts.	IMF, Government Financial Statistics
<i>Labor</i>	Persons who meet ILO definition of “economically active population,” i.e., all people who supply labor for the production of goods and services, including both employed and the unemployed.	ILO, Key Indicators of the Labour Market
<i>Corruption^c</i>	Assessment of corruption in government in the form of patronage, nepotism, job reservations, secret political funding, and demands for special payments and bribes connected with economic activity and public services. Coded 0 (min) to 6 (max).	International Country Risk Guide (ICRG) yearbooks
<i>Political terror</i>	Measure of domestic human rights based on the Political Terror Scale (PTS), scored from 1 to 5.	Gibney and Dalton (1996)
<i>GDP</i>	Gross domestic product, World Bank Atlas method.	World Bank, World Development Indicators
<i>Military expenditure^{b,d}</i>	Current and capital expenditures on the armed forces based on NATO definition, i.e., including peacekeeping forces, defense ministries and other government agencies engaged in defense projects, paramilitary forces (if trained and equipped for military operations), and military space activities.	Stockholm International Peace Research Institute (SIPRI) Yearbooks
<i>Instability</i>	Principal-components weighted sum of general strikes, assassinations, major demonstrations, purges, guerrilla wars, attempted coups, and revolutions.	Banks (2001)
<i>Banks (2001)</i>	Coded 1 if ruling executive’s party is defined as communist, socialist, social democratic, or left-wing, 0 otherwise.	Beck et al. (2001)

Variable ^a	Definition	Source
<i>Right</i>	Coded 1 if ruling executive's party is defined as conservative, Christian democratic, or right-wing, 0 otherwise.	Beck et al. (2001)
<i>Monarchical</i>	Coded 1 if chief executive is a hereditary monarch, 0 otherwise.	Banks (2001)
<i>Presidential</i>	Coded 1 if the chief executive is an elected or unelected president, 0 otherwise.	Beck et al. (2001)
<i>Single party</i>	Coded 1 if the party Herfindahl index (based on the sum of the squared seat shares of all parties represented in the legislature) equals 1, 0 otherwise. Also coded 1 if parties are banned.	Beck et al. (2001)
<i>Nationalist^f</i>	Coded 1 if a primary component of the ruling party's platform is the creation or defense of a national or ethnic identity, 0 otherwise.	Beck et al. (2001)

Notes:

- a. Welfare spending, wages, GDP, and military expenditures enter regressions as constant US\$ per capita. Workers are divided by total population.
- b. Central government only.
- c. We rescale the normal ICRG score such that 0 is least corrupt, 6 is most corrupt.
- d. Includes retirement pensions of military personnel and social services for personnel; operation and maintenance; procurement; military research and development; and military aid (in the military expenditures of the donor country). Excluded are civil defense and current expenditures for previous military activities, such as for veterans' benefits, demobilization, conversion, and destruction of weapons.
- e. E.g., parties that have fought for independence, either militarily or politically, from a colonial power, that advocate persecution of minorities, or that is considered "xenophobic."

Table A2. Summary Statistics of Variables used in Regressions (Non-Democratic Regimes Sample)

	Mean	Between country std. dev.	Within country std. dev.	Min.	Max.	Countries	T (ave.)	Obs.
<i>Public welfare spending per capita</i>	2.16	0.26	0.08	0.75	2.52	44	6.91	304
<i>Public sector wages per capita</i>	5.33	1.20	0.22	1.99	8.05	61	7.49	457
<i>Polity</i>	0.26	0.17	0.08	0.00	0.59	63	7.60	479
<i>Non-tax revenue per capita</i>	3.18	1.87	0.49	-2.28	8.82	63	7.60	479
<i>Labor per capita</i>	-0.91	0.17	0.03	-1.37	-0.55	63	7.60	479
<i>Corruption</i>	1.07	0.40	0.30	-1.79	1.82	63	7.60	479
<i>Political terror</i>	0.94	0.31	0.23	0.00	1.61	63	7.54	475
<i>GDP per capita</i>	8.07	0.93	0.19	5.86	10.10	63	7.60	479
<i>Military expenditure per capita</i>	3.75	1.59	0.37	-0.78	8.40	63	7.60	479
<i>Instability</i>	-0.66	0.88	0.66	-1.45	2.36	63	7.60	479
<i>Leftist</i>	0.02	0.15	0.10	0	1	61	7.43	453
<i>Rightist</i>	0.21	0.39	0.15	0	1	61	7.43	453
<i>Monarchical</i>	0.16	0.29	0.04	0	1	63	7.60	479
<i>Presidential</i>	0.65	0.44	0.16	0	1	63	7.60	479
<i>Single party</i>	0.29	0.45	0.20	0	1	58	6.78	393
<i>Nationalist</i>	0.20	0.41	0.08	0	1	63	7.60	479

