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Abstract

We present and test empirically a new theory of property and contract rights. Any incentive an autocrat has to respect such rights comes from his interest in future tax collections and national income and increases with his planning horizon. We find a compelling empirical relationship between property and contract rights and an autocrat's time in power. In lasting -- but not in new -- democracies, the same rule of law and individual rights that ensure continued free elections entail extensive property and contract rights. We show that the age of a democratic system is strongly correlated with property and contract rights.

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1. Introduction

What types of governments are most likely to have economic policies and institutions that generate good economic performance? There are examples of good -- and of bad -- economic performance under both autocratic and democratic governments. Many empirical studies have compared the economic performance of autocracies and democracies, but their conclusions are remarkably varied and inconclusive. We shall show here that it is naive to suppose that one of these types of political systems will regularly have better economic performance than the other.

The quality of economic policies and institutions depends partly on the incentives and constraints that face those who make governmental and legal decisions. These incentives and constraints vary from one autocracy to another and from one democracy to another. We contend that they vary so much within these two types of regimes that any empirical tests that merely distinguish governments as autocratic or democratic are bound to be mis-specified. We show that, when appropriate distinctions are drawn within each of these two types of governments, clear and robust empirical findings emerge.

The importance of incentives within different types of governments becomes immediately evident when we think about the sometimes hoped-for benevolent dictator who understands (or who is guided by economic advisers who understand) the advantages of markets and uses them effectively to elicit economic growth through the rational self-interested behavior of his subjects. A moment's reflection reveals a methodological inconsistency: if the autocrat's subjects are supposed to be self-interested, we should impartially assume that the autocrat will also take his own interests into account. If he does, then whenever insecurity about his hold on power or anything else gives him a short time horizon, he will gain from expropriating any assets of his

subjects whose tax-yield to him over the short time horizon is less than their capital value. He will typically also gain resources by printing money to spend on his own purposes, thereby taxing real money balances through inflation, and by repudiating his debts. Such measures increase the resources he can use to attempt to keep himself in power or to serve his interests in other ways. There are countless examples throughout history of autocrats who have taken such measures. In such cases, the rational self-interest of an autocrat is inconsistent with the private property rights that are necessary for an effective market economy.

By contrast, a similarly rational and self-interested autocrat expecting to rule for a long time (and especially one with dynastic expectations) would gain from respecting -- and even protecting -- the property of his subjects. This would increase investment and future productivity and thus also his long-run tax collections. There are also many historical examples of autocrats who have served their long-run interests in this way.

Thus autocrats with different time horizons face dramatically different incentives. This means that we cannot correctly estimate the impact of autocratic government on economic performance without taking the time horizons of the individual autocrats into account. The empirical results in this paper suggest that this is a matter of some importance.

Consider now the factors that can endanger property and contract rights in a beginning democracy. Suppose the democratic debut involves nothing more than an election that gives victory to some political leader or optimizing party. When an elected leader has such power, it brings him benefits, so we cannot take it for granted that democratic leaders will be indifferent to whether or not they continue in power or that they will exercise their power without regard to their own interests. The elected leadership might maximize its chances of re-election by confiscating

the assets of unpopular minorities or of the rich and distributing the proceeds among those from whom it hopes to obtain a majority in the next election. It might sometimes also improve its chances of staying in power by seizing opposing media of communication, or the assets of political opponents, or any firms or fortunes that are linked to its opponents.

Such measures terminate or at least endanger the democracy (and often are a sign that the current elected leader is on the way to becoming a dictator). They could not even be implemented if the democracy has courts that rigorously enforce the rule of law. But an initial election (however fair) does not by itself guarantee that there is an effective legal system enforcing the rule of law. Thus transitory democracies can easily suffer from expropriations that have the same harmful effects on property rights as the predations of an autocrat. If a government does not have (or respect) the legal mechanisms that constrain usurpations of individual rights, it cannot be a lasting democracy, but some democracies do not last long.

The situation in a lasting democracy is utterly different not only from transitory democracies but also from autocratic governments. Though lasting democracies suffer from sclerotic accumulations of special-interest lobbying and (like all other types of governments) often have economically inefficient policies, they <u>necessarily</u> hold elections under law and the governmental leaders or parties that are defeated surrender power in accord with the law. There cannot be genuine elections unless even the leading opponents of the party in power have not only political rights but also the economic rights needed to obtain a livelihood. If even those who are the main competitors of the existing leaders of government have these rights, they should normally be available to others as well. (This is true of any lasting representative government, whether it has universal adult suffrage, such as is typical now, or a more restrictive suffrage, such as was

characteristic of representative governments in the nineteenth century and earlier. Thus our argument applies to all representative governments, but since the representative governments in our data base are overwhelmingly universal suffrage democracies, we use the familiar word "democracy" to cover all representative governments.)

Moreover, the independent judiciary, the courts, the respect for law, or whatever other mechanisms ensure that a democracy abides by competitive elections held according to law, necessarily also ensure that the citizenry has the freedom to do whatever is permitted under the law. This freedom by definition provides some individual rights: individuals have the socially protected right to do whatever is not prohibited by law. Property rights are simply the individual rights that relate to things that may be bought and sold. As James Madison put it, just "as a man is said to have a right to his property, he may equally be said to have a property in his rights."[1] Property and contract rights are protected by the same institutions that protect other individual rights. Societies are therefore constrained in their choices: they cannot prohibit all types of private property and freedom of contract and also have a lasting democracy. A stable democracy without any property and contract rights is not in the feasible set. All lasting representative governments that have been observed, however wise or unwise their laws may be, always have extensive property and contract rights.

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[1] In the National Gazette for March 27, 1792 (Madison Papers, 1983).

Whereas in an autocracy it is the leader's interest in his future tax returns (and thus in the future income of his domain) that is the source of any property and contract rights, in any lasting democracy it is the very mechanisms that ensure that a leader can not unilaterally extend his hold on power that are the source of property and contract rights. Though some democracies suffer from excessive turnover of leadership, the legal replacement of democratic leaders is in general a sign of the effective rule of law, and thus of the property and contract rights of the citizenry.

Property and contract rights in a democracy rest mainly on the need, if the democracy is to last, to leave decisions about whether the law is being followed to relatively disinterested parties. Political leaders have an incentive to interpret the law in whatever way best furthers their own interests, so a democracy will not last if they can interpret the law as they please. The rule of law needed for a lasting democracy will prevail only if disputes under the law are adjudicated mainly by individuals who have no stake in the dispute. This in turn requires institutions that, by social design, have a very special structure of incentives and constraints: one in which those who make decisions do not share in the losses or gains of any party to the dispute, and in which a knowledge of the law and a reputation for fairness increases the chances for advancement. To last, a democracy must maintain and abide by such institutions, notably courts with an independent judiciary.

We hypothesize that the dependence of any lasting democracy on legal institutions with this special structure of incentives and constraints is the main source of property and contract rights in democracies. In an autocracy, on the other hand, the autocrat is by definition the source of law and thus above the law and able to override any of his courts. Thus his motive for providing property and contract rights, even if they are provided through courts, is rather mainly

his interest in the income and taxable capacity of his domain. The structures of incentives and constraints that give rise to property and contract rights in democracies and autocracies are, therefore, dramatically different.

The foregoing logic leads us to hypothesize that in autocracies it is the time horizon of the individual autocrat (or, occasionally, the ruling clique) that is the main determinant of property and contract rights, whereas in democracies these rights depend upon whether the democratic system is durable.

Many democracies are transitory and such property and contract rights as they provide can be quite inferior to those provided by some secure autocrats. An autocrat has, however, the capacity to seize any assets in the country that he rules, whereas no single individual in a continuing democracy can unilaterally seize the assets of others or abrogate their rights under contracts. Any autocratic society will sooner or later come to have rulers with short time horizons due to succession crises or other causes. We therefore hypothesize that democracies that have lasted for some time and are expected to last much longer provide better property and contract rights than any other type of regime. The societies that are consistently havens for capital flight and that have experienced steady capital accumulation across generations are all lasting democracies.[2]

In this paper we test empirically the theory that has just been described. Section 2 shows how the theory lends itself to relatively straightforward empirical tests, both because here past experience is a relatively good guide to the future, and also because the tests are not likely to be subject to any severe endogeneity problems. Section 3 describes our data on regime type, regime

[2] The foregoing theory is set out more fully in Olson (1991, 1993) and in McGuire and Olson (1996).

duration, and property rights. Section 4 reports empirical findings on property rights and regime type, while Section 5 presents findings on property rights and regime duration. Sections 6, 7, and 8 test the robustness of our results and show that they are not an artifact of reverse causation, sample selection, measurement error, or heteroskedasticity. We conclude with Section 9.

2. Empirical Tractability

However long a political regime has survived, the incentive structure changes drastically if that regime is expected to collapse soon. This expectation will not only change behavior in the political system, but will also alter behavior in the market. Even if property or contract rights are good at the moment, it will usually not pay to make long-term contracts or investments if one expects that contracts will not be enforced or property rights protected a year from now. Therefore, the institutions and policies that determine contract and property rights, like monetary and macroeconomic policies, affect reality not only directly but also through their impact on the expectations of the participants in the economy.

It might seem that, because expectations about the future are important, yet not directly measurable, the foregoing theory would be difficult to test. In fact, there are some important and interesting reasons that make empirical testing relatively straightforward. The idea that the past is prologue is especially relevant in this area.

Consider democratic systems first. The length of time that a legal system has been operating is a major determinant of how well property and contract rights are defined and delineated. It is beyond the wit of man to think of all possible contingencies that might lead to disputes about contracts or property. Thus legal systems that have litigated a great many cases and have accumulated a vast store of precedents offer better defined and delineated contract and

property rights than otherwise similar systems that have just started. Some new political systems have dealt with this problem by adopting wholesale the commercial codes and court precedents of other countries. Though in some cases, such as in the continued use of English common law precedents in the United States after it achieved independence, this is relatively easy, there are often substantial problems arising from differences in technology, customs, language, and experience between the country with the new political system and the country whose legal codes and precedents are being adopted. Thus the length of time a legal system has been operating affects the way it works, quite apart from the way that its age affects its viability.

