

**The Effect of Political Regime on Transparency:
Investigation of Democracy and Data Dissemination in Latin America**

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Abstract: Are democracies more transparent than other types of political regimes? The answer to this question is often assumed to be yes. Yet the logic and empirical implications behind this assertion have not been rigorously tested. In a larger project, we investigate theoretically the willingness of policymakers to provide credible announcements of intended inflation and unemployment rates, and show that the availability (or absence) of that data is correlated with regime type, even after controlling for level of development, participation in IMF programs, and country-specific effects. This paper is an empirical extension of the general project looking specifically at Latin America. Focusing on a single region at a time allows us to understand the pattern of data dissemination in greater detail and learn about specific cases. The investigation supports the finding of the larger project.

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Are democracies more transparent than other political regimes? The answer to this question is often assumed to be yes. Indeed, in the minds of many, transparency has become synonymous with democracy. As Shapiro (2003: 200) suggests, “democratic leaders can never be entirely free from a commitment to truth-telling.” Yet the logic and empirical implications behind this assertion have not been rigorously tested. As Mitchell (1998: 110) notes, “few scholars have made transparency the focus of study,” even though “many literatures discuss transparency or touch on topics related to transparency” (Lindley 1996: 4, cited in Mitchell 1998: 110).

As part of a larger project, we build a theoretical argument as to the conditions under which governments prefer to have credible information available about their policy choices and the associated economic outcomes.¹ The theory explicitly models the incentives of governments to provide information on two areas of interest: inflation and unemployment. The theory starts with a macroeconomic model of the economy where the government determines the inflation rate. The payoff to the government may depend in part on reelection, if the country is a democracy. Next we allow governments to decide whether or not to provide information about their policies. We find that where governments depend on winning elections for their survival, policy transparency is more likely. To test the argument, we make use of something that is usually considered a hindrance in cross-national research: missing data. The World Bank’s *World Development Indicators* is a large panel of measures of economic and social performance. For many countries, however, data are missing for certain years. If democracies are more transparent than non-democracies, then they should be more willing to report data on economic and social indicators. We find, indeed, that the availability (or absence) of data on inflation and unemployment is correlated with regime type, even after controlling for level of development, participation in IMF programs, country-specific effects, regional influences, and duration dependence.

This paper is an empirical extension of the general project looking specifically at Latin America. Focusing on a single region at a time allows us to understand the pattern of data dissemination in greater detail and learn about specific cases. The investigation supports the finding of the larger project.

¹ Our work follows the approach of Bueno de Mesquita, Smith, Siverson, and Morrow (2003), who have developed a comprehensive theory of leadership survival under different political institutions. Their model indicates that leaders of “large coalition systems” – or democracies – have stronger incentives to provide public goods than leaders of “small coalition systems” – or autocracies. They conjecture (2003: 179) that one such public good is transparency, defined as the “ready access to information about how and what the government is doing.” To test if democracies are more transparent than non-democracies, they consider whether governments report data on their tax revenue collection and their countries’ per capita incomes. They find that leaders beholden to large coalitions for their survival, such as under democracy, are indeed more likely to report information than leaders in other political systems.

In what follows, after defining the key terms, we present the argument about why democracies should be more transparent than non-democracies. We then turn to Latin America for evidence. In addition to standard statistical tests, we present the data in a more discursive format, discussing the histories of democracy and data dissemination of key Latin American countries.

Defining Democracy and Transparency

We employ a minimalist definition of democracy. Following Schumpeter (1942) and more recently Przeworski, Alvarez, Cheibub and Limongi (2000), we define democracy as a regime in which the executive and the legislature are both filled by “contested elections.” Contestation implies multiple parties compete, incumbents have some probability of losing the elections, and all parties comply with the results of the elections. Przeworski et al. have developed a dichotomous measure² of regime that follows this definition: democracy is a political system in which key government offices are filled through contested elections. The definition has two parts: “key government office,” which they define as the executive and the legislature; and “contested,” which implies that more than one party has some probability of winning office through election.³ Conversely, dictatorships are regimes in which either the executive or the legislature are not filled by contested elections.

The nature of our study requires this narrow definition. To paraphrase Przeworski et al. (2000: 14-5), we want to know if holding repeated elections induces governmental transparency. Our inquiry pertains specifically to the effect of elections on transparency, so we do not want to employ a measure of democracy that conflates other features of a political system with elections. In particular, we want to avoid measures of regime that define democracies as transparent.

Note that by employing a minimalist definition of democracy that pertains only to the role of elections in a political system, we can explore interesting possibilities. On the one hand, if we do not find that our measure of democracy is correlated with transparency, we will know that contested elections alone are not sufficient to produce transparent regimes. If, on the other hand, we do find that our measure of democracy leads to transparency, we will know that the minimalist conception of democracy actually covers more territory than just elections, because contested elections actually do cause regimes to be more transparent.

² Updated by Cheibub (2004) and Cheibub and Gandhi (2004).

³ Sometimes this is obvious, such as when incumbents lose elections and relinquish power. Sometimes it is not, such as when incumbents successively win elections contested by other parties. While this introduces measurement error, it does so in an observable way. We know when we are in the latter situation, and can introduce a second variable to make sure results do not depend on these ambiguous cases. Przeworski et al. have made this variable – TYPEII – available with the rest of their data at: <http://pantheon.yale.edu/~jac236/Research.htm>.

What is “transparency”? Mitchell (1998: 109) defines transparency as the dissemination of regular and accurate information. Simply put, a transparent political regime is one that provides accurate information about itself, its operations, and the country as a whole, or permits that information to be collected and made available.

We focus here on data compiled by the World Bank. The World Bank obtains their data from other international organizations, such as the International Monetary Fund (e.g., inflation data) and the International Labour Organization (e.g., unemployment data), who in turn obtain their data directly from national governments. Much of the data are missing. Regarding inflation, for example, out of a possible total of 6,439 independent country-years for 188 countries from 1961 to 2002, 25 percent of the observations are missing. The World Bank explains that the data are not available because governments have failed to report in a timely way or failed to report at all, or in some cases, “data which have been determined to be questionable may be deleted.”⁴

In this study, we emphasize the government’s willingness to permit credible measures of inflation and unemployment to be made available. Among the many policy instruments at the disposal of the government one of the most important is the control of the monetary base, and hence the inflation rate. Inflation is costly to society at large, but it also has distributional effects. Not only does it redistribute from debtors to creditors, it also acts as a tax on money holdings. Governments therefore use inflation to generate revenues - known as seigniorage - and in the process influence unemployment by the usual Phillips curve trade-off.

This paper builds on the growing awareness that electoral accountability alone is insufficient to ensure high quality governance and representative policy-making. Adserà, Boix and Payne (2003) show that both accountability and free flow of information (in the form of newspaper circulation) affect the quality of governance; the case of Montesinos in Peru shows that the high price of bribes paid to television station owners relative to judges and bureaucrats indicates the importance of controlling the information flow if democracy is to be subverted (McMillan and Zoido 2004). The importance of freely flowing information has become particularly important among international organizations. Both academics (e.g. Mitchell 1998) and officials at international organizations (e.g. the International Monetary Fund or IMF) have emphasized that transparency is crucial for their operation. In the aftermath of the East Asian Financial Crisis, for example, the IMF adopted in 1999 its *Code of Good Practices on Transparency in Monetary and Financial Policies* to make the operations of its members publicly available and took the “Transparency Decision” in January 2001 to make information about its own operations more accessible to the public. As Erbaş (2004: 3) contends, “The importance of transparency in successful economies is becoming increasingly recognized in the literature and in the operational work of international organizations, including the IMF.”

