The Political Economy of Sovereign Borrowing:
Explaining the Policy Choices of Highly Indebted Governments

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Abstract

Political economy theory expects politicians to use budget deficits to engineer an election-timed boom, known as the political business cycle. We challenge and contextualize this view by incorporating the financial constraints faced by governments into an electoral framework. We argue theoretically that the extent of ownership dispersion among creditors has important effects for governments' policy autonomy. Specifically, we contend that when highly indebted governments become more reliant on international bond markets – as opposed to traditional bank lending – politicians alter the way they respond to domestic constituents. In an econometric test of 16 Latin American countries from 1961 to 2011, we show that financial decentralization breeds austerity. More specifically, we find that politicians exhibit more fiscal discipline when they fund a greater share of their spending through decentralized bond markets. Furthermore, we find this disciplining effect to be particularly strong during election periods.

"The old saying holds. Owe your banker one thousand pounds and you are at his mercy; owe him 1 million pounds and the position is reversed." -John Maynard Keynes

In response to the 2008-2009 global financial crisis, some countries such as the United States attempted to stimulate their economies to protect jobs and wages. When facing financial crises, developing-country governments – and highly indebted countries more generally – often face a more limited set of options. Narrow tax bases and shallow domestic financial markets can leave them dependent on foreign financing to fund their budgetary operations (Gavin and Perotti 1997). For example, in Latin America – a region whose countries, on average, have struggled with high indebtedness – external financing has accounted for two-thirds of public debt in the 2000s,[1] and more than three-quarters of total public debt over the last three decades (Inter-American Development Bank 2013).

In this environment, foreign creditors frequently impose austerity on their sovereign borrowers, expecting that such restrictive budgetary policies provide economic stability and ultimately make debt repayment more likely. However, the pursuit of such budget discipline can be problematic domestically. If politicians achieve discipline by shrinking welfare programs, their efforts to stabilize the economy could aggravate social tensions. For example, throughout Latin America, when austerity translated into lower public payrolls, pensions, and social benefits, fiscal overtures that were intended to appease creditors often catalyzed pot-banging popular protests, known as *cacerolazos*. In light of these tensions between international investors and domestic citizens, what determines whether or not debtor governments ultimately pursue fiscal restraint?

In this paper, we argue that the likelihood of observing economic discipline in highly indebted countries reflects the structure of government debt, or the extent to which government creditors are bondholders rather than bankers. We claim that an increase in a government's reliance on global bond markets alters the way its politicians respond to domestic constituents, making political business cycles less common.

Budget deficits, intended to engineer economic booms and win votes, were once considered critical weapons of political survival in Latin America. However, after the 1980's debt crisis in Latin America, a shift in external funding from centralized bank lending to decentralized bond financing transformed creditor-debtor relations. Creditors interacting with these indebted countries have changed from a limited number of large institutions – typically large banks – to a substantial number of globally dispersed bond market investors. This shift toward securitization diluted the tight, financial linkage between creditors and their

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[1]Calculated from Historical IDB Debt Dataset (HIDD).

heavily indebted borrowers, allowing them to escape the Keynesian paradox referenced above. Compared to vested bankers, bondholders can more readily exit their lending relationships, leaving governments with less room to manage the economy. Their constant threat of capital withdrawal compels sovereign debtors to pursue austerity with commitments to balanced budgets and low inflation.

These theoretical claims mark a notable departure from political business cycle theories that assert an electoral inflationary bias (Nordhaus 1975; Lindbeck 1976; Tufte 1978). Such cycles may at times occur, as evidenced by President Cristina Fernández Kirchner's 2011 election-timed expansion in Argentina, but they are most likely to appear in countries that are less reliant on global capital markets. Argentina, for example, has been shut out of global capital markets since its 2002 debt default.

By comparison, our cross-national statistical analysis of Latin America finds that governments with high bond market indebtedness often pursue restrictive policies that yield electoral cycles marked by slowing rates of election-year inflation and growth. These findings are in line with recent research on context-conditional political business cycles by Canes-Wrone and Park (2012), which shows that domestic fixed investment in developed countries is conditional on the electoral cycle. We advance this burgeoning literature by explicitly considering the role of international investment in electoral cycles in developing countries. We examine the conditions under which external financing both fosters and constrains the traditional political business cycle by evaluating its effect on fiscal policy, economic growth, and inflation.[2]

This analysis also gives us new insights into the political business cycle in developing countries, which scholars have extensively analyzed using models of asymmetric information. In these fiscal policy models, voters are typically cognizant of politicians' motivations. However, they lack perfect information about their policy actions, which allows politicians to increase public spending to improve their re-election chances. This literature is based on a first generation of signaling models by Rogoff (1990) and a second generation of moral hazard models spurred by Brender and Drazen (2005) and Shi and Svensson (2006). Our work builds on the latter, as well as earlier work on creditor-debtor relations.[3] Our results are consistent with empirical studies that find a political deficit cycle in developing economies, and with results that predict the pattern to be more common in new democracies (Barberia and Avelino 2011; Shi and Svensson 2006; Gonzalez 2002; Block 2001; Schuknecht 2000; Ames 1987; Brender and Drazen 2005). However, we make the novel contribution that such cycles are conditional on the structure of government debt.

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[2]Our findings are also in line with the notion that elections can be a catalyst for economic reforms (Remmer 1993).

[3]Basic versions of both frameworks - signalling and moral hazard - are described in Persson and Tabellini (2000). Furthermore, our analysis has roots in earlier (non-formal) work examining creditor-debtor relations in Latin America (Kaplan 2013).

The arguments in the article also engage the important debate in international and comparative political economy about the relationship between modern financial globalization and democracy, as explored in Frieden (1991). On one side, some argue that contemporary global market integration represents a setback for democracy, finding that governments pursue policies that favor capitalists over other social groups (Frieden 1991; Andrews 1994; Helleiner 1994; Cerny 1995; Rodrik 1997). On the other side are those who have long argued that markets and democracy can live in harmony. This can be the case when governments intervene directly to offset globalization's dislocations (Cameron 1978; Garrett 1998). In addition, governments' efforts to boost investor confidence can improve living standards and help stabilize democracies (Przeworksi and Wallerstein 1982; Przeworksi et. al. 2000). Most recently, political economy scholars have sought to advance the globalization debate by exploring both the nature of the external constraint and the ability of governments to insulate their populace from global market pressures (McNamara 1998; Mosley 2000, 2003; Rudra 2002; Swank 2002; Bearce 2003; Wibbels 2006; Tomz 2007; Pepinsky 2008; Nooruddin and Simmons 2009). For example, recent research on financial market-government relations establishes that financial integration constrains different types of governments (i.e. developing vs. developed; democracies vs. autocracies; crisis vs. non-crisis countries; manufacturing vs. commodity exporters; peer vs. non-peer sovereign risk categorizations) in distinct ways (Mosley 2003; Saiegh 2005; Wibbels 2006; Campello 2014; Brooks, Cunha, and Mosley 2014). Our analysis brings a new set of considerations to this work, arguing that different creditors – from bankers to bondholders – often behave quite uniquely, creating important differences in policy climates for sovereign borrowers.

Finally, the analysis also contributes to the study of partisan politics in developing democracies. In Latin America, for instance, scholars have identified broad ideological swings, where the left either tolerated or advanced neoliberal reforms in the 1990s (Roberts 1998; Stokes 2001; Murillo 2002; Weyland 2002; Levitsky 2003), only to later reverse these policies (Roberts 2013). In fact, scholars have found that a variety of factors facilitated this consensus, including a weak labor movement (Roberts 1998), party-brand dilution (Lupu 2015), strong business interests (Thacker 2000; Fairfield 2010), and reform-seeking politicians (Corrales 2000). In a region where government's budget is key to addressing redistributive pressures, however, why would the left tolerate austerity? Baker (2008) and Baker and Greene (2011) suggest that these actions reflect the region's attitudes, finding that Latin American citizens surprisingly hold centrist economic policy preferences. For example, Tomz (2001) finds that the majority of Argentine voters were against debt default in 1999, preferring that the government comply with its international financial commitments. Similarly,

Hellwig (2014) shows that globalization has crowded out contestation over economic policy, increasing the importance of noneconomic issues to voters. Our analysis presents a supply-side explanation for these demand-side phenomena by evaluating the choices of highly indebted governments.