Tables and Figures

Figure 1. Equilibrium Authoritarian Bargains

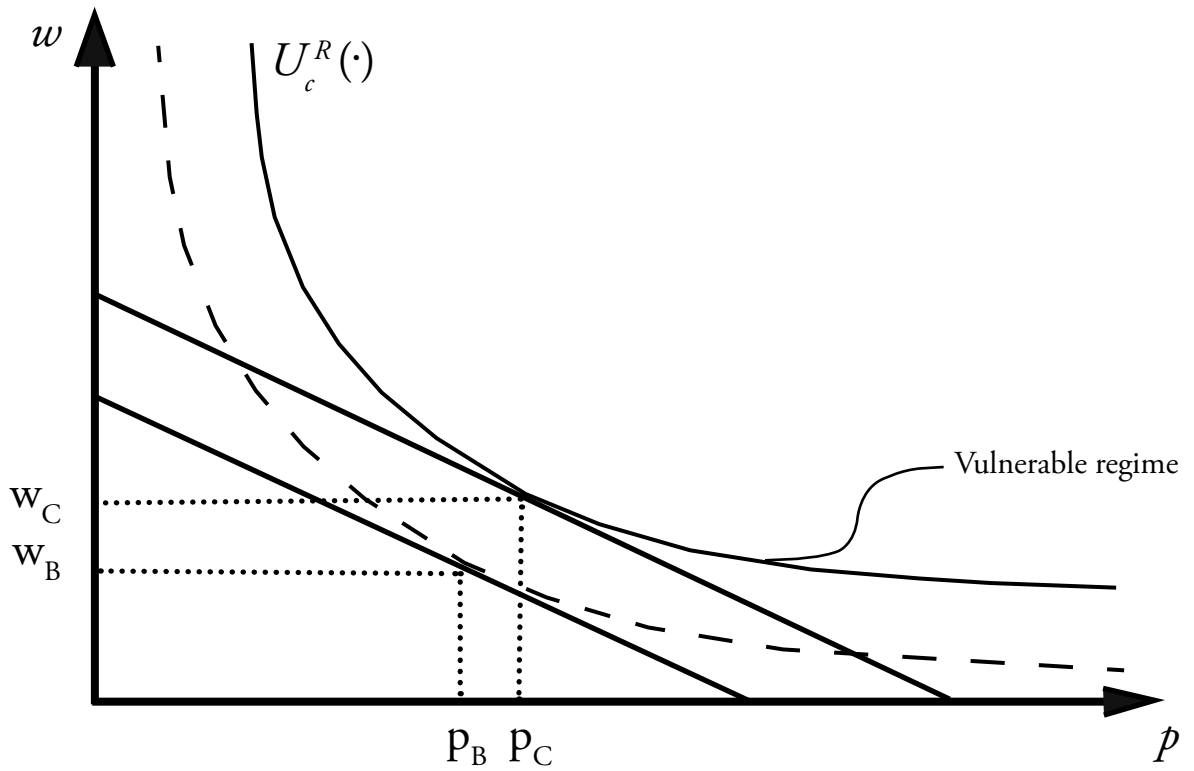
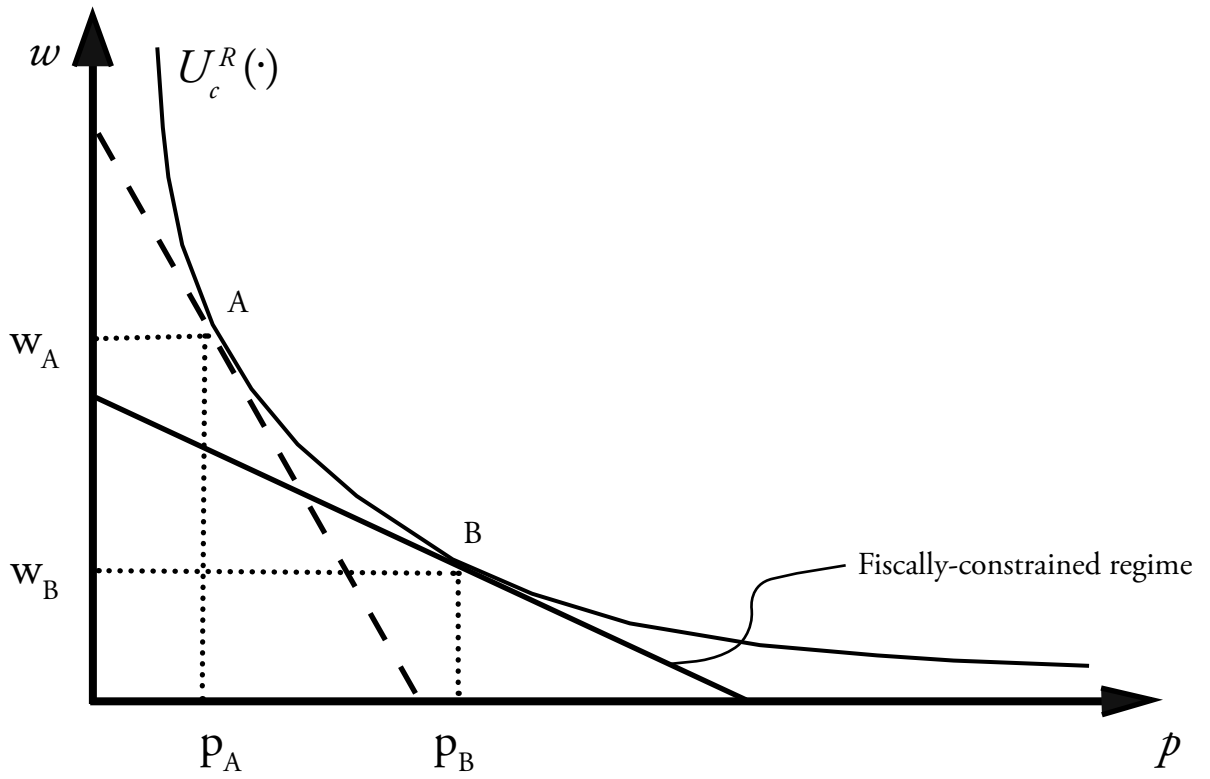


Table 1. Public Welfare Spending and Political Rights in Non-Democratic and Democratic Regimes, 1984-1999

