

**Institutions and the Credibility of Government Promises:
Evidence from Survey Data**

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Title: Institutions and the Credibility of Government Promises: Evidence from Survey Data.

Abstract: Research on the causative impact of political institutions on economic performance has been plagued by a number of problems, including endogeneity, measurement error, and omitted variable bias. To avoid these problems, we exploit cross-country survey data within a pretest-posttest quasi-experimental research design and examine the effect of institutions directly on *individual perceptions and beliefs*.

Drawing upon the responses of firm managers reported in the World Bank's "World Business Environment Survey," we find that (1) broad improvements in democratic institutions lead to improvements in perceptions of property rights and government support for business, and that (2) specific monetary institutions, such as a fixed exchange rate regimes, enhance firm owners perceptions of the stability/credibility of government policy and reduce concerns about inflation.

Introduction

Institutions, it would appear, are important determinants of economic outcomes.

Countries with “better institutions” seem to be more financially developed, attain higher rates of income growth, and enjoy lower inflation than countries with lesser institutions (see, for example, La Porta et al 1998; Levine 1999; Acemoglu, Johnson, and Robinson 2001; Rodrik, Subramian, & Trebbi. 2002; and Cukierman 1992). While scholars debate the precise channels through which institutions affect outcomes, empirical evidence of such correlations is hard to ignore.

We are concerned with research design issues in this literature. One problem is that scholars attempt to evaluate the impact of institutions on remote economic aggregates (e.g. per capita income growth) with hardly any attention to the micro-level actors whose perceptions and behaviors actually determine such aggregates. This omission is important because the theories that connect institutions to economic outcomes require human agency: certain political institutions affect the structure of incentives facing *individual* participants in an economy who, in turn, take actions that collectively determine the economy’s overall performance. Another problem is the use of research designs that confuse correlation with causation. Absent a measure of the pre-treatment variation among non-equivalent subjects, the most one can infer from regressing an economic aggregate on an institution – or an instrument for that institution – is correlation between the variables.¹

¹ While most studies attempt to control for pretest differences by including correlated covariates in the regressions, we take this approach one step further by including a pre-treatment assessment of the independent variable in question: individual recollections of prior perceptions.

We address these problems by (1) assessing the impact of institutions on *individual perceptions and beliefs* drawn from survey data, and (2) employing a pre-test posttest quasi-experimental research design in an effort to establish the causal impact of institutional improvements on perceptions and beliefs.

Examining the impact of institutions at the individual level of analysis is where we should be looking if we expect the structure of incentives provided by a country's institutions to matter in the ways specified by our institutional theories. If democratic political institutions encourage economic growth via greater investment in physical and human capital, we should observe the impact of democratic reform on firm owners' perceptions of the protection of property rights. Likewise, if central bank independence reduces inflation, firm owners in countries with more independent central banks should perceive their governments' promises of low inflation to be more credible.

Improvements in cross-national survey data allow us to test the impact of institutions on individual perceptions. We draw upon the responses of business owners and managers reported in the World Bank's "World Business Environment Survey" (WBES), which assesses the state of the institutional and policy environment for private enterprise in 80 economies, surveying at least 100 firms per country. The stated purpose of the survey is to identify the features of a country's investment climate that matter most for productivity and growth, *from the perspective of private sector actors*. It employs a common survey instrument, administered to a representative sample of firms in each country, to measure investment climate conditions. The standardized approach allows us to draw consistent cross-national inferences from the data.

Unlike other research on this topic, we employ a pretest-posttest design to estimate the impact of institutions on individual perceptions.² In particular, we exploit the multi-period feature of several WBES questions to (1) observe a pre-treatment (“pretest”) measure of perceptions in both an experimental and a control group; (2) administer the treatment (in our case, an *improvement* in the relevant institution) to the experimental group while withholding it from the control group; and (3) compare the pre-test and posttest changes in perceptions for both groups. This design allows us to get closer to causal inference than do other papers that lack a pre-treatment assessment of the dependent variable.

Our micro-level quasi-experiment provides a more direct test of institutional theories and reduces the inferential difficulties associated with current work on institutions (Przeworski 2004a, 2004b; Glaeser et al 2004). For example, the problem of endogeneity in cross-country growth or inflation regressions (fast growing economies may choose better institutions; low inflation countries may select independent central banks) falls away since it is unlikely that firm owners’ survey responses “cause” these institutions. Furthermore, examining the impact of institutions on individual perceptions by way of a multi-period experiment reduces the omitted variable bias that results when economies that are different for a variety of unobserved or unmeasured reasons differ both in their institutions and in their macroeconomic performance. Nonetheless, our empirical approach remains consistent with prevailing institutional theories. We differ

² Ayyagari, Demirguc-Kunt, and Maksimovic (2006) use the WBES to evaluate institutional theories but their research design does not attempt to gauge the effects of institutional reform on individual perceptions.

only in that we test these arguments at the individual level of analysis. Our findings are thus relevant to the wider body of literature and suggest new avenues for research.

The plan of the paper is as follows. In section 2, we briefly survey empirical work on institutions, highlighting some common shortcomings. Section 3 presents our dependent variables and assesses their validity. Section 4 lays out our research design in greater detail. Section 5 contains our empirical model and findings, and Section 6 concludes.

2. Estimating the Impact of Institutions on Perceptions

The typical approach to estimating the impact of institutions is to regress an economic outcome (per capita income growth, liquid liabilities/GDP, inflation, unemployment) on a political institution (democracy, central bank independence, electoral system) and observe the correlation. Other work takes an historical/instrumental variable approach to deal with the possibility that economic performance “causes” institutions (Acemoglu, Johnson, and Robinson 2001, Engerman and Sokoloff 2000). Beyond endogeneity, however, there is the problem of identifying which covariates have a causative impact. This problem arises because measures of institutions are highly correlated with one another and with other covariates, making it difficult to separate the effect of variables (Woodruff 2006; Acemoglu and Johnson 2005). Estimating the impact of complex institutions on highly aggregate economic outcomes has always been fraught with conceptual and statistical problems (Levine and Renalt 1992). The development of measures for institutions based on the judgments of “experts” has added new difficulties. These subjective indicators correlate well with economic performance while those based on observable “formal” features of institutions do not, which raises the possibility that the

subjective indicators may simply reflect recent performance (Aron 2000; Woodruff 2006). Endogeneity problems confound the measurement as well as the conceptualization of institutions.

Our approach avoids these problems by (1) focusing on the intermediate step of the theory of institutions, which involves individual perceptions, and (2) testing the impact of institutions on perceptions by way of a pretest-posttest research design. Institutions are “the rules of the game in a society, or more formally, [the] humanly devised constraints that shape human interaction” (North 1990). Human interactions lie between institutions and aggregate outcomes. Institutions do not directly shape economic outcomes; instead, institutions influence individual beliefs and actions which, in turn, shape outcomes.

Figure 1 diagrams the causal pathway modeled in institutional theories. Whether the institutions that matter are those that protect property rights, those that mobilize savings and coordinate investment, those that keep rulers accountable to their subjects, or those that constrain monetary policy to low inflation, every institutional theory works through individual beliefs and behaviors. The (representative) agent may vary from model to model – producer, investor, lender, price/wage setter, voter – but invariably these theories stipulate how institutions encourage certain perceptions and behaviors and discourage others. Our approach is simply to test this intermediate stage of the analysis (heavy arrow running from 1 to 2). It is closest in spirit to McMillan and Woodruff (2002) and Johnson, McMillan and Woodruff (2002), who present micro-level results that show a link between property rights institutions and the *behavior* of entrepreneurs, as measured by profit reinvestment rates, and the number and distance of trading

relationships between firms.³ Our research question, by contrast, is: do institutions influence the *perceptions* of individuals?

To evaluate this question, we focus on two types of institutions that figure prominently in the literature: democratic institutions and monetary policy institutions. Arguments linking democracy, broadly defined, to economic outcomes are ancient, but not particularly well developed. Most analysts relate democracy to property rights, which are fundamentally important to the incentives of entrepreneurs to accumulate, innovate, and invest, and therefore to growth. But the connections between democracy and property protections remain weakly theorized. By contrast, arguments about monetary policy institutions are recent and well specified: economists and political scientists have developed impressive theory over the past 30 years to justify removing monetary policy control from politicians, either by institution (central bank independence) or by rule (e.g. fixing the exchange-rate).⁴

We exploit the difference in the theoretical sophistication of these literatures in the following fashion. Since the democracy literature is vague about the specific institutions that matter for property rights, we regress perceptions of property rights on improvements in “broad” indicators of democratic institutions (e.g., Freedom House, Polity). As theory is unclear about which among the many correlated and often endogenous institutions in these broad measures matter, we expect our inferences to be imprecise. By contrast, the theory of monetary institutions allows us to be more precise

³ For micro-level evidence on the link between property rights and investment, see Besley (1995).

⁴ For the determinants of alternative monetary institutions, see Bernhard, Broz, and Clark (2003).

about which institutions are causative on perceptions. This precision should, in turn, result in cleaner inferences. We elaborate below.

Property rights have been at the heart of political economy since at least Hobbes, but North and Thomas (1973) and North and Weingast (1989) revived interest by arguing that successful property rights institutions were a key element in the onset of modern economic growth. Precisely which political institutions provide and protect these rights is difficult to discern from the ensuing literature. While North and Weingast (1989) emphasize institutions that constrain political authority (an independent legislature and judiciary), others cast an even wider net. For example, Acemoglu, Johnson, and Robinson (2002, p. 1962) view “a good organization of society to correspond to a cluster of institutions ensuring that a broad section of society has effective property rights.” Most statistical papers use subjective indices of “political freedom” to capture the features of democracy that might protect the economic system against abusive or predatory government behavior: the degree of political pluralism, the system of institutional checks and balances, and the periodic renewal of policymakers through elections.