The article unfolds as follows. The next section contains the main theoretical contribution; here we explain how a government's debt structure induces politicians to prioritize budget discipline and price stability over fiscal stimulus. In the subsequent section, we provide quantitative empirical support for this theory using data from Latin America – a region where bond financing accounts for almost half of total public external debt today. We then use the insights derived from our quantitative results to interpret a number of recent elections both within and beyond Latin America's borders, including Southern Europe – a region that has also struggled lately with high bond indebtedness. Finally, we suggest some potential research extensions.

Theoretical Framework

Why are politicians in highly indebted countries sometimes willing to impose austerity? We argue that foreign debt composition is a key determinant of budgetary discipline. Our reasoning is based on a counterintuitive collective action logic. In the world of finance, we can think of a country's solvency as a collective good for global creditors. Steady debt repayment benefits all creditors, no matter their size or stake in the borrower's financial affairs. However, when a borrower flirts with default, we argue that ownership dispersion among international creditors can have an important effect on a government's policy autonomy.

We propose that bankers are the types of creditors most likely to provide their debtors with a financial backstop. Their willingness to inject new money into their debtors reflects the nature of bank lending, which is characterized by a small, centralized pool of creditors with high concentrated exposures to their borrowers. As a result of the high exposure, the return on their investments is directly linked to debtors' financial health. If they were to cut financing fully, it would likely accelerate their debtors' road to economic turmoil. By keeping borrowers afloat, these centralized creditors are safeguarding their own balance sheets from profitability shocks. However, the promise of new funds allows debtors to veer from calls for the budget discipline that is often embedded in loan agreements. Ironically, our theory suggests that being able to solve a collective action problem leaves bankers with less sway over debtor government policies.[4]

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[4]Our theoretical priors about potential moral hazard in sovereign bank lending are in line with the IMF literature about the hazards of defensive lending (Ramcharan 2001; 2003; also see Dreher, Marchesi, Vreeland 2008) and the finance literature on the benefits of international portfolio diversification (Fabozzi and Modigliani 1992; French and Poterba 1991; also see Mosley 2003).

In contrast to bank lending regimes, we surmise that collective action failures are more common in global bond financing, given its ownership dispersion among creditors. When credit risk is channeled across such a large pool of financiers, creditors not only reduce their exposure to borrowers, but also their stake in their financial futures. They hold too small a share of borrowers' debt exposure to warrant providing new funds. These predictions are in line with Olson's collective action theory, which claims that large, heterogeneous groups often experience coordination failures (Olson 1965). Group members, with low personal stakes in the collective good, often prefer to survive without it than pay their share. However, collective action failures typically impede groups from pressuring governments. In this case, decentralized creditors benefit from their coordination problem; it indirectly increases their influence over debtor governments. If countries do not demonstrate commitment to policies that ensure debt repayment, bondholders can cut their financial ties without incurring a severe profitability shock. Hence, our theory suggests that compared to vested bankers, bondholders' credible threat to cease new funding allows them to more crudely impose austerity demands.

In addition to this general effect, our theoretical reasoning anticipates that elections intensify the disciplining effect of bond market indebtedness. In line with previous political business cycle models, we expect that information asymmetries between the government and the people can often lead to political budget cycles, or spending increases before elections. However, we argue that such electoral cycles are also conditional on the government's foreign debt structure.

The mechanism underlying this conditional effect is the same as non-election years, but is magnified by the political uncertainty surrounding elections. Investors are often wary of elections because they create political uncertainty, or potential changes in political leadership or economic priorities. However, bondholders are better equipped than vested bankers to respond to such uncertainty through their capital exit threat. Their low concentration of debt holdings allows them to swiftly withdraw their capital without incurring steep losses from bad investments. By comparison, bankers' concentrated debt exposure makes an election-timed unwinding of their financial linkages difficult to achieve without seriously disrupting their own bottom line. Notwithstanding political uncertainty, they are thus more likely to continue their lending to keep a country afloat than decentralized bondholders, leaving governments with more room to maneuver.

This theoretical logic implies that during periods of political uncertainty, governments must raise interest rates on new public debt to draw new investments from globally decentralized bondholders. The higher cost of capital constrains politicians from using deficit spending before elections. If governments do not meet bondholders' expectations for disciplined policies that reduce the chance of payment disruptions, they

risk precipitating capital exit and a destabilizing economic shock. Politicians still operate according to the standard electoral logic, assuming voters respond to economic conditions, but their incentives change when their governments are deeply indebted to global bond markets. Facing the threat of capital exit, the political impetus to protect voters from negative income shocks can be as strong as boosting their incomes, making politicians more likely to adopt economic discipline to appease bondholders.

To summarize, our theoretical argument suggests that greater ownership dispersion among global creditors - most typically characterized by a bond financing regime - should decrease budgets deficits generally, and reduce macroeconomic cyclicality around elections.

Empirical Tests

To evaluate our theoretical priors systematically, we translate them into the testable hypothesis:

H1: A shift to decentralized bond finance (characterized by greater ownership dispersion) will lead to improved fiscal balances, with a particularly strong effect in election years. Relative to a centralized finance regime (characterized by high creditor concentration), such a shift will also lead to a decrease in inflation and economic growth during election years.

To test our hypothesis, we journey to Latin America, a region that is ideally suited for our analysis because it offers significant variation in public debt composition. Throughout the 1970s and 1980s, large banks had provided the majority of cross-border capital flows to the region (Frieden 1987). The 1990s Brady Restructurings converted this commercial bank debt, which many countries had defaulted on during the 1980s debt crisis, into market-traded debt held by a diversified group of global investors. These restructurings helped fuel a surge in Latin American bond issuance, which soon replaced commercial bank loans as the region's primary funding source (see Figure 1).

How did this dramatic change in debt financing affect creditors and debtors in Latin America? Before these restructurings, creditors often injected new money into their debtors during hard economic times. For example, when Mexico ignited the 1982 debt crisis by announcing a 90–day debt moratorium, a small core of global bankers collectively responded by providing new loans to the region rather than cutting financial ties.[5] By comparison, after the Brady restructurings, creditors had redistributed risk across a large decentralized pool of financiers, making the region more susceptible to sudden capital withdrawals.

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[5]To protect their investments, banks embedded IMF conditionality into these loan agreements (Vreeland 2003; Nelson 2015).

Recall that to prevent such outflows, we expect governments to exhibit greater discipline generally, and particularly during election years. Political business cycles may still exist when countries have a low level of global bond indebtedness. However, as global bonds account for a higher share of government debt – relative to alternative external financing sources such as bank lending – we should be less likely to observe political business cycles. In the rest of this section, we will test this proposed explanation more rigorously.

Model Specification

Specifically, we operationalize our hypothesis (H1) with the following dynamic panel model specification, which has lags of both the dependent and independent variables. We choose a lagged dependent variable to both account for the influence of past economic performance on present economic conditions, and to help eliminate residual serial correlation. From a theoretical macroeconomic perspective, the lagged dependent variable is a fundamental part of the specification because it captures potentially long fiscal policy lags. While fiscal policy may rapidly affect the economy through automatic stabilizers (i.e government spending increases because of recession-driven government benefits like unemployment insurance), its effect can also be slow because of implementation delays due to the political process (Mankiw 2012). For this reason, standard model specifications in the political budget cycle literature typically employ a lagged dependent variable (see Brender and Drazen 2005; Shi and Svensson 2006).

Lagged independent variables were also used, based on the assumption that many of the economic variables included in the model do not have an instantaneous effect on the outcome variable, and may be distributed across more than one time period (Keele and Kelly 2006 and DeBoef and Keele 2008). However, we did include contemporaneous values for those international economic variables – including global growth, terms of trade, and trade openness – that are primarily expected to affect fiscal and economic outcomes within the current year because of high global interdependence (see control variables discussion).

$$Y_{it^k} = \alpha + \beta_1 Elections_{it} + \beta_2 d_{it} + \beta_3 Elections_{it} * d_{it}$$

$$+\beta_4 X_{it} + \beta_5 X_{it-1} + \gamma_1 Y_{it^k,t-1} + n_i + \varepsilon_{it} \tag{1}$$

where Y_{it^k} =economic indicator; where $k = a, b, c$ with a = fiscal balance, and b = inflation, and c = GDP growth; where $Elections_{it}$ = election variable; where d_{it} = the share of decentralized bond

finance relative to total external public debt; and $Elections_{it} * d_{it}$ = the interaction between decentralized financing and elections. The index i = country and t = year. X_{it} = vector of control variables; X_{it-1} = lagged independent variables; and $Y_{it^k, t-1}$ = economic dependent variable (one year lag). The term n_i = dummy for each country, intended to capture unobserved country effects, while ε_{it} = error term.