Dependent Variable:	Non-Democratic Regimes		Democratic Regimes		Non-Democratic Regimes		Non-Democratic Regimes	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Welfare	Polity	Welfare	Polity	Welfare	Polity	Wages	Polity
<i>Non-tax revenue per capita</i>	0.0391*** (0.0097)	-0.0442*** (0.0095)	0.0559*** (0.0040)	-0.0001 (0.0010)	0.0276*** (0.0080)	-0.0322*** (0.0079)	0.1285*** (0.0180)	-0.0047 (0.0058)
<i>Labor per capita</i>	-0.1336** (0.0560)	0.1212** (0.0550)	-0.0645* (0.0342)	0.0293*** (0.0089)	-0.1186** (0.0507)	0.1857*** (0.0503)	-0.8356*** (0.1287)	0.0059 (0.0416)
<i>Corruption</i>	0.0603*** (0.0171)	-0.0878*** (0.0168)	0.0080* (0.0046)	0.0080* (0.0046)			-0.1880*** (0.0444)	-0.1289*** (0.0144)
<i>Political terror</i>					0.0492** (0.0228)	0.0492** (0.0228)		
<i>GDP per capita</i>	0.2189*** (0.0200)	0.1429*** (0.0196)	0.1896*** (0.0118)	0.0128*** (0.0031)	0.2016*** (0.0157)	0.1275*** (0.0156)	0.6419*** (0.0424)	0.0594*** (0.0137)
<i>Military expenditure per capita</i>	-0.0569*** (0.0119)	-0.0341*** (0.0117)	-0.0361*** (0.0059)	0.0004 (0.0015)	-0.0390*** (0.0100)	-0.0358*** (0.0099)	0.1272*** (0.0257)	-0.0380*** (0.0083)
<i>Instability</i>	0.0318*** (0.0084)	0.0564*** (0.0083)	0.0066 (0.0042)	-0.0053*** (0.0011)	0.0266*** (0.0078)	0.0266*** (0.0078)	-0.1502*** (0.0210)	0.0566*** (0.0068)
<i>Trend</i>	0.0001 (0.0001)	-0.0002** (0.0001)	0.0003*** (0.0000)	0.0003*** (0.0000)	0.0133 (0.0198)	-0.0009 (0.0196)	-0.0007*** (0.0002)	0.0001 (0.0001)
Obs.	304	304	453	453	429	429	457	457
R ²	0.5651	0.4718	0.8239	0.4632	0.5731	0.3752	0.8650	0.3981
Root MSE	0.1419	0.1393	0.0728	0.0189	0.1470	0.1460	0.4396	0.1420
p > χ^2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: Dependent variables in system equations are: public welfare spending per capita, and the Polity index of democracy and autocracy (models 1 – 4) or public sector wages per capita, and the Polity index of democracy and autocracy (models 5 – 6). Sample is restricted to country-year observations for which the Polity index is less than 7 in models 1 – 2 and in 5 – 6, and to observations in which the Polity index is 7 or above in models 3 – 4. Estimations are performed using three stage least squares. All variables are in natural logs. Time dummies are included in all system regressions; these and intercepts are not reported. Standard errors are in parenthesis.

* p < 0.10

** p < 0.05

*** p < 0.01

**Table 2. Single-Equation Estimates and Estimates Allowing for Endogeneity
(Non-Democratic Regimes, 1984-1999)**

Dependent variable:	Panel-Correct		GMM	
	(1)	(2)	(3)	(4)
	Welfare	Polity	Welfare	Polity
<i>Non-tax revenue per capita</i>	0.0375*** (0.0113)	-0.0432*** (0.0075)	0.0697*** (0.0145)	-0.0370*** (0.0129)
<i>Labor per capita</i>	-0.1359** (0.0665)	0.1099*** (0.0338)	-0.1415** (0.0622)	0.0758 (0.0649)
<i>Corruption</i>	0.0548*** (0.0113)	-0.0906*** (0.0174)	0.0657*** (0.0167)	-0.0970*** (0.0266)
<i>GDP per capita</i>	0.2134*** (0.0237)	0.1425*** (0.0192)	0.1931*** (0.0229)	0.1342*** (0.0211)
<i>Military expenditure per capita</i>	-0.0521*** (0.0053)	-0.0347*** (0.0091)	-0.0724*** (0.0143)	-0.0276** (0.0138)
<i>Instability</i>	0.0306*** (0.0100)	0.0577*** (0.0088)	0.0681*** (0.0151)	0.1090*** (0.0162)
<i>Trend</i>	-0.0026* (0.0013)	0.0034* (0.0018)	-0.0036 (0.0042)	0.0014 (0.0034)
Obs.	304	304	256	256
R ²	0.5370	0.4557	0.5403	0.3983
Root MSE			0.1383	0.1507
p > χ^2	0.0000	0.0000	0.0000	0.0000

Notes: Dependent variables are: public welfare spending per capita, and the Polity index of democracy and autocracy. Sample is restricted to country-year observations for which the Polity index is less than 7. Estimations 1 – 2 are performed as single equations using OLS with errors corrected for contemporaneous correlation. Estimations 3 – 4 are performed as single equations using two-step feasible GMM estimation. For GMM estimates, the instrument matrix consists of single lags of all independent variables. GMM estimates are heteroskedasticity- and autocorrelation-consistent. All variables are in natural logs. Time dummies are included in GMM regressions; these and intercepts are not reported. Standard errors are in parenthesis.

