

# Legal Institutions and Democratic Survival

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*Do institutions designed to limit arbitrary government promote the survival of democratic regimes? Although the international effort to build the rule of law is predicated on a belief that they do, mainstream research on democratic survival typically treats institutions as epiphenomenal. We argue that institutions encourage regime survival by addressing problems of monitoring and social coordination that complicate democratic compromise. We find that property-rights institutions generally, and judicial institutions specifically, encourage survival, especially when macroeconomic conditions favor inter-class compromise.*

International organizations, nongovernmental organizations, and the large number of states that promote rule of law initiatives globally predicate their efforts, in part, on a belief that democracy can be stabilized via a system of institutions that limit arbitrary governance.<sup>1</sup> The belief is derived quite naturally from neoinstitutional scholarship, which suggests that credible limits on state authority promote order by reducing the rents leaders can capture from their positions, and thus by lowering the stakes of holding office (e.g., North, Summerhill, and Weingast 2000, 17).<sup>2</sup> Yet we also know that these institutional limits must be constructed and maintained politically (Carrubba 2009; Clark 2010; Helmke 2005; Moraski and Shipan 1999; Ríos-Figueroa 2007; Vanberg 2005). For this reason, it is not surprising that mainstream scholarship on the survival of democracies continues to explain regime survival without appeals to the kind of rules and enforcement mechanisms neoinstitutionalists have in mind. Democratic regime failures are instead primarily explained by features of the macroeconomy, natural resources or socio-ethnic cleavages, which either raise incentives for state predation or undermine intergroup trust or both (e.g., Acemoglu and Robinson 2006; Boix 2003; Lijphart 1977; Przeworski 2005).

We argue that macroeconomic factors that encourage democratic survival, notably development, are

buttressed by systems of institutions that help leaders establish credible promises to respect rights. These institutional systems, which include a cluster of rules and individuals inclined to enforce them in practice, may be neither necessary nor sufficient to ensure stable democratic regimes, but they are helpful; and they are most helpful when opposing political coalitions confront macroeconomic conditions that make grand democratic compromises appealing. They help by addressing (1) monitoring problems that follow from the nature of democratic policymaking and (2) challenges of social coordination that are essential to the process by which observed violations of limits on state authority are remedied. Although it is certainly possible to solve these monitoring and coordination problems in the absence of institutional arrangements, the rules we construct to limit arbitrary governance and the individuals we ask to enforce those rules make it a lot easier to do so. That said, when the underlying economic conditions that favor democratic compromises are not met we might expect institutional arrangements designed to enforce compromises to have weaker impacts on regime survival.

We develop this argument below by connecting the lessons of institutional models of law to a noninstitutional model of democratic survival. We test implications of our argument via an event history

<sup>1</sup>An online appendix for this article is available at [www.journals.cambridge.org/jop](http://www.journals.cambridge.org/jop) containing supplemental analyses. Data and supporting materials necessary to reproduce the numerical results in the paper will be made available at <http://mailer.fsu.edu/creenock/> no later than January 2013.

<sup>2</sup>Among many examples, see the USAID initiative (<http://www.usaid.gov/what-we-do/democracy-human-rights-and-governance>) and the United Nations peacekeeping mission (<http://www.un.org/en/peacekeeping/issues/ruleoflaw.shtml>), both of which view rule of law promotion as a means of undermining conflict and ultimately stabilizing democratic states.

analysis of democratic regime survival, leveraging first a *de facto* property rights protections measure, which we believe captures well the broad cluster of institutions that result in credible government promises. We then consider a particularly salient feature in the institutional cluster—the independence of a state’s judiciary. We find substantively meaningful effects of institutions on democratic survival, but especially so at sufficiently high levels of economic development, where the democracy literature suggests compromise should be most likely.

## Development and Democracy

To consider how a system of institutions can influence democratic survival, it is useful to focus on a representative noninstitutional model.<sup>3</sup> We center our argument on the model in Przeworski (2005), where survival depends on the regime’s ability to manage class conflicts over redistribution. We highlight commitment and coordination problems that emerge in this kind of model and suggest how a system of legal institutions can respond to these problems.

Przeworski considers a model of electoral competition between two parties (a party of the right and a party of the left) seeking the support of voters divided into three social classes. Platforms reflect promises over future redistribution, which will be implemented in the event of a victory.<sup>4</sup> Following an election, parties either accept the result or challenge the regime violently. If the outcome is accepted, production ensues, the redistribution promise of the winning party is implemented, and income is realized. If either party rebels, there will be conflict, the precise regime consequences of which are determined probabilistically.

In any equilibrium in which democracy is respected, the redistribution platforms of the two parties converge on the same level, a level that will be higher than that preferred by the wealthy and

lower than that preferred by the poor.<sup>5</sup> Given this dynamic, both parties confront a choice between accepting a suboptimal level of redistribution and challenging the regime. Although imposing a dictatorship offers considerable spoils, conflict is risky and costly. For this reason, the core trade-off in the model asks the parties to consider whether life under democracy and its inherent compromise is valuable enough to prevent them from taking a gamble on instituting an autocracy. The key theoretical result, for our purposes, is that as development increases, *it becomes increasingly easy to satisfy the rebellion constraints of both parties* (Przeworski 2005, 261–62). As development increases, the poor (rich) are constrained from rebellion at increasingly low (high) levels of redistribution. Thus, Przeworski’s (2005) explanation for the well-known empirical association between economic development and democratic regime survival is it is easier to manage interclass conflict when states are wealthy.

## The Leader’s Commitment Problem

The model assumes that policy promises will be kept, yet we might ask what keeps a victorious party from violating the democratic compromise once it has taken control of the state’s resources and the losing party has accepted the election result. Why not wait, redistribute optimally, and perhaps even capture the personal spoils of autocratic rule? A plausible answer to the leader’s problem is that losing parties continuously enforce campaign promises via the implicit threat of rebellion. A simple revision to Przeworski’s model might allow the losing party to rebel after the government has actually implemented a policy.<sup>6</sup> This would induce faithful implementation whenever the electoral outcome is mutually acceptable. By allowing

<sup>5</sup>If the median voter’s optimal level of redistribution lies within the wealthy and poor’s rebellion constraints, discussed in the subsequent paragraph, convergence will be at the median. Otherwise, the parties will converge on one of the two rebellion constraints, in order to keep the polity from falling into conflict. If it is impossible to simultaneously satisfy the wealthy and poor (i.e., the highest level the wealthy will accept is lower than the lowest level the poor will accept), conflict ensues.

<sup>6</sup>This is exactly the kind of dynamic Acemoglu and Robinson (2006) evaluate (in, particular, pp. 231–46). Unfortunately, they build their models so that the key results will be independent of economic development, thus rendering the model unhelpful for understanding the process Przeworski considers. They do consider a model (p. 290) in which the capital intensity of economic activity lowers feasible democratic tax burdens and the corresponding threats from the wealthy against democracy. In so far as capital intensity and development are related, then Acemoglu and Robinson generate nearly the same theoretical result as Przeworski. Nevertheless, monitoring of democratic policies is perfect in their model, and so the problems we discuss emerge there, as well.