To test the hypotheses, we focus on the coefficients on $Elections_{it}$, d_{it} (decentralized bond finance), and in particular, the interaction terms between these variables. A positive coefficient on the interaction term, when the government's fiscal balance is the dependent variable, would provide support for the hypothesis that decentralized finance improves fiscal balances (i.e. narrows budget deficits or bolsters budget surpluses) before elections. Similarly, a negative coefficient when inflation/growth is the dependent variable would confirm the hypothesis that bond financing has a deflationary electoral effect.

Methodology

We present our findings using both fixed effects and generalized methods of moments (GMM) estimators. Our empirical results are consistent across both types of estimation procedures, lending support to our hypothesis. We first employ a fixed effects model to address unit heterogeneity (Green et. al. 2001) given the expected country-specific differences in the time-series cross-sectional (TSCS) data. Moreover, the results of a Hausman test also favors a fixed effects over a random effects specification, rejecting the null hypothesis ($\chi_1^2 = 51.2$) that both methods of estimation are consistent.

A potential problem with the fixed effects specification is that the lagged dependent variable will lead to biased parameter estimates (Nickell 1981). The problem is thought to be especially severe in micro-panel data where the T is quite small. In political science datasets like ours with a T of 20 or more, scholars have found that the potential bias from using a fixed effects estimator in these regressions is likely to be quite small (Keele and Kelly 2006; Wilson and Butler 2007, and Beck and Katz 2011).

Nonetheless, to further account for potential Nickell bias, as well as the possibility of endogeneity, we estimate our model using the differenced-GMM estimator introduced by Arellano and Bond (Wawro 2002; Roodman 2009). We varied the lagged dependent variable across the regression models based on macroeconomic theory. In the fiscal policy models, we included 1 lag of the dependent variable, assuming that fiscal policy tends to have an effectiveness lag of about six-months (Mankiw 2012). By comparison, in the growth/inflation regressions, we use 2 lags of the dependent variable, based on the assumption that growth and inflation will also reflect monetary policy decisions, which tends to affect the economy more

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incrementally than fiscal policy, with lags typically lasting as long as 18 months (Mankiw 2012).

The differenced-GMM estimation strategy uses first differences to transform the regressors and remove the fixed-country effect. It then instruments the differenced variables that are not strictly exogenous with all their available lags in levels in order to eliminate potential bias. In our main results presented in Table 1-3, we assume that endogeneity is only present in the lagged dependent variable. That said, we also conducted additional robustness checks in the online appendix (see Table A.6) where we assume that several control variables are predetermined, or possibly influenced by past disturbances despite their independence from current errors. We suspect that the non-contemporaneous variables from our models (public debt, interest rates, fiscal balances, the output gap, inflation, growth, and unemployment) are prime candidates for such feedback. Finally, the use of first-differences corrects for autocorrelation by instrumenting the first-differenced lagged dependent variable with its past levels (Mileva 2007).[6]

The empirical analysis proceeds in two stages. First, we use a series of basic regression models to test for the traditional political business cycle, presenting evidence about the effect of elections on government budgets and core macroeconomic indicators: inflation and growth. Second, in the crux of the analysis, we analyze the impact of decentralized debt on fiscal policy and the economy; in addition to the direct effect, we condition decentralized debt on elections to evaluate its effect during election years. Fixed year effects were tested and removed since they were not statistically significant and did not affect the main results. In the online appendix, we include data sources and descriptive statistics.

Data

Latin America is an ideal setting to examine the effect of sovereign debt structure on electoral business cycles because of the region's dramatic structural shift in its external debt composition discussed above. The Brady Bond restructurings converted bank loans to market-traded debt, but also transformed sovereign creditors from a handful of large banks to gaggles of globally-dispersed bond market investors (see Figure 1). By testing our hypothesis in Latin America, we can observe how such changes in foreign debt composition affect government's policy behavior both generally and during election periods. Latin America is also a fitting environment to examine political business cycles, given the region's predominance of presidential systems.

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[6]We also replace the lagged dependent variable model with an AR(1) fixed effects specification in the online appendix to address potential autocorrelation (Table A.4). However, we believe the lagged dependent variable model is more theoretically appropriate because of the presence of fiscal policy lags, its standard usage in the economics literature on political business cycles, and our concerns that the exclusion of the lagged dependent variable would lead to omitted variable bias.

The presence of election-timing that is fixed avoids endogeneity problems with the election variable,[7] or the possibility that current economic conditions reflect political tinkering with election dates.

We base our empirical tests on a panel of data covering 16 democratic countries in Latin America from 1961-2011. We included all Central and South American democracies with available public finance and debt statistics (see Table A.3 in the appendix). Employing the dataset, we can observe how Latin America – a region that has struggled with a high average external debt burden historically[8] – governed through considerable financial volatility beginning with the 1982 debt crisis and through the most recent global crisis. We also adjudicate between our theoretical priors about debt structure and the effect of IMF conditionality using a variable that measures whether a country participated in the IMF-led Baker Plan, a debt restructuring that called for austerity and predated bond market securitization.

Data Description: Independent Variables

Elections According to political business cycle theorists, politicians' desire to maintain office compels them to aggressively intervene in the economy. We thus employ country years as the unit of analysis in order to examine the effect of democratically competitive elections on the economy. We classify elections based on whether there is electoral alternation (Przeworksi et. al. 2000), using the coding from Cheibub, Gandhi, and Vreeland (2010). We study presidential rather than legislative contests because historically Latin American economic policy is more strongly influenced by the executive than by other public actors.

Employing this classification, we code a total of 139 contested presidential elections that span the entire dataset from 1961 to 2011 (see Figure A.1 in the appendix). Autocratic years are excluded from the sample, unless they immediately precede a democratically contested election, based on the assumption that the eventual alternation implies there was "a real possibility for the opposition to win and assume office" (Przeworksi et. al. 2000) during the electoral campaign. Nonetheless, despite its historical volatility in regime type, the region has enjoyed considerable durability in democratic regimes over the last three decades. Even in the prelude to Latin America's 1978 democratic wave, several countries had long periods of uninterrupted democracy characterized by successive elections, including Chile, Colombia, Costa Rica, and Venezuela.

After classifying these democratic elections, we then constructed a binary variable, $Election_{it}$, as a pre-

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[7] To confirm that the election variable is exogenous (and that the incumbent did not disregard the constitution by changing election timing), we verified that the election dates in our time series corresponded to constitutionally mandated election dates.