* p < 0.10

** p < 0.05

*** p < 0.01

Table 3. Estimating Regional, Ideological, and Regime Effects (Non-Democratic Regimes, 1984-1999)

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Welfare	Polity	Welfare	Polity	Welfare	Polity	Welfare	Polity	Welfare	Polity
<i>Non-tax revenue per capita</i>	0.0248*** (0.0093)	-0.0183** (0.0092)	0.0504*** (0.0095)	-0.0402*** (0.0102)	0.0412*** (0.0099)	-0.0363*** (0.0087)	0.0419*** (0.0097)	-0.0475*** (0.0095)	0.0462*** (0.0088)	-0.0273*** (0.0096)
<i>Labor per capita</i>	-0.2070*** (0.0717)	-0.0778 (0.0712)	-0.1485*** (0.0536)	0.0939 (0.0577)	-0.1440** (0.0635)	0.0144 (0.0557)	-0.1001* (0.0577)	0.0811 (0.0564)	-0.0165 (0.0487)	0.2129*** (0.0531)
<i>Corruption</i>	0.0403** (0.0158)	-0.0696*** (0.0156)	0.0658*** (0.0162)	-0.0852*** (0.0175)	0.0675*** (0.0179)	-0.0458*** (0.0157)	0.0647*** (0.0171)	-0.0931*** (0.0167)	0.0540*** (0.0146)	-0.0711*** (0.0160)
<i>GDP per capita</i>	0.1659*** (0.0248)	0.0676*** (0.0246)	0.1872*** (0.0206)	0.1191*** (0.0221)	0.2166*** (0.0200)	0.1329*** (0.0175)	0.2299*** (0.0205)	0.1297*** (0.0200)	0.1976*** (0.0184)	0.1320*** (0.0201)
<i>Military expenditure per capita</i>	-0.0220* (0.0124)	-0.0319*** (0.0123)	-0.0588*** (0.0118)	-0.0242* (0.0127)	-0.0539*** (0.0122)	-0.0212** (0.0107)	-0.0640*** (0.0123)	-0.0255** (0.0120)	-0.0540*** (0.0108)	-0.0345*** (0.0118)
<i>Instability</i>	0.0180** (0.0080)	0.0352*** (0.0079)	0.0230*** (0.0083)	0.0523*** (0.0090)	0.0318*** (0.0087)	0.0597*** (0.0076)	0.0327*** (0.0084)	0.0553*** (0.0082)	0.0286*** (0.0077)	0.0498*** (0.0085)
<i>Sub-Saharan Africa</i>	-0.1936*** (0.0422)	-0.2442*** (0.0419)								
<i>East Asia & Pacific</i>	-0.1539*** (0.0423)	-0.0377 (0.0420)								
<i>Eastern Europe & CIS</i>	0.1065** (0.0445)	-0.0918** (0.0442)								
<i>Latin America & Caribbean</i>	-0.0914** (0.0448)	-0.1327*** (0.0445)								
<i>Middle East & North Africa</i>	-0.1187*** (0.0424)	-0.2576*** (0.0420)								
<i>Leftist</i>			0.0054 (0.0213)	0.0256 (0.0229)						
<i>Rightist</i>			0.0646** (0.0266)	0.0641** (0.0286)						
<i>Monarchical</i>					-0.0115 (0.0258)	-0.1047*** (0.0227)				

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Welfare	Polity	Welfare	Polity	Welfare	Polity	Welfare	Polity	Welfare	Polity
<i>Presidential</i>					-0.0327 (0.0308)	-0.1423*** (0.0270)				
<i>Single party</i>							0.0534** (0.0246)	-0.0641*** (0.0241)		
<i>Nationalist</i>									0.0342* (0.0194)	-0.0757*** (0.0211)
<i>Trend</i>	0.0003*** (0.0001)	0.0001 (0.0001)	0.0002*** (0.0001)	-0.0001 (0.0001)	0.0001 (0.0001)	-0.0002*** (0.0001)	-0.0182 (0.0476)	0.0090 (0.0466)	0.0002*** (0.0001)	-0.0001 (0.0001)
Obs.	304	304	279	279	304	304	304	304	265	265
R ²	0.6742	0.5956	0.5916	0.4614	0.5680	0.5813	0.5718	0.4838	0.6038	0.5327
Root MSE	0.1228	0.1219	0.1301	0.1399	0.1414	0.1240	0.1408	0.1377	0.1168	0.1275
p > x ²	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: Dependent variables in system equations are: public welfare spending per capita, and the Polity index of democracy and autocracy. Sample is restricted to country-year observations for which the Polity index is less than 7. All estimations are performed using seemingly unrelated regression. All variables are in natural logs. Time dummies included in all system regressions; these and intercepts are not reported. Standard errors are in parenthesis.