⁴ See the World Bank statements about *World Development Indicators*: <http://www.worldbank.org/data/datafaq.htm#cdroms>

We are aware of no study of transparency, however, as a function of domestic political institutions. In *The Moral Foundations of Politics*, Shapiro (2003) makes the case that democracies are more likely than non-democracies to converge on the truth⁵, but the argument is suppositional not based on any studies or empirical work. Elsewhere, democracies are simply assumed to be more transparent. Is it true that democracies are more likely to provide accurate information than non-democracies? In the following sections we investigate this question both theoretically and empirically.

The Effect of Democracy on Transparency

Consider a polity with a large number of identical individuals/voters who earn at the start of each period, t , an aggregate income normalized to unity. The income is subject to a shock θ_t , drawn from a known distribution independently and identically each period from a finite support with mean 0.

The income and the shock generate the aggregate money balances held at the start of the period $m_t = 1 + \theta_t$ with $Em_t = 1$.

Each period is divided into two subperiods $t1$ and $t2$. In $t1$ the voter/individual consumes some portion of the money balances c_{t1} and saves the rest for consumption in the second period, c_{t2} . Savings (endogenously determined) is risk free, and for simplicity, earns no interest. There is also no borrowing. Then per period utility is

$$u(\pi_t) = u_1(c_{t1}) + u_2(c_{t2})$$

where the subperiod utility functions have the usual properties $u'_i > 0$, $u''_i < 0$ for $i = 1, 2$. Second subperiod consumption is determined by the inflation rate, π , to be endogenously determined.⁶

The voters save at rate s across the subperiods. The real value of the money balances saved for consumption in the next subperiod depends on the price level, which is controlled by the government via the money supply. If the price in $t1$ is p_{t1} and in $t2$ is p_{t2} the government taxes savings each period by setting the inflation rate $\pi_t = \frac{p_{t2} - p_{t1}}{p_{t2}}$.

So inflation erodes savings; it can also be thought of as a tax on savings, here in the form of money balances. This tax revenue accrues to the issuer of money, government, and is called *seigniorage* - the real government revenue accrued from printing money (Drazen 2000)⁷. We treat these revenues as pure rents, and accrue to the private benefit of the government policymaker.

⁵ See especially pages 200-201, 225-6, 230.

⁶ Note that discounting across the subperiods is possible and could be part of the definition of u_2 .

⁷ Desai, Olofsgård and Yousef (2000) treat the inflation tax as the sole source of government revenue, which in their model is used for transfers back to subgroups of voters. Here no transfers occur, and the rents accrue to the policymaker.

Then in each period, consumption in the subperiods is

$$c_{t1} = m_t(1-s)$$

$$c_{t2} = m_t s(1-\pi_t) - \frac{\pi_t^2}{2}$$

where the last term in the $t2$ consumption is the deadweight loss of inflation that recognizes the general welfare costs associated with inflation. We treat this as a public bad (both the voters and the government experience this loss), and we assume the linear-quadratic structure as is common in the literature on central bank credibility (Drazen 2000, Barro and Gordon 1983, Obstfeld 1997, Cukierman, Edwards and Tabellini 1992, Desai et al 2000).

Then

$$u(\pi_t) = u_1(m_t(1-s)) + u_2\left(m_t s(1-\pi_t) - \frac{\pi_t^2}{2}\right).$$

Per period earnings to the government (as a result of the accrued inflation tax) is

$$v(\pi_t) = m_t s \pi_t - \frac{\pi_t^2}{2} \text{ and } Ev(\pi_t) = s \pi_t - \frac{\pi_t^2}{2}.$$

Notice that we have set this up with some degree of a conflict of interest between the government and the voters, but there is also some coincidence of interest - both understand that inflation is costly.

Given any (equilibrium) inflation rate, we can solve for the consumers' saving rate. Optimality (and its implied consumption smoothing) requires the expected marginal utility of consumption to be equalized across the subperiods. Hence

$$-Eu'_1(m_t(1-s)) + Eu'_2\left(m_t s(1-\pi_t) - \frac{\pi_t^2}{2}\right)(1-\pi_t) = 0 \text{ or } s \text{ solves}$$

$$(1.1) \quad \frac{Eu'_2\left(m_t s(1-\pi_t) - \frac{\pi_t^2}{2}\right)}{Eu'_1(m_t(1-s))} = \frac{1}{(1-\pi_t)}.$$

Let this value of s be denoted $s(\pi_t)$.

Both the voters and the government are infinitely lived. There is no savings across periods (only across each subperiod). Each seeks to maximize the discounted sum of the per period utilities. For the voters, $E \sum_{t=0}^{\infty} \delta^t u(\pi_t)$ and $E \sum_{t=0}^{\infty} \delta^t v(\pi_t)$ for the government, where $\delta \in (0,1)$ is the standard discount factor.

Maximal Extraction

Voters save the fraction $s(\pi_t)$ of their income $m_t = 1 + \theta_t$. In the case that the government wishes to maximize the current period extraction, it will choose an inflation rate

to maximize $Ev(\pi_t) = s(\pi_t)\pi_t - \frac{\pi_t^2}{2}$. Differentiating,

$Ev'(\pi_t) = s(\pi_t) + \pi_t s'(\pi_t) - \pi_t = 0$ yields $\pi_t = \frac{s(\pi_t)}{1 - s'(\pi_t)}$. Let the solution to this

equation be denoted Π . The government per-period payoff then is

$$V(\Pi) = \frac{\Pi(s(\Pi) - \Pi)}{2}.$$

Elections

At the end of each period an election is held. If the incumbent is evicted, that player earns zero for the rest of the game, and another executive is chosen that is identical in all respects to the incumbent. The election punishes or rewards the past behavior of an executive - voters adopt a retrospective voting rule.⁸

Non-transparency

At the beginning of each period t the executive chooses the inflation rate $s(\pi_t)$, and then nature picks the value of the shock θ_t . The voters do not see the shock θ_t or the inflation rate π_t ; they make their best guess as to the inflation rate to expect, π^e , choose their savings rate accordingly. At the end of the period, they observe the end of period utility $u(\pi_t) = u_1(m_t(1 - s(\pi^e))) + u_2\left(m_t s(\pi^e)(1 - \pi_t) - \frac{\pi_t^2}{2}\right)$. The government does not announce its actions, nor are they observable - the polity is not *transparent*.

At the end of the period, and based on the utility experienced, an election is held as to whether the incumbent should be reelected. Following Persson, Roland and Tabellini (1997) we assume the voters coordinate on the same reelection rule, and they condition their reelection rule on their observed utility. Voters choose a threshold level of

⁸ Since executives are in all ways identical, elections do not serve to choose amongst executives with differing levels of competence or differing attributes. Fearon (1999) suggests that voters care more about selecting competent legislators than disciplining extractive policymakers; Lewis-Beck (1988) provides evidence that voters use retrospective strategies to punish their elected officials when outcomes are poor. See Banks and Sundaram (1993) for a model in which executives display both moral hazard (potentially extractive behavior) and adverse selection (having differing attributes).

utility \bar{u} and will vote to reelect the incumbent if $u(\pi_t) \geq \bar{u}$ and eject the incumbent otherwise.⁹

Note that the incumbent has to take an action (that will impact his/her reelection probabilities) before the shock has materialized. Following Rosendorff (2004), we can define the ex ante probability that any threshold \bar{u} is breached after choosing inflation rate

π_t as

$$\phi(\pi_t, \bar{u}) = \Pr\{u(\pi_t) \geq \bar{u}\}.$$

Notice therefore that given any policy choice and threshold, there is always positive probability that the voters choose to evict the incumbent from office. In environments where the executive has not been too extractive, the exogenous shock can be severe enough to induce eviction. Hence the non-transparent environment admits the possibility of “unfair dismissal” - eviction in cases even where the tax was low or moderate.