<sup>3</sup>This is especially important given the possibility that legal institutions are either very weakly related to regime outcomes or simply epiphenomenal. See the debate on rule of law’s role in democratic outcomes in Maravall and Przeworski (2003).

<sup>4</sup>Voters within a class share identical preferences and are assumed to select the party whose redistribution level provides the highest income. Personal income is a function of individual resources and the net transfer from the government, which is itself determined by the redistribution rate and the shadow cost of public funds.

the parties to enforce the implementation of their own bargains, credibility is created and stability ensured.

Common features of policy implementation politics, however, complicate this explanation. First, not all major deviations from democratic compromises are directly observable or free from contention. Given a large enough population and a large enough bureaucracy, it is possible to subvert stated commitments to major policy initiatives in ways that are not immediately obvious. Second, not all deviations would necessarily be perceived as illegitimate. Political minorities might support some deviations, as they occasionally reflect sensible reactions to exogenous changes in the underlying bargaining context, the implications of which might only be transparent to members of the state. Finally, even if violations are unambiguous and perfectly observable, the model assumes that parties can mobilize supporters. They can do this because there is no mobilization challenge when we model parties as unitary actors (Przeworski 2005, 268). If we instead model parties as groups of individuals, who have to mobilize still other individuals, then the account runs into multiple pathologies of group mobilization. Most obviously, a public mobilization depends on the resolution of a significant coordination problem.

### **Institutions, Monitoring, and Coordination**

Institutional systems designed to limit arbitrary state power, when they are effective, address the kind of monitoring and coordination problems that Przeworski's leaders confront. By an effective institutional system that limits arbitrary state power, we have in mind a cluster of two classes of elements (themselves collections of many attributes), which scholars have proposed as useful to the creation of credible commitments. One is a set of rules that define the limits of state power (e.g., North 1991). These typically include formal constitutional rules, e.g. prohibitions on the impairment of contracts, due process guarantees, equal protection rights, etc. But they can also include unwritten norms or more typically statutory rules governing standing, the freedom of access to information, etc., and even elements of judicial doctrine that ensure things like the "reasonableness" of government actions. Importantly, although neoinstitutional scholars largely agree that state constraint is promoted by rules, there is little consensus over the precise bundle of rules necessary for an effective system, much less over the precise way of expressing these rules. Even scholars seeking to "unbundle" rules are typically not successful in laying out precisely which rules, in combination with which others, are necessary or suffi-

cient to ensure credible commitments (Acemoglu and Johnson 2005). Indeed, it seems highly likely that the perfect bundle of formal rules is likely to be contextually dependent. The reason is that if they are going to set behavioral incentives correctly, they must reflect shared understandings about the real limits of state authority, and these understandings can manifest in a variety of ways (Weingast 1997). The bottom line is that while formal limits on the state must exist, they are unlikely to manifest identically in every context. The second element of an effective institutional system consists of independent mechanisms for applying and enforcing rules in particular contexts. An effective system thus includes people who serve on courts, labor boards, and bodies for alternative dispute resolution, and who are willing to provide judgments that are independent of current government preferences. This is not to say that an effective institutional system need bind state practices in every context. Judges, for example, may be ignored on occasion (e.g., Vanberg 2005). What is critical for an effective system is that when violations are observed, they are declared.

Such institutional systems attempt to limit arbitrary state power in a variety of dimensions. In the context of the Przeworski model, an institutional system for the protection of property rights is particularly salient. As Acemoglu and Johnson write, the key feature of these institutions is that:

[T]hey are intimately linked to the distribution of political power in society because they regulate the relationship between ordinary private citizens and the politicians or elites with access to political power. When property rights institutions fail to constrain those who control the state, it is not possible to circumvent the ensuing problems by writing alternative contracts to prevent future expropriation, because the state, with its monopoly of legitimate violence, is the ultimate arbiter of contracts. (2005, 951)

We will focus largely on this kind of institutional system here, recognizing that the argument can be generalized beyond property rights.

In understanding how institutions might influence the monitoring and coordination problems of Przeworski's (2005) model, we are benefited by the fact that two extant models of law (Carrubba 2005; Weingast 1997) are directly on point. Carrubba considers a game in which players confront an informational challenge that complicates their ability to monitor cooperative agreements. Weingast considers a game in which citizens confront a coordination problem, the solution to which is necessary in order to keep the state from violating fundamental limits on its power. The institutional solutions the authors propose do not

exhaust all elements of a complete property rights system, the examples (a judicial dispute resolution function and a set of constitutional rules) are critical components of such a system and the mechanisms proposed are easily extended to a complete system. We consider each in turn.

**Monitoring.** Carrubba's model is essentially an infinitely repeated prisoner's dilemma,<sup>7</sup> in which the players do not observe period-specific costs of cooperation paid by their opponents. In some periods, mutual cooperation is efficient, whereas in other periods it is not (2005, 672). Carrubba considers an equilibrium in which the players wish to punish non-cooperative behavior only when cooperation would have been mutually beneficial. The problem is that they do not observe the nature of a defection perfectly; and, in the absence of this information, parties are forced to use punishment strategies that result in conflict. These strategies successfully prevent opponents from violating agreements opportunistically but they ensure conflict when agreements are violated for good reasons (i.e., when mutual cooperation would be inefficient). Carrubba argues that the judiciary can serve as a monitor of cooperative agreements and eliminate costly conflicts. It does so by offering strategic declarations on the nature of alleged breaches, declaring a violation only when cooperation would have been mutually beneficial. The implications of this kind of judging is that the parties are permitted to ignore their obligations when mutual cooperation would be inefficient and incentivized to cooperate when it would be efficient.<sup>8</sup> By so doing, courts help manage cooperative agreements, agreements like the parties implicitly strike in Przeworski's model. There are two important caveats. To serve this informational function, judges must be returning decisions that are not simply reflections of either party's desire. Otherwise, the information revealed would not be credible. Second, judicial monitoring will not induce mutual cooperation in all contexts. As in the Przeworski model, there are some contexts in which a set of cooperative strategies simply cannot be sustained in equilibrium, regardless of the monitoring provided by a court (2005, 673–77).

<sup>7</sup>Strictly speaking, the model is not a prisoner's dilemma, though there are periods in which the stage game is such a model.

<sup>8</sup>The spirit of this argument is captured by Landes and Posner's (1975) explanation for the existence of independent courts. They suggest that judicial independence ensures the credibility of legislative deals, which increases the value of rents legislators distribute. A similar logic of monitoring for the maintenance of efficient trading agreements underlies the Milgrom, North, and Weingast (1990) model.