The impact of age on viability is nicely illustrated by elections in the United States. Though there are substantial industries that do economic and political forecasting, one virtually never sees forecasts about whether, say, the 1998 Congressional elections will take place. In large part because elections in the US have been held as scheduled for more than 200 years, it is simply taken for granted that they will be held as scheduled. Similarly, the fact that the British court system has protected property and contract rights with continuity for more than 300 years means that certain property and contract rights in Britain are not the object of explicit forecasts, but are unthinkingly taken for granted. Such tacit assumptions about the institutional reality are, in turn, part of the institutional reality: what everyone expects -- and especially what everyone takes for granted -- is more likely to happen precisely because of these explicit or tacit expectations.

New democracies not only usually lack the security that comes from such expectations, but they are often also set up in extremely fluid -- and sometimes nearly anarchic -- situations. When the flag of a new democracy is raised, it may not even be clear how many will salute: there is not only uncertainty about how long the new democracy will last, but sometimes it is not even clear

that the new democracy has the power needed to protect property and contract rights.

Thus we conclude that the age of a democratic political system is not only directly pertinent to the property and contract rights in a democracy, but also a reasonable proxy measure of both the likelihood and the popular expectation that a given democratic system and the rights it provides will last for the foreseeable future.

Now let us consider autocracy. It is instructive to start with Mao's maxim that political power grows out of the barrel of a gun. Accepting this maxim does not imply, however, that an autocrat is the best marksman in the country, much less that he personally could outgun any large number of his subjects. The power of an autocrat when he is powerful grows mainly out of the belief that his subordinates will use their guns in the service of the autocrat, thereby making it exceedingly costly for other subjects to rebel. But who guards the guards? What explains why a given officer in the autocrat's army or police will obey the autocrat's orders, when they do, in fact, obey? If any officer <u>expects</u> that all or almost all of the other officers will follow the autocrat's orders, then he has no choice but to follow these orders also. What each of the other officers does also depends on what they, in turn, expect their colleagues to do. If almost everyone expects that almost all of the officers will follow the autocrat's orders, the autocrat is securely in control and likely to remain in control for some time. What it is rational to do depends on what average opinion expects average opinion to be. When someone has appointed himself the new autocrat, it is usually not clear what each officer will expect, or expect that his colleagues will expect. So autocrats who have not consolidated their power do not, in fact, necessarily have much power.

Thus the power of an autocrat is in large part the outcome of a coordination game. Just as it is irrational to drive on a different side of the road than other people going the same direction

expect to use, so it is irrational to ignore the expectations of others in assessing an autocrat's power. This means that usually the longer that an autocrat exercises power, the more people will take for granted that his orders will be followed, and the more power he has.

One check on the validity of the foregoing arguments is the correlation between the elapsed duration of an autocrat's rule and the likelihood of a coup. We calculated the probability of a coup for all regimes for all years from the data for 1948-82 as a ratio of two numbers. The numerator is the sum of all autocrats who were deposed by a coup in year *t* of their tenure. The denominator is the sum of all autocrats with tenure greater than or equal to *t* - 1. The probabilities of both successful and unsuccessful coup attempts are quite high in the first five years of an autocrat's tenure, but decline dramatically as duration increases. The probability of a coup attempt in the first year (including successful coups) is 32%, 20% in the second year, and below 10% for most years beyond the sixth. This pattern suggests that the duration of an autocrat's rule is a reasonable approximation of regime stability and expected remaining duration. This pattern is also consistent with our use of the log of duration in all empirical specifications, so that increases from, say, 0 to 3 years in the elapsed duration of an autocrat's rule are weighted much more heavily than increases from 10 to 13 years. A similar calculation was made for democracies. Again, the probabilities of successful and unsuccessful coups tend to decline as the elapsed duration of democracy within a country increases.

It might be thought that the expected remaining duration of an autocrat's regime would be inversely related to the age of the autocrat, since human life is finite and this sets a maximum value on the expected remaining duration of an autocrat's regime. Age and duration increase together, making duration to date a suspect proxy for the expected remaining time in power. However, the

prospects of natural death constrain the time horizons of even very old leaders less than one might expect. The probability of death from natural causes in a particular year is not high even at advanced ages. From the life tables of the United States, average remaining years of life exceeds five years even for an 80-year-old male. Furthermore, our use of the log of duration ensures that minimal weight is given to further increases in tenure for aging autocrats of long standing included in our sample, such as Banda of Malawi and Franco of Spain. In any event, the expectation of natural death will have less impact on an autocrat's incentives than the expectation of exiting via a coup. An autocrat may spend substantial amounts of a country's resources attempting to stave off a coup -- or preparing for a luxurious exile -- but there are limits to what he can usefully spend to stave off natural death. A proxy measure that declined in value when autocrats reached advanced ages thus might be a less accurate measure of incentives to protect property rights than the one used here.

Thus we take the elapsed duration of an autocrat's (or an autocratic group's) rule and the current age of a democratic system as proxies for its expected remaining life: what has survived for a long time is expected to be more likely to last than that which is new. In summary, our theory leads us to predict a positive relationship, for both autocracies and democracies, between the duration of a regime and the security of the property and contract rights that its citizens enjoy. For both types of regimes, this positive relationship is the result of the joint hypotheses that (1) past duration of the regime is positively related to expected future duration, and (2) expected future duration is positively related to the security of property and contract rights. In addition, for democracies we argue (3) that the mechanisms that support contract and property rights function better, the longer the democracy has been continuously in existence, apart from the effect of

duration on expectations of its future life. Though the incentive structures underlying these relationships are different for democracies and autocracies, the expected empirical relationship between duration and property rights is the same.

There is another reason why testing the implications of the foregoing theory is relatively straightforward. The key causal variables are the age of a democratic system and the duration of an individual autocrat's rule. As Grossman and Noh (1990) have shown, the time in office of a democratic leader in a political system with free entry is likely to be quite sensitive to the policies chosen by that leader. A leader or political party with a rapacious policy is much less likely to be able to win support for continuation in office than one that has followed a policy that favors the welfare of the citizenry. To determine the relationship between the tenure in office of an individual democratic leader and his impact on property and contract rights, one would have to measure not only the effect of leaders' time horizons on the policies they chose, but also the impact of the policies chosen on the probability of re-election. There would presumably be strong causal connections going in both directions and this would complicate empirical testing. By contrast, when the age of a democratic system -- or the length of a single autocrat's rule -- is at issue the situation is relatively straightforward.

In a secure democracy in which the continuation of representative government is taken for granted, the incumbent leader may not even give any thought to the implications of his policies for the life of the political system. The property and contract rights at issue are, moreover, more often the province of the courts and the legal system than of the elected officials. In a democracy that is quite insecure the courts may be much weaker and the incumbent leader obviously may take an interest in the question of how long the democracy will last, since his position as leader may be

affected. But it would be wrong to conclude that he is necessarily motivated by a desire to prolong the life of the democracy: he could, for the reasons set out above, also be motivated by a desire to become a dictator who does not have to continue to answer to the electorate. Thus, just as he might choose policies that are intended to increase the life of the democracy, so he might choose policies with the opposite objective. While our theoretical framework suggests that there should be a strong tendency for lasting democracies to have better individual rights than those that have not yet been securely established, it does not suggest that there should be any strong and regular tendency for democratic leaders to choose policies about property and contract rights that are intended to change the duration of the democratic system. Accordingly, our theory implies that the age of a democratic system is not directly influenced by policy choices. Policy choices may influence the survival probability of a democratic system through their impact on economic performance, but we control for per capita GDP levels and growth rates and this should capture much of the effect of any endogenous policy choices. We shall later see that our statistical examination of this issue offers further reassurance.

In the case of autocracy, there can be no doubt that an autocrat has an incentive to choose policies that will extend his tenure. Though this effect can indeed lead to bias in our estimates, the bias runs against our hypothesis. We assume autocrats optimize, so that an autocrat with a low survival probability <u>increases</u> his exactions and reduces his expenditures on the legal infrastructure. One reason he does this is because he has little reason to take account of the reduction in future tax receipts that this brings about. Another reason is that he rationally gives a relatively higher value to resources that he can obtain now to shore up his hold on power by strengthening his instruments of social control and by subsidizing pivotal allies. Though a

government whose survival depends on popularity with an electorate may gain from lowering taxes, an autocrat's tenure does not depend on any electorate. It typically depends instead on the power and loyalty of his military and police forces and on the support of his allies.[3] He needs resources to obtain this power, loyalty, and support. If most autocrats tried to extend their tenures by improving the welfare of their subjects, much of the effects of this behavior would in any event be captured by per capita GDP levels and growth rates, which we control for.

Thus in our model an autocrat's incentive to increase taxes and reduce expenditures on legal infrastructure improves his survival probabilities. Higher taxes still have an opportunity cost for an autocrat, however: higher taxes (and insecure property and contract rights) reduce future GDP levels. At a sufficiently high probability of survival, the costs of foregone future tax revenues from reducing GDP outstrip the benefits from using current tax revenues to extend one's tenure, particularly if one makes the reasonable assumption that survival probabilities increase at a diminishing rate as expenditures on repressive forces and pivotal allies increase.

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[3] See Olson (1965) on the logic behind this conclusion and Lichbach (1995) for a most thorough survey of the literature on this subject. See also Svensson (1994) for a broadly similar model in which investments in legal infrastructure in period 1 are negatively related to the current government's prospects of remaining in power in period 2. Unlike our results reported below, Svensson's empirical tests utilize only country-level averages of instability, property rights, and investment, and do not differentiate democracies from autocracies.

Accordingly, optimization by insecure autocrats assures that they adjust their economic policies to make their tenure less short or insecure than it would otherwise be. They do this by increasing their exactions or confiscations to obtain more resources for protecting their hold on power. To the extent that autocrats who would otherwise have a short tenure succeed in extending their hold on power, our coefficients on the duration of autocrats tend to be biased downward: those insecure autocrats whose expedient expropriations have enabled them to cling to power for extended periods reduce the generally positive association between the elapsed duration of an autocrat's rule and the security of property and contract rights. We nonetheless later report the results of tests that correct for the possibility our coefficients are biased upwards by a feedback from improved policies to lengthened tenure.