Assumption: $\phi(\Pi, u) = 0$ for all u .

If the executive chooses the maximally extractive level of inflation Π in any period, the distribution of the random shock is such that the threshold is never breached, and the voters throw out the incumbent with certainty.

Regime Type

We characterize each polity by a scalar $\sigma \in [0, 1]$, which captures the degree to which the sentiments of the voters are binding on the executive. If the voters’ will is always honored, we have $\sigma = 1$; a pure autocracy has $\sigma = 0$. We permit a continuous measure of the degree to which the executive is accountable to the voters. Then the actual probability of keeping office in any period t after both π_t and \bar{u} have been chosen is $\rho(\pi_t, \bar{u}, \sigma) = \sigma\phi(\pi_t, \bar{u}) + (1 - \sigma)$.

The Executive’s Problem

The executive must choose a policy π_t each period that just balances the benefits of extracting this period, with the reduced probability of being in office and able to extract tomorrow. The threat of eviction acts to reduce the level of extraction today. We can write the (expected) value function associated with the executive’s problem as

$$(1.2) \quad V(\pi_t, \bar{u}) = v(\pi_t) + \delta\rho(\pi_t, \bar{u}, \sigma)V(\pi_{t+1}, \bar{u}).$$

Let the optimal response by the executive to threshold \bar{u} be denoted $\bar{\pi}$.

⁹ Banks and Sundaram (1998) show that cutoff rules are optimal in the class of retention models like this one. Fiorina (1981) suggests that this threshold behavior is typical of voters.

The executive can guarantee, in expected value, a minimum intertemporal value (by taking the maximally extractive action each period) and risking eviction of

$$V(\Pi, u) = \frac{v(\Pi)}{1 - \delta(1 - \sigma)} = \frac{\Pi(s(\Pi) - \Pi)/2}{1 - \delta(1 - \sigma)} \text{ for all } \bar{u}.$$

Then the executive's best response is to set inflation each period at $\bar{\pi}$ if $V(\bar{\pi}, \bar{u}) \geq V(\Pi, u)$, Π otherwise.

The Voters' Problem

Given the behavior of the executive, they will seek to keep inflation as low as possible. So given the best response function above, they will choose a threshold that induces the lowest inflation without inducing the executive to switch to the maximally extractive action. Hence let \bar{u} solve $V(\bar{\pi}, \bar{u}) \geq V(\Pi, u)$.

Then the Nash equilibrium to this game is $(\bar{\pi}, \bar{u})$, and the probability of unfair eviction is $1 - \rho(\bar{\pi}, \bar{u}, \sigma) > 0$.

And the executive is kept indifferent between playing $\bar{\pi}$ and playing s . Hence the payoff to the executive is

$$(1.3) \quad V(\bar{\pi}, \bar{u}) = V(\Pi, u) = \frac{\Pi(s(\Pi) - \Pi)/2}{1 - \delta(1 - \sigma)}.$$

We cannot solve for the level of the equilibrium inflation rate explicitly. It must

however satisfy
$$\frac{\bar{\pi}s(\bar{\pi}) - \bar{\pi}^2/2}{1 - \delta\rho(\bar{\pi}, \bar{u}, \sigma)} = \frac{\Pi(s(\Pi) - \Pi)/2}{1 - \delta(1 - \sigma)}.$$

Transparency

Voters do not directly observe π_t ; the policymaker announces a policy $\tilde{\pi}$. A new player, a credible source, is informed of the actual policy π_t and makes its determination available to voters: either, yes, the government policy indeed is as announced (or better for the voters), $\pi_t \leq \tilde{\pi}$, or no, the policy is worse than announced, $\pi_t > \tilde{\pi}$. This fits the observed reality - voters receive information that is to some degree reliable - from sources such as the World Bank, independent government agencies, the IMF and other sources. The voter compares this information with what they might have expected given the government's own announcements and their own expectations of government behavior. Voters then choose whether to reelect the incumbent.

The sequence of moves is that government chooses an announcement ($\tilde{\pi}$) and a policy (π_i) simultaneously (but only the announcement is observed by the voters). At the same time the voter chooses the savings rate (s). Then the credible source sends its message, and the voter chooses to reelect or not $\phi \in \{1, 0\}$. A Nash equilibrium is the pair $\{(\tilde{\pi}, \pi_i), (s, \phi)\}$.

Voters will now condition their reelection decision on the announcement. The voter's optimal strategy will be as follows: As before they choose their savings rate according to equation (1), $s = s(\pi_i)$. If $\tilde{\pi} \leq \bar{\pi}$ then they will reelect if they hear the announcement that $\pi_i \leq \tilde{\pi}$; they evict if not. And if $\tilde{\pi} > \bar{\pi}$, they evict.

In any equilibrium $\{(\tilde{\pi}, \pi^*), (s, \phi)\}$ where $\tilde{\pi} \leq \bar{\pi}$, and the message sent is that $\pi^* \leq \tilde{\pi}$, the voters reelect, setting $\phi = 1$ and from equation (1.2) we can see that $\rho = 1$; the effective discount factor (see equation) is therefore simply δ , and the expected discounted value of the game (with some abuse of notation) to the government is $V((\tilde{\pi}, \pi^*), (s(\pi^*), 1)) = \frac{\pi^* s(\pi^*) - \pi^{*2}/2}{1 - \delta}$. If at any point $\phi = 0$, then $\rho = 1 - \sigma$; the effective discount rate is $\delta(1 - \sigma)$ and the government as before can assure itself of $V((\tilde{\pi}, \Pi), (s(\Pi), 0)) = \frac{\Pi(s(\Pi) - \Pi)/2}{1 - \delta(1 - \sigma)}$. In order for π^* to be a best response for the government, it must be that $\frac{\pi^* s(\pi^*) - \pi^{*2}/2}{1 - \delta} \geq \frac{\Pi s(\Pi) - \Pi/2}{1 - \delta(1 - \sigma)}$ which is equivalent to

$$(1.4) \quad \sigma \geq \frac{1}{\delta} \left[1 - \frac{\Pi s(\Pi) - \Pi/2}{\pi^* s(\pi^*) - \pi^{*2}/2} (1 - \delta) \right] - 1.$$

For the voters, the lowest interest rate feasible is preferred; it is always optimal to reward commitment to a low rate than to punish it. The Nash equilibrium to the game under transparency is as follows:

$$(1.5) \quad \begin{aligned} & \text{If } \sigma \geq \frac{1}{\delta} \left[1 - \frac{\Pi s(\Pi) - \Pi/2}{\pi^* s(\pi^*) - \pi^{*2}/2} (1 - \delta) \right] - 1 \\ & \text{then } \pi^* = \tilde{\pi} < \bar{\pi} \text{ and } \phi = 1; \\ & \text{otherwise } \pi^* = \Pi, \tilde{\pi} \in [0, 1] \text{ and } \phi = 0. \end{aligned}$$

We are now able to compare the equilibria across the two informational environments, and make a Pareto ordering.

