

Merit, Luck, and the Exogenous Determinants of Government Success*

Daniela Campello
Fundação Getúlio Vargas
daniela.campello@fgv.br

Cesar Zucco Jr.
Fundação Getúlio Vargas
cesar.zucco@fgv.br

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Abstract

Economic voting is a widely accepted regularity in the political science literature, yet most work on the subject either assumes that economic performance is a direct result of policymaking or, more recently, argues that voters can tell when this is not the case. This paper challenges these claims by showing that voters in low-savings commodity-exporting Latin American countries do *not* discount “luck” when evaluating incumbent governments. We demonstrate that both presidential popularity and probability of reelection strongly depend on factors that are utterly exogenous to leaders’ decisions, namely commodity prices and international interest rates. These findings question the effectiveness of accountability *ex-post*—holding leaders accountable for economic results, rather than for specific policies—as a mechanism for promoting good economic governance in the region.

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Carlos Andrés Pérez governed oil-rich Venezuela for the first time between 1974 and 1979, presiding over an unprecedented oil boom. A decade after leaving the presidency with very high popular approval he won another term on the promise to revive the “good times.” His second government coincided with the lowest oil prices in modern history, he could not match his original performance and did not make it to the end of his term. Even though Andrés Pérez did not control oil prices, Venezuelans neither adjusted their expectations in the face of a rough economic scenario in the early 1990’s, nor discounted the impressive performance delivered in the 1970’s.

This phenomenon is not restricted to oil-rich countries. Most of Venezuela’s neighbors are subject to similar cycles of booms and crises because they are essentially commodity exporters whose export prices are set in an international market, independently of any action taken by the presidents themselves.

Moreover, commodity prices are not the only way in which South American countries can be at the mercy of external economic conditions. When the Federal Reserve Bank, under Paul Volcker, increased American interest rates sharply to deal with stagflation in the late 1970’s, capital flows to the region dried up, and all governments faced extreme duress in an inflationary crisis that lasted for a decade. Most military regimes collapsed, and elected presidents governing through the hard times that followed suffered from low popularity and had a dismal record electing their successors.

In contrast, in the early 1990’s, when world interest rates hit their lowest point in decades, an abundance of capital flowed into South America seeking better returns. Presidents in countries as varied as Peru, Argentina, and Brazil were credited by their domestic constituents with ending inflation through the usage of ingenious stabilization plans. Throughout the region, leaders spearheaded constitutional changes to allow for immediate reelection, and were reelected. Voters did not seem to discount the fact that international conditions beyond the president’s control were very auspicious, neither that inflation was brought under control in most countries at about the same time.

To some level, these examples corroborate standard economic voting theory, which since Kramer (1971) has long established a positive correlation between economic performance and the success of politicians and parties in office.

Notwithstanding, what these examples also reveal is that voters may fail to acknowledge when a country’s economic performance is heavily affected by processes beyond the

control of presidents.

Initial studies of economic voting did not problematize whether economic performance was actually a function of governments' competence; only more recently authors have begun to focus on voters' behavior in a scenario in which performance results from factors beyond policymaking. Yet models generally assume—with some empirical support—that voters have means to distinguishing one from the other and therefore to punish/reward competence after discounting luck.

We show, to the contrary, that this is not always the case. We argue that the opening anecdotes are not aberrations, but rather the regular functioning of electoral accountability in an important class of countries. South America is particularly suitable for this analysis; countries in the region share a longer democratic history than other emerging economies, and many institutional similarities—such as fixed presidential terms, and concentration of power in the executive branch—that favor comparative analyses of the impact of economic performance on incumbents' success.

Most importantly, not only the region's economy is heavily dependent on exogenous factors, but these factors are well known and their effects have been long established in the Economics literature. Since most South American countries are essentially commodity exporters and have very low levels of domestic savings, their economies suffer when commodity prices are low and international interest rates are high, and do particularly well when the opposite occurs.

Two features make this situation theoretically interesting. First, neither of these factors can be controlled by domestic governments—i.e. they are unarguably exogenous. Secondly, voters only feel their effects indirectly, through their impact on the domestic economy. Their combination, as we explain in the paper, generates an ideal setup in which to test whether voters discount exogenous factors when evaluating government's performance.

Our analysis shows that commodity prices and U.S. interest rates have, indeed, a strong impact on presidential popularity and reelection rates in South America. This is a greatly consequential twist to standard economic voting theories, as it means that voters reward presidents for being lucky and punish them for being unlucky. This, in turn, implies that *in democracies in which economic performance is strongly influenced by exogenous factors*, failure to account for these factors breaks the link between pun-

ishment/reward and performance, loosening the connection between economic vote and democratic accountability and weakening incentives for good economic policymaking.

This paper is organized as follows. The following section discusses the relevant literature, and indicates how our analysis contributes to its advancement. Next, we present the research design employed in the paper and turn to the question of why and how commodity prices and American interest rates should determine economic performance in South America but not in other countries in Latin America where political institutions are similar but the mode of insertion in the world economy differs markedly. In the subsequent sections we examine the extent to which a positive economic outlook affects incumbent reelection, as well as monthly presidential popularity rates. In both analyses we demonstrate that our international factors of interest have a strong impact on presidential success in South American countries but no impact on North and Central America, as posited. We conclude with an interpretation of the results and a discussion of their normative implications.

Assigning Responsibility for Economic Performance

Students of economic voting have paid serious attention to the problem of assigning responsibility for economic performance. Most of this research examines institutional characteristics of political systems, and how they concentrate or disperse responsibility for the economy among different branches of government. Samuels (2004), for example, shows that in presidential systems electoral sanctioning is stronger when presidential and legislative elections are concurrent; Johnson & Schwindt-Bayer (2009) reinforce these findings in a sample restricted to Central American countries. Benton (2005) argues that citizens punish incumbents when electoral laws are more restrictive, limiting party competition, while Cutler (2004) contends that federalism and intergovernmental policymaking may reduce voters' ability to hold their governments accountable.

Less attention has been paid, however, to another very important aspect of the assignment of responsibility problem: whether voters can identify and, if so, discount exogenous components of country's economic performance. This has become more problematic as economic integration advances and the share of economic performance determined by exogenous factors increases.

Alesina & Rosenthal (1995) offer a foundation for this analysis by proposing a model in

which economic growth is established as a function of a natural rate plus unanticipated shocks that are caused by incumbents' competence, and by an exogenous element. In this model, voters can not directly identify the components of economic shocks, but by observing the variance of these shocks over time they are able to establish the level of responsibility for the economy that should be attributed to incumbents. Scheve (2000) later used a similar framework to argue that globalization diversifies the country's risk exposure, reducing the variance of exogenous shocks, and consequently increasing voters' capacity to punish/reward governments' competence.

More recently, Duch & Stevenson (2008) proposed a modification to Alesina & Rosenthal's (1995) model, which establishes two different types of decision-makers: electorally dependent (EDDs) and non-electorally dependent (NEDDs). The first one includes elected officials, and the second encompasses firms, interest groups, bureaucrats, foreign lenders, international institutions, and any other non-elected actors whose decisions have an impact in the economy. In this model, competency shocks are associated with the decisions of EDDs, and exogenous shocks with that of anyone else.

The authors propose that fully rational voters can distinguish variations in competency shocks from variations in exogenous shocks, and do not punish or reward governments for economic performance they are not responsible for. Since the variance in the overall competence shock should be larger in countries in which EDDs make most of the relevant economic decisions, in these countries the competence signal should be stronger, and so should the economic vote. Conversely, voters should be less likely to punish/reward governments in economies in which NEDDs make most of economic decisions.

Duch & Stevenson (2008) find support for these claims in Europe, by showing that citizens who perceive domestic fluctuations as diverging from those in the overall European economy are more likely to register an economic vote. Kayser & Peress (2012) also find support for relative evaluations of European leaders, but note that voters' capacity to discount exogenous sources of economic performance is higher when the media "benchmarks" international economic scenario.

Other studies also find support for at least some understanding on the part of voters of the constraints on leaders. Ebeid & Rodden (2005), for instance, use data from gubernatorial elections in the United States to show that the connection between macroeconomic performance and incumbent success is weak in states dominated by natural resources and

farming, but strong elsewhere, and Hellwig & Samuels (2007) find that greater exposure to trade and capital flows weakens economic voting.

Our study addresses the issue of assignment of responsibility through a completely different conceptual and empirical framework. First, we focus on South America, a developing region with less structured parties, in which, therefore, the economic vote phenomenon should be stronger. In addition, lower levels of information in the electorate, and less globalized societies suggest citizens should have a more limited capacity to identify exogenous sources of domestic economic performance than in European democracies.

South American countries also share a longer democratic history than other emerging regions, as well as many institutional similarities that favor comparative analyses. They all have presidential systems which, with some variation, concentrate strong power in the executive branch. Not surprisingly, studies on economic voting in South America are mostly focused on presidential elections (Samuels 2004, Benton 2005, Johnson & Sooh-Rhee 2010, Baker & Greene 2011). Presidential terms are fixed in the whole region, which eliminates potential endogeneity on the timing of elections.

Most importantly, however, we make use of the fact that the main international factors that affect the economic performance in South America are well established and can be easily observed, and in theory should not have the same effect in the remainder of Latin American countries, which are neither commodity exporters nor dependent on inflows of private financial capital.¹ This puts us in the unusual position in which we can analyze the effects of known and observed factors that are not controlled by presidents on their reelection prospects and popularity, directly, and comparing results to those of a “control group” (loosely defined) that shares important political similarities but follows a different economic model. We explain this position in detail in the next section.

Research Design

In this paper, we test whether international factors beyond the control of a president, but which affect the domestic economy to a large extent, determine voters’ evaluations of his/her performance.

¹As discussed in the next section, Mexico is an exception since it relies on financial inflows; the caveat is that these inflows behave differently with respect to Mexico than to South American emerging economies.

If voters actually discounted the state of the world economy (i.e. luck) in their assessments of incumbent’s performance, there should be no association between exogenous economic factors and presidential evaluations.² If, on the other hand, voters are unable or unwilling to discount luck, then the world conditions that strongly determine domestic economic performance should be directly related to voters’ assessment of governments’ economic performance.

Hence, for our argument to hold, it suffices to show that the international economy has an effect on voters’ assessments. In most social science observational research, establishing such an effect is not trivial. However, in this case we can confidently state that our explanatory variables are unambiguously exogenous to the outcome to be explained, which puts us in the position to make bolder than usual causal inferences.

Note that we neither contradict nor question standard economic voting theories that make some form of the argument that (domestic) economic performance affects voters’ judgement of incumbent governments. We simply add a prior step to the argument, as described schematically in Figure 1. This addition, we argue later, has non-trivial normative implications, but we accept the basic empirical fact that voters feel and react to domestic performance, as the standard arguments suggest.

Borrowing the language from mediation analysis (for a formalized statement, see Imai, Keele, Tingley & Yamamoto 2011), the total effects of an exogenous independent variable on any given outcome can be parsed into direct and indirect effects, the latter of which is channeled through a mediating variable. The indirect effects are estimated by combining the two components of the indirect path (i.e. the horizontal and vertical arrows). The direct effects (i.e. the diagonal arrow) are estimated by subtracting total effects from the indirect effects. Our argument amounts to stating the existence of an indirect effect of the international economy on voters assessments of the incumbent, that is mediated by domestic economic performance.

If the international economy were to have a direct effect on voters’ assessments, we would need to block that path to estimate only the indirect effects. However, we make the assumption that such a direct link—represented by the dashed diagonal arrow— *does not exist*.³ In the absence of a direct effect, the indirect effects—which are of interest—will be

²This is only true, of course, as long as the actual competence and performance of presidents is unrelated with the state of the world. We consider this association unlikely, and assume it away.

³A simple test of the mediation path—reported in the appendix—substantiates this assumption, by suggesting that close to 90% of the total effects in our system are actually mediated by GDP. Results

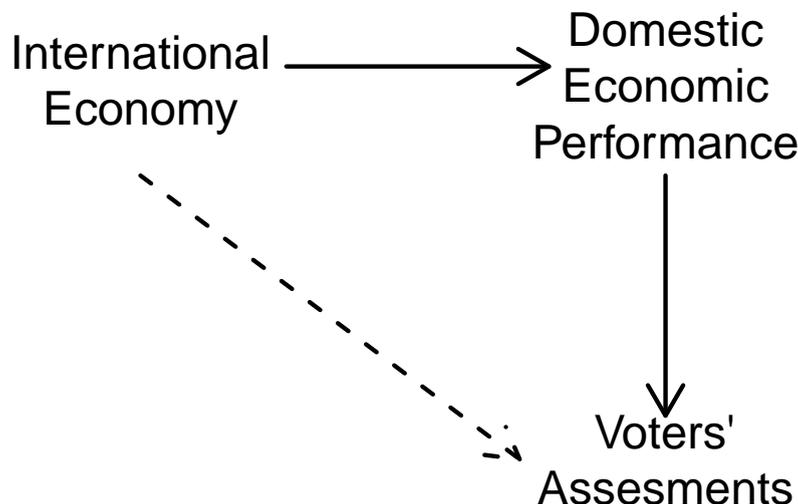


Figure 1: Possible Effects of International Economy on Voter Assessments of Incumbents

equal to the total effects, which can easily be estimated because our dependent variable is exogenous to the outcome variable.