[8] Public external debt in Latin America has averaged about 41 percent of GDP since 1961, a level that is considered well above "safe" for many emerging market countries (Reinhart, Rogoff, and Savastano 2003).

election dummy for fiscal stimulus and growth, but as a post-election dummy for inflation. We employ the separate post-election dummy variable to account for the expected lag between economic policy decisions and inflation. According to macroeconomic theory, monetary policy affects the economy incrementally, with inflationary pressures often mounting between a half year and a year and a half (Friedman 1970). Fiscal policy may also have a lag as discussed earlier in the paper. Given such potential lags, we use the post-election dummy to track inflation both during the election year and subsequent years.

$$pre\_election_{it} = \begin{cases} 1 \text{ in the election year, and the preceding N-1 years} \\ \\ 0 \text{ otherwise, where N=2 or 3} \end{cases}$$

$$post\_election_{it} = \begin{cases} 1 \text{ in the election year, and the subsequent years} \\ \\ 0 \text{ otherwise} \end{cases}$$

Decentralized Bond Debt To test our theory, we construct a variable, $Bondfinancing_{it}$, that measures a government's total global bonds outstanding (or foreign currency bond debt held by foreign creditors) as a share of its total external financing. To classify global bonds, we used two main criteria: the residence of the creditor and the currency denomination of the debt. We derived the measure from external public debt statistics published by the BIS, IMF, OECD, and the World Bank that reflect commitments that are owed by a sovereign nation to foreigners, or non-residents. Notably, however, these global bond commitments are also typically issued in foreign currency to mitigate credit risk – in fact, about 99 percent of this external debt in Latin America has been denominated in foreign currency historically.[9]

We study external bond financing because it is less stable during distress, exposing public debt managers to funding shocks (i.e. higher borrowing costs stemming from foreign bondholders sales during economic and financial downturns) that constrain government budgets. Several countries within Latin America have been attempting to mitigate such external financing pressures by deepening local currency debt markets. However, notwithstanding these efforts, external financing still accounted for about two-thirds of total public debt in Latin America in the 2000s[10] and more than three-quarters of public debt historically.[11] Even with the growth of secondary markets (and the potential diversification of the investor base), the foreign currency denomination of this debt (compared to other forms of public debt) can increase economic volatility, making it more difficult to conduct countercyclical macro-economic policies (Hausmann and Panizza 2003, 2011).

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[9]Calculated from the World Bank's International Debt Statistics and the Historical IDB Debt Dataset (HIDD).
[10]Calculated from Historical IDB Debt Dataset (HIDD).
[11]Inter-American Development Bank 2013.

Control Variables We control for a variety of global economic factors, domestic economic variables, and institutional factors that may affect national fiscal balances, growth, and inflation. As past economic performance influences present economic conditions, we also include a lagged dependent variable. Finally, we use a slightly different set of controls for the fiscal policy and growth/inflation regressions, as we expect different factors to be important for different outcomes

When employing national fiscal balances as the dependent variable, there are several standard control variables that are unique to such regressions. They are an output gap (*Domestic output gap*) and an unemployment rate (*Unemployment*) – both lagged by one year – to control for a country's position in its economic cycle. By comparison, inflation is not lagged to account for a potential Olivera-Tanzi effect, where high inflation contemporaneously erodes tax receipts, and hence, budgetary accounts in developing countries. In addition, we use a domestic interest rate variable (*Interest rate*) – also lagged by one year – to account for longer-term fluctuations in the cost of credit that tend to ease or tighten budgetary constraints, and a measure of constraints on executive power (*Executive constraints*) based on the assumption that budgetary cycles are less common when presidents confront greater checks and balances.

In all of the regressions, we also use a series of control variables to account for alternative factors beyond the structure of finance that may influence the economy. First, we control for the global growth (*Global growth*), given that our sample includes many small open economies. Because many Latin American countries are dependent on primary commodity exports, we also include a country's terms of trade position (*Terms of trade*) in our regressions to account for international commodity volatility. We also control for economic openness, employing a measure of imports plus exports as a percentage of GDP (*Trade*).

In general, we expect global fluctuations in growth, trade, and commodities to show relative fast dynamics, influencing domestic budget balances, growth, and inflation primarily in the current year. We also include a lagged measure of overall external indebtedness (*External debt*) to control for its effect on fiscal policy and the economy. In a series of robustness checks, we instead control for total public indebtedness (*Total public debt*) and debt service (*Debt service*) to account for the influence of a government's total indebtedness (beyond the external sector) and its debt servicing schedule on fiscal and economic outcomes.

Some other control variables are exclusive to the growth and inflation regressions. We control for the primary fiscal balance as a percentage of GDP (*Fiscal balance*)—lagged by one year to avoid any possible endogeneity—based on the assumption that fiscal stimulus drives both economic growth and inflation. We use the primary fiscal balance (net of interest payments on public debt) rather than the general government

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balance (inclusive of interest payments) because it is the more appropriate measure of the government's fiscal policy stance in highly-indebted countries. When economic growth is the dependent variable, we also control for the rate of domestic investment as a percentage of GDP (*Domestic investment*) because investment is often a key engine of growth. In addition, we include the inflation rate (*Inflation*) – lagged one year – to control for the effect of price instability on growth. When inflation is the dependent variable, we include annual GDP growth (*Growth*) – lagged one year – to account for its effect on price cyclicality. We also employ M2 as a percentage of GDP – lagged one year – as a proxy for financial sector size (*Domestic financial depth*), assuming that nations with stronger financial systems tend to have lower inflation.

Finally, to account for institutional factors that may affect budget balances, growth, and inflation, we add several control variables in our robustness checks, including measures of IMF participation (*IMF*), left partisanship (*Left governments*), legal central bank autonomy (*Central bank independence*), and the exchange rate regime (*Exchange rate*). The central bank autonomy measure was ultimately not included in the regression results because it assigns numerical values to countries that do not vary over time, making it indistinguishable from the country dummies already incorporated in the model. To control for the potential fiscal and economic effect of other more rigid exchange rate anchors, we also created a binary dummy variable for hard exchange rate pegs (*Hard pegs*) such as currency board or dollarization arrangements.

Empirical Results

The first series of basic regression models display the unconditional effects of the independent variables on budget balances and the economy. These effects are unconditional in that they ignore the government's debt structure at the time of elections, which in the regressions means the interaction variables between elections and bond financing are omitted. We find evidence that primary budget deficits deteriorate more during elections than other time periods. In fact, the coefficient on the election variable is negative and statistically significant (see model 1 in Table 1). These results are consistent with empirical studies that have found a political deficit cycle both in Latin America and developing economies more generally.

Does such fiscal tinkering have an effect on the macroeconomy? Perhaps, governments increase deficit spending to target political supporters with public works projects or salary increases before elections, but do not provide sufficiently large stimulus to affect the broad economy. For example, the OECD literature finds evidence of pre-electoral fiscal stimulus, but no significant increase in aggregate economic activity before elections (Drazen 2001). We find a similar pattern. Despite the appearance of a political deficit cycle, there

is no evidence that elections stimulate Latin American economies. The election coefficients for both the *inflation* and *growth* regressions are negative and only statistically significant in the case of inflation (see model 1 in Tables 2-3).

We find considerable support for a general bond financing effect on policy making and inflation control. Across the first two basic regression models, the bond-financing coefficient exhibits a statistically significant relationship with both governments' budget balances and inflation. In other words, a greater reliance on global bond financing corresponds to improved budget balances (narrower budget deficits or higher budget surpluses) and lower inflation.[12]

Finally, the control variables results indicate that the coefficient for global growth is statistically significant across all of the unconditional models (Tables 1-3). Global growth is associated with improved budget balances, higher domestic growth, and moderate inflation. In line with expectations, interest rates and executive constraints are negatively and positively correlated with budget balances respectively, and terms of trade gains and higher domestic investment appear to boost economic activity.

Does this estimated impact of bond financing differ between election and non-election years? Our theory suggest that the cyclicality around elections should decrease as governments become more dependent on decentralized bond markets. In the conditional regression models (models 2-8 in Table 1), decentralized bond finance has a strong and statistically significant mitigating effect on budget deficits during election periods, lending support to our primary hypothesis.

Figure 2a shows the marginal effects of these conditional models. When countries have little or no exposure to global bond markets, elections have a negative and statistically significant effect on budget balances. Elections tend to increase government budget deficits by as much as 1.1 percent of GDP (see Table 1), confirming the expectations of the political budget cycle literature.

Notably, however, as global bonds outstanding account for a growing share of external financing, this statistically significant relationship considerably narrows in magnitude (see Figure 2a). For instance, when bonds comprise about two-fifths of public external debt, government budget deficits shrink by about one-half of 1 percent of GDP compared to election years where governments have little or no bond financing. With greater bond indebtedness, fiscal austerity becomes even more acute. For countries where global bonds account for four-fifths of a country's external financing, average deficits narrow by about 1 percentage point

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[12]By contrast, we do not find a statistically significant relationship between bond financing and growth, which supports the findings that budget policy and inflation are among the most scrutinized factors by international investors (Mosley 2003).

of GDP compared to election years where governments have little or no bond debt outstanding.