The theory of monetary institutions is better specified and derives from the time-consistency problem in monetary policy (Kydland and Prescott 1977; Barro and Gordon 1983). Because nominal wage contracts do not get updated continuously, a benevolent social planner would have an incentive to initiate a monetary stimulus because, by decreasing the real wage, the stimulus increases employment and output. But wagesetters understand this incentive and write an inflation markup into their wage contracts. The

result is that the attempt to stimulate employment and output is futile, and the policymaker induces an inflation bias equal to the inflation markup.

Rogoff (1985) offers an institutional solution in which the benevolent planner delegates monetary policy to an independent conservative central banker who places a higher weight on the inflation goal. Wagesetters, upon observing that the independent conservative central banker is in charge of monetary policy, write lower inflation into their wage contracts. However, delegation to an independent central bank forces a tradeoff between lowering inflation and stabilizing the real economy. Because a conservative central banker places a lower weight on the output stabilization goal, she responds too little to real shocks. A large literature considers institutions that allow for some degree of commitment to low inflation while allowing some degree of flexibility to stabilize the economy. Lohmann (1992) proposes a partially independent conservative central banker that accommodates political pressures when extreme shocks hit the economy. Other solutions include an exchange-rate target with an escape clause (Flood and Isard 1989) and optimal contracts for central bankers (Walsh 1995). We take from this literature a clear picture of the specific institutions that play upon people's perceptions of expected inflation.

3. Indicators of Property Rights and Credibility

Theoretical constructs such as *property rights* or *credibility*, however, cannot be observed or measured directly. The best that researchers can do is to create indicators that serve as analogies to these constructs. To this end, we utilize individual responses to questions from the WBES to develop distinct indicators for the constructs we intend to study. In

this section, we present our operationalizations of these constructs, and we analyze the validity of each of these measures.

Our first set of variables gauges managers' confidence that the government will protect contract and property rights in each of the countries in our sample. Our next variables, which we consider a broad extension of our property rights indicators, provide a measure of the overall relationship between government and business. They allow us to test the robustness of the primary results by gauging the degree to which individuals perceive the state as *helpful* to business. Lastly, we introduce our proxies for government credibility. As with Scheve and Slaughter (2001) and Scheve (2004), responses to survey questions are used to create these dependent variables.

We generate a measure of individual perceptions of the protection of property rights from the following WBES question:

“I am confident that the legal system will uphold my contract and property rights in business disputes”. To what degree do you agree with this statement?

Managers were asked to respond along a six-point scale (1=fully agree; 2=agree in most cases; 3=tend to agree; 4=tend to disagree; 5=disagree in most cases; 6=fully disagree), in reference to two distinct points in time: “now” and “3 years ago.” In the next section we outline a methodological approach that exploits this time distinction.

A measure of confidence in the legal system to uphold contract and property rights provides a clear indicator of individual perceptions with which to test institutions-based theories. We construct several variables from the two-part survey question detailed above. One variable, *Weak Property*, is the average response of firms in each country to the question. A second variable, *Weak Property 3yr*, is the average response to the recollection (“3 years ago”) component of the question. To assess how perceptions

changed over the three year period, we calculate *Property Change 1*, which represents the difference between *Weak Property 3yr* and *Weak Property*. Positive values of *Property Change 1* indicate an improvement in managers' perceptions of property rights protection within the country during the late 1990's.

We are also interested in the percentage of managers in each country that responded 4-6 to the question, indicating dissatisfaction with the ability of the government to uphold contracts and property rights. The variables *Property Problem* and *Property Problem 3yr* represent these percentages for both the "now" and "3 years ago" components of the question, respectively. Finally, *Property Change 2* is the difference between *Property Problem 3yr* and *Property Problem*. Positive values of *Property Change 2* are indicative of an improvement in the perception of property rights protection in the particular country.

The protection of property rights is one way in which governments might encourage investment and thereby foster economic growth. But governments pursue a variety of additional policies under distinct institutional arrangements that may also contribute to economic growth. To better understand broader perceptions of the relationship between the state and business, we construct a second set of variables from WBES responses to a separate question, which we expect will be related to our property rights indicators. In reference to the "Central/National Government", managers responded to the following:

"Please rate your overall perception of the relation between government and/or bureaucracy and private firms on the following scale. All in all, for doing business I perceive the state as:"

Responses were given along a five-point scale (1=Very Helpful; 2=Mildly Helpful; 3=Neutral; 4=Mildly Unhelpful; 5=Very Unhelpful), for two distinct periods: “now” and “3 years ago”.

From the responses to the above question, we construct six variables. *Unhelpful Government* is the average response, by country, to the above question. Higher average responses indicate a perception that the government is less helpful relative to other countries. *Unhelpful 3yr* is the average country response to the recollection score. The variable *Helpfulness Change 1* is the difference between the average response, by country, to the “3 years ago” component and the “now” score. Positive values of *Helpfulness Change 1* indicate that perceptions regarding the relationship between the state and business improved in the late 1990’s, and negative values reflect a deterioration of this relationship.

We construct additional variables to measure the degree to which managers in each country perceive the state as “unhelpful” for doing business. The variable *Unhelpful Problem* is the percentage of firm managers who responded with a “4” or a “5” to the above question, and the variable *Unhelpful Problem 3yr* is the percentage of respondents who made a similar assessment with regard to the recollection component of the question. *Helpfulness Change 2* is the difference between the percentage of respondents who rate the government as “Mildly Unhelpful” or “Very Unhelpful” as their recollection response and the percentage who make a similar assessment in the “now” period. Positive values of *Helpfulness Change 2* indicate an improvement in perceptions of government helpfulness, and negative values reflect the inverse.

To assess the construct validity of these indicators, we begin by evaluating their “face validity,” or the extent to which the measures appear to reasonably operationalize our theoretical constructs. **Tables 1** and **2** report the ten countries with the lowest and highest values for *Weak Property*, *Property Problem*, *Unhelpful Government*, and *Unhelpful Problem*. The results are intuitively appealing. For example, 74% of firm managers in Moldova questioned the protection of property rights (*Property Problem*) in their country, while just 3% did so in Singapore. A full 80% found the government unhelpful to business in the Ukraine; 1% of managers in Singapore responded in a similar manner. We claim that face validity is supported by our indicators, as the results in these tables do not challenge “conventional wisdom.”

In addition to face validity, construct validity requires evidence of both discriminant validity and convergent validity (see Trochim 2001, ch. 3). The former is supported when the empirical indicator is able to differentiate between indicators of distinct, yet related, theoretical constructs; the latter implies a relatively high correlation between measures of a unique construct. To test for discriminant validity, we measure the correlation between our measures and the Freedom House Political Rights and Civil Liberties indices in 1999. We have argued that “expert” assessments such as Freedom House, although useful as a gauge of broad institutional and democratic reform, fail to capture the perceptions and beliefs of individual actors who participate in the local economy. By contrast, these are the opinions that we are purporting to operationalize with our measures. We therefore expect the Freedom House Political Rights and Civil Liberties indices to be relatively uncorrelated with our property and helpfulness variables. The correlations reported in **Table 3** indicate that our variables are indeed capturing a

distinct conceptualization of political rights from that of Freedom House. Convergent validity is also supported, as the correlations indicate a strong relationship between the measures of property rights and government helpfulness that we have developed in this section.

We now introduce our operationalizations of government *credibility*. The WBES inquiry with implications for perceptions of credibility is the following:

“Please judge on a four point scale how problematic are the following factors for the operation and growth of your business.”

Among the factors that managers judged were the “Exchange rate”, “Inflation”, and “Policy Instability/Uncertainty”. Responses were given on an ordered scale (1= No obstacle; 2=Minor Obstacle; 3=Moderate Obstacle; 4=Major Obstacle).

Unfortunately, respondents were not asked to judge conditions 3 years prior so we cannot construct “pre-test” measures in this case. Nevertheless, we argue that responses to these factors serve as useful indicators of monetary policy credibility with which to test the specific institutional theories. To gauge perceptions of credibility, we construct three measures; all are country average responses to the above WBES inquiry. *FX Concerns* refers to the exchange rate, *Inflation Concerns* measures inflation perceptions, and *Policy Instability* provides an indication of the extent to which managers find unstable/uncertain government policies problematic to the operation and growth of their business. We argue that perceptions of instability are closely related to credibility. In particular, if the government is *credible* in its policy announcements, then policy will be perceived as more stable and certain. **Tables 4** and **5** report the countries with the top and bottom ten scores for the three credibility variables. With few exceptions, the lists are intuitively

appealing, and we therefore claim sufficient support for the face validity of these indicators.

The more stringent requirements of discriminant validity and convergent validity also find support. If the opinions of actors reflect the credibility of monetary policy in a manner *distinct* from economic outcomes such as inflation, our variables should display discriminant validity with respect to inflation. This is indeed the case. In **Table 6**, our variables correlate only weakly with the inflation rate in the year the WBES was conducted (1999), indicating a divergence in the analytical constructs that these indicators purport to measure.⁵ Furthermore, our credibility operationalizations are highly correlated, providing support for the convergent validity of our indicators: they appear to proxy for a unique analytical construct.