**Coordination.** Weingast reminds us that monitoring alone cannot solve the leader's commitment problem. Leaders must believe that they will be punished for ignoring declarations about having violated a limit on power. To hold such beliefs, leaders must perceive that people will mobilize to punish a violation and that this depends on the resolution of a significant coordination problem. If individuals cannot coordinate, they will not be able to enforce limits on the state, the result of which will be that democratic regimes will violate limits on their authority. Weingast suggests that constitutions can serve as focal points, selecting equilibria in which individuals successfully mobilize to redress transgressions from among the set of possible solutions. Although this kind of formal constitutional mechanism is plausible, Weingast's argument applies to non-constitutional limits on authority, as well as to the entities that formally recognize violations, e.g., courts. This is to say that judicial decisions finding a violation can serve as a focal point for social coordination. Yet again, it is important to remember that this mechanism works only if rules or the bodies that enforce them actually can create focal points. That is, they must work in practice. To have such an effect courts and other enforcement bodies ought to be at least minimally independent of the parties they regulate. Without independence, it is unclear how they would communicate credibly that a fundamental regime rule had been violated. This mechanism also will be limited by the underlying structure of democratic compromises. If the conditions for compromise are not met, there will be no fundamental limits on state authority to enforce and thus no losing party constituents to coordinate.

In summary, systems of institutions facilitate political order by helping competing political coalitions enforce their own bargains. Specifically, they solve a leader's commitment problem in three ways: (1) by helping to identify violations, (2) by helping to sort out reasonable violations from unreasonable violations, and (3) by helping to coordinate group actions in the event of an unreasonable violation.

**Empirical Implications.** Identifying empirical implications of this argument depends on being able to link Przeworski's model to Carrubba's and Weingast's. Although the labels are distinct, the behaviors under consideration are identical analytically. The equilibrium policy in Przeworski's model reflects an implicit compromise reflected well by "cooperative" behavior in Carrubba and a fundamental limit on state power in Weingast. And a breakdown of democracy in Przeworski is captured by a breakdown of cooperation in Carrubba and a violation of fundamental state limits in Weingast.

Given this conceptualization, the empirical implications are relatively straightforward. If the Przeworski account is ultimately correct, then institutional systems designed to protect property rights should be particularly useful when the underlying conditions for compromises over redistribution are likely to be met, i.e., when states are sufficiently developed.<sup>9</sup> On the other hand, as development declines, effective property rights institutions might have weaker effects on democratic survival, precisely because it is less likely that there will be robust democratic compromises to enforce. Empirically, we should observe that *effective* property rights institutions are positively associated with political order. In so far as the effect varies by level of development, we should observe that the institutional effect is stronger as economic development increases.

## An Analysis of Democratic Regime Survival

To evaluate our empirical claims, we require data that reflect democratic regime survival, institutions that constrain the state and economic development. We address each in turn.

To determine whether a country is a democracy we use the Democratic Regimes dataset (Bernhard, Nordstrom, and Reenock 2001) and the updated (Cheibub and Gandhi 2004) Political and Economic Database (Przeworski et al., 2000). Each of these projects utilizes a minimalist definition of democracy, conceptualizing democracies as a distinct regime type in which key government offices are filled via repeated

contested elections and coding these regimes dichotomously. Our analysis centers on democratic regime breakdown, which reflects the likelihood of observing a transition from a democratic regime to an autocratic one (Bernhard, Nordstrom, and Reenock 2001, 2003, 2004; Cheibub 2007; Gasiorowski 1995; Przeworski et al., 2000; Svobik 2008). Most critically, breakdown reflects the final and most salient consequence of competing parties' inability to compromise within a democracy, its complete collapse. For the analysis of democratic breakdown, the unit of analysis is the democratic episode, where an episode represents a distinct period of democracy in a country's history. The portion of the Bernhard, Nordstrom, and Reenock (2001) original dataset that we use runs from 1961 to 2000 and includes 2,323 country-years with 140 episodes of democracy and 44 breakdowns. The portion of Cheibub and Gandhi (2004) original dataset that we use runs from 1961 to 2000 and includes 2,585 country-years with 160 episodes of democracy and 45 breakdowns. We correct for left-truncation in the survival analysis by setting the count variable's first value at the cumulative number of years that a state was democratic prior to 1960 (Guo 1993).

As we suggest above, effective property rights institutions are a cluster of rules that limit arbitrary state power, as well as effective enforcement mechanisms for these rules. Since many combinations of particular rules and corresponding enforcement mechanisms can contribute to a healthy nexus of de facto property rights protections, scholars looking to measure the concept have turned their attention to behaviors that ought to occur in the presence of property rights institutions that are perceived to be binding (Clague et al., 1999). Put another way, to measure the effectiveness of property rights institutions, we look for broad public behavior that responds to beliefs in the credibility of state promises. Based upon this logic, Clague et al. (1999) have derived a measure, the contract intensive money score (CIM), to assess citizen investment in financial institutions. Their measure has been applied in a host of contexts as a behavioral indicator of legal protections for property rights (e.g. Clague et al., 1999; Souva, Smith, and Rowan 2008). CIM is "the ratio of non-currency money to the total money supply, or  $(M2-C)/M2$  where M2 is a broad definition of money supply and C is currency held outside of banks," (Clague et al. 1999, 188). Empirically, higher values reflect states in which a greater number of citizens hold their assets in financial institutions. Conceptually, higher values of CIM reflect a nexus of institutions that the public broadly conceives to be effective

<sup>9</sup>Although institutional systems designed to constrain states deal with issues outside the context of property, we have nevertheless focused our attention on this context. It is worth asking whether property rights institutions are likely to have limited effects. Specifically, do property rights institutions only serve to credibly commit left-leaning governments, as they are the primary threats to property? The literature does not suggest that property rights protections, in principle at least, only serve to protect the wealthy from predation. For one, property rights can be defined collectively. Beyond this simple point, there are a variety of ways in which property rights can serve to protect the poor from arbitrary state action, including of course the better definition of title and the fair regulation of its transference (Albright and de Soto, 2008), the absence of which benefits individuals with means to navigate corrupt and procedurally dense systems. There are even arguments suggesting that a lack of clear property rights protections can benefit the rich, since they are better able to protect their assets privately (Sonin, 2003). On balance it is not clear that property rights protections are not generally helpful to minorities of whatever social class.

constraints on state promises to respect individual assets.<sup>10</sup> Since the primary democratic argument we are considering has profound implications for the protection of property rights, we believe that the CIM is particularly appropriate here.

To measure economic development, we use the natural log of Gross Domestic Product measured as GDP per capita computed in 2000 constant prices from the World Development Indicators (World Bank, 2008). We have also considered the lag of  $\ln(\text{GDP})$  for a given year, with similar results.