For example, during the 1999 elections, the Chilean government expanded its global bank loans to help finance a traditional fiscal expansion (its budget surplus decreased by 1.9 percent annually from 1998 to 1999), notwithstanding its long-history of budgetary rectitude. The regression estimates above imply that increasing Chile's bond indebtedness to Argentina's 1999 level could have led to a more than 1 percentage point improvement in fiscal balances, erasing much of Chile's electoral expansion. Indeed, Argentina also had presidential elections that year, but its central government averaged a more subdued fiscal deficit of 0.3 percent of GDP annually from 1998 to 1999.

In line with our theoretical framework and empirical hypothesis, bond indebtedness appears to promote budgetary discipline in highly indebted countries. Does it also have a disciplining effect on the economy during election periods? The conditional models (see Tables 2 and 3) examine this relationship. The regression results show that bond finance has a statistically significant and strong moderating effect on inflation and growth during elections. In other words, the higher a country's share of bond financing, the less likely its politicians are to craft a high growth, high inflation election cycle.

The coefficients for the control variables generally correspond to expectations (Tables 1-3). Global growth continues to be associated with improved budget balances, higher domestic growth, and moderate inflation. As expected, domestic investment is also positively related to domestic growth. Finally, when the primary fiscal balance (lagged by one year) is a control variable; its coefficient has a statistically significant relationship with both inflation and growth, but in a negative and positive direction respectively. In other words, a narrower budget deficit is associated with lower average inflation and higher growth.

To extract a meaningful relationship between bond financing and elections, we can calculate the marginal effects of elections over different values of decentralized bond finance. In Figures 2b and 2c, we observe that as global bond markets account for a higher share of government financing, the moderating effect of elections on inflation and growth not only becomes greater in magnitude, but is also more precisely estimated. These results provide considerable support for our theoretical framework and empirical hypothesis.

Robustness Checks

In a series of robustness checks, we found that the correlation between decentralized financing and the economy is markedly resilient. First, we repeated the statistical tests just described using the Arellano-Bond GMM first-difference estimator to help mitigate concerns about both (Nickell) bias resulting from the

lagged dependent variable, and the possibility of reverse causality in the independent variables. Overall, the GMM results support the governing hypothesis that the relationship between elections and the economy is contingent on decentralized finance. Elections occurring under bond financing are positively correlated with government budget balances, but negatively correlated with inflation and growth (see models 6-8 in Tables 1-3). Notably, for the fiscal policy model, the Arellano-Bond test for the GMM-estimators presents no significant evidence of serial correlation in the first-differenced errors at the second order ($p = .485$). The Sargan test also suggests that the model has the correct specification and that the overidentifying restrictions are valid ($p = .131$). For further details, please see Table A.5 in the online appendix, which has the p-values of the specification tests for all of the GMM regression models. Importantly, the incorporation of predetermined variables (public debt, interest rates, fiscal balances, the output gap, inflation, growth, and unemployment) does not materially change the principal results (see Table A.6). Notably, the findings also remain robust when we instead assume that these same regressors are endogenous.

We also inserted several additional control variables - including the exchange rate regime, left partisanship, and the existence of an IMF program - into the original models to account for the potential influence of institutional factors on government budgets and the economy. None of these additional controls significantly changed the size, direction, or statistical significance of the key results (see models 2-5 in Tables 1-3). The coefficients for exchange rate regimes and hard pegs are statistically insignificant, but notably, they are negative and strong in magnitude for hard pegs. While we are unable to reject the null hypothesis that the type of exchange rate regime has no effect on fiscal policy, higher deficits remain a possibility under the most extreme exchange rate regimes like currency board and dollarization arrangements.

The coefficient for left partisanship has a statistically significant and positive relationship with fiscal balances. While left governments are typically expected to have a proclivity to spend, this finding suggests that they may be more likely to adhere to a deficit-constraint in a capital-dependent region like Latin America where left governments must often signal their good economic governance to global creditors.

Notably, the statistically significant IMF coefficients in Table 1 suggest that governments under IMF programs tend to improve budget balances, but IMF programs alone do not appear to be a sufficient condition for austerity. Before the 1990s' debt securitizations that developed Latin American bond markets, the Baker Plan variable captures the years where an IMF-led sovereign debt restructuring was in effect (see model 4 and 5 in Tables 1-3). Embedded with conditionality agreements, these restructurings should make narrower fiscal deficits more likely if an IMF agreement alone was a sufficient condition for budget discipline. The

Baker Plan coefficients, however, are statistically insignificant, suggesting that we cannot reject the null hypothesis that IMF programs during the Baker years had no effect on budget balances. At the same time, we should also expect inflation control to be more likely under IMF programs. While the Baker Plan coefficient is statistically significant, its positive sign suggests that average inflation tended to be higher during these years. These findings support scholarship that has found that Latin American governments exhibited low rates of compliance with their IMF programs during the 1980s (Haggard 1985; Edwards 2001). This relationship appears to change in the 1990s as bonds comprise a larger share of sovereign debt, when both bond finance and IMF agreements are strongly correlated with budget discipline. Hence, our work does not rule out the possibility that conditionality *may* lead to more fiscal discipline, but it does show that the magnitude of its effects depends on the structure of government debt.

Notwithstanding these findings about the importance of debt composition, might the size of a country's total public debt itself be an important driver of austerity? Based on the assumption that austerity-inducing capital flight is more likely with a foreign rather than domestic investor base, we initially include total public external indebtedness as a percentage of GDP as a control variable in our analysis. In additional robustness checks, however, we also control for the more encompassing measure of total public (both external and domestic) debt as a percentage of GDP to account for the influence of a government's total public indebtedness on fiscal policy and the economy. In this regard, we also account for the size of a government's debt service (repayment of principal and interest) to ensure that the results were not simply a product of a country's debt servicing schedule. The negative and statistically significant coefficient on debt service suggests that inflation control is more likely when a country has higher debt repayments. However, neither total public indebtedness nor debt service's incorporation into the model materially changes any of the principal results with regard to debt composition and elections (see models 5-8 in Tables 1-3).

We expect that high indebtedness should at least be a basic prerequisite for electoral austerity. While Latin America's average total public indebtedness has fallen considerably in recent years, from a peak of 86 percent of GDP in the 1990s to 51 percent in the 2000s,[13] its external debt component continues to hover at about 28 percent of GDP, a level that is well-above the 15 percent threshold that is considered "safe" for many emerging market countries.[14] In fact, neither total public debt nor external public debt has averaged 15 percent of GDP in Latin America since the 1960s.

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[13] Reinhart and Rogoff 2010.

[14] Reinhart, Rogoff, and Savastano 2003 find that "safe" debt thresholds are as low as 15 percent of GNP.

For this reason, we re-analyzed the statistical models dropping any observations with external public debt below the 15 percent threshold (and later below more conservative thresholds of 20 and 25 percent). We did the same exercise for total public debt to ensure that those countries with sustainable debt levels are not influencing the results (i.e. public debt in Chile averaged a paltry 9.7 percent of GDP in the 2000s). Importantly, the coefficients on the interaction effects do not change sign but are greater in magnitude; strengthening the initial positive relationship between decentralized finance and election-year budget balances, and negative relationship between decentralized finance and the economy (model 7 in Tables 1-3).

We also conduct a series of robustness tests to ensure that the one-time structural shift in sovereign debt composition from bank lending to bond holding is not primarily responsible for the observed variation in fiscal policy and the economy. In the online appendix, we split the sample and re-estimate our results before and after the completion of this financing shift in 1995 (models 2 and 3 in Table A.7-A.9). We also add fixed year effects (see model 4 in the same tables), and a Brady bond restructuring variable[15] (see model 5) to account for the temporal effect of this financing change. We find that the primary results are generally robust, with greater bond market indebtedness mitigating budget deficits, inflation, and growth around elections.

As a final robustness check, we modified the structure of the binary election variable to account for longer/shorter-than-expected policy lags between economic decisions and inflation. Our theory predicts that when bonds account for a large share of external debt, we should observe a deflationary effect not only in the election year, but also the subsequent year. To account for a potentially even-longer monetary policy lag, we varied this lag structure by adding second year to the binary election variable. We also shifted the election variable to capture the possibility of a shorter policy lag by tracking inflation patterns that predate the electoral campaign. These robustness tests did not yield any material changes.