In this section, we presented our dependent variables and assessed their construct validity. While it is impossible to prove that any empirical indicator is indeed capturing elusive theoretical constructs such as “property rights” or government “credibility”, our demonstration here suggests that our measures make a distinction between both the economic proxies and expert categorizations that are frequently utilized in the literature to test the effects of government institutions.

4. A Quasi-Experimental Research Design

Our study employs several proxy-pretest, non-equivalent group research designs (NEGD) to study the effects of government institutions on individual perceptions. We utilize a

⁵ The one exception is *Inflation Concerns*, which correlates fairly well with Inflation in 1999 (.455). Still, our constructs correlate more closely with one another than with the rate of inflation, the most common proxy for monetary policy credibility in the literature. As such, the analytical construct that we gauge with our three related variables appears to be distinct from that of previous studies.

pretest-posttest NEGD to measure the effects of government institutions on the perceptions of property rights protection and a broad conceptualization of government support for business. For this purpose, our dependent variables are the four indicators that measure a change in perceptions during the late 1990s: *Property Change 1*, *Property Change 2*, *Helpfulness Change 1* and *Helpfulness Change 2*. The null hypothesis is that improvements in democratic institutions, broadly conceived, have no effect on opinions and perceptions of property rights and the business environment. As indicators of democratic reform, we consider *improvements* in the Polity and Freedom House (Civil Liberties and Political Rights) indices over the three year period referenced in the WBES property rights and government helpfulness questions (Marshall and Jaggers 2001).⁶ Countries that became more democratic over this period represent our experimental group. Countries that are not part of the experimental group constitute the control group for our quasi-experiment. **Appendix 1** lists our sample of countries and the relevant data.

Under the NEGD, any attempt to establish causality requires multiple observations (i.e., a pretest and a posttest).⁷ Our research design exploits the multi-period WBES questions on property protection and government helpfulness to obtain both

⁶ The survey questions reference two periods of time: “now” and “3 years ago.” Since the WBES was conducted in 1999, we observe Polity and Freedom House scores in that year and in 1996. If the 1999 political indicator represents an improvement over the 1996 score, our institutional improvement variable is coded as “1.” If there was no difference in scores between 1996 and 1999, or if the score decreased, the variable is coded as “0.”

⁷ A standard example of a NEGD with implications for causal inference consists of three steps: 1) observe a pre-treatment (“pretest”) measure of perceptions in both the experimental and the control group; 2) administer the treatment (in our case, an improvement in democratic institutions) to the experimental group while withholding it from the control group; 3) compare the pre-test and posttest changes in perceptions for both groups.

pretest and posttest measures.⁸ Specifically, the “3 years ago” responses serve as our pretest measures, and the “now” responses represent the posttest. Although the prior recollections of survey respondents provide only a subjective, “recollection” assessment of property rights and helpfulness as a baseline, it is precisely this individual subjectivity that we are interested in capturing. Indeed, since our intent is to ascertain whether institutions affect individual *perceptions* of the business environment, the recollection proxy-pretest is extremely valuable.

Our primary statistical models implement a “first difference” technique, which reduces omitted variable bias (Stock and Watson 2003). We exploit the two-period nature of the survey responses to create dependent variables that represent *changes* in perceptions over the three-year period (1996-99). This allows us to control for the effects of variables that differ across countries, but remain constant over time.⁹ We do, however, control for economic performance and development over the period, as these factors are likely to influence the institutional indicators and our dependent variables. In this way, our OLS estimations isolate the effects of institutional improvements on changes in individual perceptions.

To test the robustness of our main results, we estimate the determinants of individual survey responses from over 8000 firms that provided answers to the WBES

⁸ Recall that *Weak Property*, *Property Problem*, *Unhelpful Government*, and *Unhelpful Problem* gauge perceptions at the time the survey was implemented (1999), whereas *Weak Property 3yr*, *Property Problem 3yr*, *Unhelpful Government 3yr*, and *Unhelpful Problem 3yr* provide indicators of the opinions of the same set of managers, three years prior (1996).

⁹ For example, it is unlikely that factors such as prevailing cultural attitudes among businesspersons toward government, or country characteristics such as legal origin, location, or religion will influence *changes* in perceptions between 1996 and 1999.

questions of interest. Since individual responses (as opposed to country averages of those responses) are discrete and correspond to ordered categories, we use an ordered probit model to estimate the regressions with disaggregated data. Again, we take advantage of the two-part survey responses to formulate a quasi-panel dataset with two periods (corresponding to the “now” and “3 years ago” components of the questions). Our ordered probit models include the response to the “3 years ago” question on the right hand side of the regression equation. Though imperfect, this method allows us to control for determinants that vary across firms and their country of residence, but remain constant over our short three year period of study.¹⁰

Another set of models tests the relationship between specific monetary institutions and individual perceptions of government credibility. For this purpose, our dependent variables are the three indicators that gauge perceptions of monetary policy credibility and effectiveness: *Policy Instability*, *FX Concerns*, and *Inflation Concerns*. A rich theoretical literature on the time inconsistency problem argues that central bank independence or fixed exchange rate regimes can improve individual perceptions of credibility. Our experimental group(s) are thus the subset of countries that “receive” an (1) independent central bank or, (2) a pegged exchange rate, while control groups are made up of countries that have politically dependent central banks and exchange rates that are not pegged.

To test the effects of central bank independence on perceptions of government credibility, we use *CB Turnover*, a ten year average “turnover rate” of central bank

¹⁰ These factors, in addition to country-level constants such as legal origin, include firm-specific characteristics such as industry and size.

governors, which proxies for differing degrees of independence.¹¹ Countries in the treatment group have lower average turnover rates relative to other countries. To test the effects of exchange-rate institutions, we use the Levy-Yeyati and Sturzenegger (2003) measure of the *de-facto* classification of exchange rate regimes, which is based on what countries do rather than what they claim to do.¹² *Peg* (5 yr. avg.) represents the average regime classification 1995-1999, and *Peg* is the 1999 coding.

We assume that governments have control over the selection and dismissal of central bank governors and the exchange-rate regime. In this way, countries are “self-selected” into groups in a non-random fashion, making them non-equivalent. As discussed above, causal inference for non-equivalent group designs requires both a pretest and a posttest. Unfortunately, since our credibility indicators cover just one time period, we are unable to make multiple observations; in particular, there is no pretest observation. Thus, we include covariates in our models with the purpose of controlling for pre-treatment difference among these groups. In this way, we may isolate the effects of the treatment (monetary institutions) on the perceptions of policy credibility.

We include as controls a vector of variables that likely affect the types of monetary institutions as well as individuals’ perceptions of policy credibility. For instance, recent inflation could negatively influence perceptions of credibility while at the

¹¹ Based on work by Cukierman (1992), central bank governor turnover is often used to measure *de facto* central bank independence, relying on the assumption that governors who resist political pressure will be replaced. High governor turnover is thus interpreted as indicating political interference in the conduct of monetary policy. Our data are from Ghosh, et al (2002).

¹² We are currently experimenting with other regime classification schemes, such as Shambaugh (2003).

same time increase the likelihood that a government fixes the exchange rate and grants greater autonomy to the central bank. Leaving inflation out of the model would likely bias the effects of monetary institutions on government credibility. This is similarly the case for other factors such as the level of economic development, central bank reserves, and the openness of the economy to international trade. We include 5 year averages of these potentially relevant economic controls in our estimations. Our econometric model and control variables are discussed in greater detail in the next section.

5. Results

Tables 7-11 present our estimates of the impact of political institutions on firm managers' perceptions of property rights protections and the overall business environment. The dependant variable in column (1) of **Table 7** is *Property Change 1*, which represents the change in the country average "now" and "3 years ago" response to WBES question no. 12: "I am confident that the legal system will uphold my contract and property rights in business disputes" (1=fully agree to 6=fully disagree). The dependent variable in column (2) of **Table 7** is *Property Change 2*, a value indicating the change in the percentage of managers in a country who responded (4), (5), or (6) to the question. Higher values of either dependant variable indicate that respondents are on average more secure about property rights in their countries than they were three years prior.

In **Table 7**, we regress *Property Change 1* and *Property Change 2* on respondents' recollections three years prior (our pretest assessments of perceptions), indicators of democratic reform, and economic controls. The pretest assessment is included as an independent variable because we expect that countries that begin with

lower average scores are more likely to improve.¹³ As expected, these pretest assessments, proxied by the variables *Weak Property 3yr* and *Property Problem 3yr*, have a large and very significant impact on our dependent variables. In particular, countries with more negative perceptions of property rights protection in the pretest experienced greater improvements over the three year period. We also find that the *Freedom House, Political Rights* and *Freedom House, Civil Liberties* coefficients are positive and strongly significant in both regressions, controlling for the economic environment. There is, however, no evidence that *Polity Improvements* have a similar effect: the sign is negative and not significant. Lastly, we find that economic growth is positively correlated with our improvement measures, which suggests that recent economic performance biases perceptions of property rights protection.

Table 8 reports estimates of the determinants of changes in perceptions of business-government relations, as proxied for by *Helpfulness Change 1* and *Helpfulness Change 2*. The impact of democratic institutional reform on perceptions of the helpfulness of government is consistent with its effect on perceptions of property rights: improvements in the Freedom House indices enhance firm owners' assessments of the overall business environment. Here, however, the *Freedom House, Political Rights* result is not statistically significant while the civil liberties remains strongly significant to the inclusion of economic controls, which themselves appear to be important in explaining managers' responses. Specifically, inflation has a negative impact on perceptions of

¹³ The logic is similar to that incorporated into models of economic growth: countries are likely to converge over time. Furthermore, since the ordered responses have a distinct limiting value, countries with lower average pretest scores have more "room" for improvement.

government helpfulness, as expected. As with the property rights estimations, economic growth tends to improve managers' views of the business environment. Interestingly, the effects of country wealth are strongly and consistently negative, indicating that poorer countries saw greater improvements in perceptions over the period of study.