3. Regime Types, Regime Duration and Property Rights: The Data

This section describes the variables we use to assess regime types, regime duration, and property and contract rights. Since both the regime type and regime duration variables have been newly constructed for this paper and should ultimately also prove useful to other investigators, we must describe them fully. But the rest of the paper should be comprehensible even to those readers who have skipped this section.

3.1. Defining Regime Types

Most recent empirical studies of democracy and economic performance make use of Gastil's (1989) measures of political rights and/or civil liberties. The Gastil measures include some rights that are more nearly outcomes of political and economic processes than defining

features or requisites of a democratic political system.[4] Given that our interest is in assessing the impact of regime type on property rights, the outcomes-based nature of the Gastil indexes makes them inappropriate indicators of democracy. In addition, they do not cover part of our sample period.

[4] The civil liberties checklist includes "personal social rights, including those to property, internal and external travel, choice of residence, marriage, and family," "freedom from gross social inequality," "freedom from gross government indifference or corruption," and "socio-economic rights: including freedom from dependency on landlords, bosses, union leaders, or bureaucrats." The political rights checklist includes "recent shifts in power through elections," "significant opposition vote," and "informal consensus: de facto opposition power."

Our definition of democracy is procedural. In a democratic regime the chief executive and the legislature are both elected in competitive elections and the legislature is effective, in the sense that it has considerable autonomy. In this definition both presidential and parliamentary systems can be fully democratic. A regime falls short of full democracy if the elections are not fully competitive or if the executive's power is so predominant that the legislature does not provide an effective check on that power.

Our definition of democracy is procedural, but the existence of competitive democratic procedures implies the existence of certain rights. It is obviously impossible for a society to have continuing and truly competitive elections unless certain freedoms are maintained. Thus continuing representative government implies free speech, the right to campaign freely, the right to form political parties, the right of peaceful demonstration, and freedom from arbitrary arrest. It also implies that at least some opponents of the party in power must be able to survive economically, and thus have at least enough property and contract rights to remain viable. The only fully competitive elections are those in which even the opponents of the party in power have the rights they need to compete and to survive.

A full-fledged dictatorship, on the other hand, is a regime in which neither the chief executive nor the legislature (if one exists) is chosen in a competitive election, or one in which a competitively-elected legislature is rendered ineffective by a non-elected (or not competitively elected) executive.[5]

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[5] The definitions of democracy and dictatorship refer exclusively to the characteristics of the national government. We do not attempt to characterize the selection of officials at the sub-national levels.

We classify regimes by relying as much as possible on the judgments made by other observers, although in a few situations we draw our own inferences in resolving ambiguities. These instances are explained below. Our basic sources for data on selection of the chief executive and effectiveness of the legislature are Gurr's *Polity II* (1990) and Banks (1979). Our classification assigns a number from I to V to each country in each year, where these numbers have the following meanings:

I. Dictatorship
II. Almost Dictatorship
III. Intermediate Category
IV. Almost Democracy
V. Democracy

These classifications are based on the variables executive competitiveness (XRCOMP) from Gurr and executive selection (EXSELEC) and legislative effectiveness (LEGEF) in Banks. Gurr and Banks provide two alternative judgments about the selection of the chief executive. Gurr's XRCOMP classifies countries into one of three categories with respect to how the chief executive is selected. These may be loosely described as (1) no elections or rigged elections; (2) dual/transitional, where there are two executives or there is a transition between selection and election; and (3) competitive election. Banks' EXSELEC provides essentially a two-way classification: the chief executive is either elected or not. Banks' LEGEF classifies countries into one of three categories with respect to the legislature: (1) no legislature or one that is rendered completely ineffective by domestic turmoil or by the actions of the chief executive; (2) a partially effective legislature; (3) an effective legislature, elected under competitive conditions.

Five categories (I-V) are derived from these variables in the following way. A full-fledged Democracy (V) is in the top category on all three variables, while a full-fledged

Dictatorship (I) is in the bottom category on XRCOMP and LEGEF. An Almost Democracy (IV) falls short of the top rating on either XRCOMP or LEGEF, while an Almost Dictatorship (II) is in the intermediate category on LEGEF. The other cases are classified in the Intermediate Category (III), or are inconsistent (for example, because Gurr and Banks rate the chief executive differently, or because the legislature is rated as fully effective yet the chief executive was selected rather than elected).[6] In our empirical tests below, we treat countries in categories IV or V as democracies, and countries in categories I and II as autocracies. The small number of country-year observations in category III are omitted.

The Gurr and Banks data are available only through 1986. Our research assistant Suzanne Gleason updated regimes codings through 1990, relying primarily on the *Europa Yearbook*. Only seven countries were judged to have changed classification between 1986 and 1990.

Empirically, the differences between our procedural definition and the Gastil outcomes-based measures turn out to be relatively minor.[7] A crucial advantage of our measure for present purposes is that the data it is based on are available well before the 1973 beginning date for Gastil's indexes.

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[6] Our conception of democracy is fundamentally consistent with the conceptions of Bollen (1990) and other political scientists who have adopted a procedural definition of democracy. There is a conceptual difference, though, between our scheme and those that add up the scores on different indicators. Such a methodology assumes that the contribution of a characteristic to the democratic nature of a regime is independent of the level of other characteristics. However, the marginal productivity of an input (in this case, in producing democracy) usually depends on the level of other inputs. A dictator who tolerates freedom of the press during periods in which he feels secure in his position does not on that account become a more democratic ruler. Similarly, the fact that the ballots are counted honestly does not make a regime more democratic if important political alternatives are prevented from participating in the elections. Our classification does not yield a ranking identical to one obtained from a mechanical adding up of the scores on each of the component indicators. See the Appendix for a summary of our classification scheme.

[7] The simple Spearman rank-order correlations between our 5-category political regime indicator and the 7-point Gastil measures are quite high: 0.87 for political rights and 0.82 for civil liberties. Changes in Gastil ratings of countries over time are highly correlated with changes in our classification. Correlations of each with property rights indicators differ very little.

3.2. Measurement of Regime Duration

For democracies, we create two duration measures: DEMDUR refers to the number of consecutive years that a country has been a democracy[8] (i.e., regime type IV or V), while DEXDUR is the number of years that the chief executive has been in office in a democracy. Thus, DEMDUR is reset to one in any year in which the country lapses from democratic status (i.e., drops to category III or below), while DEXDUR is reset to one in any year in which the chief executive changes.

For autocracies, the variable AUTDUR is defined as the number of consecutive years that the chief executive in an autocratic nation has been in power. The value of AUTDUR thus increases by one for each year that the autocrat remains in power and the regime remains in either of the categories I and II. The variable is reset to one in any year in which the chief executive changes. This proxy for the time horizons of decision makers in autocracies fits the simplest and most common type of modern autocracy: one-man rule with no established procedures for succession.

[8] Our data on property rights go back no further than 1969. In measuring duration of regimes, we begin counting in 1930. Since we use the log of duration in regressions, neglecting to identify an earlier starting date for democracy in the U.S., Britain, etc. affects our estimates for DEMDUR's impact only trivially.

There are, however, some cases for which this proxy for autocratic time horizons does not apply. Though autocracies are much less likely to be institutionalized than democracies, some relatively autocratic or at least non-democratic regimes have achieved a degree of institutionalization. For these regimes, the duration of the chief executive will be a somewhat noisy measure. In exceptional cases, such as Mexico in the heyday of the PRI, where institutionalization reaches levels that are not normally found outside of the advanced democracies, the expected remaining duration of the President's rule is never more than his institutionally given single term of six years, but the time horizon of the PRI's oligarchic establishment has been far longer. In the more general case of undemocratic and entrenched ruling parties,[9] the chief executive may be removed by the party's ruling council or Politburo while the dictatorial rule of the party continues. As in Saudi Arabia, the monarch often attains and maintains power only with the backing of other members of the royal family. For a chief executive who intends to have his son succeed him in power, the autocratic planning horizon is so long that any confiscation that reduces investment and thus future income and tax collections will not be advantageous. What is common to all of these cases is the presence of a "ruling group," a family or party with an indefinitely long life span and thus a longer-run interest in the nation's long-term economic performance than an individualistic autocrat would have. Autocratic ruling groups usually also impose some constraints on the unilateral decisions of their leaders.[10]

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[9] In addition to Mexico, prominent examples include Taiwan and most communist countries (which are not in our sample).

[10] The chief of such a dictatorial party usually has little chance of success if he attempts to use society's resources to maintain power in the face of widespread opposition within his party. The costs of losing power are also usually lower where autocracy is institutionalized, as the party can offer a deposed leader credible guarantees of a safe, comfortable retirement.

These considerations lead us to adopt a second measure of tenure for autocracies, the duration of the ruling group (AUTGROUP). Whenever one autocrat is succeeded by another autocrat belonging to the same "group," the counter variable AUTGROUP continues, rather than re-starting at one, as AUTDUR does. As with AUTDUR and DEMDUR, we hypothesize that far-sighted policies regarding property rights will be associated with higher values of AUTGROUP, our measure of stability of the ruling group. In defining groups, our primary criterion is the peaceful transfer of power. Except in rare circumstances (such as an overthrow within a ruling family, as in Oman in 1970), exit via a coup is regarded as a change in group. Information from *Europa Yearbook* and other sources was used in judging the extent to which a new leader represented a sharp break with his predecessor. Monarchical succession, and transfers of power within strong ruling parties (or revolutionary councils) were coded as occurring within a given group. In all, about 30 percent of transfers were judged to be intra-group.