Discussion

When countries have weak institutional transparency and few executive constraints, political economy theory expects to observe an electoral expansion. But, why might we instead observe austerity? We have shown that the global financialization has profound effects on domestic politics. When politicians from highly-indebted countries rely on decentralized bond markets (rather than centralized lending), they often exhibit more fiscal discipline, which is particularly strong during election periods.

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[15]We develop a Brady Bond restructuring variable that captures the initial change in debt stock due to these restructurings (where *Brady* is equal to 1 in the restructuring year and subsequent year to account for potential implementation lags; and 0 otherwise).

For example, Peru – a country marked by a decade-long flirtation with authoritarianism earlier in the 1990s – held only five democratic elections between 1963 and 2011. Featuring still-fledgling institutions, the incumbent president, Alan García, oversaw a more than 2 percentage point increase in the primary budget surplus (as a percentage of GDP) in the two years before the 2011 elections. Why would García – who was no stranger to hefty government expenditures during his first presidency in the mid-1980s – engage in such austerity when he was intending on making another presidential bid?[16]

During García's first presidency in the 1980s, commercial banks were Peru's main creditors (loans from banks and official creditors accounted for nearly four-fifths of the country's debt). Without a credible exit threat from their lending relationships, they helped underwrite election-oriented deficit spending. By the time García had returned to office in 2006, Peru had become highly reliant on global bond markets for its budgetary financing – with international loans accounting for a paltry 0.3 percent of total debt financing. Under bond financing, García turned to electoral austerity in 2011 in response to the threat of capital flight from investors who feared a return of fiscal largesse.

Does the relationship between debt financing and electoral behavior simply reflect Latin America's unique circumstances, where the Brady Restructurings transferred debt ownership from bankers to bond-holders, or might these patterns also hold in other highly indebted regions? In particular, might our results help us better understand contemporary events? To glean some insight into these questions, we can look outside of our sample to Southern Europe. Not only has the recent financial crisis generated tremendous interest among scholars, policy-makers and the general public, but it has brought the question of fiscal re-sponsibility to the forefront of European relations again. Fiscal responsibility was initially a centerpiece of the Eurozone convergence criteria, which mandated limits on government borrowing and national debt, in the prelude to the 2001 dawn of the monetary union. However, the sovereign debt difficulties at the heart of the 2009-10 Eurozone crisis have underscored the lack of fiscal responsibility during the euro's first decade.

In the wake of the crisis, these debt difficulties have catalyzed Southern Europe's adoption of austerity policies, despite running counter to many of its incumbent governments' ideological and political roots. One often cited reason for the region's turn toward austerity has been coercive pressures from Europe's troika of international creditors: European Commission, the European Central Bank, and the International Monetary Fund. Our analysis brings a new set of considerations to the austerity question, suggesting that the structure of sovereign debt financing may also be an important determinant of economic policy choices.

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[16]Presidents are constitutionally banned from immediate reelection, but García plans to run for reelection in 2016.

To illustrate, let us briefly journey to the Iberian Peninsula, home to Spain and Portugal, two nations that share a common characteristic with the Latin American experience: they have become reliant on external financing, and specifically global bond markets to fund their government deficits. Notwithstanding this similarity, investors have often considered Latin America and Southern Europe to be institutionally and developmentally distinct (Mosley 2003). As members of the European Union and the European Monetary Union, Spain and Portugal have benefited from a sound institutional framework that allowed them to readily attract capital. Investors deemed that such established democracies with a history of stable economic governance were relatively free from default risk. By contrast, Latin America – a highly indebted region with a less developed institutional infrastructure – often struggled to overcome investor concerns about its legacy of debt crises. If we find that high bond indebtedness is also a precursor to austerity in Spain and Portugal, two countries that are institutionally very different from Latin America, it suggests that our central findings about high bond market indebtedness may generalize beyond Latin America.

In the years leading up to the Eurozone crisis, bond indebtedness accounted for an average of 91 and 98 percent of total external debt in Spain and Portugal respectively between 2007 and 2009, with the remainder comprised of international bank loans. With such high bond market indebtedness, our theory anticipates that the dilution of creditor ownership would have induced austerity in response to capital outflows – or threats of capital outflows – and increasing interest rates on public debt. As expected, the capital outflows generated by the crisis were associated with higher interest rates. By the end of 2010, the average 10-year yield spread over comparable German bonds in Spain and Portugal reached 249 and 364 basis points, relative to a mere 5 and 16 basis point spread during 2006. Facing these funding pressures, the Spanish and Portuguese authorities narrowed their primary budget deficits by 2.0 and 0.5 percentage points during 2010.

In addition to this generalized effect, we also observe pronounced electoral austerity in these two countries during their 2011 elections. This pattern is particularly surprising given that socialist parties were governing in both countries. In Spain, the incumbent PSOE party faced fervent protests against austerity from its political base, including the trade union movement. In Portugal, Prime Minister José Sócrates (PS) resigned in March 2011 after failing to secure approval for a new fiscal austerity package that featured social spending cuts that were unpopular with many of his supporters within his own party. In light of these domestic pressures, why would these socialist governments have pursued austerity before new elections?

We present a possible explanation. Their high bond indebtedness made both governments susceptible to capital flight. During 2011, capital flight contributed to both Spanish and Portuguese bonds yields surging

further by mid-year, and crossing the six percent threshold considered by investors to be sustainable in both countries. Facing these deteriorating credit conditions, Spanish Prime Minister and Socialist Party leader (PSOE) José Luis Rodríguez Zapatero announced a fiscal adjustment package in spite of the upcoming November elections.[17] The prime minister also controversially capped regional government spending by decree and introduced a constitutional amendment mandating strict deficit and debt limits. Notwithstanding the resignation of Portuguese Prime Minister Sócrates over his unpopular austerity measures earlier in the year, the entire campaign before Portugal's June elections centered around austerity negotiations, and Portugal also cut its fiscal deficit in the spring of 2011 in hopes of assuaging its creditors.

In summary, there is little trace of the political business cycle during these two elections. While a full analysis of Southern Europe's recent experience is well beyond the scope of this paper, the electoral pattern in Spain and Portugal in 2011 is not only consistent with our theoretical expectations, but also other Southern European countries. Like in Portugal and Spain, Greece's high levels of bond indebtedness (accounting for 95 percent of total external debt) made the country vulnerable to capital flight at the onset of the 2009 sovereign debt crisis. As market investors lost confidence in Greece's ability to repay its debt, their capital exit catalyzed a vicious cycle of interest rate shocks and credit downgrades (with the government's funding rates reaching 900 basis points higher than 10-year comparable German bonds) that compelled the Greek government toward more than 9 percentage points of fiscal austerity between 2009 and 2012, including about 1.6 percentage points of belt-tightening during the 2012 election year.

Importantly, the Greece case allows us to examine the effects of a structural shift in sovereign financing in the European context. Greece's historic 2012 debt restructuring altered its debt composition, dramatically cutting private bond holdings by more than two-thirds, leaving official public creditors saddled with about 80 percent of its debt. However, similar to the experience of Latin American bankers during the 1980's debt crises, these centralized creditors had greater difficulty compelling the Greece government to accept substantial austerity compared to the period of decentralized market finance prior to the 2012 debt restructurings. Greece's primary fiscal deficit narrowed by a mere 1 percentage point of GDP between 2012-2015, limited in part by some 2015 election-year fiscal drift that included higher salary and pension spending.

Without the capital exit threat created from creditors' ownership dispersion, fiscal discipline was less acute. We do not claim that this entire change can be explained by our theory, given that several concurrent

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[17]Reverse causality is unlikely to be a problem, given that Zapatero introduced the fiscal austerity package on August 19th, well-after he had called for an early election on July 29th.

factors (including political pressures within and beyond the Eurozone) may have also been affecting Greece's fiscal position. However, the change in fiscal balance following the debt restructurings is consistent with our theoretical priors. Similar to the Portugal and Spain cases, the Greece case suggests that the effect of bond market indebtedness on public spending choices may not be unique to Latin America.

Conclusion

We have examined how a reliance on external financing can affect the economic policy choices of highly indebted governments. Compared to those countries that have little or no foreign debt, highly indebted governments are less insulated from the international investment community. With fewer resources to draw on domestically from less-developed tax bases and capital markets, many cash-strapped nations have little choice but to raise financing internationally. In exchange for funds, debtor governments are typically required by their creditors to pursue fiscal restraint to increase the likelihood that their debts are repaid. Whether we observe fiscal discipline, however, is often conditional on a country's external debt structure.