Tables 9 and 10 report the results of a related quasi-experiment that measures the determinants of individual responses (as opposed to country averages). The models are ordered probits with standard errors clustered by units (countries) to correct for dependence in the error structure. *Recollection Score*, the pretest ("3 years ago") measures of perceptions of property rights and government helpfulness are strongly significant, as expected. The *Freedom House, Civil Liberties* measure of improving institutions is correctly signed and highly significant in both tables while the *Freedom House, Political Rights* indicator is only appears significant in explaining perceptions of property rights protections (**Table 9**). Oddly, the *Polity* indicator of democratic improvements is positive and weakly significant in this regression, suggesting that an improvement in a country's democratic institutions weakens property rights.

We are curious that improvements in the *Freedom House* indices – especially the *Civil Liberties* indicator – have what appears to be a significant causal impact on improvements in perceptions while similar changes in the *Polity* do not. **Appendix 2** describes the criteria used by Freedom House researchers in making evaluations. While the political freedoms index fits standard definitions of democracy better than the civil liberties index, the latter captures many of the civil society dimensions of democracy that relate to property rights. Civil liberties such as freedom of speech, the rule of law, and an independent judiciary are conceptually linked to property rights, which may account for

the strong results for this indicator. The *Freedom House* political rights indicator – and *Polity* – by contrast, is based on expert evaluations of the institutional characteristics of a country’s government, particularly how open and competitive are the processes for selecting chief executives. *Polity* is even more narrowly conceived in that it considers only two pairs of attributes: the competitiveness and regulation of “participation” and the competitiveness and openness of “executive recruitment.” These aspects of democracy are probably not all that related to the institutions that protect property rights.¹⁴

Table 11 presents results of regressing three assessments of government credibility on specific monetary institutions and a set of control variables. The dependent variables are the average firm responses, by country, to the following WBES inquiry: “Please judge on a four point scale how problematic are the following factors for the operation and growth of your business:” (1 = “No Obstacle” to 4 = “Major Obstacle”). The dependent variable in column (1) corresponds to “Policy instability/uncertainty”, Column (2) refers to the “Exchange rate”, and Column (3) is “Inflation.” We control for GDP per capita (constant 2000 \$US), recent economic growth (GDP growth, annual %) and inflation (change in consumer prices, annual %), reserves (total reserves in months of imports), and trade openness (Exports + Imports/GDP), all of which are five-year averages prior to the survey.¹⁵ As expected, firms perceive policy instability and uncertainty to be less of a problem in richer, more open and less inflation-prone nations.

¹⁴ In separate regressions not reported here, we tested the effects of changes in other narrowly-defined measures of democratic institutions. As with *Polity* improvements, changes in the effective number of *Checks* (Keefer and Stasavage, 2003), and improvements in the *Polcon* indices (Henisz, 2002) both failed to induce a significant impact on managers’ perceptions of property rights protection or government helpfulness.

The Barro-Gordon policy credibility literature suggests that an “independent and conservative” central banker can help solve the time consistency problem (Rogoff, 1985). Although it is difficult to measure the conservatism of the central bank governor, it is common to measure central bank independence in developing countries with the turnover rate of the central bank governor (high turnover is an inverse proxy for independence because it suggests that politicians can fire the governor more easily).¹⁶ We adopt this convention and use *CB Turnover* – the average turnover rate of central bank governors over the period 1990-1999 – as our proxy for central bank independence.¹⁷

Another implication of the Barro-Gordon framework is that a highly unstable economy can import the credibility and policy stability of a stable economy by fixing its exchange-rate to the currency of that economy (Giavazzi and Pagano 1988). Our proxies are *Peg*, a discrete indicator of the currency regime in 1999 (coded 1 = float; 2 = intermediate; 3 = fix), and *Peg (5 yr. avg.)*, the average value of the exchange-rate regime indicator 1995-1999.¹⁸ We expect fixed exchange-rate regimes, like central bank independence, to reduce firm managers’ perceptions of the degree to which policy uncertainty, inflation, and the exchange rate is a problem in their countries.

Table 11 provides strong support for a credibility effect of fixed exchange rates.

Having a fixed exchange-rate regime reduces firm managers’ perceptions of policy

¹⁵ These data are from the World Development Indicators (WDI). GDP/Capita and Inflation are logged averages.

¹⁶ See Adolph (2005) for a rare effort at measuring the conservatism of central bank governors.

¹⁷ Our central bank governor turnover data are from Ghosh et al (2002)

¹⁸ Exchange-rate regime data are from Levy-Yeyati and Sturzenegger (2003).

instability, problems involving the exchange rate, and problems with inflation. *CB Turnover* is signed correctly – more turnover in central bank governors increases perceptions of policy instability, and problems with inflation and the exchange rate – but is not significant. While these results suggest that monetary institutions influence individual beliefs in the expected directions, we recognize that important measurement issues exist. Our proxy for the underlying concept of “conservative and independent central banks” is not particularly effective.¹⁹ Furthermore, the lack of a recollection assessment in the survey data precludes the construction of a multi-period quasi-experiment that would control for variables that vary across countries but remain constant over time (as we have done with the property rights data). Given these weaknesses, we find our initial results encouraging.

6. Conclusion

Institutional political economy is in ascendance in academia but few studies have examined micro-level evidence to see if institutions actually influence individual perceptions and beliefs. Micro-processes underlie all institutional theories but empirical scholarship has largely ignored the intermediate stage where human agency stands between institutions and economic outcomes. We take up the challenge and our results suggest a causative relationship. In our quasi-experiment relating changes in property rights perceptions to changes in broad institutions, we find that improvements in broad measures of “democratization” improve firm managers’ perceptions of property rights protections. These results suggest that reforms that focus on civil liberties may lead to

¹⁹ For recent reviews of the relevant measurement problems, see Ghosh et al (2002), and de Haan et al (2003).

improved economic outcomes by improving the credibility of the government's commitment to the protection of private property.²⁰ In our evaluation of specific monetary institutions, we found that exchange-rate pegging improves perceptions of policy certainty and stability.

Our approach has the value of being relatively immune to the empirical problems that confront researchers estimating the impact of institutions directly on economic outcomes. While endogeneity concerns usually confound the nature of the relationship between institutions and aggregate economic outcomes, we are far more confident that causation runs from institutions to firm manager survey responses than from individual survey responses to institutions. Thus, our perceptions-based quasi-experimental research design suggests a path for future research that will not require heroic assumptions or implausible instruments constructed from colonial-era data.

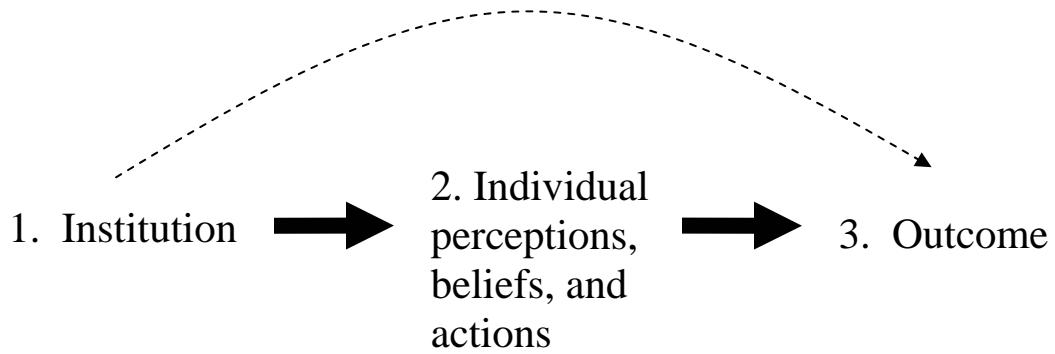
²⁰ Whether improved perceptions of the business environment actually lead to growth is another interesting empirical topic for future survey-oriented research.

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Figure 1: The Causal Pathway from Institutions to Economic Outcomes



Note: The black arrow from 1 to 2 indicates our micro-approach; the light dashed line depicts empirical research that bypasses this intermediate stage, such as cross-country growth regressions.