The main implication of this discussion is that a test of our argument does not require, and in fact, *precludes* controlling for the effect of domestic factors on voters' assessments.⁴ In fact, this conclusion also follows directly from notions of research design that are well understood and accepted in several branches of academic literature, and after formulated as maxims such as “we should never control for the mediating variable when estimating the total effects,” “we should not control for some consequence of a treatment when estimating treatment effects,” and “we should not control for a variable that is in the causal pathway of the outcome of interest” (Rubin 2005).⁵

are presented in the appendix but we do not want to overlay them because GDP is simply one of many possible indicators for domestic economic performance that can act as a mediator.

⁴We would only control for the domestic economy if we were interested in identifying the direct effects. In a slightly different formulation, if we were interested in estimating the effect of domestic economic performance on voters' assessments, we would need to condition on (control for) international economic factors. See Morgan & Winship (2007, p. 77). However, we should not condition on domestic economic performance if estimating the effects of international economic factors on voters' assessments.

⁵Another way to consider the issue is to think of exogenous economic performance as an instrument in the context of estimating the effects of domestic economic performance on voters' assessments. Domestic performance is potentially endogenous to voters' assessments because of president's political manipulation of policy for electoral purposes (i.e. political business cycles). In many Latin American countries — those at the top of Table 1 — GET strongly influences economic performance (i.e. it is a strong instrument). More importantly, it is reasonable to state that GET can *only* affect popularity through its effect on domestic economic performance (i.e. it satisfies the exclusion restriction). One can test for the strength of the instrument and, in fact we have shown the horizontal link in Figure ?? to be quite strong in a

In summary, our empirical task is simply to determine whether exogenous international economic variables have an effect on president's reelection probability and popularity. A positive result would imply that voters are rewarding presidents for factors beyond their control, which we simply call "luck." Before proceeding, however, we discuss which are the international economic variables that matter, and establish the scope conditions of the argument by examining in which countries these variables are relevant.

Exogenous Determinants of South American Economies

There has been extensive research on the exogenous factors that influence the economic performance in South America, where most countries have low rates of domestic savings and are commodity exporters. The first characteristic makes countries reliant on inflows of foreign capital that are largely driven by fluctuations in international interest rates, while the second makes them very dependent on internationally-determined commodity prices.

The impact of commodity prices on South American economies has been at the center of economic thinking about the region for decades. Dependency theorists were primarily concerned with the (then seemingly secular) declining terms of trade, for which the natural remedy were inward growth policies to reduce exposure to the "unequal exchange" conditions facing commodity exporters (Prebisch 1949, Singer 1950). Even non-*dependencistas*, however, share the perception that the international economic flows of trade and investment were key to countries' performance. Malan & Bonelli (1977), for instance, argued as early as the late 1970s that Brazilian "miracle" of ten years earlier had depended heavily on "an exception and elusively temporary international situation" (p. 21) that had been channeled through "two dimensions, one related to commodity trade and the other to net inflows of foreign capital" (p. 24).⁶

It has also been observed that even though developing countries can actively compete to attract a greater share of international flows of financial capital, these flows are, on aggregate, highly influenced by fluctuations in international interest rates, which are subsample of Latin American countries. The exclusion restriction, in contrast, has to hold by assumption, just as we assume direct effects away.

⁶At the time such flows were eminently for foreign direct investment, but since then, portfolio flows have increased considerably and become much more relevant to country's balance of payments, particularly in the shorter term.

basically set by the U.S. Federal Reserve System (the “Fed”). When American rates are low, international liquidity increases, and capital is more likely to flow to emerging economies in search of higher returns. When the opposite happens, international capital flees to safer havens (Santiso 2003).

Not surprisingly, the economic literature has shown that South American countries tend to do exceptionally well when international interest rates are low and commodity prices are high, and are likely to suffer when the opposite occurs (Maxfield 1998, Calvo, Leiderman & Reinhart 1996, Gavin, Hausmann & Leiderman 1995, Izquierdo, Romero & Talvo 2008). Izquierdo, Romero & Talvo (2008), in particular, show that both capital flows and economic growth in South America are fundamentally determined by changes in the international interest rates and in commodity prices.

It is important to note that those variables are important to South America due to these countries’ economic development model and insertion in the world economy—we by no means imply that they are equally relevant to other countries. Interest rates are more influential to economies reliant on international private capital flows; they should be less influential in countries whose domestic financial markets are poorly integrated, and in those dependent on official creditors, multilateral institutions or on remittances. Commodity prices should be less important to countries that concentrate on labor intensive manufacturing exports.

In order to strengthen our analysis, thus, in the next sections we compare the effect of commodity prices and U.S. interest rates on government success in South America (our region of interest) and Central America and Mexico (our control group, in which political institutions are quite similar, but economic models differ). We would expect these variables to affect presidents’ success on the first, but not on the latter.

We start by combining these two factors into an index that captures their joint effect. Our “Good Economic Times” index (henceforth GET) is a one-dimensional summary of commodity prices and international interest rates.⁷ This index, we argue, offers a clear indication of the international economic outlook for countries that are commodity exporters and dependent on external savings, like those in South America. Although GET is measured in a unit-less normalized scale, it has the intuitive property that that

⁷GET was produced by performing a principal components decomposition of the U.S. 10 Year Treasury Constant Maturity Rate—provided by the Federal Research Bank of Saint Louis (FRED)—and UNCTAD’s aggregate “free market commodity prices” index.

higher values represent “good times” and lower values represent “bad times.”

We recognize there is some loss in combining the two variables into a single index. We believe the theoretical notion that the combination of both variables is what matters, and the parsimony of using a single indicator make up for these losses. Results using the two separate variables are all but substantively identical to what obtains with GET, and are reported in the appendix.

Figure 2 describes the behavior of the GET index over the past 30 years, a period in which it has varied from -1.7 in 1982 to just over 3 in 2011. This figure is a particularly cogent summary of the economic conditions facing the low-savings commodity-exporting countries of South America. U.S. interest rates were extremely high at the start of the 1980’s, precipitating the Mexican default and the subsequent debt crisis that ravaged the region. During the 1990’s, lower U.S. interests rates prompted a boom of private capital inflows into the region, favoring stabilization plans that put and end to the inflationary cycle in most countries in the region. In the 2000’s, very low interest rates prompted by slow growth in the US, combined with sky-high commodity prices have helped fuel a period of unprecedented wealth creation in South America. The GET index tracks long term shifts in the economic outlook quite well, but is also sensitive enough to capture relatively smaller shifts in economic conditions, such as the Russian/Asian crisis of the late 1990’s.

To empirically determine which countries fit the scope conditions of our argument, we estimated the impact of GET on GDP in 18 Latin American countries. The dependent variable, GDP, was normalized to an index in which the value of the GDP of each country in 1980 corresponds to 100, and we dealt with the time structure by including the lagged dependent variable.⁸ We used GDP measured in constant local currency to account for widely different monetary policies employed across countries and over time.⁹

Table 1 ranks countries by the extent to which their economic performance is determined by GET, and as such, summarizes the scope conditions of our argument.

The region as a whole is strongly influenced by exogenous factors. Although the GET

⁸Estimates in the table were obtained from regressions estimated separately for each country. Results obtained using both constituent components of GET separately, instead of the index, are very similar and are reported in the appendix. Graphical analysis of the residuals of these regressions reveal that the series are stationary, and show no signs of higher order autoregressive or moving average processes. Diagnostics are available from the authors.

⁹Using current U.S. dollars, for instance, tends to misrepresent GDP performance of countries that have high inflation.

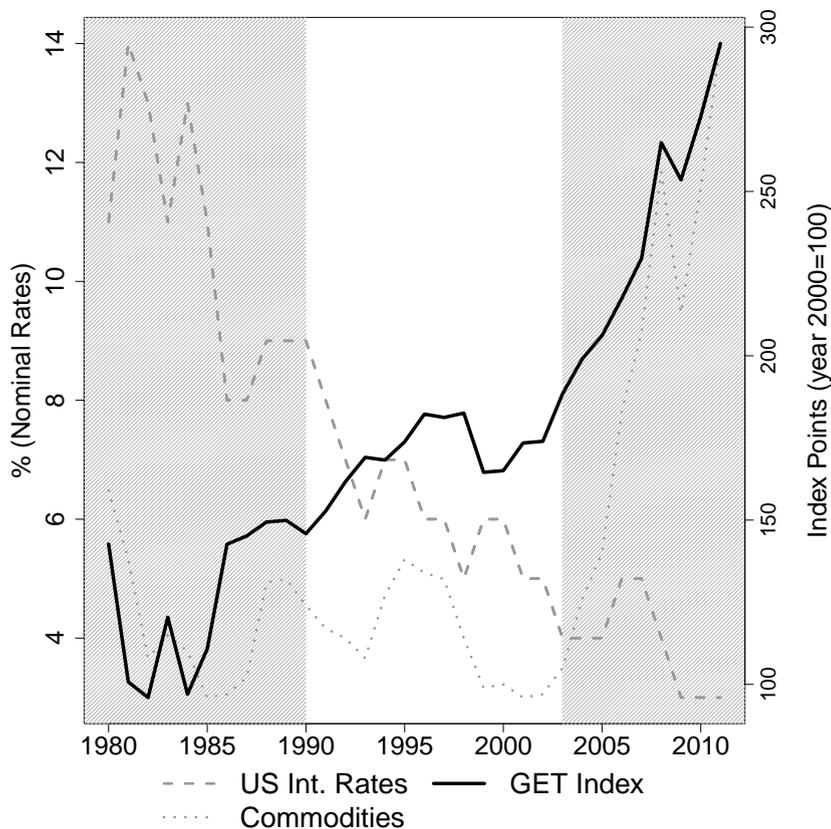


Figure 2: Good Economic Times Index (GET) and Its Constituent Components

Figure shows the evolution of GET and its two constituent components (U.S. Interest Rates and Commodity Price Index) over three periods of interest that correspond roughly the 1980's, 1990's and 2000's, and which are discussed in more detail in the next section.

coefficient for the combined economic performance of Latin America is not directly comparable to the coefficient for each country,¹⁰ it is highly significant, and goes a long way in explaining variation in economic performance in the region over time. GET is positive for all Latin American countries in the sample, indicating that in all countries, the economy tends to do better when commodity prices and U.S. interest rates are favorable. The contrast with the U.S. further underscores this general point. As an advanced industrial country, the US's relationship with the world economy is completely different than that of Latin American countries; this is evidenced by the fact that it is the only country in the table in which the impact of GET is negative.

GET, however, does not predict all countries economic performance equally well.

¹⁰Latin America GDP is measured in constant U.S. Dollars instead of constant local currency, and as such, does not account well for differing inflation rates in different countries.

Table 1: Good Economic Times Index and GDP (1980–2011)

| | Coefficient on GET | p-value | |
|----------------------|-----------------------|--------------|----------------|
| Latin America | 35.34 | 0.005 ** | |
| Argentina | 9.77 | <0.001** | Determined |
| Bolivia | 3.79 | <0.001** | |
| Paraguay | 9.05 | <0.001** | |
| Uruguay | 8.18 | <0.001** | |
| Venezuela | 9.66 | 0.003 ** | |
| Brazil | 5.06 | 0.010 * | |
| Colombia | 4.70 | 0.013 * | |
| Chile | 6.26 | 0.014 * | |
| Nicaragua | 3.96 | 0.028 * | |
| Guatemala | 2.09 | 0.038 * | |
| Ecuador | 4.51 | 0.045 * | |
| Peru | 4.56 | 0.067 . | |
| El Salvador | 2.60 | 0.105 | Not Determined |
| Dominican Republic | 4.27 | 0.111 | |
| Costa Rica | 2.85 | 0.267 | |
| Mexico | 1.90 | 0.275 | |
| Panama | 2.82 | 0.340 | |
| Honduras | 1.13 | 0.597 | |
| <i>United States</i> | <i>-1.36</i> | <i>0.240</i> | |

For simplicity, p-values are represented as ** < 0.01, * < 0.05, and . < 0.1. Countries above the horizontal line are considered externally “determined,” and those below the line (with the exception of the US) are considered “not determined” in the analysis presented in the next section. The dependent variable is GDP measured in constant local currency for all countries, but for “Latin America”, it was measured in constant U.S. Dollars.

Mexico and most of the Central-American countries appear in the bottom of the table, and GET is never statistically significant for any of these. These results reflect the increasing divide between commodity-oriented economies in the South and labor-intensive manufacturing in Central and North America.¹¹

Here, it is important to reaffirm that we are not claiming that the economy in countries in the bottom of the table do not depend on *any* international conditions. Our argument is simply that they do not depend on commodity prices and U.S. interest rates *in the same way* as countries in the top of the table. In fact, it should be possible to construct equivalent GET indices for other groups of countries, according to how they are inserted

¹¹World Bank figures for 2000 show that only 16% of Mexican exports are commodities. In contrast, this figure is 47% in Brazil, and above 60% for most other countries in the region.

into the global economy. We leave this exercise for future research.