* p < 0.10

** p < 0.05

*** p < 0.01

Table 4. Basic Estimations by Military and Repressive Characteristics, 1984-1999

Dependent variable:	Military-Ruled		Civilian-Ruled		Highly-Repressive		Non-Repressive	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Welfare	Polity	Welfare	Polity	Welfare	Polity	Welfare	Polity
<i>Non-tax revenue per capita</i>	0.1087*** (0.0187)	0.0418*** (0.0117)	0.0220** (0.0109)	-0.0509*** (0.0121)	0.0312 (0.0205)	-0.0179 (0.0264)	0.0498*** (0.0108)	-0.0442*** (0.0108)
<i>Labor per capita</i>	0.0069 (0.1128)	0.6067*** (0.0707)	-0.0113 (0.0699)	0.0765 (0.0777)	0.1987 (0.1468)	0.3070 (0.1885)	-0.1303* (0.0694)	0.1580** (0.0693)
<i>Corruption</i>	0.1018* (0.0545)	-0.0176 (0.0341)	0.0479*** (0.0170)	-0.1037*** (0.0189)	-0.0151 (0.0354)	-0.0931** (0.0455)	0.0699*** (0.0189)	-0.0869*** (0.0189)
<i>GDP per capita</i>	0.2114*** (0.0348)	0.0931*** (0.0218)	0.1942*** (0.0236)	0.1274*** (0.0263)	0.2255*** (0.0382)	0.1296*** (0.0490)	0.2217*** (0.0226)	0.1530*** (0.0226)
<i>Military expenditure per capita</i>	-0.0621*** (0.0209)	-0.0004 (0.0131)	-0.0410*** (0.0137)	-0.0299** (0.0152)	0.0058 (0.0264)	-0.0092 (0.0339)	-0.0710*** (0.0134)	-0.0401*** (0.0134)
<i>Instability</i>	0.0094 (0.0154)	0.0100 (0.0096)	0.0355*** (0.0098)	0.0649*** (0.0109)	0.0415** (0.0184)	0.0445* (0.0237)	0.0211** (0.0106)	0.0549*** (0.0106)
<i>Trend</i>	0.0001 (0.0001)	-0.0000 (0.0001)	0.0003*** (0.0001)	-0.0001 (0.0001)	0.0003* (0.0002)	-0.0001 (0.0002)	0.0001 (0.0001)	-0.0002** (0.0001)
Obs.	92	92	212	212	63	63	241	241
R ²	0.7170	0.7021	0.5269	0.5279	0.7086	0.5608	0.6094	0.4612
Root MSE	0.1371	0.0859	0.1256	0.1396	0.0997	0.1280	0.1390	0.1387
p > x ²	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: Dependent variables in system equations are: public welfare spending per capita and the Polity index of democracy and autocracy. Sample is restricted to country-year observations for which the Polity index is less than 7. Models (1) – (2) are further restricted to country-years in which the chief executive is a military officer, (3) – (4) where the chief executive is a civilian. Models (5) – (6) are restricted to observations for which the Political Terror Scale (PTS) is greater than 3, (7) – (8) when the PTS is 3 or less. All estimations are performed using three-stage least squares regression. All variables are in natural logs. Time dummies included in all system regressions; these and intercepts are not reported. Standard errors are in parenthesis.

*p < 0.10

** p < 0.05

*** p < 0.01

Table 5. Basic Estimations by Decade and Regime Duration (Non-Democratic Regimes, 1984-1999)

Dependent variable	1908s		1990s		Short Duration Regimes		Long Duration Regimes	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Welfare	Polity	Welfare	Polity	Welfare	Polity	Welfare	Polity
<i>Non-tax revenue per capita</i>	0.0592*** (0.0125)	-0.0417*** (0.0123)	0.0087 (0.0149)	-0.0498*** (0.0152)	0.0461*** (0.0155)	-0.0342** (0.0137)	0.0275** (0.0135)	-0.0054 (0.0131)
<i>Labor per capita</i>	-0.2481*** (0.0781)	0.1016 (0.0766)	-0.1238 (0.0798)	0.0975 (0.0812)	-0.1650* (0.0953)	0.1386 (0.0843)	-0.2105*** (0.0738)	-0.0364 (0.0716)
<i>Corruption</i>	0.0721*** (0.0192)	-0.0685*** (0.0188)	-0.0024 (0.0349)	-0.1588*** (0.0356)	0.0736*** (0.0279)	-0.0686*** (0.0247)	0.0576*** (0.0196)	-0.1013*** (0.0190)
<i>GDP per capita</i>	0.1724*** (0.0242)	0.1113*** (0.0237)	0.2878*** (0.0335)	0.1999*** (0.0342)	0.2053*** (0.0306)	0.1106*** (0.0271)	0.2178*** (0.0270)	0.1118*** (0.0261)
<i>Military expenditure per capita</i>	-0.0491*** (0.0163)	-0.0179 (0.0159)	-0.0676*** (0.0176)	-0.0571*** (0.0179)	-0.0584*** (0.0194)	-0.0160 (0.0171)	-0.0321** (0.0161)	-0.0708*** (0.0156)
<i>Instability</i>	0.0289** (0.0116)	0.0617*** (0.0114)	0.0307** (0.0119)	0.0521*** (0.0121)	0.0163 (0.0127)	0.0594*** (0.0113)	0.0552*** (0.0115)	0.0186* (0.0112)
<i>Trend</i>	0.0002** (0.0001)	-0.0001 (0.0001)	-0.0000 (0.0001)	-0.0003** (0.0001)	0.0002 (0.0001)	-0.0001 (0.0001)	0.0001 (0.0001)	-0.0002 (0.0001)
Obs.	140	140	164	164	139	139	151	151
R ²	0.6567	0.4650	0.5049	0.4530	0.5512	0.4815	0.7017	0.3959
Root MSE	0.1326	0.1300	0.1395	0.1420	0.1450	0.1283	0.1183	0.1147
p > χ^2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: Dependent variables in system equations are: public welfare spending per capita, and the Polity index of democracy and autocracy. Sample is restricted to country-year observations for which the Polity index is less than 7. Models (1) – (2) are further restricted to country-year observations from the 1980s and 1990s, respectively. In models (3) – (4), the sample is constrained to countries in which governments have survived 7 years or less, or more than 7 years, respectively. All estimations are performed using seemingly unrelated regression. All variables are in natural logs. Time dummies included in all system regressions; these and intercepts are not reported. Standard errors are in parenthesis.

*p < 0.10

** p < 0.05

*** p < 0.01

Notes

¹ We refer to dictatorships and “authoritarian regimes” interchangeably. These terms are used for convenience, and are not meant to signify only the most extreme forms of dictatorship. Rather, we are referring to all regimes that are less-than-fully democratic, including regimes in which some forms of limited voting and political participation are permitted.