Proposition: *Transparency is preferred to non-transparency by both players when the polity is sufficiently democratic.*

Proof: Under transparency, the government earns $\frac{\pi^* s(\pi^*) - \pi^{*2}/2}{1 - \delta}$. Under non-transparency, the government earns (from equation(1.3)) $\frac{\Pi s(\Pi) - \Pi/2}{1 - \delta(1 - \sigma)}$. Then for transparency to be preferred to non-transparency, $\frac{\pi^* s(\pi^*) - \pi^{*2}/2}{1 - \delta} \geq \frac{\Pi s(\Pi) - \Pi/2}{1 - \delta(1 - \sigma)}$ or

$\sigma \geq \frac{1}{\delta} \left[1 - \frac{\Pi s(\Pi) - \Pi/2}{\pi^* s(\pi^*) - \pi^{*2}/2} (1 - \delta) \right] - 1$, which is the condition for the existence of the transparency equilibrium, equation (1.4) above. Of course, transparency is preferred by the voters, since the transparent inflation rate is lower than the non-transparent rate, $\pi^* < \bar{\pi}$, from equation (1.5) above. ■

Hence for any value of δ , the larger is σ , the more likely it is that transparency will be preferred to non-transparency. The more likely the fate of incumbents depends on elections, the more likely information will be provided.

Voters dislike inflation, and attempt to discipline their executives via the ballot box. Since government can be unfairly evicted from office even if rent-shifting has been moderate, executives may be willing to trade away the opportunities for rent extraction (by providing access to credible information about their actions) in return for reducing the risk of being unfairly dismissed. Those policymakers more accountable to their electorates are more likely to be unfairly dismissed, and therefore are more likely to offer up, or provide access to, credible data. Hence those polities characterized by more electoral accountability will be more transparent.

Unemployment

The unemployment rate is related to the inflation rate either by a traditional Phillips curve

$$U_t = -\pi_t$$

or by a more modern expectations adjusted Phillips curve, where a reduction in unemployment happens only when the voters are surprised by inflation that is higher than expected

$$U_t = -(\pi_t - E\pi_t).$$

In the first case, more information about the inflation rate policy adopted by the government, as in the “transparent” environment is equivalent to more information about the unemployment rate. Hence “transparency” means that a credible announcement of the inflation rate is also a credible announcement of the unemployment rate. And therefore we can draw a similar conclusion about unemployment data that we draw from inflation

data: we are more likely to see credible information about unemployment flowing to the voters in democracies than in non-democracies.

In the second case, where the Phillips curve is expectations adjusted, in equilibrium in both the transparent and non-transparent regimes, there is no surprise inflation (since both players operate under the same the informational constraints), and hence in equilibrium in both regimes, unemployment is zero. In this case the model cannot speak to the informational value of a credible announcement of the unemployment rate. Nevertheless, extending the general logic of the argument, it is not unreasonable that democratic polities are likely to be characterized by better flows of data about the economic variables over which the government asserts some degree of control, for the same reasons as postulated above. Consequently, we might expect to see democracies generate more information about unemployment as well as inflation.

Evidence

The theory suggests that democracies – defined as those polities where elections determine the fate of incumbents – will provide better access to, or permit the publication of, data on inflation and unemployment by sources credible to the voters, such as international organizations. In this paper, we test this by examining patterns of missing data in Latin America. The World Bank Group publishes data from nearly all countries around the world starting as far back as 1960 up to 2002 (at this writing). The publication, *World Development Indicators*, includes country-year data on hundreds of variables, including inflation¹⁰ and unemployment¹¹, but much of the data are missing for certain countries during certain years. To examine the patterns of missing data, we create two dummy variables – one for inflation and one for unemployment – coded 1 if data are available and 0 if they are missing.

Because our dependent variables are measures of simply whether or not information is provided, we have no missing observations. Either data are provided or they are not. So our larger dataset includes all 188 independent countries recognized by the World Bank in 2002. The analysis of each variable begins with the year that data were first reported by the World Bank by any country.

In the larger project, we examine the relationship between missing data and political region for all countries in the world. A battery of statistical tests, presented in the appendix of this paper, confirm a robust relationship between democracy and the reporting of inflation and unemployment data.

In this paper, we examine this relationship in more detail for the region of Latin America. Our purpose is to better understand the relationship between transparency and

¹⁰ Consumer prices (annual %): FP.CPI.TOTL.ZG.

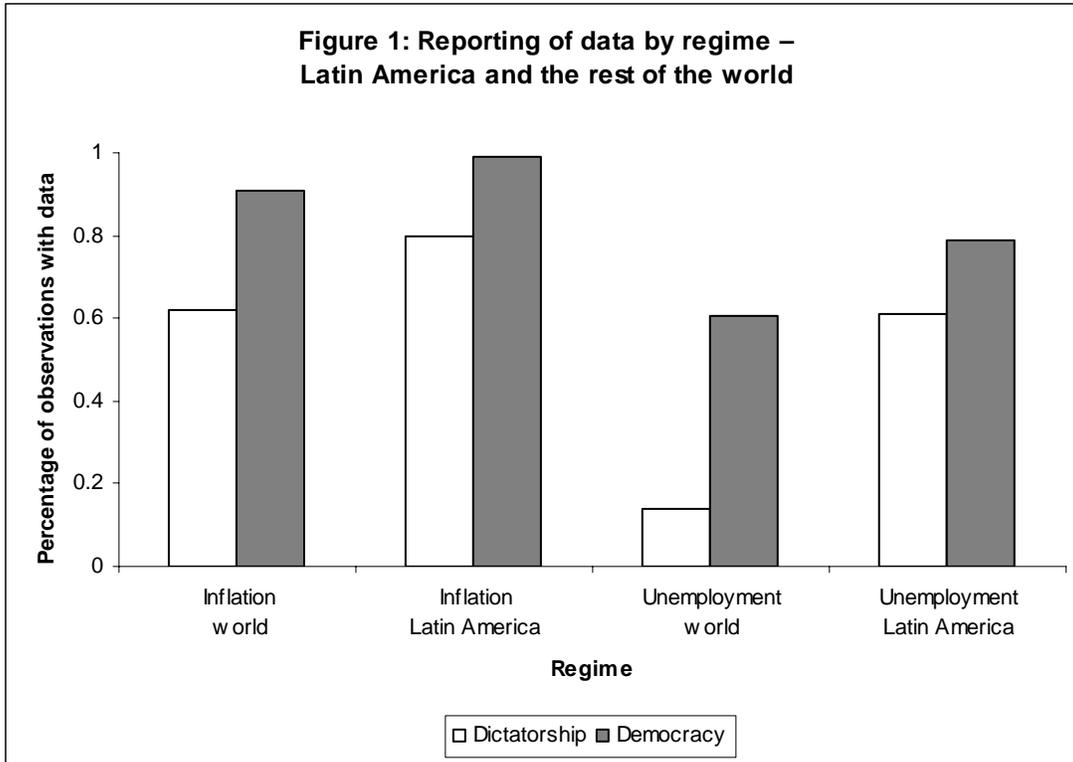
¹¹ Unemployment, total (% of total labor force): SL.UEM.TOTL.ZS.

political regime by focusing on a subset of the larger data. We present the results in the LASA2006 forum, where we hope that experts on the region may help us better understand the microfoundations of reporting data under democracy and dictatorship.

We begin with the descriptive data. We then briefly present some statistical tests establishing that the relationship between political regime and reporting data, which exists in the larger dataset, also holds for the region of Latin America. We then explore in more detail the 19 cases in the region.

First, consider what we observe from the following 19 Latin American countries – Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela:

- The World Bank begins reporting data on inflation in 1961. From 1961 to 2002, there are a total of 798 country-year observations of independent regimes, and data on inflation are missing in 9.3 percent of them (for the world as a whole – data are missing in 24.6 percent). Data are reported for 79.8 percent of the 342 observations of dictatorship. Data are reported for 98.9 percent of the 456 observations of democracy.
- The World Bank begins reporting data on unemployment in 1980. From 1980 to 2002, there are a total of 437 country-year observations of independent regimes, and data on inflation are missing in 26.1 percent of them (for the world as a whole – data are missing in 60.6 percent). Data are reported for 61.0 percent of the 123 observations of dictatorship. Data are reported for 79.0 percent of the 437 observations of democracy.