3.3. Property Rights Measures

There are many ways in which governments can violate -- or fail to protect against private theft and usurpation -- the property and contract rights of its citizens and subjects: direct expropriation of assets, defaulting on public debt, debasing the currency, prohibiting any transactions other than those at officially established prices, and failing to provide a legal infrastructure that impartially enforces contracts and adjudicates disputes about property rights. No one measure can capture all of these aspects of property and contract rights, so we use six separate variables: the amount of "contract-intensive money" (defined below), indexes from two firms evaluating risks to foreign investors, a subjective measure of default risk, currency

depreciation, and the black market exchange premium.

"Contract-intensive money" (CIM) is defined as $(M_2-C)/M_2$, where M_2 is a broad definition of money and C is currency outside banks. In environments in which third-party enforcement of contracts is reliable and where property rights facilitate pledging of assets as security for loans, banks and other financial intermediaries will profit from providing retail banking services at low cost, and sometimes even from paying interest on bank deposits, in order to obtain money that they can lend at higher rates. If the public can rely on institutional stability and third-party enforcement of contracts, they can be confident that the banks or government will not confiscate their deposits. Thus the rationale for this measure is that those forms of money, such as currency, that rely least on the fulfillment of contractual obligations by others will be preferred when property and contractual rights are insecure, whereas other forms of money are more advantageous for most purposes in environments with secure contract-enforcement and property rights. Since the non-currency components of M_2 are, by definition, held in banks or other financial institutions, poor contract enforcement and property rights imply that any advantages of using money in the form of deposits in financial institutions are small and that there is also the risk that sums deposited will not be recovered. Thus the poorer contract-enforcement and other institutions in a society, the smaller the proportion of contract-intensive money individuals will hold. We have found the proportion of contract-intensive money to be a useful and reliable measure in other contexts as well.[11]

For two other measures of property rights, we employ ratings compiled by two private

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[11] For a more extensive description of and justification for CIM, and evidence on its relationship to economic performance, see Clague, Keefer, Knack and Olson (1995).

firms for potential foreign investors. Though these ratings are subjective, the firms that produced them for sale had an incentive to make them as accurate as possible, and the fact that they were purchased by investors who would lose from wrong information also adds something to their credibility. The International Country Risk Guide (ICRG), published since 1982, covers more than 100 countries. Business Environmental Risk Intelligence (BERI) has provided ratings for about 50 countries beginning in 1972.

From five variables contained in one of these sources and four scored by the other, we create the two simple additive indices, "ICRG" and "BERI."[12] The five variables comprising the ICRG index are "Expropriation Risk," "Risk of Contract Repudiation by the Government," "Quality of the Bureaucracy," "Corruption in Government," and "Rule of Law."[13] Variables entering the BERI index include "Contract Enforceability," "Nationalization Risk," "Bureaucratic Delays," and "Infrastructure Quality."[14]

"Contract Enforceability" by BERI and "Risk of Repudiation of Contracts by Government" by ICRG are measures of how well contracts are enforced. "Rule of Law" scores reflect the strength of the court system and the degree to which citizens accept the lawmaking powers and dispute resolution mechanisms of legal institutions, rather than depending on force or other illegal means to settle claims.[15] Definitions of "Corruption in Government," "Quality of the

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[12] These simple additive scales were found to be highly correlated ($r > .99$) with alternative scales weighted by factor scores generated from factor analyses.

[13] The latter 3 measures are scored on a 0-6 scale. We multiply them by 10/6 to put them on the same 0-10 scale as the former 2 variables. The resulting additive index has a potential range of 0-50.

[14] Each variable is scored 0-4, with fractional values possible. BERI scores are averages from a permanent panel of experts, while ICRG ratings are evaluated by the staff of Political Risk Services.

[15] High scores for "Rule of Law" also indicate "provisions for an orderly succession of power," raising the

Bureaucracy," "Bureaucratic Delays," and "Transportation and Communication Quality" justify their use as measures of the general efficiency of provision of government services as well as the extent of rent-seeking behavior of government officials.[16]

possibility that correlations with regime type might be tautological. Deleting "Rule of Law" from our ICRG index does not change any results, however, as this alternative index is correlated with the one we use at .998.

[16] See Knack and Keefer (1995) for more detailed definitions and discussion of the ICRG and BERI variables. Some of these variables may be taken as empirical proxies for Clague's concept of "rule obedience" (Clague, 1993).

Our fourth measure of property and contract rights is a subjective rating of the risk of default on sovereign debt. This "credit rating" variable (CREDIT) can range from 0 to 100 (higher values indicate a lower risk of default, but values are not interpretable as probabilities). This measure is an average of evaluations by a panel of international bankers published semi-annually by *Institutional Investor*.[17]

Our fifth measure is the debasement of the currency as measured by the rate of currency depreciation (DEPREC), which is equal to (100 + inflation rate)/100. Inflation (as well as default on the sovereign debt) can be viewed as an indirect method of expropriation, an alternative to directly expropriating assets.

Our final measure is the (log of the) black market premium on currency exchange (PREMIUM). A high black market premium suggests that there are exchange controls and severe import restrictions. These controls and restrictions not only limit the types of contracts and the uses of property that are permissible in a country, but also give government officials a wide range of discretionary power through the granting or withholding of licenses and other permissions.

Each of the foregoing measures has its own idiosyncrasies, but to the extent they are uncorrelated, they can be viewed as complementary. Our empirical findings are not dependent on the use of any one of these measures.

3.4. Control Variables

Given the dearth of empirical literature on the determinants of property rights, there are no well-established precedents on model specification. We include only (the log of) per capita

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[17] We use the mean of the two scores assigned each year (in March and September) to a country as the country's value for that year.

income and time variables as regressors accompanying regime type and duration indicators in the regressions reported in the tables.

Theoretical accounts of property rights claim that more is spent to define and protect property rights when the rights themselves become more valuable. Growth could make them more valuable (Eggertsson, 1990). Rosenberg and Birdzell (1986, pp. 115-117) have noted that formal arrangements for protecting property rights, such as judicial systems based on precedent, are not instituted until there is a sufficient volume of transactions to make them practicable. We can imperfectly control for these effects by including per capita income and aggregate GDP as proxies for the value of assets and volume of transactions.[18] One might alternatively posit a threshold effect, whereby for example a legal system is instituted when the value of assets and volume of transactions imply that the social benefits of setting up courts exceed the social costs. Casual observation does not support such a view -- even in very small developing countries, increased expenditures on courts would surely pass such a cost-benefit test[19] -- and we do not test for threshold effects.

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[18] Aggregate GDP is generally not a significant determinant of our property rights measures, and has virtually no impact on coefficients for regime type and duration variables. Thus, regressions reported in tables below do not include this variable.

[19] In Egypt, many courts do not operate much during the summer months due to a simple lack of air conditioning (*Washington Post*, March 13, 1995).

The close historical connection between the emergence of democratic political institutions and the development of property and contract rights poses problems for testing the causal effects of one upon the other. A consensus is forming on the view that secure property and contract rights are important facilitators of economic growth. Thus a high level of income in a society today suggests that there were good property and contract rights in the past. Given the persistence of the institutions that sustain property and contract rights, income is also a good predictor of these institutions. Moreover, there are many aspects of a political regime that influence growth and hence, over time, the level of income. These include bureaucratic competence, political legitimacy, and rule obedience, on the one hand, and susceptibilities to political violence and extreme inequalities, on the other. These characteristics also tend to persist. Thus a high level of income in a society today usually means that there was a well-functioning political regime in the past, and, because of persistence of these characteristics, it also increases the probability that the current political regime also has these attributes.

What makes our empirical analysis of the effects of political regimes possible is that there are some independent forces producing changes in political regime. In particular there have been wars won by democracies, after which democracies were set up in countries that had lacked them. More importantly for our sample, massive decolonization has occurred, as well as other historical factors that have altered many countries' political institutions.

But it remains true that current period income contains much information about the current state of property rights and political regime. Since our analysis controls for current income and necessarily employs relatively crude measures of political regimes to investigate the impact of political conditions on property rights, our tests are quite demanding.

There are some secular and exogenous developments that may also affect the security of property and contract rights. The proportion of contract-intensive money (CIM) may be sensitive to advances in banking technology that lower the costs of intermediation. For subjective measures that have ceilings on the maximum possible scores, each country might be rated with reference to other countries at a given point in time: mean scores for the world could then remain constant even with a general improvement over time in the security of property and contract rights around the world. To avoid spuriously associating such changes, or nonchanges, with regime type and duration, time (equal to the current year minus 1969) is included as an explanatory variable.[20]

The proportion of contract-intensive money (CIM) might seem likely to be greatly influenced by inflation and interest rates (Clague et al., 1995). In fact, the inclusion of these variables has only a minute impact on the coefficients for regime type and duration in CIM equations. They are accordingly not included in the results reported here.

Inequalities in income and wealth and other social cleavages based on ethnicity, religion, or region may generate social conflict endangering individual rights. Similarly, culture, religion, and colonial heritage may influence property and contractual rights. We do not include measures of these as regressors, however. For our sample, the coverage of available data over time and across countries on inequality and other social cleavages is inadequate. Existing theories do not account for the differences in the apparent effects of cultural variables across regions or over time: why did British influences lead to strong property rights regimes only in some former colonies?

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[20] Results using the log of time were very similar. In fixed effects regressions, we use year dummies instead of time.

Why was "Confucianism" until relatively recently thought to be unfavorable to economic development? Also, since others have used cultural and heritage indicators to explain political freedoms (Bhalla, 1994; Abrams and Lewis, 1993), inclusion of these variables as regressors along with regime type would potentially confound tests of the latter's impact on property rights. In any event, to the extent that inequality, other social cleavages, culture, and colonial heritage remain constant over time, their effects are captured by country intercepts in our fixed effects tests.

4. Property and Contract Rights in Different Types of Regimes

Some recent and sophisticated statistical studies on postwar data have supported Lipset's (1959) thesis that high incomes are conducive to the emergence and survival of democracy (Barro, 1994; Burkhart and Lewis-Beck, 1994; Helliwell, 1994). By contrast, there is no clear tendency that has yet emerged from studies of the effects of democracy on economic performance. The three studies just cited conclude that democracy has either no influence or a negative influence on subsequent growth. A recent study by Bhalla (1994), on the other hand, finds a positive effect of political rights on growth.[21] Consistent with Bhalla's results is evidence from earlier periods of history suggesting that representative or at least non-absolutist government is favorable to economic performance (e.g., de Long and Shleifer, 1992).