² The use of logical models to identify underlying laws by which key constructs are related, and from which the form of empirical specifications is derived (rather than relying upon a single-equation linear specification regardless of the source and content of the data) has been advocated by, e.g., Taagepera (2005).

³ This is by no means coincidental; while support has long been considered one of the main dimensions of political performance, some of the conventional “modes” of achieving that legitimacy (building public trust, expanding participation, improving the responsiveness of government, etc.) are more easily measured and observed in democracies (e.g., see Almond and Verba 1965; Powell 1982; Putnam, Leonardi, and Nanetti 1993).

⁴ The exception is Razo (2002), who argues that the commitment problem in dictatorships can actually influence, in the end, the character of the political institutions that produce economically high- or low-performing dictatorships.

⁵ Przeworski and Gandhi (2006) assume that the dictator obtains legitimacy through policy concessions or through rent-sharing, while Acemoglu and Robinson (2005) and Jack and Lagunoff (2004) focus chiefly on the extension of the franchise. The dictator in these models also faces a trade-off between two instruments to retain power. Our concept of political rights, by contrast, includes but is not limited to voting rights.

⁶ While it is obvious why citizens should prefer greater welfare spending, similar preferences with respect to political liberalization may seem less clear. We find three general reasons for believing that citizens prefer greater political liberalization. First, following spatial analyses of political participation, greater inclusion allows citizens to move policy outcomes in their preferred direction. Second, the greater transparency and accountability that accompanies political liberalization can limit the ability of public officials to extract bribes from the public, and can limit waste in the use of public resources (Persson and Tabellini 2000; Reinikka and Svensson 2004). Third, survey data suggest that citizens also intrinsically value political and civil liberties (Inglehart and Wetzel 2003). Rather than choosing any single explanation, we encompass all three dimensions by assuming that political liberalization is an independent component of citizens’ utility functions. Consequently, the level of political liberalization may change over time due to changes in the exogenous variables, and, in contrast to many other models, these changes may be gradual and/or followed by reversals.

⁷ Note that, in this ultimatum game, unidirectional offers must be accepted or rejected—a valid assumption in a game between a dictator and citizens (Camerer and Thaler 1995). A game in which the dictator is allowed to make repeated offers, moreover, has the same unique sub-game perfect equilibrium as that of the ultimatum game (Muthoo 1999).

⁸ Indeed, even in “relative-deprivation” theories, economic conditions that increase the average level or intensity of expectations without increasing regime capabilities increase popular discontent (Gurr 1970).

⁹ The composite Polity score, based on separate measures of democracy and autocracy, ranges from -10 (most authoritarian) to +10 (most democratic). We re-scale the measure as $(10 + \text{democracy} - \text{autocracy})/20$, yielding a score from 0 (undemocratic) to 1 (democratic).

¹⁰ The normal ICRG measure of corruption is from 0 (most corrupt) to 6 (least corrupt). We re-scale such that higher numbers represent greater corruption.

¹¹ We use military spending rather than some measure of actual repression, given that we aim to proxy repressive capacity—the ability of a state to deter or defeat rebellions violent attempts at regime overthrow—rather than active repression. For reasons we explain below, we do not consider repressive capacity an “outcome” of the authoritarian bargain.

¹² Note that all variables are non-negative. For all variables z not bounded by 0 the natural log $\ln(z)$ was used. For variables bounded by 0, $\ln(1 + z)$ was used.

¹³ We do not include country-specific effects in our SUR estimations for three reasons. First, with multiple equations, the merits of introducing fixed effects are unclear given the fact that the asymptotic properties of fixed effects are based on single equations. It is, additionally, uncertain whether country fixed effects should be included in the individual component equations, or whether they should be constrained to be identical in both equations. Second, given that some variables in our specifications exhibit relatively little variation over time, the introduction of fixed effects would reduce the significance of other explanators. Finally, as previously mentioned, our chief interest lies in testing the predictive power of our structural model rather than in explaining the maximum sample variance.

¹⁴ The model of the “selectorate”—the individuals who hold the power to replace incumbents—suggests that in autocratic regimes where the size of the group whose loyalty is vital to dictatorial survival is small, leaders are more likely to provide private goods at the expense of public goods (Bueno de Mesquita et al. 2002).

¹⁵ Note that the poor estimation of the variance-covariance matrix is more likely to be a problem when the number of equations is quite large relative to the number of time periods.

¹⁶ The scorings for party orientation, as well as for single-party rule, and nationalist orientation are taken from the World Bank’s Database of Political Institutions (Beck et al. 2001). Note that this database also scores a limited number of governments as “centrist.” In our sample, only two countries are considered centrist—South Korea (in its last year of less-than-fully-democratic rule, 1996-1997) and Romania (until 1995). We code both of these as neutral.

¹⁷ This does not mean that all right-wing dictatorships spend more on public welfare or liberalize politically to a greater extent than left-wing dictatorships. Rather, it suggests that a rightist political orientation carries additional effects beyond those hypothesized by the model. Thus if countries governed by left-wing parties tend to be richer, less repressive, more corrupt, and more unstable, then they may very well spend more on welfare than countries governed by right-wing governments.

¹⁸ Note that increased repression in Wintrobe’s framework decreases the need for the regime to “invest in loyalty” (corresponding, roughly, to greater welfare spending in our approach). But we interpret the authoritarian bargain as one in which citizens accept limitations on political openness in exchange for economic benefits, and consequently, we choose to endogenize political openness rather than the ability to deter insurrection. The trade off between political openness and economic benefits, of course, partly depends on the capacity of the regime to deter insurrection; military expenditures—our (imperfect) proxy for repressive capacity—is thus an explanatory variable in our empirical model.