To restate our reasoning, the economic performance of countries in the upper portion of the table is strongly determined by exogenous factors that we, as analysts, can observe. However, in a context of low information, a tradition of inward-looking development and relatively recent integration into the world economy, there are few reasons to expect voters in the low-savings commodity-exporting countries of South America to be aware of the relevance of these factors, or to be able to distinguish between the impact of policymaking and of exogenous shocks on their countries' economic performance. If this is true, presidents in the “determined” sample will typically be punished and rewarded on the basis of how favorable the world economy is (measured by GET), while those in the bottom of the table will not. This is what we test in the remainder of the paper.

International Factors and Presidential Reelection

In countries where economic performance is strongly determined by commodity prices and international interest rates, we expect to observe a high incidence of presidential reelection in good times—when commodity prices are high and international interest rates are low—, and a low incidence of reelections when the opposite happens. For the reasons just stated, we expect to see no such relationship in the remaining countries of our sample.

We examine reelection rates as a first approximation of the role of international economic factors in determining the fate of Latin American presidents. We identified a total of 120 presidential elections in 18 Latin American countries since 1980, of which 107 were deemed free of electoral process and/or franchise violations (Mainwaring, Brinks & Liñán. 2010). Of these, 33 elections were held in the 6 countries in the “not determined sample,” and 74 elections in the 12 countries in the “determined” sample.¹²

We coded each of these elections as a “reelection” if the candidate supported by the (elected or *the facto*) incumbent government won the election. In most cases, this means that either the incumbent president or a candidate of the president's party won the election, but some cases are less straightforward. The appendix provides a detailed discussion of the coding of potentially dubious cases.

¹²One election (Guatemala 2012) is coded as missing on the reelection variable due to particularities of the case, and is not included in the analysis (see appendix for details).

Figure 3 shows re-election rates in the two sub-samples of countries, by decade.¹³ Recall that GET (see Figure 2, above) was much lower in the first period (reflecting high U.S. interest rates and low commodity prices) than in the latest period (reflecting low U.S. interest rates and high commodity prices). Figure 3 shows that reelection rates increased markedly from 22.2% in the worse period, to 60% in the best period in the determined countries, but did not follow any noticeable trend and remained close to 40% in the countries whose economies are not determined by GET.

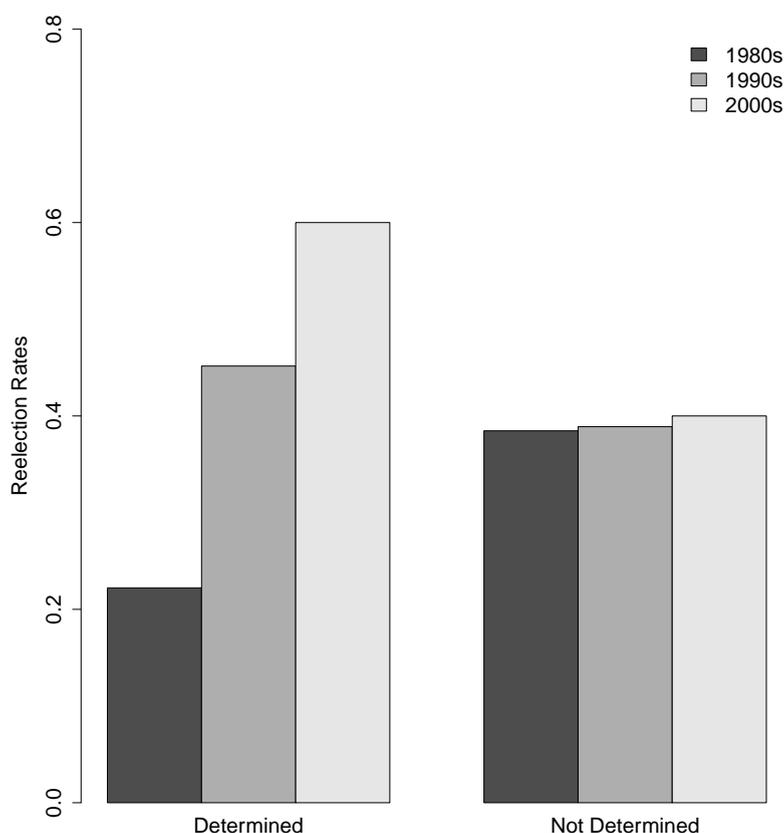


Figure 3: Reelection Rates in Determined and Not Determined Economies

Figure shows that reelection rates increased by decade in countries whose economies are determined (by GET), but remained roughly stable in countries whose economies are not determined. See text for definitions.

In order to further assess the relationship between international factors and presidential reelection in the region, we ran a simple logit analysis of the effects of the average value of GET in the twelve months prior to the election date on the probability of re-

¹³Although we refer to the three periods as the 1980's, 1990's and 2000's, we partitioned our data so that we would have a similar number of elections in each period. As such, the 1980's cover 1982–1994, the 1990's cover 1994–2004, and the 2000's cover 2005–2012.

election, estimated separately for the determined and non-determined economies in Latin America. We fit several versions of the basic model that vary simply on the approach to the hierarchical structure in our data, and with regards to the inclusion of a control for the ideology of government, which deserves some attention.

Latin American countries have extremely high levels of income inequality, therefore redistribution has a significant effect on the well-being of the poor who amount to a large share of the population. For this reason, we expect governments that engage in redistributive policies to enjoy an electoral advantage, over performing relative to what would be predicted by the world economy.

If redistribution is completely unrelated to international economic conditions, it would not be necessary to control for it, as it would not interfere in the relationship between GET and probability of reelection (Morgan & Winship 2007). But, if the possibility of electing a more redistributive government is affected by world economic conditions, it needs to be accounted for. Consider the possibility that pro-redistribution incumbents are more often reelected in good economic times; if this is true, there would be a second path in Figure 1 linking international conditions to voters' assessments passing not through the domestic economic performance, but through the level of redistribution.

Given that international conditions are exogenous to the system, if we simply ignored this our total effects would capture the effects of both alternative paths (i.e. through the domestic economy and through redistribution). This would not affect our estimates of the total effects and our basic argument. Nonetheless, we believe that this redistribution path might have theoretical implications which are distinct from our basic argument, so to rule it out we present a model specification in which we add an partisanship of the president, which we consider an (indirect) indicator of the propensity of incumbent to redistribute. For this variable, we build on Campello (Forthcoming), and code all governments in our sample as either left or right-wing (0 or 1, respectively).¹⁴

Table 2 reports the different model specifications for both determined and non-determined countries. Results are consistent with our expectations, despite the relatively small sample sizes. In all specifications GET *always* has a positive effect on the probability of reelection.

¹⁴Another common explanation for reelection success is that some governments might be simply “more competent” than others. We do not object to this idea in principle, but unless there exists a backdoor path linking the state of the world economy and the competence of governments, there is no need to include such a variable in the analysis. We believe that competence is unrelated to GET, and therefore need not be accounted for. In the appendix we report results controlling for and indicator of competence. As expected, substantive results do not change substantively.

tions in the determined sample, but *never* in the sample of countries not-determined by commodity prices and U.S. interest rates.¹⁵

Table 2: Predicting Incumbent Candidate Reelection (1980–2012)

| | Determined | | | Not Determined | | |
|--------------------------|------------|--------|--------|----------------|--------|--------|
| | Mod. 1 | Mod. 2 | Mod. 3 | Mod. 4 | Mod. 5 | Mod. 6 |
| | Cl. SE | FE | RE | Cl. SE | Cl. SE | FE |
| GET Index | 0.948 | 1.145 | 0.993 | 0.941 | 0.137 | 0.110 |
| Std. Error | 0.282 | 0.387 | 0.319 | 0.291 | 0.199 | 0.361 |
| p-value | 0.001 | 0.003 | 0.002 | 0.001 | 0.493 | 0.761 |
| Ideology | | | | -0.041 | | |
| | | | | 0.582 | | |
| | | | | 0.944 | | |
| (Intercept) | -0.853 | -0.009 | -0.902 | -0.820 | -0.609 | -0.512 |
| | 0.334 | 0.871 | 0.344 | 0.547 | 0.398 | 0.731 |
| | 0.011 | 0.992 | 0.009 | 0.134 | 0.126 | 0.484 |
| Baseline Error | 0.370 | 0.370 | 0.370 | 0.370 | 0.364 | 0.364 |
| Model Error | 0.315 | 0.288 | 0.260 | 0.315 | 0.364 | 0.303 |
| Prop. Reduction in Error | 0.148 | 0.222 | 0.296 | 0.148 | <0.001 | 0.167 |
| Countries | 12 | 12 | 12 | 12 | 6 | 6 |
| N | 73 | 73 | 73 | 73 | 33 | 33 |

Coefficients are logit estimates. Table header indicates whether clustered standard errors, fixed effects, or random effects (intercepts) were used to account for the hierarchical nature of the data. The dependent variable is a binary indicator of whether the incumbent supported candidate was reelected. GET Index was operationalized as the average value of the index in the 12 months prior to each election.

The random effects model (Mod. 3) performs slightly better in terms of fit, but also makes more taxing assumptions than fixed-effects models or the OLS model with standard error corrections, especially given the relatively small number of elections per country.

Mod. 4 shows that the coefficient on GET declines slightly with the inclusion of the dummy for the ideology of the part of the president. The dummy itself is not significant, though its sign suggests that presidents from leftists parties do perform better than those on the right. Despite this variation, the message here is that GET has a statistically significant and very stable effect across all specifications in the elections held in determined economies.

The magnitude of these effects are clearer in Figure 4, which shows the changes in probability of reelection as the international economic outlook changes from “bad” to

¹⁵Results shown in the appendix reveal that commodity prices have a positive effect and U.S. interest rates have a negative effect on the probability of reelection, and are always jointly significant in the determined sample but never in the non-determined one.

“good,” defined as a move from one standard deviation below to one standard deviation above the mean value of GET over the entire period. In the determined sample, these substantive effects range from 0.4 in the basic model with clustered standard errors to 0.45 in the model with country fixed-effects. In contrast, effects in the not determined sample are never larger than 0.07 and not statistically significant. These results indicate that the extremely favorable international economic scenario observed in the the 2000s goes a long way towards explaining the change in the probabilities of reelection of incumbents in South America.

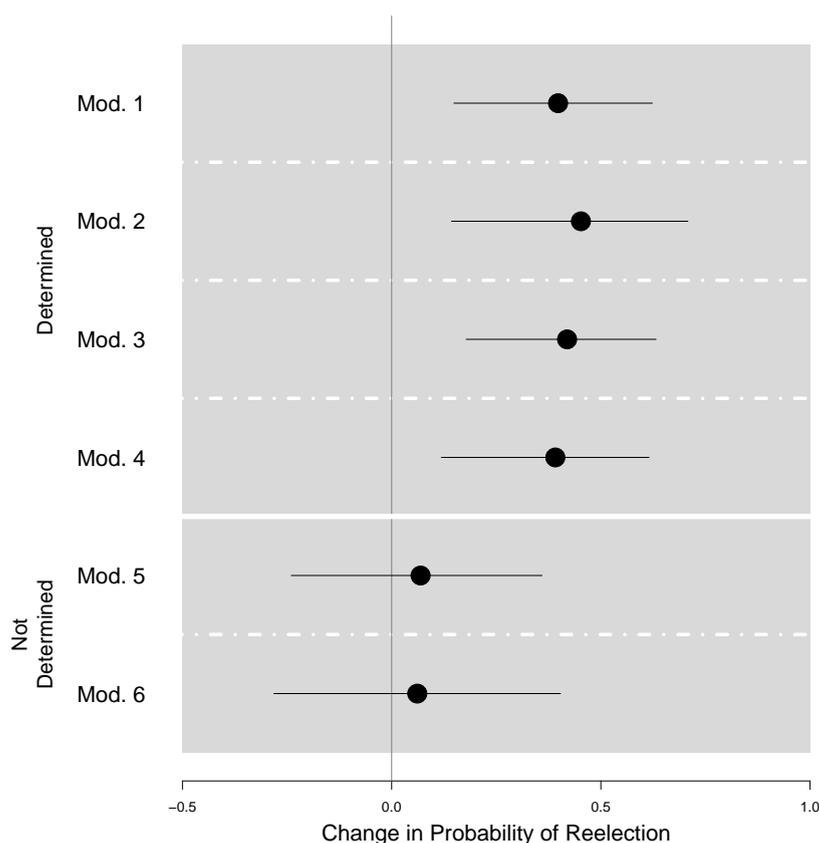


Figure 4: Effects of Change in GET (from “Bad” to “Good”) on Reelection

Figure shows the change in probability of reelection associated with moving from a “bad” international economy to a “good” international economy (i.e. from one standard deviation below to one above the mean of the GET index). First differences were computed from models presented in Table 2, and the definition of economies determined and not determined by U.S. interest rates and commodity prices is presented in Table 1.

Yet presidential elections are relatively rare events, which can be determined by many factors beyond the state of the economy. Formal models of electoral accountability, for instance, highlight the fact that retrospective evaluations of incumbents are simply the

basis through which voters make prospective evaluations of candidates. Voting decisions, in this view, are based on the comparison of the prospects offered by all the candidates, and not simply on a retrospective evaluations of incumbents (Ashworth 2012).