We focus here on one of the proposed links between regime type and economic performance: the hypothesis that more democratic regimes will better protect property and contract rights. We have elsewhere documented the impact of property and contract rights on

[21] The difference in results between Bhalla and the other three studies appears to relate mainly to the choice of other independent variables and instruments for democracy. We focus on these four studies because they make use of the most recent data on a large number of countries and because they pay careful attention to endogeneity problems, mainly through the use of instrumental and lagged variables. The earlier literature is also thoroughly inconclusive regarding the effects of democracy on growth. See, for examples, the review in Brunetti and Weder (1993).

investment and growth rates (Clague et al., 1995; Knack and Keefer, 1995).

The effects of regime type -- and of regime duration -- were first tested with pooled time-series cross-sectional regressions, using country-years as units of analysis. Results of these tests were very supportive of the hypotheses.[22] Errors from these regressions, however, were highly autocorrelated, indicating that it is inappropriate to treat yearly observations of a country as independent.

In a purely cross-sectional design, on the other hand, difficulties arise in assigning values for regime type for countries moving across categories one or more times over the period. Averaging the different regime types -- i.e., treating a country shifting from type II to type IV halfway through the period identically to one remaining a category III over the entire period -- would unjustifiably impose cardinality on our regime type index as well as fail to make use of important variations in the data.

We adopted two alternative solutions. First, we created an observation for each country-regime, i.e. for each spell of democracy (for regressions with DEMDUR), and for each period that a particular autocrat rules (for AUTDUR).[23] With country-regime units of analysis, we retained some over-time variation across regime types within countries, but suffered far less serious autocorrelation problems (as confirmed by Durbin-Watson statistics). Second, we retained country-year units of analysis but incorporated fixed country and/or regime effects, thereby arguably removing the most important sources of possible autocorrelation and

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[22] Results available on request from authors.

[23] Thus, Egypt in 1954-1969, 1970-80, and 1981-1990 (1990 is the last year for our regimes and income data) constitute three separate observations in Table 1 and in the AUTDUR panel of Table 3. In the AUTGROUP panel of Table 3, Egypt 1954-90 is one observation as Nasser, Sadat, and Mubarak are all judged to be of the same "group."

heteroskedasticity.

Table 1 presents cross-sectional regressions, using country-regime units of analysis, examining the effects of regime type on property rights (mean values over the period), controlling for mean per capita income and mean time over the period the country-regime lasts.[24] In each case we find democracies outperforming autocracies, even controlling for the higher per capita incomes prevailing in most democracies. The Autocracy coefficient has the expected sign in all six cases: negative for CIM, ICRG, BERI, and CREDIT, and positive for DEPREC and PREMIUM. These coefficients are highly significant for two of these property rights variables. Higher incomes are associated with significantly better scores on each of the dependent variables with the exception of DEPREC. The latter, along with PREMIUM and CIM, all significantly increase with time, controlling for income and regime type. The time trend in CIM probably reflects secular improvements in banking technology. Negative coefficients for time on CREDIT and (in some specifications) BERI suggest that scores for these variables reflect only the relative positions of countries at a single point in time.

[24] "Time" = year - 1969. Where there is missing data on a dependent variable for some years within a country-regime, we delete time and income data for the corresponding years. Calculating mean time and mean income for Franco's regime using all available data from the 1930s onward would yield means far below those that actually apply to (for example) the 1972-90 period covered by BERI. Then, income and time would underpredict BERI, and positive BERI residuals would be spuriously associated with a high duration value.

The finding that democracies as a group outperform autocracies in protecting property and contractual rights does not, if the arguments at the beginning of this article are right, necessarily imply that the short- or medium-term effects of shift from autocracy to democracy are an improvement in performance. To explore this issue, we shift to country-year units of analysis, to exploit the time-series variation in the data, and control for fixed country-specific effects. The autocracy coefficient under this approach is influenced only by over-time variation in regime type and property rights. Given the length of our sample period (9 to 22 years, depending on the dependent variable), this test is designed to reveal short- or medium-term effects of changes in regime type on our property rights variables. Estimates from country-regime regressions in Table 1 are heavily influenced by democracies of long standing, in Western Europe and among the English-speaking nations. No nation remaining a democracy (or an autocracy) over the entire sample period influences the autocracy coefficients in Table 2; those estimates are based solely on over-time variation within countries. Results for the autocracy dummy in Table 2 are thus the product of a relatively small number of countries with inter-regime shifts during the sample period.[25]

The results summarized in Table 2 strongly indicate that new democracies tend to face many of the difficulties, outlined earlier in the paper, that can render property rights less secure than in a country ruled by a secure autocrat. Autocracy is associated with significantly higher CIM and BERI values, and significantly lower inflation (coefficients on the other three variables are not significant). Many of the benefits of democracy seem to accrue only over a substantial

[25] During our sample period eight countries shifted from autocracy to democracy, two shifted in the other direction, and eleven more experienced multiple shifts (e.g. Chile).

period of time, which may exceed the duration of most new democracies installed in our sample period. Most importantly, longstanding democracies, unlike all other regimes, have a predictable succession of power. They also tend to have more effective checks on executive power, in the form of independent legislatures, central banks, and judiciaries, and this makes it more difficult for any leader to abridge property or contract rights.[26] In new democracies such as Argentina, Nigeria (abortively), and Pakistan, by contrast, individuals cannot enter into long-term contracts secure in the knowledge that successions will be orderly and legal, and that a chief executive cannot preempt the powers of other branches of government.

[26] In the U.S., the role of the Supreme Court as a check on unconstitutional actions of the Congress was not established, nor recognized, until *Marbury v. Madison*, decided during Jefferson's presidency.

In addition to the uncertainty and instability pervading new democracies generally, other factors potentially contribute to the positive Autocracy coefficients in Table 2. First, new democracies in recent years are hardly a random sample of all democracies. These "marginal" democracies exhibit a substantially worse income distribution, more ethnic tensions, and more political violence than exhibited by countries remaining democracies throughout the 1970s and 80s. Prevailing social conditions often subject these new democracies to extraordinary populist pressures, which autocrats in these same countries were (sometimes) better able to resist.[27] Second, democracies are more likely to replace successful autocracies. Autocracies almost never replace democracies unless the latter are performing poorly -- when their legitimacy in the eyes of the public is especially low. Conversely, with the exception of Argentina, autocrats giving way to new democratic regimes during our sample period apparently chose to do so when the economic climate was favorable for a smooth transition to democracy (as in Chile, Uruguay, and Turkey). Given these selection processes, the autocracy coefficient in fixed-effects tests is conceivably capturing a regression-to-the-mean effect: autocrats succeeding democracies have more opportunity to improve the policy climate than do leaders of democracies succeeding autocrats.

5. Property Rights and Regime Duration

[27] Keefer and Knack (1995) find that income distribution is a more important determinant of property rights and risk of loan defaults in democracies than in autocracies. Persson and Tabellini (1994) find that inequality is harmful to growth, particularly in democracies. One could alternatively interpret a significant interaction between democracy and inequality in growth equations as implying that democracy is beneficial to growth where and only where there exists a suitably egalitarian distribution of income.

For the reasons set out at the beginning of this paper, we hypothesize that the length of time a democratic system has survived and the time horizons of each autocrat are important determinants of the effects of regime type on property and contract rights. If these temporal considerations are as important as we expect them to be, any comparisons of economic performance under autocracy and democracy that leave them out are likely to be mis-specified. The same is true for the comparisons of property and contract rights under differing regime types in the preceding section.

In this section, we test our hypotheses about how duration of regime affects the security of property and contract rights in each type of regime. That is, we test our hypothesis that autocrats with longer duration will be associated with better property and contract rights than short-term autocrats, and our hypothesis that the longer a democratic system has lasted the better these rights will be.

Table 3 regressions test for the impact of regime duration on the security of property rights. As with Table 1, cross-sectional regressions using country-regime units are reported in Table 3. Control variables include mean income and time. Autocracies and democracies are separated for these tests, as duration is defined differently for each group.

The coefficient for duration of autocrats (AUTDUR) -- specifically, the log of duration the year the regime ends -- has the expected sign in every case in Table 3, with three of these statistically significant at .05 or better. Results are similar for AUTGROUP, with better policies associated with higher duration of the ruling group in every case, and significant associations in three cases.

Coefficients for the duration of democratic regimes (DEMDUR) are all in the expected

direction, with three significant at the .05 level. These generally favorable results on DEMDUR are consistent with the view that new democracies cannot offer investors the same predictability (of succession) and credibility (of policy) offered by the longstanding democracies.

This emphasis on the importance of the duration of democratic systems does not apply to the tenure of particular leaders of democracies. While policy making in democracies is not immune to the short-term needs of chief executives with limited time horizons, there are far more powerful checks on the ability of chief executives in democracies, compared to autocrats, to expropriate assets, to renege on debts, and to print money.

The results in Table 3 support the view that the duration of democracy itself matters more than the time in power of chief executives in democracies. For these tests, we define democratic leader regimes similarly to autocratic regimes: each unit of analysis corresponds to the time in power of a chief executive. For all six dependent variables, the effect of a one-year increase in the duration of a democratic leader (DEXDUR) has a smaller impact (see fourth panel of Table 3) than an identical increase in the duration of democracy (see third panel).

Our theory also suggests that the impact of DEXDUR should be weaker than the impact of AUTDUR -- the duration of autocratic leaders. The estimated impacts of leader duration are similar, however, for autocrats and for democratic chief executives in the cross-sectional tests reported in Table 3. The results from fixed-effects models reported below, on the other hand, are supportive of our theory.