Of note is the fact that missing data are much less common in Latin America than in the world as a whole. In particular, Latin American dictatorships report data at much higher rates than dictatorships elsewhere, as Figure 1 illustrates. This finding is beyond the purview of our theory, though it is something worthy of investigation. *Why are Latin American dictatorships more transparent than other dictatorships, at least with respect to inflation and unemployment data?*

Beyond this, the basic descriptive statistics displayed in Figure 1 support our hypothesis that democracies are more transparent than dictatorships with respect to inflation and unemployment. The pattern seems to hold true in Latin America, as it does for the rest of the world.

To analyze the relationship between regime and missing data more rigorously, we use a simple logit analysis to test if democracies are more likely to report data. Table 1 presents the results. Just as we find for the entire dataset, for each dummy variable indicating whether information is provided during a given country-year, democracy has a statistically significant positive impact.

Table 1: The effect of democracy on transparency in Latin America

	Inflation	Unemployment
The effect of Democracy (Robust std error)	3.13** (0.47)	0.88** (0.23)
Constant (Robust std error)	1.38** (0.13)	0.45** (0.19)
# of obs.	798	437
Log pseudolikelihood	-199.50	-243.73

These could be spurious results. So far, we have included no control variables. Unfortunately, we do not have a battery of variables that we can use to control for all other possible factors that may influence patterns of missing data because data are also missing for many of these variables. Fortunately, we do have a complete set of data for the most important factors.

First of all, level of economic development may be a factor. More developed states may be more likely to report data because with development comes greater technical capacity to collect data. As Bueno de Mesquita et al. (2003: 182) note, poor countries “just cannot afford to gather the information.” The collection and reporting of data may also simply be a more routine activity in more modern states, as Scott (1999) contends. Level of economic development is important to account for because it is correlated with political regime. Democratic regimes are more likely to survive at higher levels of income (Przeworski et al. 2000). So the positive effects of democracy on transparency reported in Table 1 may be driven in part by level of economic development. Fortunately, Heston and Summers (1995) have collected data on per capita income for nearly all countries with no missing data. We use their data, measured in 1995 purchasing power parity (PPP) dollars, to control for level of economic development.¹²

A second factor that may influence the reporting of data is the degree of scrutiny that a government is under by international organizations. For example, countries participating in programs sponsored by the IMF are required to submit to increased surveillance of the economy. Like economic development, participation in an IMF program is also important to account for because it is correlated with regime. The IMF has historically been more likely to enter into arrangements with dictatorships (Bandow 1994, Przeworski and Vreeland 2000). To the extent this is true, the effect of democracy

¹² The data actually come from the *Democracy and Development* ACLP data project, updated to 2000 by Jose Antonio Cheibub, Jennifer Gandhi, Adam Przeworski, and Sebastian Saiegh.

in Table 1 may actually be understated. Fortunately, we have data on all IMF arrangements for all countries and can control for this factor.¹³

A third factor is time, which we account for by including year as an independent variable.¹⁴ There are several reasons to believe that transparency has trended upward over time. First of all, concern with transparency is a relatively new phenomenon. As people have become more concerned with it, data collection has become a priority. Secondly, with technological advances in computing, the ever-improving ability to conduct extensive statistical studies has produced ever-increasing demands for more data. International agencies have more incentives to collect and report data. Finally, the technological capacity to collect and store data has also increased with time. Both the supply and demand for data has increased over time.

Similar arguments were recently suggested by Carol Carson, who was the Director of the IMF's Statistics Department from 1996 until 2004. She notes an "increasing realization of the importance of internationally comparable data." She cites several factors for the improvement in data collection, including (1) the Internet, (2) "increased recognition, by countries of all sizes, of the importance of the data," and (3) regional organizations that "are also pushing the cause" (IMF 2004: 213).

Table 2 presents the results when we control for GDP per capita, IMF participation, and year with the same logit statistical model as above. As expected, level of economic development has a positive significant effect for the reporting of unemployment data, however, the effect is not positive nor statistically significant for inflation data. IMF participation has a positive and significant effect on the reporting of inflation data, but the effect is not significant for unemployment. Year has a strong positive effect for both variables.

Even after controlling for these factors, democracies appear to be more transparent than non-democracies. The effect is strong and significant at the 0.95 confidence level for both inflation and unemployment. For dictatorships, the estimated probability of reporting data on inflation, assuming no participation in IMF programs and holding per capita income to its median of \$3,919 (1995 PPP), is 0.88. The estimated probability for democracies is 0.99. Democracies are 1.12 times more likely to report data on inflation than dictatorships. For unemployment data, the estimated probability for dictatorships is 0.44 and for democracies it is 0.59; democracies are 1.34 times more likely to report.

¹³ The data come from Vreeland (2003).

¹⁴ In the larger project we employ more sophisticated approaches to modeling time, but the smaller dataset for Latin America limited the models we could employ here.

Table 2: The effect of democracy on transparency in Latin America controlling for level of development, IMF participation, and year

	Inflation	Unemployment
The effect of Democracy (Robust std error)	2.34** (0.51)	0.60** (0.27)
The effect of GDP/capita (Robust std error)	-0.00003 (0.00005)	0.00027** (0.00008)
The effect of IMF participation (Robust std error)	0.59** (0.30)	0.09 (0.26)
Year (Robust std error)	0.04** (0.02)	0.17** (0.03)
Constant (Robust std error)	-74.11** (36.20)	-331.19** (57.56)
# of obs.	732	390
Log pseudolikelihood	-140.74	-181.69
Holding GDP/capita to its median (\$3,919), year to 1985, and assuming no IMF participation:	Democracies are 1.12 times more likely to report data than dictatorships.	Democracies are 1.34 times more likely to report data than dictatorships.

The findings are striking, not just for data on Latin America, but for data from the world, as the appendix shows. With these findings in mind, we turn to a closer look at the data from 19 Latin American countries. What follows is preliminary, and we invite comments from readers – particularly conference participants who are experts on these countries.

Inflation

Regarding the reporting of inflation, there are three features of the Latin American data that stand out:

- (1) Missing data are not as pervasive in Latin America as in the rest of the world. 26.8% versus 9.3%. In particular, Latin American dictatorships are more

transparent than other dictatorships in the world: 79.8% missing data versus 61.8%.

- (2) The data exhibit path dependence. Once a country begins reporting data, it continues to do so, regardless of regime change. This is true for all Latin American countries without exception (although it is unobserved for Cuba, which never reports).
- (3) Almost all Latin American countries began reporting data when the World Bank first started collecting these data in 1961, regardless of regime. The three exceptions are **Brazil, Cuba, and Nicaragua**.

Why are Latin American dictatorships more transparent than other dictatorships around the world? The reason may have to do with the path dependent nature of the data, and the coincidence that democracy was prevalent in Latin America when inflation data were first collected in 1961. Twelve out of our 19 cases were democracies in 1961 and began reporting data that year: **Argentina, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Panama, Peru, Uruguay, and Venezuela**. All of these countries – except Colombia, Costa Rica, and Venezuela – eventually suffered breakdowns of democracy, but they continued reporting data even under dictatorship. It is possible that if these countries had been dictatorships in 1961, they would have been less likely to begin reporting data. But having established the data collecting institutions and connections with the World Bank in 1961, data continued to be collected thereafter regardless of regime.

There are five cases, however, where data were reported in 1961 and thereafter, even though the countries were under dictatorship: **Bolivia, Dominican Republic, El Salvador, Mexico, and Paraguay**. Were these genuinely more transparent dictatorships? Are they outliers?