The Chilean case illustrates these perils very well: our model predicts a slow and steady increase in the probability of reelection in the country over time. Governments in Chile were reelected three times throughout the nineties when our model predicted somewhat lower probabilities of reelection, and failed to elect a successor in the 2000's, when our model predicted a higher probability of reelection. Notwithstanding, all elections in Chile, particularly the last two, were very close, and very likely determined on the margin, by less structural issues than those discussed here. Moreover, Michelle Bachelet, the incumbent president who failed to reelect her successor left office with very high approval ratings. As such, the ultimate test of our argument should not rely on reelection rates, but rather on a more direct indicator of voters' assessment of presidents, which we now turn to.

International Factors and Presidential Popularity

In order to test the relationship between international factors and presidential success, we examine presidential popularity rates in Brazil to determine the extent to which they can be predicted by fluctuations in commodity prices and U.S. interest rates—both exogenously-determined variables. Brazil appears in the upper portion of Table 1, and as such is clearly within the scope of our argument. To strengthen our argument further, we contrast results for Brazil with analogous time series analysis for Mexico, a country that clearly falls outside the scope of our argument.

GET and the Popularity of Brazilian Presidents

We compiled 375 observations of the popularity of Brazilian presidents, taken by four polling firms, and spanning the period between march 1987 and december 2012.¹⁶ We

¹⁶These observations are mostly publicly available. Just over 70% of all our observations were compiled and made available by journalist Fernando Rodrigues (noticias.uol.com.br/politica/pesquisas/), but our data set expands the number of observations by using several other sources. Three data points exist for the period between 1985 and 1987, but they are too sparse to used reliably and were dropped. At the time of writing, some data already existed for 2013, but most of the other covariates were not available beyond december 2012. See the appendix for the question wordings, and additional information about

converted these observations originally produced at irregular intervals into monthly observations by averaging multiple observations per month. This led us to 222 observations spanning 310 months.

Although we report some results based on this data set, most of our analysis is conducted after imputation of the missing data. We imputed the missing 88 observations using Amelia II (Honaker, King & Blackwell 2011), which allows us to make use of lead and lag values.¹⁷ All independent variables were fully observed on a monthly basis.

Diagnostics of the data suggest that the series is stationary, but that serial autocorrelation is present. We dealt with the serial correlation through the use of lag dependent variable models (lagDV), which were estimated in the original dataset and on the imputed data sets,¹⁸ as well as by fitting two ARMA models that the diagnostics suggest to be the most appropriate ones for our data series: AR-1 and ARMA(1,1). The ARMA models were fit only on the imputed data sets. Details of the diagnostics are provided in the appendix.

Figure 5(a) reports coefficients on the GET index—our variable of interest—across the four different specifications. The effects of GET are statistically significant in *all* models. The coefficients vary very little between the lagDV models estimated on the original and imputed data sets, but effects are substantially larger in the ARMA models. As expected, and as we report in the appendix, if we control for GDP, the effect of GET is zero, which reinforces the idea that the international economic variables have no direct effects on voters.

To gauge how substantively important, consider a comparison based on a simple OLS model without lags. Fernando Henrique Cardoso’s popularity at the end of his second term was 24.4%. Had he faced the same international conditions Lula da Silva faced at a similar point in his first term, Cardoso could have enjoyed a popularity rate of 69%. In contrast, Lula’s popularity at reelection was very close to its predicted value, at 83%.

the data.

¹⁷We worked with five imputed sets in the analysis. All results presented combine the analysis in the five sets and correct standard errors accordingly. Details of the imputation process and its results are provided in the Appendix.

¹⁸The lagDV model is a restricted version of the autoregressive distributed lag (ADL) model, which includes only lags of the dependent variable (and not of the independent variables). It is ideal for the present case because presidential approval today is a function of past presidential approval as modified by new information on the performance of the economy. As Keele & Kelly (2006) show, this is equivalent to assuming that the effects of new economic conditions on popularity of the president decay at a rate of $\frac{\beta_0}{1-\lambda}$, where β_0 is the coefficient on the economic variable of interest, and λ the coefficient on the lagDV.

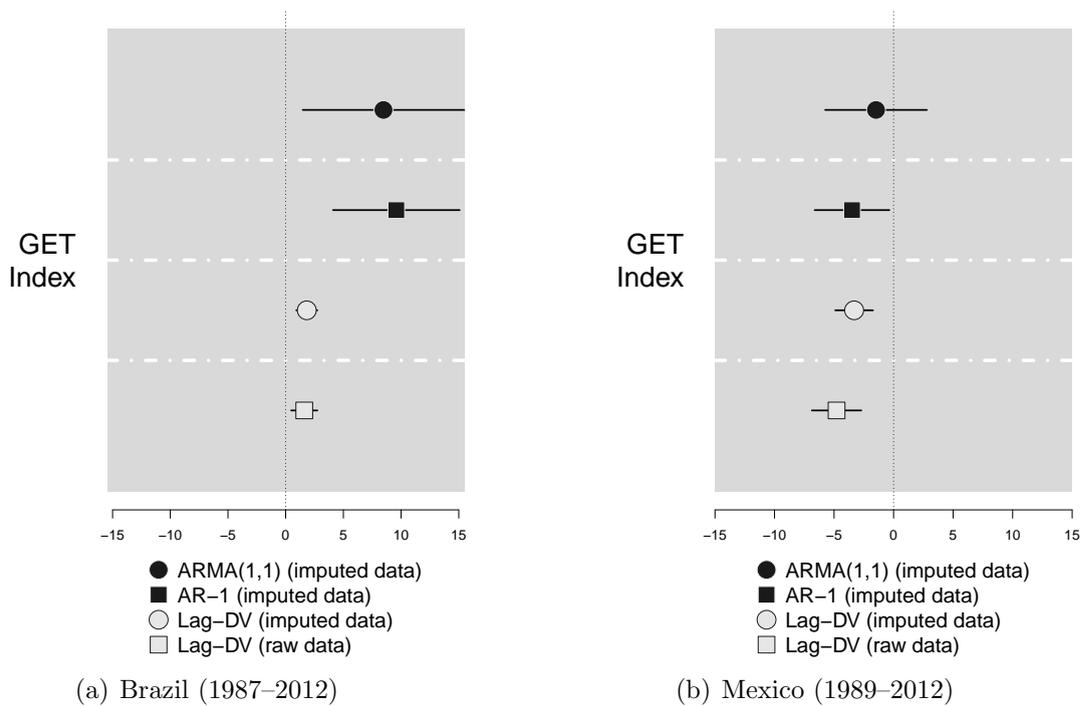


Figure 5: International Economic Determinants of Presidential Popularity

Figure shows coefficients on the variables of interest in four regressions specifications that deal differently with the time structure in the data. All regressions also included pollster fixed effects and time in office. See the appendix for complete results. Residual serial correlation is absent in all models for Brazil, but only from the ARMA(1,1) model for Mexico.

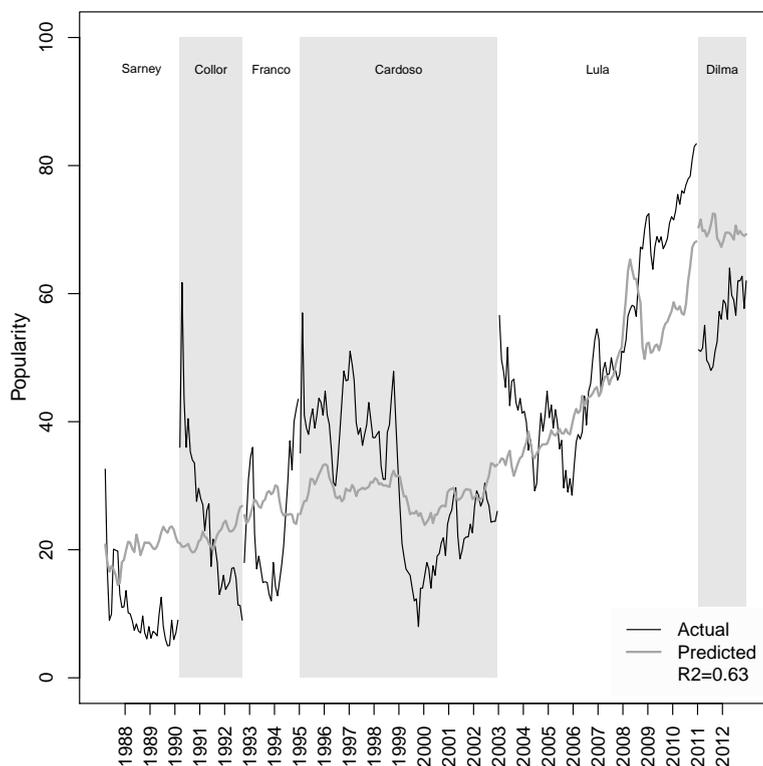


Figure 6: Predicted and Actual Popularity of Brazilian Presidents (1987–2002)

Figure shows actual popularity of Brazilian presidents and the predicted popularity, based on the simplest possible OLS model including using only the GET Index .

Had he faced the much more unfavorable conditions Cardoso faced, his popularity could have been as low as 34.4%.

To illustrate the power of international factors in predicting presidential success in Brazil, Figure 6 reports actual popularity and the popularity predicted by the simplest OLS regression that includes *only* the GET index and pollster dummies. We chose this model for this illustration as it *does not* include a lagged dependent variable or any AR or MA terms, which improve the fit of any model. The R^2 of this very bare-bones model is a whopping 0.64.

For the sake of comparison, a model including several “domestic” economic variables (i.e. average income index, GDP, inflation in the preceding six months, and unemployment) yields and R^2 of 0.65. The fact that a model relying on only two *exogenous* economic variables can predict popularity *almost as well as* a model with several domestic economic variables is striking. We discuss its implication in the closing section.

Figure 6 shows that the fit of the regression improves after the economic liberalization

of the Collor-Franco (1990–1994) government. It also shows that Cardoso over-performed in his first term (1995–1998), whereas Lula over-performed in his second term (2007–2010), showing that there is at least some room for deviations from the international determinants. Cardoso probably reaped the rewards of currency stabilization, as Lula of his redistributive policies. Though both stabilization and redistribution were at least partially made possible by a benign economic outlook, in both moments presidents were able to make the most of good economic times.

In contrast, Cardoso underperformed during much of his second term, which coincided with the energy crisis known as *apagão*, and Lula during a shorter period in his first term during which the corruption scandal dubbed *mensalão* threatened to bring down his government. In those moments, domestic crises took a toll on president’s popularity.¹⁹

GET and the Popularity of Mexican Presidents

Our argument is that voters reward/punish presidents for economic performance regardless of whether it is determined by external factors beyond presidents control. The fact that we can clearly see this process in Brazil, a country that neatly conforms to the scope conditions of our argument, suggests that our argument does in fact hold. Our confidence that this is the mechanism at work is bolstered if we can show that the link between these two international economic factors and popularity does *not* exist in a country in which the economy is not affected by these factors.

We turn, for this exercise, to Mexico. As evidenced in Table 1, Mexico is the Latin American country least dependent on commodity exports. It exports mostly manufactured goods to the U.S., and as such is deeply tied to the U.S. economy. Moreover, due to these ties, financial capital is more prone to flow to Mexico during good times in the US, or when interest rates are in an upward trend, which is the opposite of what happens in other emerging economies. In short, Mexico relates to the rest of the world much differently than its South American neighbors.

We collected data on the popularity of presidents in Mexico since the start of Salinas’ term, in the late 1980s from several public sources.²⁰ We encountered three basic types of

¹⁹In ongoing work we explore the roll of domestic crisis on presidential popularity.

²⁰Most of the data we obtained were from the CIDE/BIIACS repository <http://biiacs-dspace.cide.edu>, but we also compiled data from other sources, such as from Consulta Mitofsky website <http://consulta.mx/web/>.

questions assessing president's performance, and we chose the question with the greatest availability over the time-span. Note that the question is different than the one used in Brazil, so popularity rates should not be compared directly.

We processed the raw data in exactly the same way as the Brazilian data, and the resulting data set was similar. It covers 287 months between March 1989 and January 2013. Of these, we have data for 240 months, and there are 47 missing months.

We report analogous models specification as for Brazil. Results for Mexico, however, are subject to an important qualification. While residual serial correlation was absent from all the models reported for the case of Brazil, for Mexico residual autocorrelation still remains after the lagDV and the AR-1 models. As such, only the ARMA(1,1) specification deserves serious consideration.

The contrast with Brazil is stark. Figure 5(b) shows that GET has a negative effect on popularity in the three troublesome specifications, and no effect in the ARMA(1,1) estimation. A barebones OLS model including only the GET index and pollster dummies yields an R^2 of 0.25, which is considerably lower than in the case of Brazil. Moreover, and also in contrast to Brazil, model based on GET performs significantly worse than a model including domestic variables, which yields an R^2 of 0.5

With this, it becomes evident that GET has an important impact in predicting fluctuations in presidents' popularity in an economy that is strongly determined by U.S. interest rates and commodity prices. Conversely, in a country where the economy is not determined by these two external variables, or is determined in a different way, GET has no impact on presidential popularity. A discussion of the theoretical implications of these facts follows.