Table 4 illustrates the economic significance of results in Table 3 by substituting values for time, income and duration into the regressions to determine the predicted values of property rights indicators. The values in each cell correspond to predicted values of the property rights variables

with time = 11 (i.e., 1980) and per capita income of $2500. Within each row, duration increases from 2 to 10 to 25. For each dependent variable, there are four rows, corresponding to autocratic leaders, autocrat "groups," democratic leaders, and democratic regimes. The most dramatic improvements associated with increasing duration occur for the democratic regimes, particularly for ICRG, DEPREC, and PREMIUM. Focusing on the column for which duration = 2, new autocrats have "better" values than new democracies on four of the six dependent variables. However, democratic regimes lasting 25 years outscore autocrats of 25 years duration on four out of six measures. While many democracies surpass 25 years in duration, there is an upper limit to how long an individual autocrat can last. These results are consistent with the theory that longstanding democracies provide the most secure property rights.

We further explore the effects of duration variables using fixed-effects regressions. With the cross-sectional design of Table 3 regressions, we cannot rule out unobserved country-specific variables that may be responsible for both high rates of leadership turnover and insecure property and contractual rights. By including country dummies in regressions using the full time series available, we can examine the influence of variations in the duration of leaders over time, within countries, on the property rights variables.[28]

In five out of six cases (all except CREDIT), increases in autocratic duration (AUTDUR) are associated with highly significant improvements in our property and contract rights measures

[28] Results on the log of autocrat duration are generally weaker when regime dummies are substituted for country dummies. Regime effects are highly correlated within countries, and add very little explanatory power over the country intercepts. The major difference between the two models is that within a regime (as opposed to a country) over time, duration always increases -- when a new autocrat comes into power, duration re-starts at 1. As time and (usually) income also increase each year, there are potentially serious multicollinearity problems using regime dummies. (Using time, as opposed to year dummies, and duration, as opposed to its log, would in fact result in perfect collinearity.)

within countries (Table 5, first panel). By contrast, increases in the duration of the chief executive's leadership in democracies (DEXDUR) are associated with significant improvement in only one of the six (CREDIT), with DEXDUR's coefficient taking on the wrong sign in four cases (see third panel of Table 5). Table 6 presents marginal effects for duration values as estimated from Table 5 regressions, for changes in duration from 2 to 10 years, and from 10 to 25 years.[29]

[29] We do not calculate predicted values because of the differing country intercepts.

By pooling the autocratic and democratic observations, and constructing an interaction term equal to the autocracy dummy multiplied by the duration of the chief executive, we can test whether differences between autocracies and democracies in the impact of leader duration on property rights are statistically significant. Coefficients on these interaction terms indicate that more time in power for an autocrat improves property and contract rights more than does a longer time in office for a democratic leader; the interactions are highly significant for CIM and the BERI index, and significant at .05 or .06 levels for ICRG, DEPREC, and PREMIUM.[30] These results strongly support the theory that the duration of leaders affects property and contact rights in autocracies but not in democracies.

Our theory would also predict that the time in power of "almost" autocrats -- category II in our classification -- would matter less than the duration of less-constrained autocrats (in most cases, the presence of a partially effective legislature is what differentiates the category I from category II leaders). Results from tests using Table 5 specifications, but with autocrats and almost autocrats separated, strongly support this prediction. For the sample of relatively unconstrained autocrats, the AUTDUR coefficient is significant in all five cases in which it was significant in the first panel of Table 5; in most cases the coefficient is larger in absolute value (see Table 7). For the relatively constrained autocrats, coefficients attain the right sign only in CIM, BERI, and PREMIUM equations, with only CIM significant.

[30] Results not shown in tables, but are available on request.

Property rights appear to deteriorate with increasing life of democratic systems (Table 5, fourth panel). The unexpected results here on the duration of democracy are largely the product of a few long-lasting democracies which were replaced by reform-minded autocracies, but then returned to democracy during our sample period. Chile, Uruguay, and Turkey are the most notable examples of this phenomenon. For each of these countries, a few high DEMDUR values are coupled with poor property rights at the outset of our sample period, and a few very low DEMDUR values are coupled with much improved property rights at the end of the period. In these cases, the improvements in property rights and policies over the period are primarily attributable to the reform-minded autocratic regimes. These countries heavily influence the coefficient: for DEMDUR for the sample as a whole, despite the fact that the inverse correlation between DEMDUR and property rights measures within these countries is produced by an interruption of democracy by autocratic rule. Deleting these three regime-switching countries dramatically weakens the perverse findings for DEMDUR in the CIM and BERI equations in Table 5. A similar weakening of those findings is obtained by using a fixed-effects test that substitutes regime dummies for country dummies.[31] The Table 5 coefficients on DEMDUR, therefore, do not reflect an actual deterioration in property and contract rights when a given democratic regime lasts longer.

6. Endogeneity of Regime Duration

[31] Recall that within a democratic regime, DEMDUR always increases: DEMDUR reverts to a value of 1 only when a new democratic regime replaces a non-democratic regime. Interruptions in democracy by spells of autocratic rule thus cannot influence the DEMDUR coefficient when regime intercepts are included.

The time in power of autocrats is conceivably endogenous to economic performance. Previous studies have found coup probabilities to be negatively related to recent growth rates (Alesina et al., 1993; Londregan and Poole, 1991)[32] and income levels (Londregan and Poole, 1991). The coefficient of AUTDUR could be biased upwards if property rights improve economic performance, which in turn improves an autocrat's survival probability and thereby increases AUTDUR. Another possibility is that increases in income add to autocrat duration and improve property rights, creating a spurious association between the latter two variables. Our regressions control for current income levels, however. In specifications not reported in our tables, AUTDUR coefficients are found to be unaffected by the inclusion of growth over the previous year as an additional regressor.[33]

If autocratic leaders behave in the same way as do governmental leaders in the Grossman and Noh model, property rights could influence AUTDUR independently of the impact of property rights on economic performance. Though in our model higher rent extraction by an autocrat provides more resources to maintain his hold on power, on the alternative interpretation a lower extraction of rent from the populace would improve an autocrat's survival probability directly, and thus generate a reverse causation from property rights to duration.

If such reverse causation were driving our results, we would expect duration in the following period to explain current property rights better than duration in the previous period. We introduced one-year lags and, alternatively, one-year leads of duration into our fixed-effects

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[32] Alesina et al. (1993) find, however, that the probability of government changes and of "major" government changes (both of which include coups as one type of government change) is unaffected by recent economic performance.

[33] Growth in most cases is not a significant predictor of property rights. These results are available on request.

regressions of property rights on autocrat duration. Neither leads nor lags performed as well as contemporaneous duration, although differences were not dramatic. Neither lags nor leads clearly performed better than the other one, either. These findings offer no support for the view that our results are primarily capturing reverse causation.

A second piece of evidence against reverse causation is that the coefficient on AUTDUR in most cases exceeds the coefficient on DEXDUR, the duration of democratic leaders. A plausible assumption is that the time in power of chief executives in democracies, as compared to autocracies, is more sensitive to their choice of policies: indeed, this sensitivity to short-term electoral pressures is commonly cited as a disadvantage of democracy. Thus, the endogeneity objection outlined above should apply as strongly, or more strongly, to the time in office of democratic leaders. Therefore, if reverse causation from property rights to time in power were the primary force driving our results, coefficients for DEXDUR should exceed those for AUTDUR. For five of the six dependent variables in Table 5, however, coefficients for DEXDUR and AUTDUR indicate a stronger link between duration and property rights for autocratic leaders than for democratic leaders, as reported in more detail above. Again, no evidence for reverse causation is found.

Finally, we also attempted to correct for endogeneity by instrumenting for AUTDUR, despite our skepticism concerning the appropriateness of available instruments. The two instruments used were age of the autocrat at the time of accession,[34] and completed duration of the

[34] Age is a highly imperfect measure of the time horizons relevant to policy choices by autocrats, for reasons discussed earlier in the paper.

previous autocrat.[35] As neither of these instruments varies by year, we use them only in the country-regime regressions of property rights on AUTDUR. Results using instrumented values of AUTDUR were mixed. Recall that in Table 3 AUTDUR had the predicted sign in all six regressions. Coefficients for instrumented values of AUTDUR are greater in absolute value in four of these six cases, including each of the three cases (ICRG, CREDIT, and DEPREC) in which AUTDUR was significant in Table 3. Only in the case of DEPREC -- and of CIM, which reverses sign -- is the instrumented value of AUTDUR statistically significant, however. In all six cases, standard errors are several times higher than in Table 3, due in part to reductions in sample size attributable to missing data on the instruments, but primarily to the relatively poor explanatory power of the instruments.

7. Heterogeneity of Autocrats

Our results on AUTDUR are conceivably an artifact of omitted-variable bias associated with heterogeneity (sample selection) of autocrats. As a simple example, suppose that autocrats attaining power come in two types, "skilled" and "unskilled," with equal numbers in each group. Assume further that for each group, there is a constant hazard of deposition by coup in each period, and that this constant rate is substantially higher for the unskilled group, as depicted by the two horizontal lines of Figure 1. Autocrats know to which group they belong, and perceive a constant low or high hazard rate over time, depending on whether they are skilled or unskilled. The overall

[35] Where there was no previous autocrat, as in the newly-independent African nations, we used the average of completed duration for the initial autocrats of "similar" countries. For example, we used the average completed duration of all other initial autocrats in formerly-British African colonies as the instrument for AUTDUR for Uganda's first autocrat. Age was highly significant (t = 4.70) but previous duration only marginally significant (t = 1.64) in explaining AUTDUR. The R^2 was only .12.

hazard rate for any given value of duration will be a weighted average of the rates for the two separate groups. In t = 1, the overall hazard will be exactly halfway between that for each of the two groups, since they are represented in equal numbers at t = 1. After that time, however, as higher attrition in the unskilled group implies that the ratio of skilled to unskilled leaders rises, in each subsequent year the weighted average rate of hazard will be increasingly close to the lower hazard rate of the skilled group.

In observing only the overall hazard rate, we attribute increasing horizons to leaders that survive longer in power, and hypothesize an improvement in property rights. Yet, each autocrat perceives only one of the two constant hazard rates, and thus does not feel more secure in power as his time in power lengthens. A consequence of heterogeneity is that it potentially makes tenure to date an inappropriate proxy for time horizons. Any correlation between time in power and property rights may be spurious if duration has little or no relationship to the "true" time horizons perceived by autocrats.