Bolivia may not actually be an outlier for our theory. While considered to be a dictatorship by Cheibub (2004) in 1961, the executive and legislative branches of government were filled by contested elections in Bolivia from 1956 to 1963. President Víctor Paz Estenssoro of the Nationalist Revolutionary Movement (MNR) introduced universal adult suffrage after his party came to power in 1952. While the party took power through force, they had emerged the victors of elections held in 1951. Cheibub explicitly codes the country a dictatorship because the incumbent party never lost elections during this period, and so it is unknown if the incumbents would have peacefully transferred power had they lost an election. But for all intents and purposes, Bolivia looked like a democracy in 1961, and it started providing data that year like the other democracies of Latin America.

El Salvador is a similar case. The National Conciliation party took power through force in 1961, but held elections in 1962, when Julio Adalberto Rivera was elected president. He was succeeded in 1967 by Fidel Sánchez Hernández. Cheibub (2004) begins coding El Salvador as a “Type II” democracy in 1964. Like Bolivia, El Salvador

appeared to operate as a democracy, but the incumbents never lost elections, so we do not know for certain if they would have stepped down had they lost elections -- the ultimate test of democracy. Yet, the party that took power in 1961 soon established what appeared to be a democratic regime in El Salvador, and it started providing data in 1961 like the other democracies of Latin America.

This leaves the Dominican Republic, Mexico, and Paraguay who were, respectively, under the well-established dictatorships of Trujillo, PRI, and Stroessner in 1961. Why did these dictatorships provide data? One possibility that we have not included in our analysis thus far could be political proximity to the United States. The World Bank was characterized as early as 1950 as being a tool of the United States and Western Capitalism.¹⁵ We may find that Communist countries were less likely to report data to the World Bank, and countries allied with the US during the Cold War were more likely to cooperate with institutions like the World Bank and the IMF by providing data. We plan to test this variable in the next draft of this paper. We would like to test the following: (1) were US-favored dictatorships more likely to report data than other types of dictatorships? (2) Does our democracy finding still hold once we control for this variable, or do international relations better explain data collection by the World Bank than the domestic politics of transparency?

Cold War alliance could explain the case of Cuba, but this case fits our theory as well. Democracy broke down in Cuba in 1952 when Fulgencio Batista took power through a coup. He was deposed in 1959, when Fidel Castro took power. In 1961, when most of Latin America began providing inflation data to the World Bank, Castro announced his Marxist-Leninist leanings, but Cuba did not officially discontinue membership in the International Monetary Fund until 1964. The Cuban dictatorship has never reported inflation data. Would Cuba have provided data had the dictatorship been US-friendly? It might have been like the Trujillo dictatorship in the Dominican Republic, providing data. But it might have been like the Somoza dictatorship in Nicaragua, which did not provide data, despite ties to the US.

In 1961, Nicaragua was under the US-friendly Somoza dictatorship which ruled from 1936 to 1979. Unlike most other Latin American countries, Nicaragua did not report inflation data in 1961. The government provides no data until 1973. In the Nicaraguan case, dictatorship did not ultimately prevent the dissemination of data, but the dissemination certainly appears delayed. Why did Nicaragua finally begin reporting data in 1973? We require further research on this question but conjecture the following. After the devastating December 1972 Managua earthquake, international aid flowed into the country, but it is alleged that about half was taken by dictatorship authorities. The subsequent revelation of information may have been a conciliatory act on the part of the dictatorship. The disappearance of international aid – under a non-transparent regime – alienated Nicaraguan citizens as well as the United States.

¹⁵ Poland from the IMF in 1950, citing in its official withdrawal letter to the IMF that the Fund had become “a submissive instrument of the Government of the United States” (IMF Annual Report 1950: 102).

Finally, there is the case of Brazil, which did not report data until 1981. Brazil was actually a democracy in 1961, when most of Latin America began reporting data, but it was a fragile democracy. João Goulart became president, advocating social, economic, and political reforms. This frightened the military, centrists, and the extreme right, and led to an attempted coup (Cohen 1994). To avoid further attempted coups, a compromise was struck – a parliamentary regime was instituted, weakening the powers of the president. After a 1963 plebiscite decided in favor of returning to the presidential system, however, a successful coup was staged against Goulart. A military dictatorship emerged and democracy did not return until 1979. Subsequently, in 1981, Brazil finally began reporting inflation data.

The inflation data are fairly easy to summarize: Latin American countries reported at higher rates than the rest of the world – and most were democracy. The exceptions on reporting data were dictatorships in Brazil, Cuba and Nicaragua. Political regime is a statistically significant predictor of these three cases, even after accounting for IMF program participation, time trends, and per capita income.

Unemployment

The unemployment data appear to have a greater stochastic component than the inflation data, with data missing in 26% of the cases. Still, the data exhibit some of the same patterns observed with the inflation data.

(1) The dictatorships of Latin America are far more transparent than dictatorships elsewhere in the world. Indeed, the reporting of unemployment data is nearly as high among dictatorships in Latin America as among democracies elsewhere in the world. Nevertheless, the reporting among Latin American democracies is even higher.

(2) There appears to be some path dependence in the data, though not nearly as strong as with the inflation data. There are 332 observations of countries where data on unemployment were reported during a previous year. In only 47 of these observations are data missing (14%). Using dynamic probit, we analyzed whether democracy is a predictor of the continuation of providing data in Latin America – it is not. The data appear to be missing at random with respect to regime. Per capita income has a positive correlation with the continuation of reporting data, but it is significant only at the 90% level.

Closer examination of the countries that fail to report data even though they had reported data in the past reveals an additional factor that we should consider when evaluating transparency: civil unrest. The countries that had the most frequent interruptions in reporting unemployment data were Central American countries during the 1980s. **El Salvador** failed to report data during 1981-1984, and 1987. This may be due in part to the twelve year civil war (1980-1992). **Guatemala**, after first reporting data

in 1981 as a democracy, failed to report data in 1982, after democracy collapsed, and did not begin reporting data again until 1988. Data are missing again for 1992, 1993, 1995-1997, 1999-2001. The data reporting problems in Guatemala up to 1996 may be due in part to the civil war involving the government and the Guatemalan National Revolutionary Unity (URNG). Since the peace treaty in 1996, the government continues to be known for corruption. This is reflected in the failure to provide data on unemployment.

(3) Regime appears to play a role in most of the cases. Democracies were more likely to report unemployment data than dictatorships. Unlike with the inflation data, most countries did not start reporting during the same year. The World Bank begins reporting unemployment data in 1980. Only eight out of 19 Latin American countries began reporting this year. Democracies slightly outperformed dictatorships. Four out of eleven dictatorships reported (36%): **Argentina, Chile, El Salvador, and Paraguay**. Four out of eight democracies reported in 1980 (50%): **Brazil, Colombia, Costa Rica, and Venezuela**. As mentioned above, **Guatemala**, reported in 1981. Democracy does not completely explain the initial reporting of data, but it appears to have been a contributing factor.

Of the remaining ten countries, political regime appears to be a closely related factor in many of them.

Of the countries that were democracies, most of them began reporting earlier than the remaining dictatorships. **Honduras** reported unemployment data for the first time in 1982, the very year that democracy was restored after a ten year dictatorship. Note that like El Salvador and Guatemala, data was somewhat spotty, missing in 1983-1985, 1988-1989. This could have something to do with the poverty of Honduras, as it was the poorest of the 19 countries during the 1980s. **Nicaragua** had its first democratic regime in 1984, and began reporting data in 1985. **Peru** also began reporting as a democracy, although it was a bit slower in getting started, considering that it had been a democracy since 1980. **Uruguay** also began reporting unemployment data as a democracy in 1986, after democracy had been restored in 1985. **Ecuador** is another country that began reporting unemployment data as a democracy, but like Peru seems to have taken its time, since democracy had been restored in 1979. **Bolivia** was also slow, with democracy being restored in 1982 and data not being reported until 1989. In this case, poverty may play a role, as Bolivia was the second poorest of the 19 countries, after Honduras, suffering declining per capita income during much of the 1980s. Finally, the **Dominican Republic** does not seem to fit. A democracy throughout the 1980s, unemployment data are not available until 1991. Again, poverty may be a factor – the Dominican Republic was the fourth poorest of the 19 countries during the 1980s, following Honduras, Bolivia, and Nicaragua.