### Possible Confounders

We include several variables in order to address the possibility of observing a spurious relationship between property rights institutions, socioeconomic context, and our dependent variable. They include institutions and socioeconomic indicators that reflect either constraints on state power or incentives for state predation. We include a *Presidential Regime* dummy variable that indicates the presence of an executive, who was elected under a separate mandate to an office with fixed terms and who does not possess the ability to dismiss the legislature (Linz 1994). *Growth* is the annual percentage change in GDP (World Bank, 2008). We also control for *Ethnic* and *Religious Fractionalization* as measured by Rae and Taylor's (1970) fractionalization index as well as *Party Fractionalization* using the Laakso and Taagepera (1979) index to calculate the effective number of parties in the legislature. We also control for the presence of natural resources, which are easily predated upon and which offer a valuable source of rents, thus providing strong incentives for governments to violate limits on their powers (e.g., Boix 2003). We

<sup>10</sup>We use CIM as a proxy for the effectiveness of property rights institutions rather than a proxy for property rights institutions. As we note above, we do not expect all institutions (rules, enforcement mechanisms, etc.) to be effective; some may be more effective than others. Moreover, as others have noted, only a specific combination of a variety of certain rules (de jure institutions) and enforcement mechanisms (de facto institutions) may be sufficient to render property rights protection effective. And the precise combination of these institutions may vary widely over cultural settings. Hence, we appeal to a proxy for our latent concept of interest. Whatever the subset of institutions in the possible nexus of de jure rules and de facto enforcement mechanisms, when property rights institutions are effective we ought to observe behavioral implications of these institutions functioning well. In the context of financial assets, one behavioral implication is that citizens ought to have greater faith that the state is not likely to predate on their financial assets and as a result, ceteris paribus, will be more likely to hold their assets in financial institutions. In this respect, CIM offers an effective proxy for our concept of interest—the effectiveness of property rights institutions.

use data from Humphreys (2005) in addition to updated data from primary sources to measure the daily *Oil Production* in millions of barrels and the annual *Diamond Production* in hundreds of thousands of carats for a given democracy. Both of these variables are lagged by one year. We also include *Previous Democratic Experiences* to measure the number of times a democracy has previously experienced democratic failures. We also include two dichotomous variables: *British Colony* as a control for British colonial legacy and *Micro* as a control for microstates with populations lower than one million citizens.

### Model Estimation

For our democratic breakdown models, we estimated a parametric proportional hazards Weibull model. The Weibull allows for a time-varying baseline hazard of regime breakdown, which estimates a parameter reflecting the duration dependence of the regime breakdown process. The parameter's relative location to  $P=1$ , suggests a baseline hazard rate either monotonically increasing ( $P>1$ ), decreasing ( $P<1$ ) or time invariant ( $P=1$ ).<sup>11</sup> We estimate our models with clustered standard errors to correct for nonindependence of observations within countries.

**Results.** Our expectation is that property rights institutions ought to be negatively associated with democratic regime breakdown and, in so far as this effect varies by level of development, we should observe the order-inducing effect of property rights to be stronger at higher levels of development. This is because economic development widens the space within which it is possible for competing classes to reach acceptable compromises over economic policy. When this is possible, institutions become relevant as a means of locking in the deal. At sufficiently low levels of development, there simply may be no compromise for institutions to enable, and in those contexts, institutions are

<sup>11</sup>To examine whether our models suffered from unobserved heterogeneity we estimated a gamma distributed frailty model with shared frailties across countries. In these models, the frailty parameter was never significant nor was the likelihood ratio test between the models. Moreover, we also estimated our models with a split population model to determine whether our estimates were sensitive to the assumption that all regimes in the data have a nonzero risk of breakdown (Svolik 2008). We estimated a discrete time split-population, or cure model using a cloglog link function, which reestimates parameters controlling for the proportion of the data that are found to be not at risk of an event, or a breakdown (Jenkins 2001). The results from this estimation suggested no significant number of episodes were "cured" from the risk of breakdown and as a result our estimates were robust to this assumption.

unlikely to influence order. The results of the multiplicative models are shown in Table 1.

The results in Table 1 suggest that the benefits of property rights institutions for democratic order are conditioned by the opportunity for compromise provided by enhanced development. Across both the Bernhard, Nordstrom, and Reenock (2001) and Cheibub and Gandhi (2004) indicators, the coefficients on the interaction terms are negative and statistically significant in all models, suggesting that the beneficial effects of legal institutions for democratic order are greater in the presence of enhanced development. To more precisely evaluate the conditional relationship, we present the results graphically below in Figure 1. Figure 1 displays two panels each reflecting the effect of an increase of one standard deviation in CIM on a democracy's expected duration (in years), for each dataset.<sup>12</sup> Panel A displays the relationship for the Bernhard, Nordstrom, and Reenock (2001) data, while panel B displays the relationship for the Cheibub and Gandhi (2004) data. Each figure displays the marginal effect of the independent variable of interest along with its 95% confidence interval plotted around it. In addition, each of the figures superimposes a plot of the histogram of the conditioning variable on the chart.

Panels A and B suggest that property rights institutions are most helpful for developed democracies. CIM has a positive and statistically significant effect on democratic regime survival, and this effect is increasingly more beneficial for more economically developed democracies. A marginal increase of one standard deviation in CIM at lower development (ln(GDP) of seven or approximately \$1,000 per capita) only induces 10 additional years for a democratic regime's expected survival. The same increase in CIM will induce a gain of nearly 40 years for democratic regimes at higher development (ln(GDP) of eight or approximately \$3,000 per capita).<sup>13</sup> However, not all democracies reap the benefits that institutions may provide. At sufficiently low levels of development, the estimated

<sup>12</sup>For each panel, we estimated the effect of moving the variable of interest from one standard deviation below the mean up to the mean. The figures were created by estimating the mean expected change in duration and associated standard errors from 10,000 draws off of the variance-covariance matrix (Brambor, Clark, and Golder 2006).

<sup>13</sup>For reference, examples of democracies at \$1,000 per capita in our data include The Congo and Albania in the 1990s and The Philippines and Malaysia in the late 1960s while examples of democracies at \$3000 per capita in our data include Grenada, Belize, Poland, Slovakia, and Chile in the 1990s and Suriname, Uruguay in the 1970s. All cases at the time for whom democracy's future prospects was hardly a certainty.

TABLE 1 Models of Democratic Breakdown

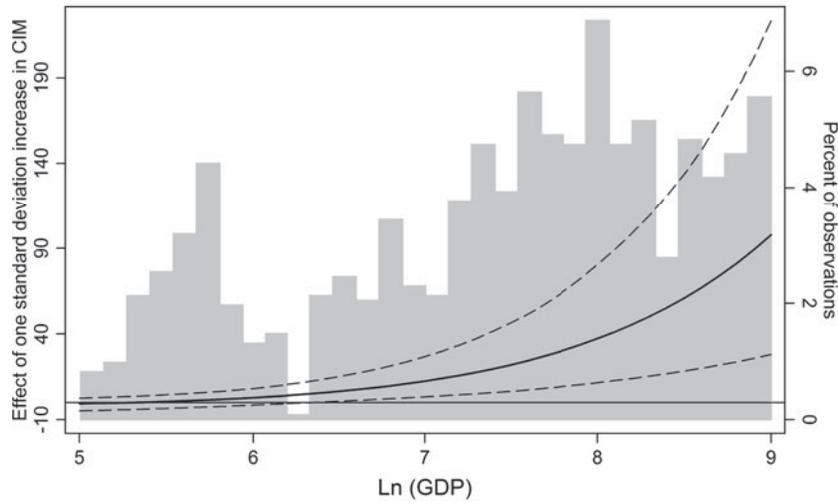
	Impact of Effective Property Rights Institutions on Democratic Breakdown	
	BNR Data	C&G Data
	Model 1	Model 2
<b>Main Variables</b>		
Contract intensive money score (CIM)	8.97** (4.09)	4.75 (3.36)
Ln(GDP per capita)	0.72 (0.49)	0.38 (0.36)
CIM × Ln(GDP)	-1.71*** (0.61)	-1.08** (0.46)
<b>Control Variables</b>		
Economic growth	-0.08*** (0.02)	-0.06*** (0.02)
Presidential regime	0.15 (0.24)	0.35 (0.33)
Effective parties	-0.10** (0.04)	-0.02 (0.05)
Religious fractionalization	1.82** (0.77)	0.31 (0.61)
Ethnic fractionalization	0.21 (0.70)	0.86 (0.54)
Diamond production	-0.04 (0.06)	0.03 (0.03)
Oil production	-0.16 (0.13)	-0.21 (0.19)
Previous Democratic experiences	-0.10 (0.29)	0.31*** (0.12)
Former British Colony	-0.51* (0.30)	-0.33 (0.32)
Microstate	0.03 (0.44)	0.29 (0.39)
Constant	-6.46* (3.67)	-4.60* (2.68)
P	1.36*** (0.18)	1.41*** (.18)
Pseudo Log-likelihood	-70.60	-80.29
Wald $\chi^2$ (df)	124.35(13)	170.05(13)
Democratic Episodes	128	137
Breakdowns	39	40
N	2129	2270