We have developed and tested a theory that shows that deficit spending declines with the greater dispersion of creditor ownership that is characteristic of global bond markets. In other words, we expect that globally decentralized bond markets should have more of a disciplining effect on macroeconomic governance than other types of more centralized credit such as commercial banking.[18] In our cross-national test in Latin America – a region that, on average, has struggled with high external indebtedness – we find that governments whose global bond portfolios account for a greater share of their external debt are more likely to have narrower budget deficits. This effect holds generally, but is most pronounced during elections.

Our theoretical framework offers several future research opportunities. Moving beyond this setting, it would be interesting to explore the effect of recent legal changes in the global financial architecture. For example, the 2013 European Stability Mechanism has sought to insulate euro-area citizens from capital flight by mandating that all new sovereign bonds have collective action clauses. These clauses facilitate creditor-debtor negotiations by allowing a supermajority of bondholders to overrule holdout creditors, and as a result, lessen the likelihood of default. We have argued that greater magnitudes of creditors under bond financing catalyzes capital exit during hard times, necessitating more austerity to assuage creditor fears of default. However, if the adoption of collective action clauses helps forge a bondholder consensus, creditors

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[18]Aid flows, which are historically less prominent in Latin America, may also be an important form of centralized credit in other regions such as Africa (see Winters 2010 and Dietrich 2013 for more details).

may behave more like centralized bank lenders, making capital exit and ultimately austerity less likely.

A related and important question is how litigation from 'holdout creditors' – as observed in Argentina and Greece[19] – might mitigate such an effect. These holdout creditors typically refuse to accept negotiated bondholder settlements, demanding that their borrowers repay them fully. Fearing that consensus-driven restructuring efforts will create a new precedence, they prefer to uphold the legal tradition that governments cannot renege on their contracts with individual creditors. If such litigation strategies become more common, they could threaten to dilute creditor coordination and intensify bondholder exit, as each creditor holds out for a better deal. Not only might default become more likely, but governments might be forced to take even more onerous actions to curb capital exit. For example, during the first half of 2014, the Argentine government had expended tremendous political and financial capital demonstrating its commitment to market governance in hopes of returning to global capital markets.[20] Caught by surprise when the U.S. Supreme Court refused to hear its July 2014 appeal, the Argentine government opted for a technical default rather than comply with a US district court ruling demanding that it repay its holdout creditors. It feared that paying some holdouts could spark a cascade of claims from other bondholders that could surpass US$15 billion, potentially depleting the nation's dollar reserve funds meant to protect against future financial instability. Argentina preferred to find new alternative financing sources, including a US$11 billion currency swap agreement with China,[21] than risk such capital reversals.

These examples suggest that our theoretical framework could be fruitfully extended in several ways. We have shown that global ownership diffusion can plague creditor coordination and breed austerity in countries with high bond indebtedness. By exploring the effects of other dimensions of the international financial architecture beyond ownership dispersion, such as the legal evolution of bond contracts, we can gain a better understanding for creditor-debtor relationships, and ultimately for thinking about how the structure of global finance may affect future sovereign crises.

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[19]Hedge funds, such as Elliott Associates and Dart Management, have used litigation strategies to circumvent participating in Argentina and Greece's creditor restructurings in 2005/2010 and 2012 respectively.

[20]Over the last year, the Kirchner government has attempted to restore its credibiliity wiith international investors by repaying its long-standing Paris Club arrears and compensating the Spanish energy company, Repsol, for the government's YPF expropriation.

[21]For more details on China's increased role in global finance, see Steinberg 2014 and McDowell and Liao 2014.

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Table 1: The Effect of Elections on Fiscal Balances (16 Latin American Countries)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	FE	FE	GMM	FE	FE	GMM	GMM	GMM
Elections	-0.675***	-1.041***	-1.052***	-1.068***	-1.082***	-1.096***	-1.159***	-1.068***
	(0.169)	(0.314)	(0.300)	(0.302)	(0.324)	(0.305)	(0.308)	(0.299)
Bond Financing	1.388**	0.990*	1.020**	1.109*	1.140*	1.213**	1.044**	0.840
	(0.511)	(0.465)	(0.471)	(0.555)	(0.608)	(0.593)	(0.505)	(0.592)
Elections*Bonds		1.149*	1.164*	1.191*	1.219*	1.247*	1.281**	1.181*
		(0.651)	(0.617)	(0.647)	(0.692)	(0.650)	(0.636)	(0.616)
Global Growth	0.315***	0.328***	0.330***	0.319***	0.318***	0.321***	0.246***	0.327***
	(0.095)	(0.091)	(0.087)	(0.091)	(0.094)	(0.089)	(0.061)	(0.083)
Terms of Trade	0.261	0.270	0.273	0.261	0.268	0.263	0.234	0.263
	(0.268)	(0.252)	(0.256)	(0.237)	(0.240)	(0.240)	(0.233)	(0.230)
Inflation	0.477**	0.445*	0.443**	0.449**	0.434*	0.438**	0.402*	0.335
	(0.215)	(0.235)	(0.222)	(0.207)	(0.222)	(0.209)	(0.217)	(0.210)
Output Gap (t-1)	0.049	0.030	0.029	0.038	0.036	0.039	0.038	0.037
	(0.039)	(0.041)	(0.038)	(0.044)	(0.048)	(0.046)	(0.041)	(0.042)
Interest Rate (t-1)	-0.321*	-0.317*	-0.320**	-0.305*	-0.303*	-0.302**	-0.264	-0.252**
	(0.161)	(0.150)	(0.144)	(0.145)	(0.161)	(0.153)	(0.170)	(0.126)
Unemployment (t-1)	-0.056	-0.075	-0.080*	-0.083*	-0.083	-0.087*	-0.086*	-0.087*
	(0.045)	(0.047)	(0.045)	(0.047)	(0.050)	(0.048)	(0.051)	(0.049)
Ext. Public Debt (t-1)	-0.003	-0.003	-0.003	-0.003				
	(0.002)	(0.002)	(0.002)	(0.002)				
Total Public Debt (t-1)					-0.002	-0.002	-0.002	
					(0.002)	(0.001)	(0.002)	
Debt Service (t-1)								0.010
								(0.034)
Fiscal Balance (t-1)	0.400**	0.383**	0.380***	0.380**	0.372**	0.371***	0.347***	0.370***
	(0.137)	(0.130)	(0.125)	(0.129)	(0.133)	(0.125)	(0.127)	(0.124)
Income (t-1)	-2.713***	-3.229***	-3.288***	-2.825**	-2.732**	-2.708***	-2.181*	-2.257***
	(0.919)	(0.935)	(0.864)	(0.984)	(0.995)	(0.909)	(1.293)	(0.677)
Exec. Constraints	0.234**	0.274***	0.286***	0.267***	0.240**	0.249***	0.219**	0.255***
	(0.103)	(0.088)	(0.085)	(0.084)	(0.084)	(0.080)	(0.105)	(0.072)
Left Governments		0.582**	0.548**	0.595**	0.514*	0.491*	0.465	0.510**
		(0.238)	(0.229)	(0.225)	(0.273)	(0.256)	(0.292)	(0.256)
IMF Program				0.429*	0.433*	0.445**	0.518**	0.402*
				(0.229)	(0.237)	(0.223)	(0.212)	(0.240)
Baker Plan				0.194	0.152	0.164	0.090	0.194
				(0.627)	(0.637)	(0.608)	(0.697)	(0.659)
Exchange Rate					0.019	0.001	-0.032	0.063
					(0.119)	(0.119)	(0.137)	(0.132)
Hard Peg					-0.389	-0.423	-0.654	-0.274
					(0.517)	(0.519)	(0.529)	(0.472)
Observations	375	375	357	375	363	345	326	345
R^2	0.38	0.39		0.40	0.39			

Standard errors in parentheses

FE=Fixed effect models, cluster-robust standard errors. GMM=GMM estimator, first differences and robust standard errors.