We believe the decline in hazard rates as the time in power of an autocrat lengthens is more than an artifact of sample selection. First, the concept of consolidation of power is difficult to argue against. Second, "skill" is only one of many factors determining who stays in power.[36] Third, some of the most important possible sources of unobserved heterogeneity may cancel each other out: hereditary succession may enhance a leader's legitimacy, yet his other "skills" may be inferior to those of a leader rising to power on his own. Note it is not necessarily true that unobserved heterogeneity would bias the coefficient of AUTDUR upward. "Charisma" may help

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[36] "Examples abound of leaders who were considered "smart" or "skilled" but who did not hold power very long, such as Kofi Busia in Ghana and Sylvanus Olympio in Togo." (Bienen and van de Walle, 1991, p. 6).

a leader to stay in office, but if that charisma is based in part on an ideology antagonistic to markets, increases in an autocrat's time in power will be associated with deteriorating property rights. In any event, we correct for this potential problem of heterogeneity, finding that the positive impact of autocrat duration on property rights is robust to these corrections.

Our test is borrowed from the Abraham and Farber (1987) study of the impact of seniority on wages. The long duration and favorable property-rights policies of some autocrats are conceivably both products of some omitted autocrat-specific characteristic, such as superior "skills." In principle, we could include autocrat dummies in our fixed effects tests. Collinearity of duration with time and income made these very demanding tests, however.

Abraham and Farber faced a similar problem in attempting to control for unobserved worker skills and worker-job "match" in time-series cross-sectional regressions of wages on seniority and experience. They could not estimate job-specific effects because changes in seniority and experience over time were perfectly collinear within a given job. As an alternative, they included as an additional regressor completed job duration, as a proxy of these unobserved characteristics.

Analogously, we include terminal duration in a time-series cross-section model without country- or autocrat-specific intercepts. For each country-year observation, TERMDUR equals the (log of) duration of the autocrat in his final year in power. Unmeasured skills of autocrats formerly captured by AUTDUR are hence captured by TERMDUR instead.

The addition of TERMDUR has relatively little effect on the results for AUTDUR (see Table 8, where column 1 equations do not contain TERMDUR but column 2 equations do). TERMDUR has the positive sign implied by the sample selection objection in only four of six

cases and is never significant. AUTDUR retains the expected sign in five of six cases (all but ICRG), with the coefficient rising substantially in two cases (CIM and BERI). Property rights are generally found to improve with autocrat duration, independently of autocrat skills, as measured by differences in terminal duration.

8. Additional Robustness Tests

The ranges of several of the dependent variables -- both objective and subjective -- are limited. Most notably, CIM is bounded by 0 and 1, while CREDIT is bounded by 0 and 100. Using OLS on these variables could lead to predicted values outside these bounds. In fact, very few predicted values violated these bounds. Re-estimating all CIM and CREDIT equations using logistic transformations of CIM and of CREDIT/100, constraining the predicted values to the 0-1 interval, yielded results very similar to those reported in the tables.

Each fixed-effects regression was re-run using corrections for autocorrelation. All duration effects that were statistically significant in the tables reported here remained significant. Random-effects specifications were also run. In these tests, duration of autocrat leader significantly improved values on all six dependent variables; AUTDUR was not a significant predictor of CREDIT in the fixed-effects results of Table 5. A Hausman test rejects the random-effects specification in favor of the fixed-effects specification, however.

The country-regime units cover widely-varying periods: some last less than one year while others cover 30 or more years. Accordingly, we re-ran all country-regime tests reported in Tables 1 and 3 weighting observations by the (square root of) duration of the regime. Results on the regime type and duration variables vary somewhat from OLS, but not in a consistent direction, and

lead to similar conclusions. Furthermore, the error variance of the unweighted regressions is generally uncorrelated with regime duration. We therefore report OLS rather than WLS results in our tables. All standard errors reported in tables are White-corrected (1980).

9. Conclusions

We began with a theory of the incentives and constraints that explain property and contracts rights in autocracies and in democracies. We argued that a secure autocrat with a long time horizon has an incentive to respect and protect property and contract rights in his domain because this increases the future income of his domain and thus also his tax collections. By contrast, an autocrat who, because of an insecure hold on power or any other reason, has a sufficiently short time horizon will find that the tax yield from any asset over that short time horizon is less than the value of the capital good, so that he is rational to seize any easily confiscable assets.

In democracies, we argued, property and contract rights arise from a dramatically different set of incentives and constraints. There is no reason why the election that initiates a democracy should bring good property and contract rights. Democracies often emerge in unsettled and sometimes even somewhat anarchic conditions that are unfavorable to the protection of property rights and the new democracies may not be strong enough to protect these rights. Even if the leadership of the new elected government is powerful, there is no assurance that property rights will be secure, for this democratic government may not last long, and one of the prominent possibilities is that the democratically elected leader will become a dictator.

By contrast, it is not feasible for a long-lasting democracy to prohibit all forms of private

property and contracting: the same adherence to the rule-of-law and protections for individual freedoms that are needed to maintain free elections in which any defeated incumbents step down, entail that there are some property rights -- the individuals in a free society have what James Madison called "a property in their rights." Thus we hypothesized that long-lasting democracies generally provide better property and contract rights than either transient democracies or autocracies.

Our empirical evidence supports our hypotheses. We found that autocrats who had been in power longer and who by our argument had reason to have longer time horizons were associated with better property and contract rights than autocrats who were in power only for a shorter time. We also found that, in general, democracies provide greater security of property and contractual rights than autocracies. But these benefits of democracy did not appear quickly: the property and contract rights were often poor in democracies that had lasted only a short time. Among the relatively small group of countries within our sample that moved from one regime type to another, the security of property and contract rights was greater while they were autocracies than while they were democracies. We found, by contrast, that long-lasting democracies offer better protection for property and contract rights than any other regime type of any duration.

Our results also show that, as our theory predicted, the duration of democratic systems matters much more than the duration of democratic leaders for property and contract rights. Moreover, we found that, after controlling for country effects, the security of property rights is more sensitive to changes in the time in power of autocratic leaders than to the time in office of democratic leaders.

We conclude that statistical tests of economic performance under autocracies and democracies that leave out the hypotheses that we have developed and tested are mis-specified. It

is only natural, given our theory and our empirical results, that the comparisons of economic performance under autocracies and democracies have been so varied and inconclusive. It is, we argue, just as important in the analysis of government and politics as in the analysis of market behavior to analyze the incentives and constraints that face the individuals involved. Such an analysis suggests that property and contract rights in democracies and autocracies have utterly different sources, and our empirical results show that this is true.

Appendix
The Gurr-Banks Annual Scheme

BASIC VARIABLES

2.2 XRCOMP. (from Gurr)
00. This unnamed category applies to situations in which power transfers are coded "unregulated" in variable 2.1 or involve a transition to/from unregulated.
1. Selection of chief exec. [hereditary succession, or rigged elections, or by coups, or by military designation, or repeated incumbent selection of successors]
2. Dual/transitional [Dual means there are two executives, one chosen by hereditary succession, the other by competitive election. Also used for transitional arrangements between selection and election.]
3. Election of chief exec [competitive election]

9.7 EXSELEC (from Banks)
1. Direct election
2. Indirect election
3. Nonelective

9.12 LEGEF, Legislative Effectiveness (Banks)
0. None
1. Ineffective: either rubber stamp, or domestic turmoil makes the implementation of legislation impossible, or the effective executive prevents the legislature from meeting or substantially impedes the exercise of its function.
2. Partially effective. A situation in which the effective executive's power substantially outweighs but does not completely dominate that of the legislature.
3. Effective. Possession of significant governmental autonomy by the legislature.

Classifications are:
1. Dictator (DI)
2. Almost Dictator (AD)
3. Intermediate category (I)
4. Almost Democracy (AD)
5. Democracy (DE)
EMPTY = category predicted to be empty (EM)

Regime Type Classification
Based on LEGEF and XRCOMP*

		LEGEF		
		0,1	2	3
XRCOMP	0,1	I	II	
	2	II	III	IV
	3	III	IV	V

*Where Banks' EXSELEC is inconsistent with Gurr's XRCOMP, we code the regime a III, as described in the text.

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Table 1
Regime Type and Property Rights
Country-Regimes Cross-Sectional Regressions[a]

Dependent variable: Indep. var.:	CIM	ICRG Index	BERI Index	Credit Risk	Currency Deprec.	Black market premium
Intercept	-0.057 (0.067)	-25.154 (9.255)	-7.023 (2.245)	-84.239 (17.422)	-0.011 (0.096)	1.119 (0.258)
Log (income)	0.101* (0.008)	5.567* (0.779)	1.950* (0.198)	19.772* (1.569)	0.012 (0.011)	-0.136* (0.048)
Time	.0047* (.0013)	0.610 (0.353)	-0.022 (0.053)	-1.849* (0.424)	.0049* (.0021)	0.019* (0.006)
Autocracy	-0.051* (0.015)	-5.995* (1.652)	-0.446 (0.505)	-5.687 (3.340)	0.020 (0.025)	0.063 (0.071)
Adj. R^2	.50	.57	.50	.71	.02	.09
N	240	137	93	133	223	217

Table entries are regression coefficients, with White-corrected standard errors in parentheses. A * indicates significance at .05 or better, 2-tailed tests.

aAutocracy dummy = 1 for regime types I and II, = 0 for regime types IV and V.

Table 2
Regime Type and Property Rights
Fixed-Effects Regressions[a]

Dep. variable: Indep. variable:	CIM	ICRG Index	BERI Index	CREDIT	DEPREC	PREMIUM
Log (income)	0.089* (0.008)	0.922 (0.960)	1.815* (0.217)	35.054 (1.760)	-0.188* (0.017)	-0.522* (0.070)
Autocracy	0.015* (0.005)	0.173 (0.508)	0.446* (0.114)	-0.148 (1.015)	-0.047* (0.011)	-0.069 (0.045)
R^2	.92	.97	.93	.97	.62	.53
N	1977	768	812	951	1828	1612

* indicates significance at .05 or better.

aAutocracy dummy = 1 for regime types I and II, = 0 for regime types IV and V. Additional regressors include year and country dummies.