Note: Multiplicative interactive models estimating the effects of CIM (contract intensive money score) by the natural log of GDP on democratic breakdown; Positive coefficients reflect greater hazard of breakdown; Robust standard errors clustered by country are in parentheses; \*\*\*  $p \leq 0.01$ , \*\*  $p \leq 0.05$ , \*  $p \leq 0.10$  (two-tailed).

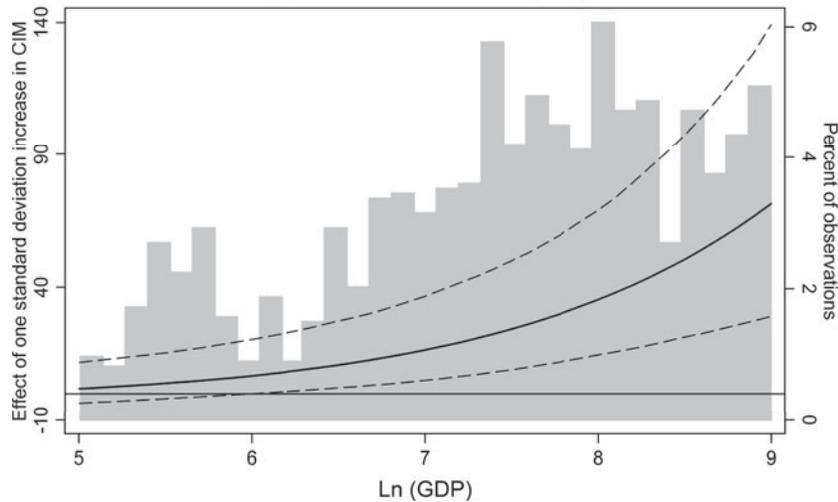
effect is very small and the 95% confidence interval straddles the x-axis, suggesting little to no benefit of rights preserving institutions for those democracies below economic development of 6.65 ln(GDP) or

FIGURE 1 Effect of Contract Intensive Money Score (CIM) by GDP on Democratic Survival

Panel A: Effect of one standard deviation increase in CIM on expected duration across Ln (GDP).  
(Expected duration measured in years)



Panel B: Effect of one standard deviation increase in CIM on expected duration across Ln (GDP).  
(Expected duration measured in years)



Note: Solid lines reflect the predicted effect of a one standard deviation increase in CIM on survival, across values of the Ln(GDP); dashed lines show 95% confidence intervals.

approximately \$772 per capita, for the BNR data or 6.00 ln(GDP) or approximately \$400 per capita, for the CNG data. Moreover, the histogram reveals that the number of democracies that fall below this lower limit is nontrivial, with nearly 15% of the cases in the data having GDPs below this level. In our data, this set of cases consists of modern-day democracies including countries like Malawi, Mozambique, Nepal, and Madagascar. Our analysis suggests that, in the absence of sufficiently high development, these democracies are

not likely to benefit from greater attention to institutional reform. Turning our attention to the right hand side of Panel A and B in Figure 1, note that we have truncated the Figures at ln(GDP) of 9.0, or approximately \$8,103, due to the fact that democratic regimes do not experience breakdown above sufficiently high GDP (Przeworski et al. 2000). Therefore, while the expected benefits of institutions continue to grow for regime survival beyond this level, there are no cases of breakdown above this level of economic development.

In summary, the analysis provides evidence that property rights institutions, as measured by CIM, encourage political order. Moreover, to the extent that this effect is conditioned by developmental context, such institutions are increasingly more important as it becomes more likely that competing coalitions can reach a democratic compromise. Property rights institutions enhance the durability of sufficiently developed democratic regimes on average, and the benefits of such systems are critically and increasingly important as the necessary conditions for compromise between political interests expand.

**Robustness Analysis.** One obvious challenge for our research design is that our measure of property rights institutions, CIM, may be endogenous to our dependent variable, democratic regime breakdown. We have sought several solutions, yet we believe that it is important to consider the theoretical basis for the concern first. It is no doubt possible to imagine a simple account of investment where a citizen might be more likely to withdraw funds from financial institutions in the presence of an increased expectation of regime collapse. If this is true, then we might suspect that an estimated positive effect of CIM on order simply reflects the effect of order on citizen investment. It is important to note that we are not looking to simply estimate the unconditioned relationship between CIM and order. Instead, the expectation is that the effect is conditioned by development, and we believe it is far from obvious why the possible causal effect of order on citizen investment would be stronger as development increases. If disorder undermines investment choices for whatever reason, we would expect that it would do so similarly in developed and developing states. We are aware of no theoretical model that explains why this would not be so.

Our theoretical reservations aside, we addressed a number of empirical solutions. We began by considering potential exogenous instruments for property rights institutions. The most likely candidate is the settler mortality variable introduced by Acemoglu, Johnson, and Robinson (2001). There are, however, two difficulties in pursuing this instrument. First, there are no data for those states that were not colonies and there are significant levels of missing data on those states that were colonies. In fact, the use of the settler mortality data would result in 60% of the total country-years used in the democratic survival analysis to be list-wise deleted. Proceeding with the analysis in the presence of substantial list-wise deletion would likely introduce selection bias and result in our drawing incorrect inferences (King et al., 2001). In particular, given the correlation between our key variables of

interest (development and order) and the missingness of the settler mortality data there is reason to believe that we would introduce strong bias into our analysis by ignoring the missingness problem. Using common multiple-imputation solutions (e.g., King et al., 2001) is equally implausible given that most of the missing data are missing for entire country series, which would require us to impute all information for all nonsettler states, and many more states that were not colonies, but were nevertheless excluded in the Acemoglu, Johnson, and Robinson study (2001).

As an alternative to settler mortality we also pursued biological and geographic instruments employed by Olsson and Hibbs (2005).<sup>14</sup> Using these instruments, models estimated with a two-stage conditional maximum likelihood estimate, 2SCML, (see Alvarez and Glasgow 2000) yield similar results, suggesting that our inferences are not threatened by endogeneity. To further isolate the possible effect of endogeneity we also reestimated our models both with our property rights measure lagged by one, two, and three periods, and with our property rights measure entered as a nontime-varying input, where we used only the first observation of CIM for a given country for that country's entire democratic episode. The results reported here were robust to these alternate specifications.