Table 1: Most Favorable Impressions of Property Rights and Government Helpfulness (Lowest Average Values)

Weak Property		Property Problem		Unhelpful Government		Unhelpful Problem	
Singapore	1.530	Singapore	0.030	Singapore	1.745	Singapore	0.010
Tunisia	1.824	Trinidad and Tobago	0.069	Tunisia	1.787	Malaysia	0.045
Botswana	2.095	Malaysia	0.099	Malaysia	2.000	Egypt	0.060
Chile	2.153	Canada	0.100	Cambodia	2.084	Tunisia	0.064
Belize	2.250	Egypt	0.101	Egypt	2.240	Cambodia	0.084
South Africa	2.258	Chile	0.112	Thailand	2.307	Trinidad and Tobago	0.110
Egypt	2.348	Botswana	0.116	Namibia	2.309	Thailand	0.114
Namibia	2.426	Tunisia	0.118	Botswana	2.323	Namibia	0.138
India	2.507	Belize	0.125	Trinidad and Tobago	2.360	Portugal	0.163
Costa Rica	2.515	Sweden	0.152	Belize	2.438	Botswana	0.177

Table 2: Least Favorable Impressions of Property Rights and Government Helpfulness (Highest Average Values)

Weak Property		Property Problem		Unhelpful Government		Unhelpful Problem	
Madagascar	4.409	Moldova	0.744	Lithuania	4.342	Ukraine	0.803
Russia	4.252	Ukraine	0.742	Ukraine	4.287	Lithuania	0.757
Ukraine	4.187	Russia	0.735	Kyrgyz Republic	4.118	Russia	0.739
Kenya	4.130	Madagascar	0.730	Moldova	4.112	Moldova	0.728
Kyrgyz Republic	4.096	Kyrgyz Republic	0.704	Russia	4.094	Bulgaria	0.718
Moldova	4.040	Honduras	0.652	Bulgaria	4.056	Kyrgyz Republic	0.714
Haiti	3.937	Lithuania	0.652	Zimbabwe	4.000	Zimbabwe	0.691
Nicaragua	3.895	Haiti	0.632	Czech Republic	3.924	Georgia	0.661
Lithuania	3.875	Kenya	0.620	Bosnia and Herzegovina	3.851	Bolivia	0.660
Cameroon	3.796	Cameroon	0.611	Kazakhstan	3.839	Czech Republic	0.634

Table 3: Simple Correlations, Property Rights

	<i>Weak Property</i>	<i>Property Problem</i>	<i>Unhelpful Government</i>	<i>Unhelpful Problem</i>	FH Political Rights 1999	FH Civil Liberties 1999
<i>Weak Property</i>	1.000					
<i>Property Problem</i>	0.955 (0.000)	1.000				
<i>Unhelpful Government</i>	0.683 (0.000)	0.667 (0.000)	1.000			
<i>Unhelpful Problem</i>	0.678 (0.000)	0.685 (0.000)	0.952 (0.000)	1.000		
FH Political Rights 1999	0.191 (0.089)	0.264 (0.018)	-0.087 (0.444)	-0.026 (0.821)	1.000	
FH Civil Liberties 1999	0.283 (0.011)	0.357 (0.001)	0.045 (0.694)	0.121 (0.287)	0.891 (0.000)	1.000
		Convergent Validity				
		Discrimant Validity				

Note: Weak Property is the mean response for firms in each country to WBES question no. 12: “I am confident that the legal system will uphold my contract and property rights in business disputes” (1=fully agree to 6=fully disagree). *Property Problem* is the share of firm managers in each country that responded either (4), (5), or (6) to WBES question no. 12. *Unhelpful Government* is the mean response for firms in each country to WBES inquiry no. 9: “All in all, for doing business I perceive the state as:” (1=Very Helpful to 5=Very Unhelpful). The variable *Unhelpful Problem* is the share of firm managers in each country that responded either (4) or (5) to WBES inquiry no 9. Freedom House Political Rights and Civil Liberties are logged values. P-values in parentheses.

Table 4: Most Favorable Impressions of Monetary Policy Credibility (Lowest Average Values)

<i>FX Concerns</i>		<i>Inflation Concerns</i>		<i>Policy Instability</i>	
Bosnia and Herzegovina	1.227	Bosnia and Herzegovina	1.320	Singapore	1.470
Botswana	1.301	Singapore	1.560	Botswana	1.571
Panama	1.384	Sweden	1.693	Germany	1.576
Hungary	1.595	Tunisia	1.735	Slovak Republic	1.586
United States	1.632	Germany	1.860	Namibia	1.600
Portugal	1.688	Botswana	1.953	Tunisia	1.810
Germany	1.695	France	1.969	Trinidad and Tobago	1.861
Belize	1.714	Argentina	2.010	Portugal	1.898
Sweden	1.773	Panama	2.020	Malaysia	1.947
France	1.792	Namibia	2.022	United States	2.000

Table 5: Least Favorable Impressions of Monetary Policy Credibility (Highest Average Values)

<i>FX Concerns</i>		<i>Inflation Concerns</i>		<i>Policy Instability</i>	
Ecuador	3.740	Moldova	3.839	Venezuela	3.640
Thailand	3.634	Zimbabwe	3.838	Moldova	3.585
Guatemala	3.557	Ecuador	3.760	Ecuador	3.566
Moldova	3.525	Kyrgyz Republic	3.734	Pakistan	3.505
Kyrgyz Republic	3.458	Romania	3.726	Turkey	3.490
Philippines	3.450	Belarus	3.653	Thailand	3.479
Kazakhstan	3.424	Malawi	3.604	Brazil	3.478
Indonesia	3.360	Kazakhstan	3.567	Russia	3.434
Colombia	3.300	Turkey	3.564	Albania	3.389
Honduras	3.272	Zambia	3.521	Nigeria	3.386

Table 6: Simple Correlations, Government Credibility

	<i>FX Concerns</i>	<i>Inflation Concerns</i>	<i>Policy Instability</i>	<i>Inflation (1999)</i>
<i>FX Concerns</i>	1.000			
<i>Inflation Concerns</i>	0.790 (0.000)	1.000		
<i>Policy Instability</i>	0.642 (0.000)	0.572 (0.000)	1.000	
<i>Inflation (1999)</i>	0.304 (0.007)	0.455 (0.000)	0.221 (0.052)	1.000
		Convergent Validity		
		Discriminant Validity		

Note: The italicized variables are the average firm responses, by country, to the following WBES inquiry: “Please judge on a four point scale how problematic are the following factors for the operation and growth of your business:” (1 = “No Obstacle” to 4 = “Major Obstacle”). *FX Concerns* corresponds to the “Exchange Rate”, *Inflation Concerns* refers to “Inflation”, and *Policy Instability* is “Policy instability/uncertainty.” In Table 6, “Inflation” is the rate of inflation in the country in 1999.

Table 7: Changes in Property Rights Assessments (OLS Regressions Using Country Averages)

	(1) <i>Property Change 1</i>			(2) <i>Property Change 2</i>		
<i>Weak Property 3yr</i>	0.183 [0.055]***	0.149 [0.046]***	0.175 [0.051]***			
<i>Property Problem 3yr</i>				0.226 [0.066]***	0.183 [0.057]***	0.221 [0.059]***
<i>Polity Improvement</i> (1 if Polity2 score in 1999 represents improvement over 1996 score; 0 otherwise)	-0.078 [0.069]			-0.008 [0.025]		
<i>Freedom House, Political Rights</i> (1 if FH Political Rights score in 1999 represents improvement over 1996 score; 0 otherwise)		0.155 [0.074]**			0.057 [0.026]**	
<i>Freedom House, Civil Liberties</i> (1 if FH Civil Liberties score in 1999 represents improvement over 1996 score; 0 otherwise)			0.133 [0.063]**			0.056 [0.021]***
GDP Growth (Avg. 1996-99)	0.035 [0.015]**	0.034 [0.013]**	0.034 [0.014]**	0.011 [0.005]**	0.011 [0.005]**	0.011 [0.005]**
GDP/Capita (Avg. 1996-99)	-0.010 [0.024]	-0.007 [0.023]	0.001 [0.024]	0.006 [0.008]	0.007 [0.008]	0.011 [0.008]
Inflation (Avg. 1996-99)	-0.032 [0.025]	-0.028 [0.025]	-0.028 [0.025]	-0.006 [0.008]	-0.004 [0.007]	-0.004 [0.008]
Constant	-0.402 [0.365]	-0.354 [0.329]	-0.496 [0.358]	-0.109 [0.101]	-0.115 [0.095]	-0.161 [0.100]
Observations	74	78	78	74	78	78
R ²	0.28	0.33	0.31	0.23	0.29	0.29

Robust standard errors in brackets
* significant at 10%; ** significant at 5%; *** significant at 1%

Note: The dependant variable in column (1) is *Property Change 1*, which represents the change in the average “now” and “3 years ago” response to WBES question no. 12: “I am confident that the legal system will uphold my contract and property rights in business disputes” (1=fully agree to 6=fully disagree). The dependent variable in column (2) is *Property Change 2*, which indicates the change in the percentage of managers that responded (4), (5), or (6) to WBES question no. 12. Higher values of both dependent variables indicate that respondents are on average more secure about property rights in their countries than they were three years prior. *Weak Property 3yr* is the average recollection (“3 year ago”) score for question no. 12. *Property Problem 3yr* is the percentage of managers who responded (4), (5), or (6) to the recollection component of question no. 12. GDP/Capita and Inflation are logged country averages.