Of the remaining dictatorships, only **Panama** reported early, in 1982. The other two, **Mexico** and **Cuba**, reported much later than most democracies, in 1988 and 1990, respectively. In the case of Mexico, the reporting of data may have begun in 1988 as a reaction to the widely disputed elections held that year. Mexico certainly became more

transparent in other ways following the 1988 elections, with the creation of the Federal Electoral Institute (IFE), which is independent of the government and oversees the fairness of elections. Cuba may have become more transparent in 1990 as its Eastern Bloc trading partners turned away from Communism, opening up to greater transparency themselves.

To summarize the 19 cases, 15 appear to be readily explainable. The following 10 countries fit our theory very well: Brazil, Colombia, Costa Rica, Cuba, Guatemala, Honduras, Mexico, Nicaragua, Uruguay, and Venezuela. All were democracies that either reported data as early as anywhere in the world or directly following democratization. Peru and Ecuador also fit our story, but not quite as tightly. They reported as democracies, but took a few years to do so. Bolivia and the Dominican Republic do not fit – they reported as democracies, but took many years to do so. Low per capita income, however, seems to explain better why their governments were unable (or unwilling) to report unemployment data. El Salvador surprisingly reports data in 1980 as a dictatorship, but then stops reporting 1981-1984. Democracy is restored in 1984, and the reporting of unemployment data resumes in 1985, with only one other missing observations in 1987, which is likely due to the civil war.

Four cases require further explanation: Argentina, Chile, Panama, and Paraguay. As was found in some cases with the reporting of inflation data, these represent the transparent dictatorships with respect to unemployment data. One feature about Argentina 1980, Chile 1980, Panama 1982, and Paraguay 1980 stands out – they were all rightist dictatorships, staunchly anti-Communist, and closely allied with the United States. As was seen with the inflation data, US-favored dictatorships may have been more likely to report data to the World Bank than other countries. We intend to test this possibility with the larger dataset in future work.

Conclusion

This preliminary exercise of examining Latin American data in detail is proving fruitful even at this early stage. We have learned of two additional factors to test with the larger dataset: (1) US-favored dictatorships may be more likely to report data to the World Bank than other countries, and (2) countries facing violent civil unrest may be less likely to report data than countries at peace. We will consider these factors along with others we have found to matter for transparency: per capita income, IMF participation and a trend over time. Beyond this, the preliminary look at Latin American data provides additional evidence of the plausibility of our theory about democracy and transparency.

Our substantive conclusion is straightforward: democracies are more transparent than other political regimes. We provide both theoretical arguments of why this is so as well as evidence from data provided by governments to the World Bank. We feel that this finding is intrinsically interesting. It confirms what has often been taken for granted about

democracy and transparency. Beyond this, however, our results have at least two important methodological implications for other research on democracy.

The first implication regards the definition of democracy. Debate about the most appropriate measure for political regime abounds. The debate is waged today by proponents of various indicators of democracy, but it stretches back throughout modern political science. Dahl (1971), for example, took issue with Schumpeter's (1942) minimalist conception of democracy when he first introduced his concept of "polyarchy." Dahl argued that contested elections alone were not sufficient to define democracy, because "responsiveness" was also required. And for there to be responsiveness, Dahl listed several guarantees that were necessary, including, for example, the free flow of information.

Przeworski and his colleagues, Cheibub, Limongi and Alvarez, have proposed a return to the minimalist definition of democracy. They make this suggestion not because other features – such as those listed by Dahl – are unimportant, but because the relationships among these various other features should be examined not assumed. So, for example, rather than require the free flow of information to be a defining feature of democracy, they restrict the definition of democracy to cover only elections. This allows researchers to test to see if there is, in fact, a relationship between elections and information.

It turns out that there is. As we have shown in our research here, the most transparent regimes are those in which the key offices of the executive and the legislature are filled through contested elections. The relationship between democracy and transparency is a causal one, not something that must be included by definition. So the minimalist definition of democracy actually covers more territory than just elections.

The second methodological concern that this paper addresses regards the nonrandom nature of missing data. Whether or not information about a country is available is no accident. The availability of data may well be driven in part by political institutions. The implication for cross-national research on democracy is clear: missing data cannot be ignored. Researchers studying the causes and consequences of political regime must be wary that their empirical findings are not driven simply by the subset of observations for which data are available. Fortunately, political scientists have been taking the problems of missing data more seriously. Methods, such as suggested by King et al. 2001, should be employed to address potential biases that may result from missing data. Beyond this concern, however, our paper shows that missing data is not just a problem to be overcome. In many cases, missing data may also be a phenomenon worthy of explanation.

Appendix

In this section we present a series of statistical tests performed on data from around the world. Detailed explanations of the statistical models, model specifications, and results are available in the larger paper available from the authors upon request.

Appendix Table 1

	Inflation				Unemployment			
	Logit		Fixed Effects Logit		Logit		Fixed Effects Logit	
The effect of Democracy (Robust std error)	1.92** (0.08)	2.02** (0.15)	1.87** (0.16)	4.93** (0.87)	2.14** (0.08)	1.65** (0.11)	1.45** (0.13)	1.96** (0.64)
The effect of GDP/capita (Robust std error)		0.0001** (0.00002)	0.0001** (0.00002)	0.0014** (0.00035)		0.0002** (0.00001)	0.0001** (0.00002)	0.0005** (0.00016)
The effect of IMF participation (Robust std error)		0.82** (0.09)	0.87** (0.09)	2.73** (0.43)		0.66** (0.11)	0.62** (0.13)	0.96** (0.25)
Africa (Robust std error)			-0.88** (0.26)				-4.83** (0.44)	
South Asia (Robust std error)							-2.86** (0.47)	
East Asia (Robust std error)				-1.49** (0.32)				
S. E. Asia (Robust std error)				1.20** (0.38)			-1.52** (0.43)	
Oceania (Robust std error)							-3.64** (0.58)	
Middle East (Robust std error)				-0.50* (0.28)			-2.88** (0.43)	
Latin America (Robust std error)				0.33 (0.30)			-1.55** (0.43)	
Caribbean (Robust std error)				-1.18** (0.30)			-3.71** (0.44)	
East Europe (Robust std error)				-1.37** (0.30)			-1.57** (0.44)	
Industrial cttries (Robust std error)							-0.58 (0.53)	
Constant (Robust std error)	0.55** (0.03)	0.31** (0.07)	1.06** (0.25)		-1.59** (0.06)	-2.46** (0.12)	0.93** (0.41)	
# of countries:				65				73
# eventually reporting:								
# of obs.	6,349	5,042	4,013	1,806	3,912	2,935	2,935	1,306
Log pseudolikelihood	-3157.43	-1932.65	-1775.38	-466.41	-2159.55	-1428.22	-1083.57	-477.21