**Alternative Interpretations.** The prior section establishes a conditional relationship between the nexus of rules that protect property rights and democratic order. In this section, we consider alternative interpretations of what our proxy for effective property rights institutions, CIM, may reflect.

**Judicial Independence.** First, it may be that the CIM reflects a particular institutional configuration that protects property rights. The most likely candidate is the judiciary. Many institutions designed to protect against arbitrary rights violations are in the final analysis subject to judicial review. In this respect, the judiciary plays a critical role in curbing state power. To the extent that other institutions' authority (or decisions) over rights disputes are questioned, such disputes are likely to be resolved in the domain of the courts. In this capacity, a court can not only serve as monitor of state violations but also help parties

<sup>14</sup>The biological variable was drawn from the first principal component of two variables: the number of wild grasses exceeding 10mg mean kernel weight and the number of domesticable animals weighing more than 45kg. The geographical variable was drawn from the first principal component of four variables: climate for agriculture, latitude, the East-West orientation of a landmass relative to its North-West orientation, and the land mass in square kilometers to which a country belongs.

coordinate their constituents on appropriate reactions to unfaithful leaders. These purposes are served best by independent courts, those courts whose decisions can be meaningfully separated from the simple desires of leaders. A judiciary that fails this minimal condition would be unlikely to be perceived as a credible monitor or capable of creating a focal solution to a coordination problem.

Recent work by Gibler and Randazzo (2011) suggests an inverse relationship between judicial independence and democratic backsliding. They find that judicial independence, measured with a scale using the executive-constraints component of the Polity IV index along with the law- and-order index from the Political Risk Group (Henisz 2002), is positively correlated with the remaining components of the Polity IV index (with the executive constraints component excluded). Rather than use Polity components to assess both democracy and judicial independence, we take a different approach.

To assess judicial independence, we turn to Linzer and Staton's (2011) Latent Judicial Independence (LJI) scores. LJI scores are derived from a heteroskedastic, graded item response theory (IRT) model designed specifically for time series, cross-sectional data, where the underlying latent trait is both conceptually bounded and trends over time. Judicial independence is bounded in the sense that a court can only be so dependent on a government until it is a simple extension of leadership preferences. It can be only so independent of government until it purely reflects the preferences of its members. The concept trends in the sense that the independence of the judiciary in one year is unlikely to be independent of its value in the prior year.<sup>15</sup> As all IRT models do, the model leverages observable manifestations of the judicial independence to draw inferences about the latent trait. The observables include several indicators that have been used to measure judicial independence as well as a few broader indicators of

state constraint and social order.<sup>16</sup> Importantly, whereas existing judicial independence measures present severe missing-data challenges, LJI provides scores for 200 countries over 50 years, permitting the kind of temporal analysis we conduct.<sup>17</sup>

Figure 2 displays two panels, each reflecting the effect of an increase of one standard deviation in LJI on a democracy's expected duration (in years), for each democracy indicator.<sup>18</sup> Panel A displays the relationship for the Bernhard, Nordstrom, and Reenock (2001) data, while panel B displays the relationship for the Cheibub and Ghandhi (2004) data. Each figure displays the marginal effect of the independent variable of interest along with its 95% confidence interval plotted around it. In addition, each of the figures superimposes a plot of the histogram of the conditioning variable on the chart.

Panels A and B suggest that, across both datasets, independent courts are most helpful for developed democracies. LJI has a positive and statistically significant effect on democratic regime survival, and this effect is increasingly more beneficial for more economically developed democracies. The effect is, however, smaller and nearly zero at lower levels of development. These results suggest that the CIM findings are consistent with the influence of a particular set of institutions closely related to property rights protection—*independent courts*. Of course, independent courts can protect a

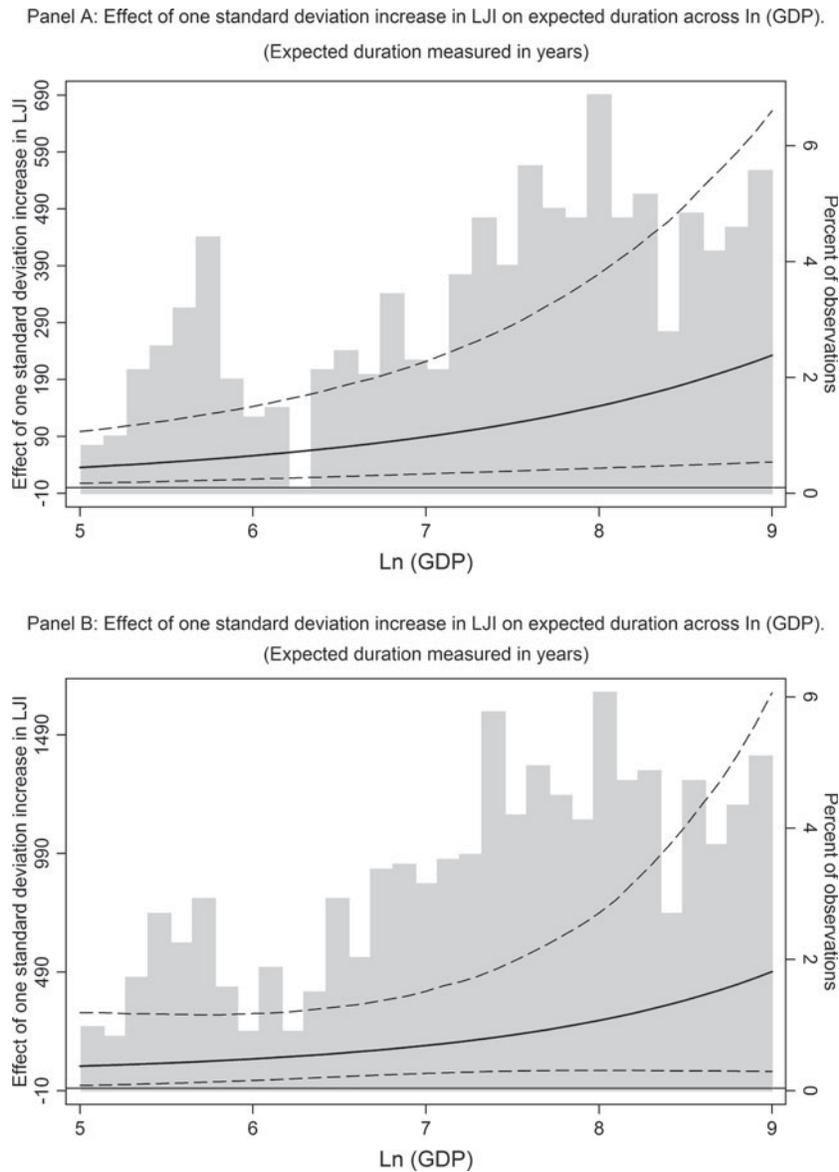
<sup>15</sup>These features of the concept are addressed in a variety of ways. First, the model assumes a random walk prior for the latent variable. Specifically, for state  $k$  and year  $t$ , latent judicial independence,  $x_{kt}$ , is assumed to be normally distributed with mean  $x_{k(t-1)}$  and variance  $\sigma_k^2$ . Bounding is obtained by constraining estimates of  $x_{kt}$  to the unit interval. By estimating country specific variance, the model allows for extremely flexible time trends, which capture well states in which judicial independence is relatively stable (e.g., Australia) and states in which it changes both abruptly (e.g., Spain) or slowly (e.g., Venezuela). Details of the complete model are contained in Linzer and Staton (2011).