Table 8: Changes in Perceptions of Government Helpfulness (OLS Regressions Using Country Averages)

	(1) <i>Helpful Change 1</i>			(2) <i>Helpful Change 2</i>		
<i>Unhelpful Government 3yr</i>	-0.045 [0.055]	-0.044 [0.050]	-0.054 [0.050]			
<i>Unhelpful Problem 3yr</i>				0.119 [0.062]*	0.124 [0.059]**	0.115 [0.058]*
<i>Polity Improvement</i> (1 if Polity2 score in 1999 represents improvement over 1996 score; 0 otherwise)	0.033 [0.080]			0.019 [0.030]		
<i>Freedom House, Political Rights</i> (1 if FH Political Rights score in 1999 represents improvement over 1996 score; 0 otherwise)		0.055 [0.073]		0.014 [0.032]		
<i>Freedom House, Civil Liberties</i> (1 if FH Civil Liberties score in 1999 represents improvement over 1996 score; 0 otherwise)			0.197 [0.071]***			0.090 [0.029]***
GDP Growth (Avg. 1996-99)	0.035 [0.014]**	0.036 [0.015]**	0.035 [0.013]**	0.012 [0.006]*	0.012 [0.006]**	0.012 [0.006]**
GDP/Capita (Avg. 1996-99)	-0.057 [0.020]***	-0.059 [0.020]***	-0.046 [0.020]**	-0.023 [0.009]***	-0.024 [0.008]***	-0.018 [0.008]**
Inflation (Avg. 1996-99)	-0.038 [0.026]	-0.047 [0.026]*	-0.042 [0.025]	-0.024 [0.010]**	-0.028 [0.010]***	-0.025 [0.010]**
Constant	0.629 [0.278]**	0.662 [0.271]**	0.563 [0.258]**	0.159 [0.089]*	0.174 [0.088]*	0.112 [0.084]
Observations	74	78	78	74	78	78
R ²	0.28	0.29	0.36	0.25	0.27	0.36
Robust standard errors in brackets * significant at 10%; ** significant at 5%; *** significant at 1%						

Note: The dependant variable in column (1) is *Helpfulness Change 1*, which represents the change in the average “now” and “3 years ago” response to WBES inquiry no. 9: “Please rate your overall perception of the relation between government and/or bureaucracy and private firms on the following scale. All in all, for doing business I perceive the state as:” (1=Very Helpful to 5=Very Unhelpful). The dependent variable in column (2) is *Helpfulness Change 2*, a value indicating the change in the percentage of managers that responded (4) or (5) to WBES inquiry no. 9. Higher values of both dependent variables indicate that respondents find on average that the government is more helpful than it was three years prior. *Unhelpful Government 3yr* is the average recollection (“3 year ago”) score for question no. 9. *Unhelpful Problem 3yr* is percentage of managers who responded (4) or (5) to the recollection component of question no. 9. GDP/Capita and Inflation are logged country averages.

Table 9: Managers' Concerns about Property Rights (Ordered Probit Regressions using Individual Survey Responses)

Dependent Variable: WBES Question #12			
<i>Recollection Score</i> (Response to "3 years ago" component)	1.122 [0.066]***	1.136 [0.064]***	1.129 [0.065]***
<i>Polity Improvement</i> (1 if Polity2 score in 1999 represents improvement over 1996 score; 0 otherwise)	0.171 [0.096]*		
<i>Freedom House, Political Rights</i> (1 if FH Political Rights score in 1999 represents improvement over 1996 score; 0 otherwise)		-0.239 [0.103]**	
<i>Freedom House, Civil Liberties</i> (1 if FH Civil Liberties score in 1999 represents improvement over 1996 score; 0 otherwise)			-0.192 [0.089]**
GDP Growth (Avg. 1996-99)	0.013 [0.026]	-0.008 [0.028]	-0.012 [0.028]
GDP/Capita (Avg. 1996-99)	-0.047 [0.018]***	-0.046 [0.016]***	-0.043 [0.017]**
Inflation (Avg. 1996-99)	0.054 [0.032]*	0.041 [0.032]	0.044 [0.034]
Countries	74	78	78
Observations	8185	8519	8519
Pseudo R ²	0.36	0.36	0.36
Robust standard errors in brackets			
* significant at 10%; ** significant at 5%; *** significant at 1%			

Note: WBES no. 12: "I am confident that the legal system will uphold my contract and property rights in business disputes" (1=fully agree to 6=fully disagree). The dependent variable is the "now" response. The *Recollection Score* is the manager response to the "3 years ago" component of question no. 12. GDP/Capita and Inflation are logged country averages. Robust standard errors clustered by country.

Table 10: Managers' Concerns about Government Helpfulness (Ordered Probit Regressions using Individual Survey Responses)

Dependent Variable: WBES Question #9			
<i>Recollection Score</i> (Response to "3 years ago" component)	1.000 [0.049]***	0.995 [0.048]***	1.001 [0.048]***
<i>Polity Improvement</i> (1 if Polity2 score in 1999 represents improvement over 1996 score; 0 otherwise)	-0.006 [0.116]		
<i>Freedom House, Political Rights</i> (1 if FH Political Rights score in 1999 represents improvement over 1996 score; 0 otherwise)		-0.122 [0.132]	
<i>Freedom House, Civil Liberties</i> (1 if FH Civil Liberties score in 1999 represents improvement over 1996 score; 0 otherwise)			-0.252 [0.092]***
GDP Growth (Avg. 1996-99)	0.087 [0.033]***	0.082 [0.028]***	0.069 [0.032]**
GDP/Capita (Avg. 1996-99)	-0.058 [0.026]**	-0.061 [0.023]***	-0.056 [0.026]**
Inflation (Avg. 1996-99)	0.128 [0.045]***	0.126 [0.041]***	0.126 [0.045]***
Countries	74	78	78
Observations	8101	8438	8438
Pseudo R ²	0.29	0.28	0.29
Robust standard errors in brackets			
* significant at 10%; ** significant at 5%; *** significant at 1%			

Note: WBES no. 9: "Please rate your overall perception of the relation between government and/or bureaucracy and private firms on the following scale. All in all, for doing business I perceive the state as:" (1=Very Helpful to 5=Very Unhelpful). The dependent variable is the "now" response. The *Recollection Score* is the manager response to the "3 years ago" component of question #12. GDP/Capita and Inflation are logged country averages. Robust standard errors clustered by country.

Table 11: Monetary Institutions and Government Credibility (OLS Regressions Using Country Averages)

	(1) <i>Policy Instability</i>				(5) <i>FX Problem</i>				(9) <i>Inflation Problem</i>			
GDP Growth	-0.068 [0.025]***	-0.062 [0.024]**	-0.056 [0.023]**	-0.083 [0.026]***	-0.068 [0.028]**	-0.056 [0.024]**	-0.052 [0.025]**	-0.081 [0.030]***	-0.043 [0.021]**	-0.038 [0.020]*	-0.036 [0.020]*	-0.047 [0.021]**
GDP/Capita	-0.061 [0.042]	-0.068 [0.043]	-0.067 [0.042]	-0.075 [0.048]	-0.083 [0.045]*	-0.096 [0.046]**	-0.088 [0.046]*	-0.090 [0.052]*	-0.107 [0.035]***	-0.117 [0.037]***	-0.114 [0.036]***	-0.122 [0.040]***
Inflation	0.124 [0.052]**	0.112 [0.054]**	0.103 [0.050]**	0.094 [0.065]	0.170 [0.051]***	0.144 [0.048]***	0.145 [0.048]***	0.174 [0.061]***	0.248 [0.048]***	0.234 [0.050]***	0.233 [0.049]***	0.241 [0.055]***
Trade/GDP	-0.004 [0.002]**	-0.003 [0.002]*	-0.003 [0.002]	-0.003 [0.002]**	-0.003 [0.002]**	-0.001 [0.001]	-0.001 [0.002]	-0.003 [0.002]	-0.001 [0.001]	0.000 [0.001]	0.000 [0.001]	0.000 [0.001]
Reserves/GDP	0.002 [0.029]	0.007 [0.029]	0.003 [0.027]	-0.005 [0.029]	-0.011 [0.024]	0.001 [0.024]	-0.009 [0.021]	-0.012 [0.026]	-0.017 [0.012]	-0.013 [0.012]	-0.017 [0.011]	-0.024 [0.010]**
<i>Peg (5 year avg.)</i>		-0.126 [0.074]*				-0.278 [0.077]***				-0.109 [0.065]*		
<i>Peg (1999)</i>			-0.18 [0.063]***				-0.235 [0.075]***				-0.104 [0.058]*	
<i>CB Turnover</i>				0.264 [0.268]			0.214 [0.332]					0.147 [0.275]
Constant	3.385 [0.415]***	3.615 [0.450]***	3.698 [0.431]***	3.56 [0.506]***	3.195 [0.478]***	3.682 [0.530]***	3.563 [0.532]***	3.218 [0.570]***	3.242 [0.373]***	3.491 [0.428]***	3.467 [0.416]***	3.389 [0.423]***
Observations	76	75	74	63	76	75	74	63	76	75	74	63
R-squared	0.33	0.35	0.40	0.39	0.37	0.46	0.47	0.43	0.60	0.61	0.62	0.69

Note: The dependent variables are firm manager responses, averaged by country, to the following WBES inquiry: “Please judge on a four point scale how problematic are the following factors for the operation and growth of your business:” (1 = “No Obstacle” to 4 = “Major Obstacle”). The dependent variable in column (1) corresponds to “Policy instability/uncertainty”, Column (2) refers to the “Exchange rate”, and Column (3) is “Inflation”. GDP Growth, GDP/Capita, Inflation, Trade/GDP, Reserves/GDP are five-year country averages (1995-1999). GDP/Capita and Inflation are logged. *Peg (5 year avg.)* is the average value of the exchange rate regime (coded 1 = float; 2 = intermediate; 3 = fix), 1995-1999. *Peg(1999)* is the value of the variable in 1999. Exchange rate regime data are from Levy-Yeyati and Sturzenegger (2003). *CB Turnover* is the average previous 5 year turnover rate of central bank governors over the period 1995-1999, from Ghosh et al (2002).