Conclusions and Implications

This paper examined the hypothesis that voters reward/punish presidents for economic performance even when this performance is strongly determined by external factors beyond presidents' control. Our results, both in the cross national analysis of presidential reelection rates and in the time series analysis of presidential popularity, show that voters' assessments in South American countries are strongly determined by U.S. interest rates and international commodity prices.

Our results do provide some indication that presidents are able to marginally affect

their own destiny. Reelections are not perfectly predicted by our international factors, and even within Brazil, the country which we examine in more depth, presidents have occasionally over-performed relative to the state of the world economy. However, our main conclusion is that voters do not separate merit from luck—i.e. factors beyond presidential control—when evaluating the economic performance of presidents. We show that this is true for systematic, potentially observable, and somewhat predictable factors—such as the influence of the world economy on the domestic economy—as it is for shark attacks and droughts in the real world (Achen & Bartels 2006) and randomly determined events in experimental settings (Huber, Hill & Lenz 2012).

Our findings have important implications for the study of democratic theory. As summarized by Ashworth (2012), the building blocks of electoral accountability are an electorate that decides whether or not to retain an incumbent potentially on the basis of her performance, and an incumbent who has the opportunity to anticipate voters' reactions and act accordingly (p. 184). Our results cast a shadow on both of these pillars.

First, the levels of information necessary to induce responsiveness, especially in less developed democracies, might be very demanding. Even if citizens are aware of how well the economy is doing they have extreme difficulty in correctly attributing responsibilities. As a result, voters do extract meaningful information from past outcomes, and are therefore likely to not only reward incompetent incumbents in booming times, but also punish competent ones simply because they happened to lead during an unfavorable economic scenario.

Perhaps even more importantly, in such an environment incumbents' behavior will also be shaped by the knowledge that voters' evaluations will not depend, to a large extent, on actions she might take. Although we leave the development of the full strategic interaction between voters and incumbents to future work, when the connection between electoral success and “good” policymaking is broken, the incentives for incumbents to promote good economic performance diminish. For example, rulers in good times might find they can extract rents from office and still be reelected, in the same way that incumbents that find themselves doomed by the international scenario might find in their best interest to obtain rents from office, rather than marginally improving the state of the economy. Examples from South America in support of both situations abound.

Our findings also fundamentally challenge the established notion of *accountability ex-*

post (Stokes 2001), according to which incumbents' frequent breaking of electoral promises does not affect democratic accountability. This claim relies on the assumption that voters' ultimate concern is with their material conditions, and that the fact that they can reward or punish incumbents depending on the economic impact of their policy choices guarantees accountability. Yet accountability *ex-post* hinges on the capacity of voters to link results to performance; if economic performance is mostly determined exogenously, and voters overlook that, the *ex-post* logic cannot hold.

Here, an analogy with a firm helps grasp the consequences of this situation. Imagine that shareholders have to decide how much to reward the CEO of an oil company, in a scenario in which they cannot observe his/hers actions directly, but only the company's performance (Bertrand & Mullainathan 2001). Shareholders want to devise a payment scheme that will attempt to make sure the executive acts in their best interest. Considering that oil prices are not determined by the CEO's decision, should shareholders simply punish a CEO that ruled under declining oil prices, and consequently lower profit, and reward one that presided over rising oil prices? Most analysts would agree that simply tying payment to performance of the firm is not the best solution. In fact, the optimal way to make sure the best executives are selected is to discount exogenous factors, as accurately as possible, in order to evaluate CEOs strictly based on his/her contribution to the firms' performance, which is a hard problem even for a highly qualified board.

Another potential dangerous consequence of voters' inability to discount luck is well illustrated by the opening anecdote about Andrés Pérez. Failure to discount the differing world economic conditions led to profound disappointment and to violent response by Venezuelans, both major steps in the dissolution of a half-a-century-old party system that plunged the country into decades of turmoil. Incipient calls for Lula da Silva's to run in the Brazilian 2014 elections could easily lead to similar outcome in the near future, if commodity prices continue to fall and U.S. interest rates begin to rise.

Much work is needed to understand the full implications of our results. Do incumbents facing a threatening international environment attempt to convey to voters information about the state of the world economy? What about their opposition? Can voters change their assessments of the president if presented with information that allow them to assess relative performance? Can counter-cyclical policies break the transmission mechanism and reduce the effect of international factors? Irrespective of the answers we eventually

encounter, the main finding in this paper should prompt democracy enthusiasts to engage in some soul-searching.

References

- Achen, C.H. & L.M. Bartels. 2006. Blind Retrospection: Electoral Responses to Droughts, Floods, and Shark Attacks. In *Unpublished article. Presented at American Political Science Association Meeting.*
- Achen, Christopher. 2000. "Why Lagged Dependent Variables Can Suppress the Explanatory Power of Other Independent Variables." Paper Presented at the Meeting of the Methodology Section of the American Political Science Association.
- Alesina, Alberto & Howard Rosenthal. 1995. *Partisan Politics, Divided Government, and the Economy.* Cambridge: Cambridge University Press.
- Ashworth, Scott. 2012. "Electoral accountability: recent theoretical and empirical work." *Annual Review of Political Science* 15:183–201.
- Baker, Andy & Kenneth F. Greene. 2011. "The Latin American Left's Mandate: Free Market Policies and Issue Voting in New Democracies." *World Politics* 63(1):43–77.
- Benton, Allyson Lucinda. 2005. "Economic Hardship, Political Institutions, and Voting Behavior in Latin America." *Comparative Political Studies* 38(4):417–442.
- Bertrand, Marianne & Sendhil Mullainathan. 2001. "Are CEOs Rewarded for Luck? The Ones without Principals Are." *The Quarterly Journal of Economics* 116(3):901–932.
- Calvo, Guillermo, Leonardo Leiderman & Carmen M. Reinhart. 1996. "Inflows of Capital to Developing Countries in the 1990s." *Journal of Economic Perspectives* 10(2):123–39.
- Campello, Daniela. Forthcoming. "The Politics of Financial Booms and Crisis: Evidence from Latin America." *Comparative Political Studies* 47(5).
- Cutler, Fred. 2004. "Government Responsibility and Electoral Accountability in Federations." *Publius—The Journal of Federalism* 34(2):19–38.
- Duch, Raymond M. & Randolph T. Stevenson. 2008. *The Economic Vote: How Political Institutions Condition Election Result.* New York: Cambridge University Press.
- Ebeid, Michael & Jonathan Rodden. 2005. "Economic Geography and Economic Voting: Evidence from the US States." *British Journal of Political Science* 36(3):527–547.
- Gavin, Michael, Ricardo Hausmann & Leonardo Leiderman. 1995. "Macroeconomics of Capital Flows to Latin America: Experience and Policy Issues." *RES Working Papers, Inter-American Development Bank* 4012(3):389–431.
- Hellwig, Timothy & David Samuels. 2007. "Voting in Open Economies The Electoral Consequences of Globalization." *Comparative Political Studies* 40(3):283–306.
- Honaker, J., G. King & M. Blackwell. 2011. "Amelia II: A Program for Missing Data." *Journal of Statistical Software* 45(7):1–47.
- Huber, Gregory A., Seth J. Hill & Gabriel S. Lenz. 2012. "Sources of Bias in Retrospective Decision Making: Experimental Evidence on Voters' Limitations in Controlling Incumbents." *American Political Science Review* 106:720–741.
- Imai, Kosuke, Luke Keele, Dustin Tingley & Teppei Yamamoto. 2011. "Unpacking the Black Box of Causality: Learning about Causal Mechanisms from Experimental and Observational Studies." *American Political Science Review* 105(4):765–789.

- Izquierdo, Alejandro, Randall Romero & Ernesto Talvo. 2008. "Booms and Busts in Latin America: The Role of External Factors." *IADB Working Paper* 89(631):2–31.
- Johnson, Gregg B. & Leslie A.e Schwindt-Bayer. 2009. "Economic Accountability in Central America." *Journal of Politics in Latin America* 1(3):33–56.
- Johnson, Gregg B. & Ryuy Sooh-Rhee. 2010. "Repudiating or Rewarding Neoliberalism? How Broken Campaign Promises Condition Economic Voting in Latin America." *Latin American Politics and Society* 52(4):1–24.
- Kayser, Mark & Michael Peress. 2012. "Benchmarking across borders: electoral accountability and the necessity of comparison." *American Political Science Review* 106(3):661–684.
- Keele, Luke & Nathan J. Kelly. 2006. "Dynamic Models for Dynamic Theories: The Ins and Outs of Lagged Dependent Variables." *Political Analysis* 14(2):186–205.
URL: <http://pan.oxfordjournals.org/content/14/2/186.abstract>
- Kramer, Gerald H. 1971. "Short-Term Fluctuations in U.S. Voting Behavior, 1896-1964." *American Political Science Review* pp. 131–143.
- Mainwaring, S.P., Daniel Brinks & Aníbal Pérez Liñán. 2010. "Political Regimes in Latin America, 1900-2008."
- Malan, Pedro S & Regis Bonelli. 1977. "The Brazilian economy in the seventies: old and new developments." *World Development* 5(1):19–45.
- Maxfield, Sylvia. 1998. Effects of International Portfolio Flows on Government Policy Choice. In *Capital Flows and Financial Crises*, ed. Miles Kahler. New Jersey: Council of Foreign Relations pp. 69–92.
- Morgan, S.L. & C. Winship. 2007. *Counterfactuals and Causal Inference: Methods and Principles for Social Research*. Analytical Methods for Social Research Cambridge University Press.
- Prebisch, Raúl. 1949. "El Desarrollo Económico de la América Latina Y Algunos de sus Principales Problemas." *El Trimestre Económico* 16(63(3)):347–43.
- Rubin, Donald B. 2005. "Causal Inference Using Potential Outcomes." *Journal of the American Statistical Association* 100(469):322–331.
URL: <http://amstat.tandfonline.com/doi/abs/10.1198/016214504000001880>
- Samuels, David. 2004. "Presidentialism and Accountability for the Economy in Comparative Perspective." *American Political Science Review* 98(3):425–436.
- Santiso, Javier. 2003. *The Political Economy of Emerging Markets - Actors, Institutions and Financial Crises in Latin America*. New York: Pallgrave McMillan.
- Scheve, Kenneth. 2000. "Democracy and Globalization: Candidate Selection in Open Economies." Working Paper, Yale University.
- Singer, Hans. W. 1950. "The Distribution of Gains between Investing and Borrowing Countries." *The American Economic Review* 40(2):pp. 473–485.
URL: <http://www.jstor.org/stable/1818065>
- Stokes, Susan. 2001. *Mandates and Democracy: Neoliberalism by Surprise in Latin America*. Cambridge: Cambridge University Press.

Appendices

A Alternative Approach to Determined Economies

The first part of table A.3 is identical to what is reported in the main body of the paper. It reports country-by-country regressions of economic performance (GDP) on the GET index. Regressions include the lag dependent variable and AR-1 corrections. Countries are ranked by the statistical significance of the index. The second part of the table describes results from a similar regression analysis in which GET is replaced by its two constituent parts (commodity prices and U.S. interest rates). The conclusion is that the two criteria yield very similar samples. If we had relied on an joint significance test with the the two-variable approach, Nicaragua, Ecuador and Peru would not have made it into the sample, even though the two components have significant effects for the last two of these countries.

Table A.3: Alternative Specifications of Determined Economy Regressions

| | GET Only | | Interest Rates and Commodity Prices | | | |
|----------|----------|----------|-------------------------------------|-----------|--------------------|----------|
| | Coef | P-value | Int. Rates | log(Comm) | Joint Significance | |
| | | | | | F-Stat | P-value |
| Lat. Am. | 35.34 | 0.005** | -5.54** | 113.47** | 10.22 | <0.001** |
| arg | 9.77 | <0.001** | -2.01** | 23.52** | 11.95 | <0.001** |
| bol | 3.79 | <0.001** | -1.04** | 7.07** | 15.06 | <0.001** |
| par | 9.05 | <0.001** | -1.18** | 21.47** | 14.41 | <0.001** |
| uru | 8.18 | <0.001** | -1.78** | 17.83** | 19.05 | <0.001** |
| ven | 9.66 | 0.003** | -2.34** | 22.12** | 6.05 | 0.006** |
| bra | 5.06 | 0.010* | -1.12* | 8.54** | 2.81 | 0.076. |
| col | 4.70 | 0.013* | -0.86** | 10.31** | 4.34 | 0.022* |
| chi | 6.26 | 0.014* | -2.41* | 10.87** | 4.65 | 0.018* |
| nic | 3.96 | 0.028* | -1.01 | 6.55** | 2.33 | 0.115 |
| gua | 2.09 | 0.038* | -0.84 | 3.01** | 4.40 | 0.021* |
| ecu | 4.51 | 0.045* | -0.81* | 9.72** | 2.15 | 0.134 |
| per | 4.56 | 0.067. | -0.86 | 11.08** | 1.64 | 0.212 |
| els | 2.60 | 0.105 | -1.95 | -2.14** | 13.22 | <0.001** |
| dom | 4.27 | 0.111 | -0.99. | 10.09** | 1.78 | 0.187 |
| cri | 2.85 | 0.267 | -1.49 | 2.17** | 2.21 | 0.128 |
| mex | 1.90 | 0.275 | -0.42 | 4.14** | 0.65 | 0.529 |
| pan | 2.82 | 0.340 | -0.05. | 12.15** | 2.16 | 0.133 |
| hon | 1.13 | 0.597 | -0.62 | 1.34** | 0.52 | 0.598 |
| USA | -1.36 | 0.240 | -0.28. | -4.37** | 2.21 | 0.128 |

B Coding of Presidential Reelection

Our coding of reelections and incumbent vote share followed these steps, detailed below. 1) We identified all presidential elections held in Latin America between 1980 and 2012 and excluded elections deemed not free and/or fair; 2) we determined who the incumbent president (and party) was; 3) we determined who the incumbent candidate(s) was(were); 4) we coded the case as reelection= 2 if the incumbent president won reelection; 1 if the incumbent supported candidate won candidate won; and 0 otherwise (in the paper, we collapsed categories 1 and 2 together).