Table 3
Regime Duration and Property Rights
Summary of Country-Regimes Cross-Sectional Regressions[a]

Sample (Duration variable)	Autocrats (AUTDUR)		Autocrat Groups (AUTGROUP)		Democrat Regimes (DEMDUR)		Democrat Leaders (DEXDUR)	
	B (SE)	Adj. R^2 N	B (SE)	Adj. R^2 N	B (SE)	Adj. R^2 N	B (SE)	Adj. R^2 N
Contract-Intensive Money (CIM)	0.007 (0.008)	.34 174	0.010 (0.009)	.30 131	0.018 (0.011)	.58 66	.0087 (.0045)	.54 248
Int'l Country Risk Guide Index (ICRG)	1.351* (0.524)	.10 84	2.398* (0.433)	.21 71	5.303* (1.142)	.81 53	0.764 (0.850)	.69 111
Business Environmental Risk Intelligence Index	0.240 (0.154)	.31 53	0.486* (0.165)	.36 34	0.854* (0.269)	.69 40	0.416* (0.154)	.59 157
Institutional Investor Credit Rating	2.446* (1.122)	.61 83	3.939* (1.014)	.64 65	1.503 (4.636)	.70 50	1.310 (1.583)	.63 147
Currency Depreciation	-0.025* (0.010)	.05 155	-0.018 (0.011)	.01 117	-0.047* (0.022)	.12 68	-0.026* (0.010)	.08 244
Black Market Currency Exchange Premium	-0.054 (0.038)	.12 169	-0.026 (0.039)	.07 126	-0.073 (0.072)	.08 48	0.004 (0.022)	.03 141

A * indicates significance at .05 or better.

aTable entries show coefficients and (White-corrected) standard errors for duration variables. The duration variable is the log of the number of years the regime lasts, where the regime is defined in terms of the chief executive's tenure in the "autocracy" and "democratic leader" samples, and in terms of the number of continuous years in which democracy has been in place in the "democratic regimes" sample. Independent variables in addition to regime duration include the log of per capita income and time (= year - 1969).

Table 4: Predicted Values of Property Rights Variables (from Table 3 regressions)

Dependent variable	Regime Type	Duration and Income Values								
		2			10			25		
		500	2500	5000	500	2500	5000	500	2500	5000
CIM	Aut (L)	.553	.734	.812	.564	.745	.823	.570	.751	.830
	Aut (G)	.555	.720	.791	.572	.736	.807	.581	.746	.817
	Dem (L)	.689	.804	.853	.703	.818	.867	.711	.826	.875
	Dem (R)	.672	.766	.806	.701	.795	.835	.718	.812	.852
ICRG Index	Aut (L)	13.51	16.67	18.03	15.68	18.84	20.21	16.92	20.08	21.44
	Aut (G)	11.64	13.94	14.93	15.50	17.80	18.79	17.69	20.00	20.99
	Dem (L)	7.66	24.85	32.26	8.89	26.08	33.49	9.59	26.78	34.19
	Dem (R)	-4.74	6.30	11.05	3.80	14.83	19.58	8.66	19.69	24.44
BERI Index	Aut (L)	5.35	7.37	8.23	5.74	7.75	8.62	5.96	7.97	8.84
	Aut (G)	5.37	6.57	7.08	6.16	7.35	7.86	6.60	7.79	8.31
	Dem (L)	3.46	7.51	9.26	4.13	8.18	9.93	4.51	8.56	10.31
	Dem (R)	1.56	5.12	6.65	2.94	6.49	8.02	3.72	7.27	8.80
Credit Risk	Aut (L)	10.31	37.74	49.55	14.25	41.68	53.49	16.49	43.92	55.73
	Aut (G)	8.80	31.77	41.67	15.14	38.11	48.01	18.75	41.72	51.62
	Dem (L)	4.46	43.57	60.41	6.57	45.68	62.52	7.77	46.88	63.72
	Dem (R)	23.24	58.52	73.72	25.66	60.94	76.14	27.04	62.32	77.52
Currency Depreciation	Aut (L)	.151	.188	.204	.111	.148	.164	.088	.125	.141
	Aut (G)	.145	.178	.192	.116	.149	.164	.100	.133	.147
	Dem (L)	.236	.175	.149	.194	.133	.107	.170	.110	.084
	Dem (R)	.214	.236	.245	.139	.161	.170	.096	.118	.127
Black Market Premium	Aut (L)	.608	.389	.295	.521	.303	.209	.472	.253	.159
	Aut (G)	.514	.377	.319	.473	.336	.277	.449	.313	.254
	Dem (L)	.373	.238	.180	.379	.244	.186	.382	.248	.190
	Dem (R)	.528	.402	.347	.410	.283	.229	.343	.216	.162

Table 5
Regime Duration and Property Rights
Fixed-Effects Models

Sample	Autocrats		Autocrat Groups		Democrat Leaders		Democratic Regimes	
Dependent variable:	B (SE)	R^2 N	B (SE)	R^2 N	B (SE)	R^2 N	B (SE)	R^2 N
Contract-Intensive Money (CIM)	0.013* (0.002)	.89 1082	0.014* (0.003)	.89 1082	-.0012 (.0015)	.86 895	-0.016* (0.002)	.86 895
International Country Risk Guide Index (ICRG)	0.499* (0.162)	.93 394	0.818* (0.215)	.93 394	0.112 (0.169)	.98 374	0.430 (0.481)	.98 374
Business Environmental Risk Intelligence Index	0.574* (0.076)	.82 275	0.992* (0.100)	.84 275	-0.017 (0.038)	.96 537	-0.366* (0.061)	.96 537
Institutional Investor Credit Rating	0.553 (0.387)	.93 440	1.721* (0.550)	.93 440	0.689* (0.280)	.98 511	0.906 (0.677)	.98 511
Currency Depreciation	-0.015* (0.005)	.58 943	-0.009 (0.005)	.57 943	.0043 (.0037)	.77 885	0.014* (0.006)	.77 885
Black Market Currency Exchange Premium	-0.057* (0.018)	.56 1099	-0.077* (0.020)	.56 1099	.0064 (.0166)	.42 513	0.078* (0.020)	.44 513

Independent variables in addition to regime duration include per capita income, year dummies, and country dummies. A * indicates significance at .05 or better.

Table 6: Marginal Effects of Duration
on Property Rights Variables (from Table 5 regressions)

Dependent Variable	Regime Type	Duration Values		
		2	10	25
CIM	Aut (L)	0	.021	.034
	Aut (G)	0	.023	.035
	Dem (L)	0	-.001	-.001
	Dem (R)	0	-.011	.016
ICRG	Aut (L)	0	0.80	1.26
	Aut (G)	0	1.31	2.06
	Dem (L)	0	0.08	0.13
	Dem (R)	0	0.30	0.47
BERI	Aut (L)	0	0.92	1.45
	Aut (G)	0	1.60	2.51
	Dem (L)	0	-0.01	-0.02
	Dem (R)	0	-0.26	-0.40
CREDIT	Aut (L)	0	0.89	1.39
	Aut (G)	0	2.77	4.34
	Dem (L)	0	0.49	0.76
	Dem (R)	0	0.63	0.99
DEPREC	Aut (L)	0	-.023	-.037
	Aut (G)	0	-.015	-.024
	Dem (L)	0	.003	.004
	Dem (R)	0	.011	.016
PREMIUM	Aut (L)	0	-.092	-.145
	Aut (G)	0	-.124	-.194
	Dem (L)	0	.004	.006
	Dem (R)	0	.054	.086

Aut(L) = Autocratic Leader; Aut(G) = Autocratic Group
Dem(L) = Democratic Leader; Dem(R) = Democratic Regime

Table 7
Regime Duration and Property Rights
Fixed-Effects Models for Autocrats and Near-Autocrats

Sample	Autocrats (Regime Type I)		Near-Autocrats (Regime Type II)	
Dependent variable:	B (SE)	R^2 N	B (SE)	R^2 N
Contract-Intensive Money (CIM)	0.013* (0.003)	.88 883	0.012* (0.004)	.94 199
International Country Risk Guide Index (ICRG)	0.784* (0.187)	.92 319	-0.119 (0.420)	.95 75
Business Environmental Risk Intelligence Index	0.790* (0.110)	.80 182	0.077 (0.090)	.93 93
Institutional Investor Credit Rating	-0.023 (0.462)	.93 344	-0.218 (0.670)	.96 96
Currency Depreciation	-0.013* (0.005)	.61 757	-0.006 (0.009)	.71 186
Black Market Currency Exchange Premium	-0.064* (0.021)	.55 903	0.022 (0.023)	.84 196

Independent variables in addition to regime duration include per capita income, year dummies, and country dummies. A * indicates significance at .05 or better.

Table 8
Regime Duration and Property Rights
Terminal Duration of Autocrats in Time-Series Cross-Section Tests

Sample	Autocrats		
	Equation 1	Equation 2	
Independent variable	AUTDUR	AUTDUR	TERMDUR
Dependent variable:	B (SE)	B (SE)	B (SE)
Contract-Intensive Money (CIM)	0.011* (0.004)	0.019* (0.007)	-0.013 (0.008)
International Country Risk Guide Index (ICRG)	0.481 (0.307)	-0.646 (0.775)	1.571 (0.992)
Business Environmental Risk Intelligence Index	0.340* (0.101)	0.487* (0.175)	-0.214 (0.207)
Institutional Investor Credit Rating	2.238* (0.565)	1.199 (1.178)	1.499 (1.482)
Currency Depreciation	-0.023* (0.004)	-0.013 (0.008)	-0.014 (0.010)
Black Market Currency Exchange Premium	-0.073* (0.018)	-0.066* (0.033)	-0.011 (0.040)

Independent variables in addition to regime duration variables include per capita income, and year dummies. A * indicates significance at .05 or better.