Appendix Table 2

	Inflation				Unemployment			
	Weibull Survival Model	Dynamic Probit	Exponential Hazard Model	Cox Hazard Model	Weibull Survival Model	Dynamic Probit	Exponential Hazard Model	Cox Hazard Model
The effect of Democracy (Robust std error)	1.30** (0.27)	1.31** (0.14)	1.67** (0.23)	0.68** (0.22)	0.65** (0.30)	0.60** (0.09)	1.35** (0.23)	1.11** (0.20)
The effect of GDP/capita (Robust std error)	-0.00003 (0.00006)	0.00001 (0.00001)	0.00002 (0.00003)	0.00003 (0.00002)	0.00004* (0.00002)	0.00004** (0.00001)	0.0001** (0.00002)	0.0001** (0.00001)
The effect of IMF participation (Robust std error)	0.55** (0.17)	0.38** (0.12)	0.52** (0.21)	0.44** (0.15)	0.42* (0.24)	0.09 (0.10)	0.20 (0.23)	0.30 (0.22)
Africa (Robust std error)	-3.19** (0.25)				-2.51** (1.08)			
South Asia (Robust std error)	-2.12** (0.52)				-1.48 (1.18)			
East Asia (Robust std error)	-3.18** (0.38)							
S. E. Asia (Robust std error)	-1.49** (0.30)				-0.81 (1.15)			
Oceania (Robust std error)					-2.78* (1.56)			
Middle East (Robust std error)	-2.38** (0.36)				-1.46 (1.12)			
Latin America (Robust std error)	-2.20** (0.41)				-0.29 (1.08)			
Caribbean (Robust std error)	-3.31** (0.65)				-1.59 (1.09)			
East Europe (Robust std error)	-2.26** (0.39)				-0.34 (1.07)			
Industrial ctries (Robust std error)	-1.25** (0.39)				0.57 (1.14)			
Constant (Robust std error)	0.20 (0.24)	-1.53** (0.08)	-2.76** (0.18)		-2.23** (1.08)	-1.78** (0.09)	-3.70** (0.23)	
Duration dependence (ln p) (Robust std error)	-0.03 (0.07)				0.11 (0.08)			
# of countries:	144		144	144	160		160	160
# eventually reporting:	126		126	126	103		103	103
# of obs.	998	983	998	998	1,431	1,668	1,431	1,431
Log pseudolikelihood	-123.30	-327.28	-150.41	-467.00	-162.24	-484.60	-201.27	-438.04

Note: Coefficients not hazard ratios are reported.

References

- Adserà, Alicia, Charles Boix and Mark Payne. 2003. "Are You Being Served? Political Accountability and Quality of Government." *Journal of Law, Economics & Organization* 19(2): 445-490.
- Bandow, Doug. 1994. "The IMF: A Record of Addiction and Failure." In *Perpetuating Poverty: The World Bank, the IMF, and the Developing World*, edited by Doug Bandow and Ian Vasquez, pp. 15-36. Washington, DC: The Cato Institute.
- Barro, Robert J. and David B. Gordon. 1983. "Rules, Discretion and Reputation in a Model of Monetary Policy". *Journal of Monetary Economics* 12(1):101-120.
- Beck, Nathaniel, Jonathan N. Katz, and Richard Tucker. 1998. "Taking Time Seriously: Time-Series–Cross-Section Analysis with a Binary Dependent Variable." *American Journal of Political Science* 42: 1260-1288.
- Bueno de Mesquita, Bruce, Alastair Smith, Randolph M. Siverson and James D. Morrow. 2003. *The Logic of Political Survival*. Cambridge: MIT Press.
- Chamberlain, G. 1980. "Analysis of Covariance with Qualitative Data." *Review of Economic Studies* 47: 225-238.
- Cheibub, Jose Antonio. 2004. "Political Institutions." Unpublished. Yale University.
- Cheibub, Jose Antonio and Jennifer Gandhi. 2004. "Classifying Political Regimes: A Six-Fold Measure of Democracies and Dictatorships." Paper prepared for annual meeting of the American Political Science Association, Chicago, September 2004.
- Cohen, Youssef. 1994. *Radicals, Reformers, and Reactionaries: The Prisoner's Dilemma and the Collapse of Democracy in Latin America*. Chicago: University of Chicago Press
- Cukierman, Alex, Sebastian Edwards, and Guido Tabellini. 1992. "Seignorage and Political Instability." *American Economic Review* 82(3):537-55
- Dahl, Robert. 1971. *Polyarchy: Participation and Opposition*. New Haven: Yale University Press.
- Desai, Raj M., Anders Olofsgård and Tarik M. Yousef. 2003 "Democracy, Inequality, and Inflation." *American Political Science Review* 97(3):391-406.
- Drazen, Allan. 2000. *Political Economy in Macroeconomics*. Princeton: Princeton University Press.

Erbaş, S. Nuri. 2004. Ambiguity, Transparency, and Institutional Strength. International Institute of Public Finance, The 60th Congress, Milan, Italy, August 23-26. IMF Working Paper.

Gleditsch, Kristian Skrede. 2002. *All International Politics is Local: The Diffusion of Conflict, Integration, and Democratization*. Ann Arbor, MI: University of Michigan Press.

Green, Donald, Soo Yeon Kim, and David Yoon. 2001. Dirty Pool. *International Organization* 55: 441-468.

Hanchard, Michael. 1999. Afro-Modernity: Temporality, Politics and the African Diaspora. *Alternative Modernities, special issue of Public Culture* 27: 245-268.

Heston, Alan and Robert Summers. 1995. *Penn World Tables 5.6*. Cambridge: National Bureau of Economic Research.

IMF. 2004. *IMF Survey 2004*. Vol. 33 no. 14. July 26, 2004. Washington DC: 2004.

Kalbfleisch, John D. and Ross L. Prentice. 1980. *The Statistical Analysis of Failure Time Data*. New York: John Wiley & Sons, Inc.

Lindley, D. 1996. Transparency and Security Regimes: A Study of the Concert of Europe and the United Nations. Paper presented at the CSIA Library, Harvard University.

Mani, Anandi and Sharun W. Mukand. 2000. Democracy and the Politics of Visibility. Paper prepared for the Yale Conference on the Political Economy of Development, March 16-18, 2001.

McMillan, John and Pablo Zoido. 2004. "How to Subvert Democracy: Montesinos in Peru", unpublished, Stanford University.

Mitchell, Ronald B. 1998. Sources of Transparency: Information Systems in International Regimes. *International Studies Quarterly* 42 (1): 109-30.

Obstfeld, Maurice. 1997. "Destablizing Effects of Exchange Rate Escape Clauses". *Journal of International Economics* 43:61-77.

Persson, Torsten, Gerard Roland and Guido Tabellini. 1997. "Separation of Powers and Political Accountability." *Quarterly Journal of Economics* 112(4):1163-1202

Przeworski, Adam, Michael Alvarez, José Antonio Cheibub, and Fernando Limongi. 2000. *Democracy and Development: Political Regimes and Economic Well-being in the World, 1950-1990*. New York: Cambridge University Press.

Przeworski, Adam and James Vreeland. 2000. "The Effect of IMF Programs on Economic Growth." *Journal of Development Economics* 62: 385-421.

Rosendorff, B. Peter. 2004. "Democracy and the Supply of Transparency." Unpublished, University of Southern California.

Ross, Michael. 2004. "Is Democracy Good for the Poor?" Unpublished. UCLA.

Schumpeter, Joseph. 1942. *Capitalism, Socialism, and Democracy*. New York: Harper.

Scott, James C. 1999. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven, CT: Yale University Press.

Shapiro, Ian. 2003. *The Moral Foundations of Politics*. New Haven, CT: Yale University Press.

Simmons, Beth and Zachary Elkins 2000. "Globalization and Policy Diffusion: Explaining Three Decades of Liberalization." Paper prepared for the Annual Meeting of the Midwest Political Science Association, Chicago, April 2000.

World Bank. 2004. *World Development Indicators on CD-ROM*. Washington, DC: The World Bank.