Discarding Unfree and Unfair Elections: For step 1 we used Mainwaring, Pérez-Linan & Brink’s coding of Latin American regimes. Our argument requires that unpopular incumbents be able to lose an election, but it does not necessarily require “full democracy.” Mainwaring, Pérez-Linan & Brink’s coding of Latin American democracies is particularly appealing because they code separately four different types of “violations” (deviations from democracy), two of which (“elections” and “franchise”) relate directly to electoral politics. We kept in the sample all elections that were held in years that their data set code the country as having no violations in these two categories. This meant excluding the following elections DOM94, ELS84, ELS89, HON85, HON09, MEX88, MEX94, NIC84, PAN89, PAR89, PAR93, PAR98, and PER00.

We chose to depart from Mainwaring et al’s coding *only* in the case of Venezuela 2006. They code Venezuela as having some electoral violations during 2004–2012 period. While we concede that the 2012 elections in Venezuela were “free but not fair,” because of Chavez’s tight control over the media and persecution of opposition supported, the fact that Chávez lost the constitutional referendum in 2008 suggests that he could have lost the 2006 elections as well. In fact, the previous version of their data set coded Venezuela as not having any violations through 2007.

Coding of reelections Given steps 2 and 3, steps 4 and 5 were quite straightforward. In most cases, steps 2 and 3 were relatively simple. However, there are several cases that deserve greater attention. We describe here our general coding criteria, and subsequently briefly describe each possibly controversial case.

Most of the controversial cases occur when the incumbent government did not field a candidate. Most of these are “first” elections, held at the tail end of a dictatorial regime, but some cases include elected incumbents. In almost all cases, the incumbent was a clearly identifiable political group. Therefore, we considered not fielding a candidate the same as losing an elec-

tion. This makes sense in most cases, we believe, because the decision not to field a candidate is endogenous to the bad political outlook.

Consider, for instance, that the Argentine military regime did not field a candidate in 1983 elections. One option, here, would be to code this elections as not-observed. However, a comparison to Chile in 1989 shows that even outgoing military regimes *can* field political candidates or support a political candidate in subsequent elections.

In most cases, when a interim was in charge and did not present a candidate, we also coded the case as not being a reelection (0). The rationale here is that interim presidents can become relevant political players (as in Brazil 1994 and Argentina 2003).

The most controversial cases occur when a clearly non-partisan and apolitical caretaker was in power for a very short time at the time of the election (Bolivia 2005, Uruguay 1985). In these cases, we considered the last “political” or potentially political incumbent as the reference. Non-partisan apolitical caretakers typically are supreme court justices who are simply overseeing the transition, which is different from military governments.

Some elections in Uruguay, Honduras and Argentina had multiple candidates affiliated with the president’s party. We sought to determine who, if anybody, had the support of the outgoing president, and then proceeded as before.

In a few cases, such as Brazil 1994, Colombia 2006, and in some cases of coalitions (Bolivia, Chile), the president supported a candidate not from his party. This was typically fairly straightforward to code. In other cases (Argentina 1999) the president did not support his party candidate. As long as the president did not support another candidate, we considered his party’s candidate as the incumbent candidate.

- Argentina 1983: Incumbent=Bigonne (Military), Reelection=0

None of the presidential candidates supported the incumbent non-elected government. While reelection could have been coded as missing because the the government, by not fielding a candidate, could not have won the election, we code it as a non-reelection because the government was so unpopular that it could not muster strength to field a candidate. Had it fielded a candidate in a free and fair election, it would have lost. This stands in contrast to Chile 1989, when the outgoing military regime supported a candidate in free elections.

- Argentina 1999: Incumbent=Menem (PJ), Reelection=0

Menem was denied the opportunity to run for a third term, and did not support the PJ’s candidate, Eduardo Duhalde. However there is no doubt that Duhalde had was the Peronist candidate in the election, and as such is coded as the incumbent candidate.

- Argentina 2003: Incumbent=Duhalde (Interim, PJ), Reelection=1
Duhalde took office in January, 2002, following a succession of extremely short presidencies in the wake of the fall of elected president de la Rúa. By election time, Duhalde had already been ahead of the country for more than one year, and the economic recovery had begun, making de la Rúa a distant memory. In the 2003 elections, however, the PJ allowed several candidates to run as “peronists,” even though they all ran under different labels. There is no doubt that Duhalde supported Kirchner, even if only to oppose Menem, who was also running. In the first round, Menem narrowly beat Kirchner, but then withdrew from the second round, anticipating defeat.
- Bolivia 1985: Incumbent=Siles Suazo (UDP-MIR), Reelection=0
The only doubt here is whether Paz Zamora, who had been Suazo’s vice president, can be considered as the incumbent candidate. In 1984 he broke with the government as its popularity sank, and did not run as the president’s candidate. Siles Suazo’s party did not support any candidate, and disappeared soon after.
- Bolivia 2005: Incumbent=Carlos Mesa (non-partisan), Reelection=0
Rodriguez Veltzé was a supreme court judge charged with overseeing new elections following the resignation of Carlos Mesa Gisbert. Because Rodriguez was clearly a non-political caretaker, we focus, instead, on the previous incumbent Carlos Mesa who had taken office in October 2003, after Sánchez de Lozada was forced to flee the country. By then, Mesa who has never really been part of the MNR had distanced himself from the president. During his government, he sought out support from Evo Morales, and appointed a non-partisan cabinet. He at first announced he did not intend to serve out the full term but eventually changed course before being forced to resign in June 2005. Had Mesa remained in office until the election and supported a candidate (such as Franco in Brazil 1994) this could have been potentially a reelection. Given that he did not even manage to finish his term, we coded it as a failure to obtain reelection by not even presenting a candidate.
- Brazil 1994: Incumbent=Franco (PMDB), Reelection=1
Itamar Franco broke with elected president Fernando Collor prior to his resignation. Franco who was unaffiliated to any party during most of his term before joining the PMDB, administered the country with a large coalition. He appointed Fernando Henrique Cardoso foreign minister, and then economic minister, and under his watch, Cardoso oversaw the Real stabilization plan. Franco and his new party overtly backed Cardoso in the election.
- Chile 1989: Incumbent=Pinochet (military), Reelection=0
Although Pinochet was not affiliated to any party, the pro-Pinochet parties coalesced and

offered Büchi as a unified candidate of the pro-regime political forces. Büchi lost, but we code his result as the incumbent candidate's vote share.

- Colombia 2002: Incumbent=Pastrana (PCC), Reelection=0

The conservative coalition that supported Pastrana had trouble finding a candidate, but after a tortuous process decided to field Juan Camilo Restrepo. Meanwhile, Alvaro Uribe had returned from abroad to contest the Liberal Party primaries. After another tortuous process, Uribe presents himself as an independent and Horacio Serpa ran as the liberal candidate. In February, a few months ahead of the election, some conservatives defected to Uribe's camp and eventually the party withdrew its candidate and bandwagoned behind him. However, we cannot label Uribe the incumbent candidate, as he hailed from the opposing force, was endorsed very late in the race by the incumbent party, and was highly critical of Pastrana, the sitting president.

- Ecuador 1996: Incumbent=Duran-Ballén (PUR); Reelection=0

Sixto Durán-Ballén split from the PSC after the party selected Jaime Nebot Saadi as its candidate in 1992. Durán-Ballén defeated Nebot, and governed with irregular support from the PCE during much of his term. He grew increasingly unpopular as the term progressed, the PUR did not present a candidate in 1996, and essentially disappeared thereafter. He did not formally endorse any candidate, though it was rumored that he preferred Abdalla Buracaran over Nebot, strictly for personal reasons.

- Ecuador 1998: Incumbent=Alarcón (Interim, FRA); Reelection=0

Following Bucarán's resignation in february 11, 1997, and the disqualification of vice-president Rosalía Arteaga, Fabián Alarcon (Frente Radical Alfarista, a small legislative party) then president of the legislative branch took on as interim president. He oversaw a plebiscite on a new constitution, its drafting, and early elections held in 1998, but did not participate directly in the elections. The question here is whether to code this case as non-observed or no reelection. We opted for the latter because as a politician Alarcón *could* have followed what other interim presidents did, and used the office to build some political influence (see Argentina 2003), so we code this case as one of no reelection by lack of incumbent candidate.

- Ecuador 2002: Incumbent: Noboa (UDC); Reelection=0

Gustavo Noboa (UDC), then vice-president, took office after elected president Jamil Mauhad (UDC) was forced to leave office. He stayed course with respect to the dollarization of the economy implemented by Mauhad at the end of his time in office, and oversaw a regular electoral transition. Noboa could have followed other vice presents

into becoming a political player (see Brazil 1994), but did not, and did not support any candidate in the 2002 elections.

- Ecuador 2006: Incumbent: Palacio (non-affiliated); Reelection=0
Palacio, then vice president, took office after the elected president Rafael Gutierrez (PSP) was forced out of office. He nominated Rafael Correa as his finance minister, but Correa left after only four months in office complaining about having received only lukewarm support from the president. Correa then ran and won the 2006 elections, without support from Palacio, who did not participate in the elections. Palacio could have followed other vice presidents into becoming a political player (see Brazil 1994), but did not.
- Guatemala 1985: Incumbent: Oscar Humberto Mejía (de facto); Reelection=0
General Mejía kept a distance from the constitutional assembly of 1984 and the subsequent election. There is no record of him having supported any candidate and he publicly declined endorsing any candidate. In the compilation of official documents of that election, the electoral tribunal's press release of July 25, 1985 (p.21) states that "el General Mejía dió información sobre diversas cuestiones de interés nacional, inclusive la relativa a que, categóricamente, no habrá ningún candidato oficial o apoyado por el Gobierno en las elecciones que se avecinan, ni se impondrán condiciones de ninguna especie al Presidente que resulte electo."
- Guatemala 1995: Incumbent: Ramiro de Leon; Reelection=0
De Leon was the popular national ombudsman who became president after Jorge Serrano and his vice-president Gustavo Espina were deposed following a failed auto-coup. De Leon oversaw the transition to an elected successor without supporting any candidates. The doubt here is whether De Leon supported his former party (UCN) candidate Fernando Andrade Díaz-Duran, or no candidate. Although De Leon had been an elected official and founder of the UCN in the 1980's he had abandoned partisan activities at the end of the decade prior to becoming ombudsman and did not support any candidates in the 1995 elections.
- Guatemala 2011: Incumbent: Colón (UNE); Reelection=NA (only NA in the dataset)
Guatemalan law prevented relatives of the sitting President of participating in elections. In August 2011, the constitution court ruled that Sandra Torres, former wife of the current president who got divorced to run for the presidency, was ineligible, therefore the incumbent was left without a candidate against his will. We coded this case as non-observed.
- Honduras 1981: Incumbent: Paz Garcia (military); Reelection=0
In principle, the outgoing military regime did not support any candidate, but a majority of

the population assumed that the PNH (ultimate losers) would be favored by the military government in power.

- Honduras 1985: Incumbent: Suazo Cordova (PLH); Reelection=1
The incumbent PLH could not decide on a single candidate, so they adopted an “Uruguayan” solution and allowed multiple candidates per party, with pooling. José Azcona Hoyo, the winning candidate, had broken with the sitting president in 1983, who supported his justice minister Óscar Mejiía Arellano. The Liberals won, which makes this a reelection. However, we considered the incumbent vote share as being just Mejia Arrelanos’s, the candidate backed by the president.
- Nicaragua 1996: Incumbent Chamorro; Reelection=1
Despite the changes in party names, Alemán was from the same political group as the incumbent Chamorro.
- Peru 1980: Incumbent: Bermudez (military); Reelection=0
Although the military had participated in the drafting of the constitution in 1979, by a decision of president Morales Bermúdez they sat out of the presidential election in 1980.
- Peru 2001: Incumbent: Paniagua (AP, interim); Reelection=0; Inc. Vote Share=0
Paniagua was selected by the Peruvian Congress to replace ousted president Alberto Fujimori. He served for under one year, oversaw elections, and although he was a longtime member of Acción Popular, his party did not present a candidate and he did not support any other candidate in the 2001 elections.
- Peru 2006: Incumbent: Toledo (PP); Reelection=0
Toledo did not support any presidential candidate in 2006.
- Peru 2011: Incumbent: Garcia (APRA); Reelection=0
The APRA did not field any presidential candidate in 2011.
- Uruguay 1984: Incumbent: Gregorio Alvarez; Reelection=0
Rafael Addiego Bruno was supreme court justice who took office as interim president after the resignation of the last military leader Gregorio Álvarez in february 1985 to oversee the transition to the elected president Sanguinetti in march of the same year. His position is very similar to that of Rodriguez Veltzé in Bolivia 2005, as he was clearly not a political president. We refer, then, to the last political president Gregorio Álvarez. Although the military did not field or support any political candidate in the 1984 election, they could have done so in the same way that Pinochet did in Chile 1989. Hence, we coded this case a failure to obtain reelection by not fielding a candidate.
- Venezuela 1993: Incumbent: Velazquez (AD); Reelection=0
Velazquez was elected president by Congress after one month of a provisional government

by Octavio Lepage (AD), following the resignation of Carlos Andrés Pérez. Although Velazquez was a “consensus” choice by both AD and COPEI, the parties did not appoint ministers to the cabinet. Still, Velazquez was a senator elected by AD, and had been an AD member before, hence, we coded him as being from the AD, even though it was somewhat of a caretaker government.