References

- Acemoglu, Daron, and James A. Robinson. 2001. "Inefficient Redistribution." *American Political Science Review* 95 (3): 649-61.
- Acemoglu, Daron, and James A. Robinson. 2005. *Economic Origins of Dictatorship and Democracy*. Cambridge: Cambridge University Press.
- Alesina, Alberto, Stephan Danninger, and Massimo Rostagno. 2001. "Redistribution through Public Employment: The Case of Italy." *IMF Staff Papers* 48 (3): 447-73.
- Almond, Gabriel A., and Sidney Verba. 1965. *The Civic Culture: Political Attitudes and Democracy in Five Nations*. Boston: Little, Brown.
- Banks, Arthur S. 2001. *Cross-Section Time-Series Data Archive*. Binghamton, N.Y.: SUNY.
- Beck, Nathaniel. 2001. "Time-Series-Cross-Section Data." *Statistica Neerlandica* 55 (2): 111-33.
- Beck, Thorsten, et al. 2001. "New Tools in Comparative Political Economy: The Database of Political Institutions." *World Bank Economic Review* 15 (1): 165-76.
- Bellin, Eva. 2004. "The Robustness of Authoritarianism in the Middle East: Exceptionalism in Comparative Perspective." *Comparative Politics* 36 (2): 139-57.
- Boix, Carles. 2003. *Democracy and Redistribution*. New York: Cambridge University Press.
- Bueno de Mesquita, Bruce, et al. 2002. "Political Institutions, Policy Choice and the Survival of Leaders." *British Journal of Political Science* 32 (4): 559-90.
- Camerer, Colin, and Richard H. Thaler. 1995. "Ultimatums, Dictators, and Manners." *Journal of Economic Perspectives* 9 (2): 209-19.
- Chaudhry, Kiren Aziz. 1997. *The Price of Wealth: Economies and Institutions in the Middle East*. Ithaca: Cornell University Press.
- Collier, Paul, and Anke Hoeffler. 2004. "Military Expenditure: Threats, Aid and Arms Races." *Centre for the Study of African Economies*, Oxford University. Typescript.
- Collier, Ruth Berins. 1992. *The Contradictory Alliance: State-Labor Relations and Regime Change in Mexico*. Berkeley: University of California Press.
- Di Palma, Giuseppe. 1990. *To Craft Democracies: An Essay on Democratic Transitions*. Berkeley: University of California Press.
- Friedrich, Carl J., and Zbigniew Brzezinski. 1956. *Totalitarian Dictatorship and Autocracy*. Cambridge: Harvard University Press.
- Gandhi, Jennifer, and Adam Przeworski. 2006. "Cooperation, Cooptation, and Rebellion under Dictatorship." *Economics & Politics* 18 (1): 1-26.
- Gasiorowski, Mark. 1995. "Economic Crisis and Political Regime Change: An Event History Analysis." *American Political Science Review* 89 (4): 882-97.
- Geddes, Barbara. 2000. "Authoritarian Breakdown: Empirical Test of a Game Theoretic Argument." Manuscript. University of California, Department of Political Science, Los Angeles, Calif.

- Gibney, Mark, and Matthew Dalton. 1996. "The Political Terror Scale." In *Human Rights and Developing Countries*, ed. David L. Cingranelli. Greenwich, CT: JAI Press.
- Gleditsch, Kristian S., and Jinhee L. Choung. 2004. "Autocratic Transitions and Democratization." Manuscript. University of California, San Diego, Calif.
- Grossman, Herschel I., and Minseong Kim. 1995. "Swords or Plowshares? A Theory of the Security of Claims to Property." *Journal of Political Economy* 103 (6): 1275-88.
- Grossman, Herschel I., and Minseong Kim. 1996. "Predation and Accumulation." *Journal of Economic Growth* 1 (3): 333-51.
- Gurr, Ted Robert. 1970. *Why Men Rebel*. Princeton, N.J.: Princeton University Press.
- Haggard, Stephan, and Robert R. Kaufman. 1995. *The Political Economy of Democratic Transitions*. Princeton, N.J.: Princeton University Press.
- Heydemann, Steve. 2002. "Defending the Discipline: Middle East Studies after 9/11." *Journal of Democracy* 13 (3): 102-8.
- Huber, Evelyne, Thomas Mustillo, and John D. Stephens. 2004. "Determinants of Social Spending in Latin America." Presented at the Society for the Advancement of Socio-Economics, Washington, D.C.
- Inglehart, Ronald, and Christian Wetzel. 2003. "Democratic Institutions and Political Culture: Misconceptions in Addressing the Ecological Fallacy." *Comparative Politics* 35 (4): 61-79.
- Jack, William, and Roger Lagunoff. 2004. "Dynamic Enfranchisement." Department of Economics Working Paper. Georgetown University, Washington, D.C.
- Jin, Hehui, Yingyi Qian, and Barry Weingast. N.d. "Regional Decentralization and Fiscal Incentives: Federalism, Chinese Style." *Journal of Public Economics* Forthcoming.
- Kang, David C. 2002. *Crony Capitalism: Corruption and Development in South Korea and the Philippines*. Cambridge; New York: Cambridge University Press.
- Kaufman, Robert R., and Alex Segura-Ubiergo. 2001. "Globalization, Domestic Politics, and Social Spending in Latin America: A Time-Series Cross-Section Analysis, 1973-97." *World Politics* 53 (4): 553-87.
- Kaufmann, Daniel. 1998. "Research on Corruption: Critical Empirical Issues." In *Economics of Corruption*, ed. Arvind K. Jain. Boston: Kluwer Academic Publishers.
- Keen, David. 1997. "A Rational Kind of Madness." *Oxford Development Studies* 25 (1): 67-75.
- Kuran, Timur. 1995. "The Inevitability of Future Revolutionary Surprises." *American Journal of Sociology* 100 (6): 1528-51.
- Lam, Richard, and Leonard Wantchekon. 2003. "Political Dutch Disease." Manuscript. New York: Department of Politics, New York University.
- Levi, Margaret. 1988. *Of Rule and Revenue*. Berkeley: University of California Press.
- Lindert, Peter H. 1994. "The Rise of Social Spending, 1880-1930." *Explorations in Economic History* 31 (1): 1-37.