<sup>16</sup>The Linzer and Staton model includes eight indicators (14, 2012): three of which are based on U.S. State Department Human Rights Country Reports, and three of which are based on international surveys of field experts, CIM and the XCONST indicator from Polity. The precise list of indicators is available in our online appendix. Alternatively, they are available in Linzer and Staton (2011). While CIM is one of eight indicators that Linzer and Staton (2011) use, it is important to stress that although the CIM is positively correlated with the other indicators, its discrimination parameter is not particularly high, ensuring that the LJI scores are very far from simple reproductions of the CIM. We also assessed our models with another version of the LJI measure, with CIM excluded from its estimation. Our results were nearly identical to those reported in Figure 2 and are available in the online appendix.

<sup>17</sup>Missingness for judicial independence scores that rely upon U.S. State Department human rights country reports (Cingranelli and Richards 2008; Howard and Carey 2004; Tate and Keith 2009) ranges between roughly half (51.44%) to nearly three quarters (71.30%) of the data. Missing data is mitigated in the LJI by the use of many observable indicators. In cases in which there is no observable information on a state prior to a particular year, those years are missing for the LJI. When there is missing information between years in which there are manifest indicators for a state, the model connects the years where data is available by assuming that the latent variable follows the random walk described in endnote 16.

<sup>18</sup>For each panel, we estimated the effect of moving the variable of interest from one standard deviation below the mean up to the mean.

FIGURE 2 Effect of Latent Judicial Independence (LJI) by GDP on Democratic Survival



Note: Solid lines reflect the predicted effect of a one standard deviation increase in LJI on survival, across values of the Ln(GDP); dashed lines show 95% confidence intervals.

wide variety of rights, not only property. In this way, the LJI results themselves suggest the importance of institutional solutions to commitment problems over rights generally. This evidence also sheds new light on the role of courts and democratic regime survival, suggesting that in the absence of sufficiently high development, democracies are less likely to benefit from greater attention to judicial reform.

**Beliefs about the Macroeconomy.** A second possibility is that the CIM, rather than reflecting citizen expectations of effective property rights protections, may be capturing citizen expectations about the

performance of the macro economy (as it is unrelated to property rights protections) or specifically, citizen expectations over the deflation of saved assets. If citizens are fearful that saved assets may be vulnerable to value deflation, they would have incentive to extract those assets from banking institutions and reallocate them to inflation-resistant shelters.

It is possible that CIM may be correlated with institutions that influence inflation. To consider this, we investigated whether controlling for a country's Central Bank Independence (CBI), which would serve as a signal of the likely security of currency value, has

any effect on our results. We used an updated measure (Crowe and Meade, 2008) of Cukierman, Webb, and Neyapti's (1992) original CBI indicator. This measure contains four components that assess (1) appointment procedures for the head of the central bank, (2) the resolution of conflict between the central bank and the executive branch, (3) the use of an explicit policy target, and (4) rules limiting lending to government. The resulting index ranges from 0 to 1. Among the democratic states in our sample, CBI is weakly correlated with a country's CIM (.12,  $p < .05$ ). For that reason alone, it would appear unlikely that the CIM estimates are picking up the effect of CBI. Nevertheless, to consider whether our results are in fact robust to a democracy's CBI, we included CBI as a control and reestimated our models. The results suggest that our findings are robust to this control. CBI does exhibit a statistically significant effect on enhancing regime survival but only for the models using Cheibub and Ghandhi's (2004) measure.<sup>19</sup>

We also considered whether our results were robust to the inclusion of state financial-stress indicators. To examine this possibility, we included measures of inflation and restrictions by external lenders in our models. Our reestimated models were robust to the inclusion of either a measure of inflation, the annual percentage change in consumer prices from the World Development Indicators, or an indicator for whether the country was under an IMF agreement (Vreeland, 2003).<sup>20</sup>

### Implications: Property Rights and Democratic Deals

Our results suggest that for countries where the fundamental economic conditions for democratic compromise exist, property rights institutions may

<sup>19</sup>We also included an interactive term with CBI and  $\ln(\text{GDP})$  to test whether CBI functions as CIM in conditioning the effect of development on order; these results were null.

<sup>20</sup>International lenders may also play a role as an external constraint on the area of compromise between competing parties, by setting limitations on public financing or other policy choices to encourage austerity. While such constraints could appear in our model in the form of decreased GDP, we explicitly considered whether being under an IMF agreement alters the relationship observed in Figure 1. Using Vreeland's data on IMF agreements, we find generally null results. The results are null for the CNG data. Being under an IMF agreement does not change our original findings nor does it appear to restrict the bargaining space. The BNR data are slightly different. The three-way interaction term is marginally significant at traditional levels ( $P < .10$ ) and the sign is in the expected direction, suggesting that CIM's effectiveness may be weaker among states currently under an IMF agreement. These results along with figures displaying the marginal effects are presented in the online appendix.

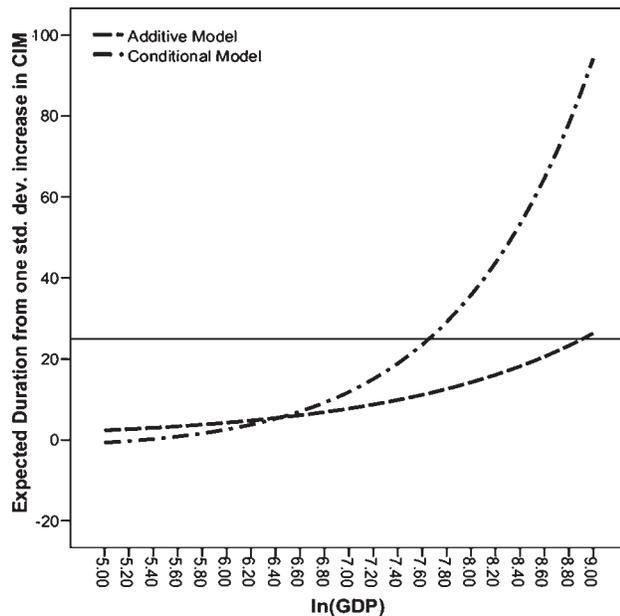
provide substantial benefits. For democracies in which competing interests are able to seek compromise, investment in institutions that effectively protect property rights may pay substantial dividends. Here we consider a related question: do property rights institutions create greater incentives for compromise? While it is clear that rules protecting fundamental rights matter when the conditions for compromise are present, we may wonder whether these rules might influence the deals that can be reached. If Carrubba's account is correct, providing institutions that function in a monitoring capacity should expand the arena of compromise among competing actors. In short, institutions make cooperation not only easier to maintain but more attractive to the actors. This logic suggests that enhancing institutions may actually lower the wealth threshold that we observe in our results, providing a bit more breathing room for democratic compromise. If this were the case, it would suggest that reform efforts even in countries with moderate economic resources may have some benefit.