- Venezuela 1998: Incumbent: Caldera (Convergencia); Reelection=0
Caldera’s new party (Convergencia) did not participate in the presidential elections of 1998 and 2000, and since the end of Caldera’s term has survived as a small regional and parliamentary party. It supported Rosales in 2006, but no other presidential candidates before that.

C Extended Results for Presidential Reelection

In the paper, we report logic regressions using GET as the main independent variable. In this section we report equivalent regressions that use U.S. Interest Rates and U.S. Commodity Prices instead of GET.

As before, results are in-line with our expectations, despite the relatively small sample. In all specifications, commodity index has always a positive effect and interest rates a negative effect on the probability of reelections. Individually, the two variables have statistical significant effects, even when controls are included. When both variables are entered simultaneously, the statistical significance of commodity prices fall below conventional levels. This is due to the fact that they do vary together, to some extent. The important point, however, is that commodity prices and U.S. interest rates are always *jointly significant*, and produce substantively large effects.

Figure A.7 shows the changes in probability of reelection as the international economic outlook changes from “bad” to “good.” We defined bad (good) outlook by setting commodity prices one standard deviation below (above) and U.S. interest rates one standard deviation above (below) their means for the period. In all specifications, the change in probability of reelections is statistically significant.

Substantive effects range from just under 0.3 for the model with just U.S. interest rates to 0.5 in the model with both variables and country fixed-effects. Commodity prices seem to be the stronger predictor, but U.S. interest rates’ contribution is far from negligible. This is not surprising given that we have previously shown that U.S. interest rates play a significant role in the economies of fewer countries. Interest rates, however, do play an important role in some

Table A.4: Determinants of Incumbent Candidate Reelection (1980–2012)

| | Interest Rates | | Commodity Index | | Both | |
|--------------------------|----------------|--------|-----------------|--------|--------|--------|
| US Interest Rates | -0.427 | -0.414 | | | -0.383 | -0.444 |
| Std. Error | 0.083 | 0.084 | | | 0.092 | 0.177 |
| p-value | <0.001 | <0.001 | | | <0.001 | 0.012 |
| log(Commodity) | | | 1.932 | 1.828 | 0.583 | 0.797 |
| | | | 0.987 | 0.937 | 1.107 | 1.185 |
| | | | 0.050 | 0.051 | 0.599 | 0.502 |
| Ideology | | -0.256 | | -0.228 | -0.163 | |
| | | 0.544 | | 0.460 | 0.543 | |
| | | 0.638 | | 0.621 | 0.765 | |
| (Intercept) | 2.039 | 2.156 | -10.018 | -9.341 | -0.585 | -0.751 |
| | 0.543 | 0.558 | 4.877 | 4.566 | 5.635 | 6.378 |
| | <0.001 | <0.001 | 0.040 | 0.041 | 0.917 | 0.906 |
| Fixed Effects | No | No | No | No | No | Yes |
| Clustered SE | Yes | Yes | Yes | Yes | Yes | No |
| Baseline Error | 0.370 | 0.370 | 0.370 | 0.370 | 0.370 | 0.370 |
| Model Error | 0.315 | 0.329 | 0.301 | 0.329 | 0.329 | 0.260 |
| Prop. Reduction in Error | 0.148 | 0.111 | 0.185 | 0.111 | 0.111 | 0.296 |
| N | 73 | 73 | 73 | 73 | 73 | 73 |
| Countries | 12 | 12 | 12 | 12 | 12 | 12 |

The dependent variable is a binary indicator of whether the incumbent party was reelected. Proportional reduction in error compares the estimated model relative to the baseline error (i.e. a null model).

countries, including Brazil, one of the countries which we analyze in depth in the subsequent section.

Finally, we mentioned in Footnote 14 that the inclusion of a measure of competence does not affect the results. The best measure of competence we found is actually a measure of political risk, available from the International Country Risk Guide, published by Political Risk Services (PRS) since 1985. Given that PRS produces this index based on the assessments and for the business and investment community, it is not a “neutral” indicator of competence, and should be used with care. Still, the index reflect, at least partially, one conception of what competence might mean. The inclusion of this variable, as shown in Table A.5 reduces slightly the effects of GET, but does not substantively change the results.

Table A.5: Effects of GET on Reelection, Controlling for “Competence”

| | Mod. 1 | Mod. 2 | Mod. 3 | Mod. 4 |
|--------------------------|--------|---------|--------|--------|
| GET Index | | | | 0.722 |
| SE | | | | 0.341 |
| p-value | | | | 0.034 |
| US Interest Rates | -0.321 | | -0.227 | |
| | 0.109 | | 0.111 | |
| | 0.003 | | 0.041 | |
| Commodities | | 1.684 | 1.004 | |
| | | 1.066 | 1.142 | |
| | | 0.114 | 0.379 | |
| Pol Risk (Competence) | 0.043 | 0.065 | 0.050 | 0.054 |
| | 0.018 | 0.019 | 0.017 | 0.018 |
| | 0.015 | 0.001 | 0.003 | 0.002 |
| (Intercept) | -1.181 | -12.638 | -7.077 | -3.989 |
| | 1.267 | 5.368 | 6.222 | 1.270 |
| | 0.351 | 0.019 | 0.255 | 0.002 |
| Baseline Error | 0.403 | 0.403 | 0.403 | 0.403 |
| Model Error | 0.343 | 0.358 | 0.358 | 0.358 |
| Prop. Reduction in Error | 0.148 | 0.111 | 0.111 | 0.111 |
| N | 67 | 67 | 67 | 67 |
| Countries | 12.000 | 12.000 | 12.000 | 12.000 |

All models are estimates with standard errors clustered by country. N is lower than in other tables because political risk is only available starting in 1985.

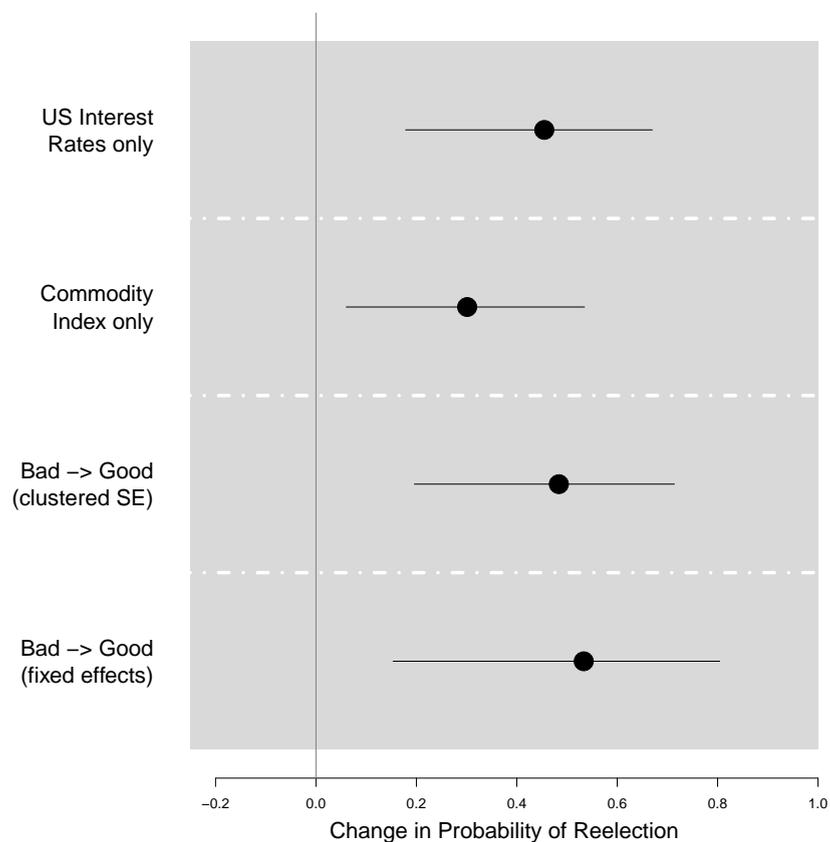


Figure A.7: Effects of Changing from “Bad” to “Good” Economy on Reelection

Figure shows the change in probability of reelection associated with moving from a “bad” international economy (i.e. commodity prices one standard deviation below and U.S. interest rates one standard deviation above their means for the whole period) to a “good” international economy (i.e. the reverse), as estimated in four of the models reported in Table A.4.

D Notes on Popularity Data

Sampling procedures and question wording vary across pollsters, and overtime within pollsters, but we made an effort to minimize variation in the questions to the extent possible. In Brazil, the “popularity” question has been asked by the main pollsters in very similar formats since the late 1980’s, and all of them use a standard five level scale that ranges from excellent to terrible. The original text of the questions is reported in Table A.6, below.

For Mexico, most of the surveys covering the Salinas and Zedillo governments were fielded by the *Oficina de la Presidencia de la República Mexicana* (OPRM). Almost all of the surveys for the Calderón period were fielded by Consulta Mitofsky, and for the Fox presidency we found a balance between the two sources. We also obtained some results from Reforma, a news organization. Most of the data were collected from the BIIACS/CIDE archives (<http://biiacs->

Table A.6: Wording of Popularity/Approval Questions

| Brazil | |
|-------------------|---|
| Sensus | O(A) Sr.(a) avalia o governo do/a Presidente [NAME] como? [Ótimo, Bom, Regular, Ruim, Péssimo] Como você avalia o desempenho do governo presidente [NAME]? Está sendo ótimo, bom, regular, ruim ou péssimo? |
| Datafolha | Na sua opinião, o/a presidente [NAME] está fazendo um governo ótimo, bom, regular, ruim ou péssimo? |
| Ibope | Na sua opinião, o/a presidente [NAME] está fazendo um governo ótimo, bom, regular, ruim ou péssimo? Na sua opinião, o/a presidente [NAME], até o momento, está fazendo um governo ótimo, bom, regular, ruim ou péssimo? |
| Vox Populi | De uma maneira geral, como você avalia o desempenho do Presidente Lula à frente do governo federal: Ótimo, bom, regular, ruim ou péssimo? Como você avalia o desempenho do presidente Fernando Henrique Cardoso à frente do governo: está sendo ótimo, bom, regular, ruim ou péssimo? |
| Mexico | |
| OPRM | En general, está usted de acuerdo o en desacuerdo con la manera como está gobernando el Presidente [NAME]? [de acuerdo, parcialmente de acuerdo, en desacuerdo] En general, ¿está usted de acuerdo o en desacuerdo con la manera como está gobernando el Presidente [NAME]? [acuerdo, acuerdo en parte, desacuerdo en parte, desacuerdo] |
| Consulta Mitofsky | En general, está usted de acuerdo o en desacuerdo con la manera en que está gobernando el presidente? |

dspace.cide.edu), and from Consulta Mitofsky (<http://consulta.mx/web>), but some were obtained from other sources.

We discarded a large number of data points that were not representative of the national population. More specifically, we discarded all samples that covered only four cities or less, or that focus on only one or two states. We kept samples of 6, 10, and 13 cities in different states (common in the Salinas years), as well as properly nationally representative samples.

After collecting all the face-to-face surveys available, we included telephone surveys to cover periods for which there was no better data. When using telephone surveys, we always have at least four different surveys in the month, and only used surveys with at least 500 respondents each. Although we collected other types of data, we use only surveys that asked some variation of the approval question shown in Table A.6.