- Linz, Juan J. 1978. *The Breakdown of Democratic Regimes: Crisis, Breakdown, and Reequilibration*. Baltimore: Johns Hopkins University Press.
- Linz, Juan J. 2000. *Totalitarian and Authoritarian Regimes*. Boulder, CO: Lynne Rienner Publishers.
- Lohmann, Susanne. 2000. "Collective Action Cascades: An Informational Rationale for the Power in Numbers." *Journal of Economic Surveys* 14 (5): 655-84.
- MacCulloch, Robert, and Silvia Pezzini. 2002. "The Role of Freedom, Growth and Religion in the Taste for Revolution." Development Economics Paper. Suntory and Toyota International Centres for Economics and Related Disciplines, London.
- Marshall, Monty G., and Keith Jagers. 2001. *Polity IV Project: Political Regime Characteristics and Transitions* [Available from <http://www.bsos.umd.edu/cidcm/polity/>].
- McFaul, M. 2002. "The Fourth Wave of Democracy and Dictatorship: Noncooperative Transitions in the Postcommunist World." *World Politics* 54 (2): 212-44.
- Moore, Mick. 1998. "Death without Taxes: Democracy, State Capacity, and Aid Dependence in the Fourth World." In *The Democratic Developmental State: Political and Institutional Design*, ed. M. Robinson and G. White. Oxford: Oxford University Press.
- Murillo, M. Victoria. 2000. "From Populism to Neoliberalism - Labor Unions and Market Reforms in Latin America." *World Politics* 52 (2): 135-74.
- Muthoo, Abhinay. 1999. *Bargaining Theory with Applications*. New York: Cambridge University Press.
- O'Donnell, Guillermo A. 1973. *Modernization and Bureaucratic-Authoritarianism: Studies in South American Politics*. Berkeley: Institute of International Studies.
- O'Donnell, Guillermo A., and Philippe C. Schmitter. 1986. *Transitions from Authoritarian Rule: Tentative Conclusions about Uncertain Democracies*. Baltimore: Johns Hopkins University Press.
- O'Donnell, Guillermo A., Philippe C. Schmitter, and Laurence Whitehead. 1986. *Transitions from Authoritarian Rule: Prospects for Democracy*. Baltimore: Johns Hopkins University Press.
- Olivier de Sardan, J. P. 1999. "A Moral Economy of Corruption in Africa." *Journal of Modern African Studies* 37 (1): 25-52.
- Persson, Torsten, and Guido Tabellini. 2000. *Political Economics: Explaining Economic Policy*. Cambridge, Mass.: MIT Press.
- Popkin, Samuel L. 1988. "Political Entrepreneurs and Peasant Movements in Vietnam." In *Rationality and Revolution*, ed. Michael Taylor. New York: Cambridge University Press.
- Powell, G. Bingham. 1982. *Contemporary Democracies: Participation, Stability, and Violence*. Cambridge, Mass.: Harvard University Press.
- Putnam, Robert D., Robert Leonardi, and Raffaella Nanetti. 1993. *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton, N.J.: Princeton University Press.
- Razo, Armando. 2002. "Political Control, Regulation, and Commitments in Dictatorships." Presented at the annual meeting of the American Political Science Association, Boston, Mass.

- Reinikka, Ritva, and Jakob Svensson. 2004. "The Power of Information: Evidence from a Newspaper Campaign to Reduce Capture." *Policy Research Working Paper 3239*. World Bank, Washington, D.C.
- Ross, Michael L. 2001. "Does Oil Hinder Democracy?" *World Politics* 53 (3): 325-61.
- Ross, Michael L. 2004. "Does Taxation Lead to Representation?" *British Journal of Political Science* 34 (2): 229-49.
- Schiavo-Campo, Salvatore, Giulio De Tommaso, and Amitava Mukherjee. 1997. "An International Statistical Survey of Government Employment and Wages." *Policy Research Working Paper 1806*. World Bank, Washington, D.C.
- Seligson, Mitchell A. 2002. "The Impact of Corruption on Regime Legitimacy: A Comparative Study of Four Latin American Countries." *The Journal of Politics* 64 (2): 408-33.
- Smith, Benjamin. 2004. "Oil Wealth and Regime Survival in the Developing World, 1960-1999." *American Journal of Political Science* 48 (2): 232-46.
- Taagepera, Rein. 2005. "Beyond Regression: The Need for Logical Models." Presented at the Third Conference of the Belgian Political Science Association, Liège.
- Wintrobe, Ronald. 1998. *The Political Economy of Dictatorship*. New York: Cambridge University Press.
- World Bank. 2004a. *From Transition to Development: A Country Economic Memorandum for the Russian Federation*. Washington, D.C.: World Bank.
- World Bank. 2004b. *Unlocking the Employment Potential in the Middle East and North Africa: Toward a New Social Contract*. Washington, D.C.: World Bank.

ISBN: 978-0-9790376-2-7