Appendix 1.a: Property Rights and Government Helpfulness Data

Country	Property Change 1	Property Change 2	Helpfulness Change 1	Helpfulness Change 2	GDP Growth (1996-99)	GDP/Capita (1996-99)	Inflation (1996-99)	Polity 2 Improvement	FH Political Rights Improvement	FH Civil Liberties Improvement
Albania	0.149	0.111	0.007	-0.019	5.425	6.906	2.817	1	0	0
Argentina	0.041	0.008	-0.063	0.013	3.526	8.975	-2.216	1	0	0
Armenia	0.136	0.064	-0.081	-0.032	4.957	6.267	2.350	1	1	0
Azerbaijan	0.190	0.073	0.016	-0.004	6.125	6.289	1.258	0	0	1
Bangladesh	-0.188	-0.076	0.062	-0.064	5.027	5.763	1.717	0	0	0
Belarus	-0.038	-0.013	-0.248	-0.119	6.500	6.886	4.794	0	0	0
Belize	0.188	0.021	0.625	0.208	4.369	7.976	0.293	.	0	0
Bolivia	0.294	0.052	-0.102	-0.049	3.693	6.904	1.909	0	1	0
Bosnia and Herzegovina	0.350	0.143	0.179	0.063	37.137	6.863	.	.	0	0
Botswana	0.261	0.051	0.402	0.043	5.964	7.942	2.117	1	0	0
Brazil	0.076	0.031	0.013	0.010	1.725	8.145	2.039	0	0	0
Bulgaria	-0.017	-0.011	-0.181	-0.064	-2.175	7.254	5.705	0	0	0
Cambodia	0.093	0.044	0.084	0.017	7.127	5.520	2.081	1	0	0
Cameroon	0.315	0.019	0.354	0.223	4.883	6.323	1.210	0	0	0
Canada	-0.015	0.011	0.010	-0.015	3.886	9.952	0.390	0	0	0
Chile	0.024	0.013	0.022	0.017	4.122	8.472	1.702	0	0	0
China	0.312	0.115	0.289	0.083	8.675	6.589	0.797	0	0	1
Colombia	0.365	0.135	0.188	0.089	0.463	7.629	2.837	0	0	0
Costa Rica	0.011	0.014	0.089	-0.007	5.771	8.263	2.574	0	0	0
Cote d'Ivoire	0.408	0.094	0.467	0.216	4.946	6.543	1.097	.	0	1
Croatia	0.074	0.011	-0.034	-0.011	3.591	8.261	1.522	.	0	0
Czech Republic	0.017	0.022	-0.070	-0.022	0.873	8.556	2.019	0	0	0
Dominican Republic	1.009	0.324	0.502	0.150	7.716	7.620	1.833	0	1	0
Ecuador	0.421	0.178	0.056	0.016	0.567	7.199	3.579	0	0	1
Egypt	0.555	0.123	0.680	0.240	5.712	7.266	1.546	0	0	1
El Salvador	0.570	0.174	0.237	0.042	3.288	7.623	1.467	0	1	0
Estonia	0.409	0.159	0.249	0.074	5.062	8.150	2.423	0	0	0
Ethiopia	0.257	0.064	0.471	0.167	4.947	4.581	0.665	0	0	0
France	0.107	0.045	-0.011	0.036	2.603	9.937	0.091	0	0	0
Georgia	0.647	0.215	0.003	-0.021	6.926	6.360	2.851	0	1	0
Germany	0.014	0.015	-0.697	-0.333	1.710	9.978	0.189	0	0	0
Ghana	0.287	0.071	0.512	0.221	4.476	5.486	3.234	0	0	1
Guatemala	0.519	0.224	0.460	0.176	4.041	7.403	2.083	0	0	0
Haiti	0.320	0.048	0.178	0.065	2.930	6.212	2.715	.	0	0
Honduras	0.046	-0.016	0.035	0.034	2.396	6.827	2.853	1	0	0
Hungary	-0.086	-0.049	-0.187	-0.034	3.725	8.321	2.805	0	0	0
India	0.176	0.059	0.530	0.224	6.247	6.023	2.141	0	0	1
Indonesia	0.430	0.262	0.212	0.081	0.002	6.726	3.147	1	1	1
Italy	0.029	0.005	-0.023	-0.004	1.644	9.779	0.879	0	0	0
Kazakhstan	-0.003	-0.030	-0.300	-0.080	0.750	6.958	2.891	0	0	0
Kenya	0.011	-0.004	0.051	0.054	2.549	5.888	2.101	1	1	1
Kyrgyz Republic	-0.116	-0.051	-0.322	-0.092	5.694	5.549	3.236	0	0	0
Lithuania	-0.033	-0.041	-0.108	-0.055	4.317	7.992	2.286	0	0	0
Madagascar	0.144	0.022	0.218	0.089	3.608	5.489	2.312	0	0	0
Malawi	-0.110	-0.031	0.000	-0.083	4.512	5.118	3.412	0	0	0
Malaysia	0.095	0.051	0.211	0.000	4.026	8.216	1.265	0	0	0
Mexico	0.197	0.082	0.216	0.090	5.174	8.592	3.086	1	1	0
Moldova	-0.145	-0.073	-0.441	-0.149	-3.375	5.737	3.014	0	1	0
Namibia	0.047	-0.015	0.191	0.014	3.520	7.486	2.067	0	0	0
Nicaragua	0.105	0.038	0.234	0.001	5.265	6.604	2.423	0	0	0
Nigeria	0.569	0.159	0.621	0.271	2.495	5.801	2.576	1	1	1
Pakistan	0.498	0.202	0.366	0.168	3.018	6.251	2.083	0	0	0
Panama	0.296	0.095	0.155	0.048	5.133	8.246	0.092	0	1	1
Peru	0.588	0.215	0.494	0.184	2.385	7.615	2.042	0	0	0
Philippines	0.151	0.056	-0.064	0.012	3.463	6.863	1.957	0	0	0
Poland	0.174	0.053	-0.027	0.009	5.425	8.261	2.601	0	0	0
Portugal	0.184	0.124	0.314	0.059	3.972	9.169	0.946	0	0	0
Romania	0.121	0.049	-0.081	-0.034	-2.021	7.450	4.312	0	0	1
Russia	0.029	0.016	-0.108	-0.057	-0.275	7.359	3.784	0	0	0
Senegal	0.886	0.233	0.532	0.161	4.772	6.066	0.456	0	0	0
Singapore	0.197	0.000	0.255	0.031	5.554	9.928	-0.243	0	0	0
Slovak Republic	0.101	0.047	0.385	0.142	4.110	8.168	1.987	1	1	1
Slovenia	0.187	0.090	-0.024	-0.016	4.381	9.065	2.088	0	0	0
South Africa	-0.048	-0.015	0.155	0.108	2.457	8.006	1.946	0	0	0
Spain	0.147	0.029	0.041	0.004	3.758	9.453	0.883	0	0	0
Sweden	-0.085	-0.019	0.008	0.054	2.988	10.107	-1.044	0	0	0
Tanzania	0.717	0.204	0.458	0.254	3.827	5.555	2.670	0	1	1
Thailand	0.300	0.110	0.134	0.040	-0.383	7.612	1.600	0	1	0
Trinidad and Tobago	0.079	0.020	0.190	0.040	4.702	8.629	1.391	1	0	0
Tunisia	0.340	0.107	0.168	0.003	5.834	7.524	1.193	0	0	0
Turkey	0.000	0.017	-0.030	0.003	3.230	7.967	4.368	0	0	0
Uganda	0.639	0.135	0.560	0.272	6.739	5.460	1.633	0	0	0
Ukraine	-0.170	-0.039	-0.420	-0.167	-3.775	6.390	3.478	0	0	0
United Kingdom	0.001	-0.007	0.044	0.005	3.011	10.029	0.970	0	0	0
United States	0.103	0.024	0.020	0.010	4.251	10.380	0.812	0	0	0
Uruguay	0.039	0.013	0.041	-0.014	3.079	8.724	2.782	0	0	0
Uzbekistan	0.123	0.014	-0.116	-0.041	3.875	6.256	.	0	0	0
Venezuela	0.286	0.095	-0.163	-0.089	0.124	8.522	3.957	0	0	0
Zambia	0.282	0.064	0.259	-0.007	2.653	5.793	3.391	0	0	0
Zimbabwe	-0.223	-0.058	-0.141	-0.015	3.082	6.428	3.485	0	0	0
N	80	80	80	80	80	80	78	75	80	80
Sample Mean	0.193	0.060	0.115	0.037	3.981	7.431	2.049	0.160	0.175	0.175
Sample Standard Deviation	0.243	0.083	0.264	0.107	4.433	1.379	1.317	0.359	0.382	0.382