The differenced-GMM model employs all of the available lags in levels of the lagged dependent variable as instruments.

Note: Model 7 drops any observations with public debt below the 15 percent of GDP safe debt threshold.

$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table 2: The Effect of Elections on Inflation (16 Latin American Countries)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	FE	FE	GMM	FE	FE	GMM	GMM	GMM
Elections	-0.089**	0.010	0.002	-0.008	0.000	-0.013	-0.014	-0.030
	(0.041)	(0.066)	(0.061)	(0.062)	(0.065)	(0.063)	(0.066)	(0.059)
Bond Financing	-0.903**	-0.760**	-0.774**	-0.573**	-0.519*	-0.555**	-0.645**	-0.479*
	(0.334)	(0.319)	(0.311)	(0.259)	(0.266)	(0.258)	(0.307)	(0.247)
Elections*Bonds		-0.353*	-0.343**	-0.333*	-0.365**	-0.346**	-0.391**	-0.349**
		(0.172)	(0.173)	(0.170)	(0.171)	(0.169)	(0.181)	(0.155)
Global Growth	0.059**	0.062***	0.067***	0.048**	0.047**	0.052***	0.050**	0.055***
	(0.020)	(0.020)	(0.018)	(0.021)	(0.021)	(0.018)	(0.020)	(0.018)
Terms of Trade	0.315*	0.319*	0.287**	0.294*	0.254*	0.233**	0.251**	0.263**
	(0.162)	(0.156)	(0.132)	(0.147)	(0.128)	(0.112)	(0.123)	(0.113)
Trade Openness	0.001	0.001	0.001	-0.000	0.000	0.000	-0.001	0.000
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Financial Depth (t-1)	0.010*	0.009*	0.008*	0.009	0.008	0.008	0.013***	0.006
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Fiscal Balance (t-1)	-0.038***	-0.038***	-0.037***	-0.042***	-0.048***	-0.047***	-0.049***	-0.041***
	(0.007)	(0.007)	(0.007)	(0.006)	(0.007)	(0.006)	(0.006)	(0.006)
Growth (t-1)	0.004	0.004	0.008***	0.002	0.001	0.004	0.002	0.004
	(0.005)	(0.005)	(0.003)	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)
Ext. Public Debt (t-1)	-0.000	-0.000	0.000	-0.000				
	(0.000)	(0.000)	(0.000)	(0.000)				
Total Public Debt (t-1)					-0.000	0.000	0.000	
					(0.000)	(0.000)	(0.000)	
Debt Service (t-1)								-0.037*
								(0.021)
Inflation (t-1)	0.802***	0.802***	0.918***	0.777***	0.770***	0.855***	0.814***	0.868***
	(0.035)	(0.035)	(0.076)	(0.035)	(0.035)	(0.061)	(0.069)	(0.056)
Inflation (t-2)			-0.135*			-0.099*	-0.074	-0.087
			(0.072)			(0.053)	(0.060)	(0.072)
Left Governments				0.067	0.044	0.040	0.043	0.035
				(0.102)	(0.117)	(0.109)	(0.112)	(0.099)
IMF Program				-0.106	-0.135	-0.140*	-0.154*	-0.083
				(0.085)	(0.089)	(0.084)	(0.088)	(0.069)
Baker Plan				0.489***	0.496**	0.500***	0.520***	0.506***
				(0.164)	(0.178)	(0.162)	(0.160)	(0.149)
Exchange Rate					0.029	0.031	0.058*	0.027
					(0.039)	(0.034)	(0.032)	(0.035)
Hard Peg					-0.287	-0.258	-0.207	-0.266
					(0.247)	(0.214)	(0.204)	(0.221)
Observations	432	432	414	432	415	397	370	399
R^2	0.82	0.82		0.83	0.83			

Standard errors in parentheses

Inflation=log(CPI)

FE=Fixed effect models, cluster-robust standard errors. GMM=GMM estimator, first differences and robust standard errors.

The differenced-GMM model employs all of the available lags in levels of the lagged dependent variables as instruments.

Note: Model 7 drops any observations with public debt below the 15 percent of GDP safe debt threshold.

$^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

Table 3: The Effect of Elections on Economic Growth (16 Latin American Countries)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	FE	FE	GMM	FE	FE	GMM	GMM	GMM
Elections	-0.029	0.513	0.505	0.540	0.666*	0.664*	0.723**	0.563
	(0.325)	(0.384)	(0.374)	(0.376)	(0.378)	(0.361)	(0.360)	(0.357)
Bond Financing	0.445	1.162	1.069	0.526	0.801	0.774	1.363	0.821
	(1.456)	(1.471)	(1.368)	(1.594)	(1.607)	(1.473)	(1.650)	(1.406)
Elections*Bonds		-1.765*	-1.727**	-1.810*	-2.185*	-2.171**	-2.216**	-1.977**
		(0.849)	(0.801)	(0.895)	(1.068)	(0.985)	(1.030)	(0.979)
Global Growth	0.444***	0.428***	0.428***	0.468***	0.456***	0.456***	0.464***	0.469***
	(0.105)	(0.102)	(0.096)	(0.101)	(0.103)	(0.098)	(0.098)	(0.094)
Terms of Trade	0.066	0.042	0.018	0.091	0.274	0.265	0.311	0.144
	(0.287)	(0.285)	(0.275)	(0.246)	(0.300)	(0.279)	(0.290)	(0.225)
Trade Openness	0.024	0.022	0.023*	0.026*	0.010	0.011	0.007	0.013
	(0.014)	(0.014)	(0.013)	(0.013)	(0.017)	(0.016)	(0.017)	(0.015)
Domestic Investment	0.143***	0.145***	0.143***	0.144***	0.149***	0.149***	0.149***	0.146***
	(0.033)	(0.033)	(0.030)	(0.032)	(0.033)	(0.031)	(0.031)	(0.029)
Fiscal Balance (t-1)	0.116**	0.113*	0.116**	0.121**	0.111**	0.111***	0.111***	0.112***
	(0.054)	(0.054)	(0.049)	(0.047)	(0.038)	(0.036)	(0.032)	(0.040)
Inflation (t-1)	-0.102	-0.097	-0.112	-0.021	-0.030	-0.036	-0.030	-0.009
	(0.216)	(0.217)	(0.218)	(0.201)	(0.197)	(0.193)	(0.201)	(0.182)
Ext. Public Debt (t-1)	0.000	0.000	0.000	0.000				
	(0.002)	(0.002)	(0.001)	(0.002)				
Total Public Debt (t-1)					0.001	0.001	0.001	
					(0.001)	(0.001)	(0.001)	
Debt Service (t-1)								0.007
								(0.046)
Growth (t-1)	0.216***	0.219***	0.224***	0.221***	0.228***	0.229***	0.222***	0.226***
	(0.051)	(0.051)	(0.044)	(0.051)	(0.049)	(0.044)	(0.044)	(0.044)
Growth (t-2)			-0.024			-0.007	-0.013	-0.009
			(0.042)			(0.036)	(0.037)	(0.036)
Left Governments				-0.456	-0.447	-0.444	-0.556	-0.440
				(0.372)	(0.385)	(0.357)	(0.388)	(0.360)
IMF Program				0.135	0.174	0.170	0.048	0.171
				(0.282)	(0.274)	(0.260)	(0.253)	(0.267)
Baker Plan				-1.566**	-1.568**	-1.557***	-1.588***	-1.490***
				(0.578)	(0.589)	(0.550)	(0.536)	(0.486)
Exchange Rate					0.201	0.202	0.274	0.204
					(0.252)	(0.238)	(0.244)	(0.233)
Hard Peg					0.522	0.524	0.528	0.481
					(0.963)	(0.915)	(0.944)	(0.917)
Observations	386	386	370	386	371	355	338	356
R^2	0.56	0.57		0.58	0.59			

Standard errors in parentheses

FE=Fixed effect models, cluster-robust standard errors. GMM=GMM estimator, first differences and robust standard errors.

The differenced-GMM model employs all of the available lags in levels of the lagged dependent variables as instruments.

Note: Model 7 drops any observations with public debt below the 15 percent of GDP safe debt threshold.

$^*p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

Figure 1: Bond Issuance Supplants Bank Lending
(16 Latin American Countries, Aggregate)