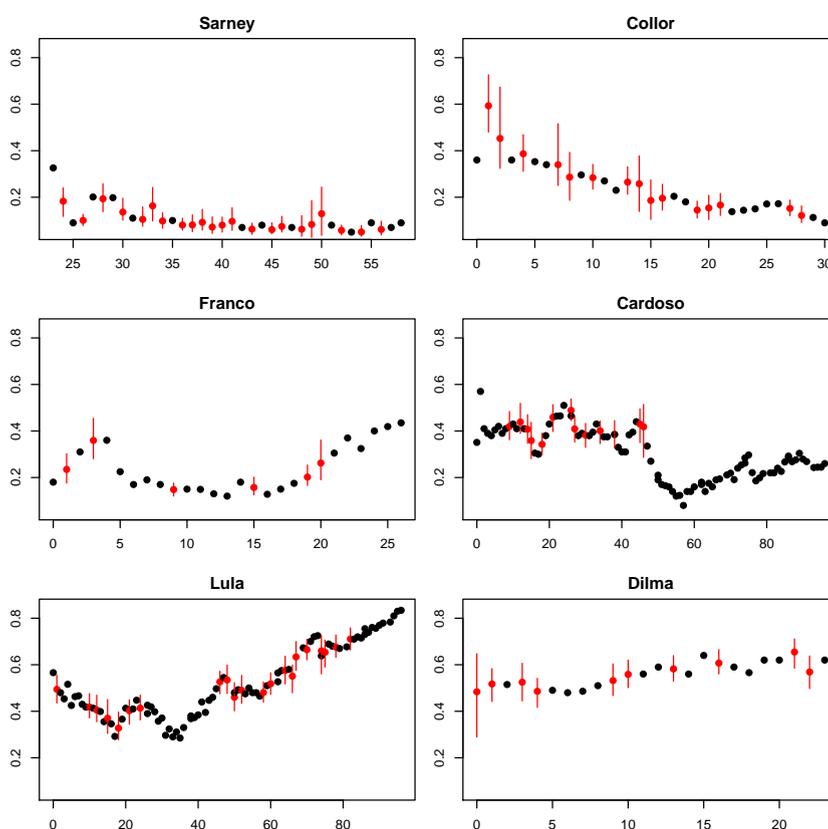


Figure A.8: Imputed and Observed Values of the Dependent Variable in Brazil

We used Amelia II to conduct multiple imputation for the months with missing values. All of the missingness occurs exclusively in the popularity data (i.e. the independent variables are fully observed). We used a logit transformation to force Amelia to impute values between 0 and 1, and included leads and lags in the imputation. Figure A.8 shows observed popularity values

and imputed observations for the popularity of the six Brazilian presidents, and the subsequent figure shows the equivalent data for Mexico.

E Extended Results for Presidential Popularity

In the main body of the paper we report the estimates of the effect on GET in graphical form only (Figure 5), and for simplicity we omitted the coefficients for other variables included in the models. The first columns in Table A.7 and A.8 report complete results from those regressions for Brazil and Mexico, respectively. The last columns in both tables show results that obtain using U.S. Interest Rates and (log of) Commodity Index in the time series analysis of the international economic determinants of presidential popularity in each country. These two variables are the constituent parts of the GET Index, that is used in the main body of the paper. As the table shows, GET is always positive and statistically significant. When individually considered, interest rates always contribute negatively to presidential performance while commodity prices contribute positively.

For the case of Brazil — where the GET index is a significant predictor of popularity — we also estimated models in which we control for domestic economy with the inclusion of GDP. As discussed in the main body of the paper, the inclusion of GDP amounts to blocking the indirect path between GET and popularity, and thus allows us to estimate the direct effect, describe in Figure 1 by the diagonal arrow. Per our argument, we expect that no such effect exists. Figure A.9 shows that this is indeed the case.

Along these same lines, mediation analysis using GDP growth as a mediator variable shows that about 90% of the total effects are channeled through domestic GDP. The mediating equation was defined simply as a regression of GDP on the GET index, while the outcome equation was a regression of popularity on GET, GDP, time in office, pollster, and the lag GDP. In this setup, the average mediator effect across the five imputed datasets was 1.76 (SE=1.29) while the average total effects were 1.99 (SE=0.67).

In Mexico, on the other hand, the two constituent parts have opposite signs in most specifications. Commodities are not statistically significant in the more reliable specifications, which is in line with the fact that Mexico is not a commodity exporter. U.S. interest rates have a positive effect on the Mexican economy, probably because they serve as an indicator of good international purchasing power in the US, which stimulates the mexican economy. In the ARMA(1,1) specification, however, the effect is not significant.

Substantively, the results support the argument laid out in the main body of the paper.

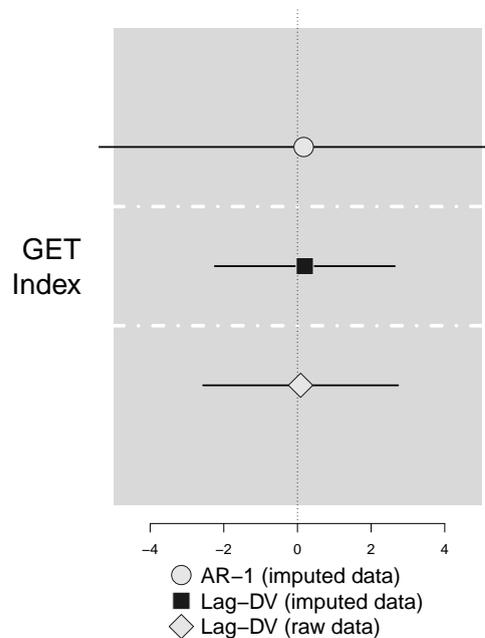


Figure A.9: Effects of GET on Popularity, Controlling for GDP

Figure shows coefficients on GET once GDP is included in the regressions reported in the left side of Table A.7. This is an estimate of the direct effect of GET on popularity, which should be zero, according to our argument.

The exogenous state of the economy has a strong influence on presidential popularity in Brazil (which is a “determined country”), but not in Mexico (a “non determined” one).

In the Brazilian case, visual inspection of the residuals of a simple OLS regression, as well as tests for unit root suggests that the models was stationary. However, analysis of the ACF and PACF functions of the residuals and formal tests showed clear signs of autocorrelation in the original series. Our first approach to the autocorrelation was simply the inclusion of the lagged dependent variable in an OLS model. As the Lag-DV model can also be easily fitted on the non-imputed data, it is our preferred specification. Although LagDV models have been out of favor in the profession (Achen 2000), Keele & Kelly (2006) make the case that LagDV models can be unbiased if they are used in a truly dynamic data generating process (such as the dependence of presidential popularity on the state of the economy) as opposed to a common factor data generating process, that bias is relatively less of an issue larger sample sizes (as ours) as long as there is no (or low) residual autocorrelation.

Analysis of the residuals in the Brazilian series suggests that the inclusion of the lag purges serial correlation, but we also report AR-1 and ARMA(1,1), which also support our conclusions. In Table A.9, below, we report a series of statistical tests that fail to reject the null hypothesis

of no residual autocorrelation in all three model specifications.

In the Mexican case, in contrast, we find residual autocorrelation even after the inclusion of the lagDV, and with AR-1, as the Table A.9 shows. We were only able to purge this autocorrelation after estimating the ARMA(1,1) model we report in the main body of the paper.

Table A.7: International Factors and Presidential Popularity in Brazil

| | GET Models | | | | Interest Rates & Commodities | | | |
|----------------|--------------|--------|-------|-----------|------------------------------|--------|--------|-----------|
| | Imputed Data | | | | Imputed Data | | | |
| | Lag-DV | Lag-DV | AR-1 | ARMA(2,1) | Lag-DV | Lag-DV | AR-1 | ARMA(2,1) |
| GET Index | -4.79 | 1.83 | 9.59 | 8.47 | | | | |
| SE | 1.26 | 0.56 | 3.34 | 4.26 | | | | |
| p-value | <0.01 | <0.01 | <0.01 | 0.05 | | | | |
| Interest Rates | | | | | 1.81 | -0.42 | -3.54 | -3.45 |
| | | | | | 0.47 | 0.29 | 1.11 | 1.13 |
| | | | | | <0.01 | 0.14 | <0.01 | <0.01 |
| Commodities | | | | | -6.96 | 4.62 | 17.82 | 16.47 |
| | | | | | 2.96 | 1.57 | 7.75 | 8.65 |
| | | | | | 0.02 | <0.01 | 0.02 | 0.06 |
| Time in office | 0.08 | -0.00 | -0.05 | -0.05 | 0.09 | -0.00 | -0.05 | -0.06 |
| | 0.03 | 0.01 | 0.07 | 0.07 | 0.03 | 0.01 | 0.07 | 0.07 |
| | <0.01 | 0.99 | 0.48 | 0.43 | <0.01 | 0.98 | 0.44 | 0.39 |
| Lag-DV | 0.74 | 0.87 | | | 0.72 | 0.86 | | |
| | 0.05 | 0.03 | | | 0.05 | 0.03 | | |
| | <0.01 | <0.01 | | | <0.01 | <0.01 | | |
| (Intercept) | 13.96 | 3.69 | 31.88 | 32.82 | 37.10 | -15.04 | -30.92 | -24.54 |
| | 2.86 | 1.32 | 4.82 | 5.54 | 14.85 | 7.71 | 41.02 | 44.80 |
| | <0.01 | 0.01 | <0.01 | <0.01 | 0.01 | 0.05 | 0.45 | 0.58 |
| AR-1 | | | 0.90 | 0.91 | | | 0.88 | 0.90 |
| | | | 0.04 | 0.05 | | | 0.04 | 0.04 |
| | | | <0.01 | <0.01 | | | <0.01 | <0.01 |
| MA1 | | | | -0.06 | | | | -0.06 |
| | | | | 0.08 | | | | 0.08 |
| | | | | 0.45 | | | | 0.47 |

Table reports time series estimates of the effect of international variables on presidential popularity in Brazil. Columns with GET estimates were presented graphically in Figure 5 in the main body of the paper. Columns with the two separate components are extended results. All models also include dummy indicators for pollsters.

Table A.8: International Factors and Presidential Popularity in Mexico

| | GET Models | | | | Interest Rates & Commodities | | | |
|----------------|--------------|--------|-------|-----------|------------------------------|--------|-------|-----------|
| | Imputed Data | | | | Imputed Data | | | |
| | Lag-DV | Lag-DV | AR-1 | ARMA(1,1) | Lag-DV | Lag-DV | AR-1 | ARMA(1,1) |
| GET Index | -4.79 | -3.31 | -3.49 | -1.47 | | | | |
| SE | 1.26 | 0.96 | 1.91 | 2.60 | | | | |
| p-value | <0.01 | <0.01 | 0.07 | 0.57 | | | | |
| Interest Rates | | | | | 1.81 | 1.35 | 2.01 | -0.38 |
| | | | | | 0.47 | 0.38 | 1.09 | 1.14 |
| | | | | | <0.01 | <0.01 | 0.07 | 0.74 |
| Commodities | | | | | -6.96 | -3.94 | -1.98 | -6.57 |
| | | | | | 2.96 | 2.15 | 5.56 | 6.57 |
| | | | | | 0.02 | 0.07 | 0.72 | 0.32 |
| Time in office | 0.08 | 0.05 | 0.10 | 0.10 | 0.09 | 0.05 | 0.11 | 0.10 |
| | 0.03 | 0.02 | 0.05 | 0.04 | 0.03 | 0.02 | 0.05 | 0.04 |
| | <0.01 | 0.02 | 0.03 | 0.01 | <0.01 | 0.01 | 0.03 | 0.01 |
| (Intercept) | 13.96 | 13.99 | 59.55 | 57.66 | 37.10 | 25.57 | 56.15 | 91.38 |
| | 2.86 | 2.57 | 2.91 | 4.53 | 14.85 | 10.80 | 31.12 | 33.51 |
| | <0.01 | <0.01 | <0.01 | <0.01 | 0.01 | 0.02 | 0.07 | 0.01 |
| Lag-DV | 0.74 | 0.75 | | | 0.72 | 0.73 | | |
| | 0.05 | 0.04 | | | 0.05 | 0.04 | | |
| | <0.01 | <0.01 | | | <0.01 | <0.01 | | |
| AR1 | | | 0.81 | 0.96 | | | 0.79 | 0.96 |
| | | | 0.04 | 0.02 | | | 0.04 | 0.02 |
| | | | <0.01 | <0.01 | | | <0.01 | <0.01 |
| MA1 | | | | -0.52 | | | | -0.53 |
| | | | | 0.07 | | | | 0.07 |
| | | | | <0.01 | | | | <0.01 |
| R2 | 0.73 | 0.71 | 0.71 | 0.75 | 0.73 | 0.71 | 0.71 | 0.75 |

Table reports time series estimates of the effect of international variables on presidential popularity in Mexico. Columns with GET estimates were presented graphically in Figure 5 in the main body of the paper. Columns with the two separate components are extended results. All models also include dummy indicators for pollsters.

Table A.9: Autocorrelation Diagnosis for the Lag-DV Model in Brazil and Mexico

| | Durbin-Watson | | Box-Pierce | | Breusch-Godfrey | | |
|--------|---------------|---------|------------|---------|-----------------|---------|-------|
| | h-statistic | p-value | Statistic | p-value | LM test | p-value | |
| Brazil | LagDV | 2.02 | 0.81 | 0.23 | 0.63 | 0.69 | 0.71 |
| | AR1 | 2.07 | 0.46 | 0.50 | 2.07 | 0.46 | 0.50 |
| | ARMA(1,1) | 1.99 | 0.01 | 0.94 | 1.99 | 0.01 | 0.94 |
| Mexico | LagDV | 2.50 | <0.01 | 18.39 | <0.01 | 33.67 | <0.01 |
| | AR1 | 2.52 | 19.46 | <0.01 | 2.52 | 19.46 | <0.01 |
| | ARMA(1,1) | 1.96 | 0.14 | 0.70 | 1.96 | 0.14 | 0.70 |

Table reports tests for residual autocorrelation the time series models reported in Figure ??, in the main body of the paper.