Appendix 1.b: Monetary Institutions and Government Credibility Data

Country	Policy		Inflation Concerns	GDP Growth (1995-99)	GDP/Capita (1995-99)	Inflation (1995-99)	Trade (1995-99)	Reserves (1995-99)	Peg (5 Year Avg.)	Peg (1999)	CB Turnover
	Instability	FX Concerns									
Albania	3.389	2.525	2.654	6.120	6.884	2.704	46.950	4.615	1.200	1	.
Argentina	3.101	1.811	2.010	2.251	8.957	-0.271	21.826	5.869	3.000	3	0
Armenia	2.935	2.790	2.839	5.345	6.236	3.775	77.259	2.969	2.400	3	0
Azerbaijan	2.367	2.288	2.571	2.540	6.270	4.445	80.372	2.284	2.400	2	0
Bangladesh	2.925	2.921	2.644	5.006	5.747	1.871	30.291	2.797	.	.	.
Belarus	2.955	3.085	3.653	3.120	6.854	5.474	113.961	0.726	1.400	1	0.67
Belize	2.300	1.714	2.083	3.559	7.975	0.501	107.279	1.600	3.000	3	0
Bolivia	3.060	2.380	2.580	3.890	6.894	2.006	49.303	6.760	2.200	2	0.33
Bosnia and Herzegovina	3.243	1.227	1.320	33.869	6.737	.	96.095	0.860	3.000	3	.
Botswana	1.571	1.301	1.953	5.652	7.926	2.169	94.686	23.079	3.000	3	0.33
Brazil	3.478	2.938	2.701	2.220	8.141	2.963	18.166	6.642	2.000	2	1
Bulgaria	3.033	2.402	2.816	-1.168	7.275	5.532	99.418	4.051	2.400	3	.
Cambodia	2.884	2.297	2.577	7.007	5.506	1.890	79.615	2.634	1.200	2	.
Cameroon	2.083	2.333	2.024	4.567	6.312	1.503	47.479	0.091	3.000	3	.
Canada	2.120	2.020	2.158	3.666	9.941	0.479	77.893	0.954	1.000	1	0
Chile	2.600	2.525	2.152	5.423	8.451	1.798	57.640	7.862	1.200	1	0
China	2.270	1.793	2.283	9.120	6.555	1.640	41.530	8.540	3.000	3	0.33
Colombia	3.376	3.300	2.970	1.411	7.631	2.881	35.839	5.741	1.000	1	0
Costa Rica	2.660	2.707	2.840	5.401	8.251	2.717	88.078	2.152	2.000	2	0.33
Cote d'Ivoire	2.888	2.057	2.494	5.382	6.528	1.659	73.846	1.537	3.000	3	.
Croatia	3.056	2.889	2.504	4.239	8.233	1.494	90.983	2.841	1.800	2	.
Czech Republic	2.746	2.289	2.910	1.887	8.549	2.061	109.379	4.338	1.400	1	0.33
Dominican Republic	2.946	2.855	2.838	7.143	7.593	2.016	86.413	0.630	1.200	2	1
Ecuador	3.566	3.740	3.760	0.804	7.198	3.504	52.428	3.475	1.200	2	0.33
Egypt	2.978	2.738	2.723	5.503	7.250	1.932	44.739	10.113	3.000	.	0
El Salvador	3.029	2.583	3.175	3.909	7.618	1.700	58.747	3.992	3.000	3	.
Estonia	2.566	1.811	2.389	4.955	8.117	2.693	149.424	2.182	3.000	3	0.33
Ethiopia	2.397	2.520	2.333	5.182	4.566	1.270	39.382	5.113	1.600	2	0.33
France	2.071	1.792	1.969	2.553	9.928	0.209	47.070	1.917	2.500	3	0
Georgia	3.016	2.767	3.434	6.061	6.317	3.837	56.399	1.356	2.000	2	0
Germany	1.576	1.695	1.860	1.746	9.973	0.271	53.479	1.934	1.400	3	0
Ghana	2.257	2.478	3.351	4.404	5.476	3.472	75.545	2.895	2.600	3	0.33
Guatemala	3.143	3.557	3.321	4.222	7.397	2.093	43.484	2.897	1.200	1	0.33
Haiti	3.190	2.882	2.961	1.554	6.207	2.869	39.255	2.918	1.000	1	0.33
Honduras	2.422	3.272	3.280	2.733	6.824	2.984	97.535	2.629	1.600	1	0
Hungary	2.629	1.595	2.619	3.278	8.303	2.938	110.820	4.310	2.000	1	0.33
India	2.836	2.480	2.866	6.527	6.002	2.181	23.624	5.504	1.200	2	0.33
Indonesia	3.100	3.360	3.140	1.681	6.724	3.021	64.269	4.135	2.000	2	0
Italy	2.847	1.846	2.245	1.900	9.773	1.091	48.747	2.319	2.400	3	0
Kazakhstan	2.839	3.424	3.567	-1.040	6.949	3.905	74.788	3.074	1.667	2	0.33
Kenya	2.897	1.831	2.724	2.921	5.887	1.924	63.619	2.245	1.400	1	0
Kyrgyz Republic	3.375	3.458	3.734	3.471	5.525	3.236	87.462	2.135	1.500	2	0.33
Lithuania	2.472	1.841	2.591	4.112	7.964	2.760	107.772	2.334	3.000	3	0.33
Madagascar	2.670	2.320	3.182	3.229	5.489	2.884	52.328	2.051	1.200	1	.
Malawi	2.140	2.356	3.604	6.955	5.105	3.712	65.321	3.158	2.400	3	0.33
Malaysia	1.947	1.935	2.287	5.187	8.203	1.259	197.322	3.580	1.800	3	0
Mexico	3.290	3.190	3.420	2.895	8.573	3.199	61.481	2.243	1.200	1	0.33
Moldova	3.585	3.525	3.839	-2.980	5.754	2.929	125.904	2.514	1.250	1	0
Namibia	1.600	1.865	2.022	3.638	7.482	2.119	105.292	1.359	3.000	3	.
Nicaragua	2.845	3.144	3.396	5.394	6.593	2.417	66.065	1.914	2.800	2	.
Nigeria	3.386	2.796	3.070	2.496	5.800	3.222	78.877	4.047	2.800	2	0
Pakistan	3.505	2.910	3.119	3.407	6.248	2.185	35.529	1.466	1.000	1	0
Panama	2.740	1.384	2.020	4.456	8.231	0.073	164.038	1.084	3.000	3	0
Peru	3.170	3.000	2.850	3.625	7.609	2.127	31.690	9.683	1.200	1	0
Philippines	2.910	3.450	3.400	3.706	6.855	1.947	98.462	3.066	1.400	1	0
Poland	2.650	2.207	2.565	5.740	8.235	2.797	52.686	5.394	1.000	1	0
Portugal	1.898	1.688	2.093	4.034	9.152	1.060	68.357	5.005	3.000	3	0
Romania	3.371	3.097	3.726	-0.185	7.455	4.192	61.019	3.179	1.400	2	0
Russia	3.434	3.116	3.509	-1.049	7.365	4.313	55.106	2.063	1.667	1	0.33
Senegal	2.293	2.069	2.413	4.850	6.055	1.042	68.210	2.275	3.000	3	.
Singapore	1.470	1.820	1.560	6.051	9.915	-0.029	.	5.805	1.800	3	0
Slovak Republic	1.586	2.336	3.039	4.456	8.146	2.056	122.658	3.296	2.200	3	0
Slovenia	2.560	2.096	2.144	4.233	9.045	2.213	112.894	3.023	2.600	2	0
South Africa	2.000	2.427	2.444	2.589	8.004	1.993	47.988	1.661	1.400	1	0
Spain	2.360	1.878	2.343	3.558	9.439	1.054	51.167	3.912	2.400	3	0
Sweden	2.460	1.773	1.693	3.201	10.096	-0.259	74.897	2.023	1.800	1	0
Tanzania	2.421	2.033	2.597	3.776	5.549	2.847	46.460	2.817	1.200	1	0
Thailand	3.479	3.634	3.365	1.541	7.614	1.634	95.141	5.454	1.750	1	0.67
Trinidad and Tobago	1.861	2.396	2.530	4.553	8.610	1.448	98.693	2.505	2.667	3	0.33
Tunisia	1.810	1.930	1.735	5.131	7.503	1.358	89.192	2.426	1.800	2	.
Turkey	3.490	2.838	3.564	4.022	7.951	4.391	50.106	4.213	1.400	1	0.67
Uganda	2.452	1.794	2.633	7.696	5.441	1.760	33.830	4.333	3.000	3	0
Ukraine	3.183	3.046	3.449	-5.460	6.415	4.618	92.666	0.856	1.400	1	0
United Kingdom	2.216	2.253	2.196	2.980	10.016	1.027	56.551	0.995	1.000	1	0
United States	2.000	1.632	2.222	3.908	10.366	0.860	23.908	1.450	1.000	1	0
Uruguay	2.635	2.418	2.117	2.174	8.706	3.062	39.295	5.443	1.200	2	0.67
Uzbekistan	2.042	2.627	3.024	2.920	6.248	.	51.351	4.450	.	.	0
Venezuela	3.640	3.140	3.475	0.890	8.526	3.986	47.183	8.141	2.400	2	0
Zambia	2.529	1.903	3.521	1.558	5.787	3.425	68.161	0.904	3.000	3	0.33
Zimbabwe	2.755	2.885	3.838	2.497	6.412	3.422	83.985	.	2.800	3	0
N	80	80	80	80	80	78	79	79	78	77	66
Sample Mean	2.695	2.463	2.745	3.897	7.418	2.327	71.351	3.606	1.987	2.026	0.161
Sample Standard Deviation	0.556	0.614	0.606	4.106	1.378	1.306	33.693	3.055	0.786	0.926	0.216

Appendix 2: Freedom House and Polity Democracy Indicators

The Comparative Survey of Freedom, published by Freedom House, provides cross-country indexes of “civil liberties” and “political freedoms.” Countries are assigned scores from 1 to 7, with smaller values assigned to countries with greater liberties. Values are based on judgments for each country on the following set of criteria:

Civil liberties

- media/literature free of political censorship
- open public discussion
- freedom of assembly and demonstration
- freedom of political organization
- nondiscriminatory rule of law/independent judiciary
- freedom from unjustified terror or imprisonment
- free trade unions, peasant organizations
- free business or cooperatives
- free professional or other private organizations
- free religious institutions
- personal social rights: property, travel, residence, family
- socioeconomic rights; freedom from dependency on landlords, etc.
- freedom from gross socioeconomic inequality
- freedom from gross government indifference or corruption

Political freedoms

- chief authority recently elected by a meaningful process
- legislature recently elected by a meaningful process
- fair election laws, campaigning opportunity, polling and tabulation
- fair reflection of voter preference in distribution of power
- multiple political parties
- recent shifts in power through elections
- significant opposition vote
- free of military or foreign control
- major group or groups denied reasonable self-determination
- decentralized political power
- informal consensus; de facto opposition power