Consider Figure 3, below. We present two estimates of the effect of a one standard deviation increase in CIM on that regime's expected duration. In the first, we present the expected benefit of an increase in CIM for an additive model, in which economic development does not condition the effect of judicial effectiveness. This estimated effect is the dashed line. In the second, we present the expected benefit of an increase in CIM for a conditional model, in which development conditions the effect of institutions. This estimated effect is represented by the dot-dashed line. For the sake of illustration, we include a horizontal line positioned at an expected democratic regime duration of 27 years. The precise placement of the reference line is not critical but is useful to illustrate our findings.

Imagine that this horizontal line represents the expected democratic duration that we would need to observe before we declared a democracy to be "insulated" from breakdown. If the horizontal line were located higher on the figure, say at 37 or 47 years for example, we would require additional time before we declared a given regime to be impervious from breakdown.<sup>21</sup> If we focus on the dashed line in the figure, the line produced from the additive models, we can see that as we move along the horizontal axis from left to right, increasing a democracy's economic development, the expected duration represented by the dashed line

<sup>21</sup>The exact number on the y-axis associated with this abstract expected duration is not critical and is for illustration purposes only. We do not mean to suggest that an expected duration of 27 years is sufficient to insulate a democracy against breakdown.

**FIGURE 3 Predicted Change in Expected Duration of Democratic Regimes**



*Note:* The figure shows the expected change in regime duration for a one standard deviation increase in CIM across two models. The dashed line displays the prediction from the additive model when CIM does not condition the effect of development on regime survival. The dot-dashed line displays the prediction from the conditional model where CIM is allowed to amplify the effect of development on regime survival.

increases and approaches our “ideal” duration threshold, represented by the horizontal line. In fact, in this figure, when  $\ln(\text{GDP})$  is equivalent to approximately 8.9, or \$7,300, the estimated benefit of an increase in CIM up to the mean is sufficient to produce an expected duration at our ideal threshold, thus “guaranteeing” democratic survival.<sup>22</sup> What then might be the effect of increasingly effective property rights institutions on this ideal threshold?

To answer this, we now focus on the dot-dashed line in the figure, the line produced from the conditional models. We can see that as we move along the horizontal axis, increasing a democracy’s economic development, the expected duration represented by the dot-dashed line increases and approaches our “ideal” duration threshold, represented by the horizontal line, more rapidly than the additive model.

<sup>22</sup>Prior literature references such concepts as democratic “thresholds” and “guarantees,” suggesting that at some level of development regimes become insulated from disorder. By referring to these concepts, we mean that a democracy’s likelihood of experiencing a regime breakdown effectively approaches zero.

In fact, in this figure, when  $\ln(\text{GDP})$  is equivalent to approximately 7.6, or \$1,998, the estimated benefit of an increase in CIM up to the mean is sufficient to produce an expected duration at our ideal threshold, thus “guaranteeing” democratic survival. Again, we do not mean to place too much emphasis on the precise values in this illustration. We do believe, however that this exercise is useful in demonstrating the potential of effective property rights institutions to enhance and expand the acceptable boundaries of peaceful resolution of democratic conflict. With sufficiently functioning property rights institutions, democratic regimes can enhance their prospects of survival at effectively lower minimum levels of economic development. This analysis supports Carruba’s proposition that institutions that can fill the role of effective monitoring should expand the conditions under which compromise is possible.

## Conclusion

The rule of law community is deeply invested in legal reform, at least in part because good institutions are supposed to strengthen democracies. Upham (2002, 8) reports that, during the 1980s and early 1990s, USAID and the World Bank alone spent over a billion dollars on such projects. There is no evidence that this kind of commitment is slowing down. Yet, the mainstream literature on democratic regime survival has almost entirely ignored legal institutions.

In this article, we have suggested that there are natural connections between models of neoinstitutional models of law and political economy models of regime survival, which provide a rationale in general for rule of law reform. Critically, however, the idea is not that good institutions stabilize democracies *ipso facto*. Institutions help groups monitor their own compromises. They can help parties coordinate their efforts to punish leaders when they violate core promises.

We considered how property rights institutions facilitate order in the context of Przeworski’s model of democracy, which provides what we take to be the first fully developed model of the relationship between economic development and democratic stability. Although we have not done so here, the implications for other accounts of democratic stability are clear. Specifically, Acemoglu and Robinson’s (2006) models of regime transition also operate via the logic of constraining groups from rebelling with the strategic implementation of redistribution rates. Although they

model the leader's commitment problem directly, monitoring of implementation is perfect, and there is no coordination problem to solve. But if there were, institutions might help ensure order. The precise empirical implications will change, of course, but only in so far as they speak to the different underlying features of the economy that ensure cooperation. For Przeworski, it is a sufficiently high level of development. For Acemoglu and Robinson, it is a moderate level of inequality (2006, 199).

It is worth summarizing the empirical results in light of institutional reform goals. Empirically, we know that there are no instances of democratic breakdown above a sufficiently high threshold of development (e.g., Przeworski 2005). Essentially, very wealthy democracies seem to be entirely resilient to disorder. Yet here we have found evidence suggesting that good institutions seem to lower the level of development at which democracies become highly stable, suggesting that institutions can render states relatively safe, which would otherwise remain at high risk for breakdown. Still, it is important to remember that our findings suggest that there may be no direct relationship between good institutions and regime survival when states are underdeveloped. Unfortunately, these are precisely the states most vulnerable to breakdown. This suggests that legal reform may be least effective where we believe it is needed most. Perhaps this is why mainstream literatures on conflict, which center empirically on underdeveloped states, have largely ignored the law. Simply put, there is reason to question whether building key rule of law institutions in Chad or Iraq is likely to matter in any substantial way. Finally, these results are highly consistent with North, Wallis, and Weingast's (2009) argument that developing states are heavily invested in maintaining order through rent distribution, and that for this reason, building strong rule of law institutions only undermines common strategies for holding power.

Lest we paint too dreary a picture for reform, it is worth considering an alternative causal path. If we recall the evidence linking effective legal institutions to economic growth and development (Acemoglu, Johnson, and Robinson 2001; Barro 1997) then we can infer that, if anything, we are underestimating the total effect of legal institutions on order, precisely because some of the effect of law passes indirectly through development. We have been careful to restrict our more sobering claims to the direct effects of law on order. If good institutions breed efficient investment, and ultimately growth, then law might have an indirect effect on order. Although this is plausible, it is important to remember North, Summerhill, and

Weingast's (2000) primary point: order in democracy is a necessary condition for development. Thus, if an underdeveloped state is subject to regime breakdowns, it is not obvious that good institutions will breed democratic survival via its long-run impact on development. Solving the regime stability problem may be paramount. For this reason, in some democratic contexts, the right strategy for stabilizing regimes may need to center on critical concerns of security and development strategies that do not depend on market-based contracting.

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