

The Political Economy of Sovereign Debt Issues ^{*}

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Draft. Comments welcome.

Abstract

How does domestic politics influence government access to international capital? We consider the strategic interactions in which government debt managers and potential investors coordinate on debt issues. While much of the existing literature assumes that risk premia on outstanding debt (or the cost of insuring against default on such debt) are the best way to measure the pricing of economic and political risk, we instead focus on the initial capacity of governments to issue debt in primary capital markets. First, we evaluate how sovereign debt markets react to regime type at the time of issuance. Second, we explore how governments strategically time debt issues around electoral cycles. Third, we highlight the role of global market conditions and risk appetites as a conditioning factor: when global liquidity is low, domestic political variables become more important determinants of market access. We test our predictions using a new dataset of 150,000 bond issues (1990-2015) made by 76 countries (excluding the United States). Our article generates new insights into the role of politics in shaping both the demand for and supply of sovereign debt. It also motivates a new research agenda that examines the trade-offs governments make when choosing when and how to issue debt.

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Introduction

International sovereign debt markets are churning all the time. In our data—covering over 150,000 bond issues by 76 countries from 1990 through 2015—the median national government issues 12 international bonds a year, in seven different months. From a political perspective, this heavy volume of borrowing is not difficult to understand: for politicians seeking to appease important constituents today while pushing the consequences of such actions to the future, few fiscal activities are more appealing than issuing sovereign debt. But while politicians may be willing to shift fiscal burdens to future generations, the market’s appetite for such lending is not infinite. Generally, governments issue sovereign bonds through open markets; institutional investors, central banks, commercial banks and others purchase these issues. Concerns about fiscal profligacy by politicians with limited time horizons ought to give pause to investors that buy sovereign debt; indeed, it may be in times when debt is most desirable for governments that it is least demanded by market actors.

Government debt management offices, as agents that take direction from politicians as principals, understand these constraints. Far from being passive participants when it comes to borrowing, government debt managers interact regularly with investment banks that underwrite debt; with institutional investors that purchase sovereign bonds; with debt managers in other countries; and with intergovernmental organizations. Debt managers practice a trade with certain standard operating procedures: they actively structure debt issues and terms, such as maturity and currency denomination, to both enable borrowing and minimize future vulnerabilities. They also are aware of the opportunities presented by flush global markets, and the constraints presented by global risk aversion. In contrast to their corporate counterparts, however, government debt managers’ strategies are shaped by politics. Opportunities and constraints on both the demand and supply side of sovereign debt are squarely subjects for political science.

In this article, we explore how political institutions and events shape government debt managers’ interactions with market actors. It is these interactions that determine governments’ capacity for and cost of borrowing and, therefore, their ability to implement their preferred fiscal and social policies. For governments in more precarious financial positions, interactions with markets also determine the ability to rollover existing debt and to avoid debt rescheduling or default.¹

¹Conceptualizing debt managers as strategic political actors fits with an important and growing literature that

Our analysis of debt manager-market dynamics identifies the important roles played by political institutions, election events and the state of global financial markets. We begin with the longstanding argument that democratic governments have advantages in sovereign debt markets and, specifically, that regime type matters for governments’ ability to access debt markets. Consistent with work that has found a “democratic advantage” in risk premia on outstanding (secondary market) debt, in sovereign credit ratings, and in the cost of insuring against debt default, we expect that democratic governments generally are able to issue new bonds more often and in greater amounts.

We argue, however, that the standard democratic advantage account ignores variation over time and space in the effect of political institutions on sovereign debt. Specifically, democratic elections generate temptations for governments and risks for potential buyers and may therefore disrupt debt issuance.² We consider two channels by which elections affect risk. First, the political business cycle creates incentives for a government to engage in pre-election fiscal expansion, and to do so via greater borrowing (rather than via taxation). Investors may worry that this pre-election spending will not enhance a government’s future capacity to repay its debt. Hence, pre-election periods may be marked by greater incentives to supply debt issuance, but also lower market demand for such bonds, given investors’ worries that pre-election fiscal profligacy will have deleterious effects on the broader macroeconomy and on the government’s future capacity for repayment. Investors, however, can estimate the extent of such risks when choosing whether to buy new debt. Second, pre-election periods can generate uncertainty for investors regarding the outcome of the contest. When they are uncertain over who will set future policy, it is difficult for investors to “price in” the risks associated with that policy. This effect should dissipate once the outcome is known. An important contribution of our article is therefore to specify the relationships between domestic politics and political risk in a much more dynamic sense than regime type-based accounts.

Further, global capital markets condition the relationship between domestic politics and sovereign debt. Because investors’ risk appetites vary according to the yield environment, the salience of risks—including those emanating from domestic politics—varies with international mar-

identifies government strategies around renegotiating debt and repayment in times of financial crisis. See, e.g., Ballard-Rosa 2016; Copelovitch 2010; Stone 2002; Vreeland 2003.

²On the impact of elections on secondary sovereign debt markets, see Bechtel 2009; Bernhard and Leblang 2006; Hardie 2006; Jensen and Schmith 2005; McMenamin, Breen and Muoz-Portillo 2016; Spanakos and Renno 2009.

ket conditions. In times of global capital liquidity, investors are more risk-tolerant and are incentivized to seek out higher returns. In contrast, global capital scarcity implies that investors are less risk-tolerant and more inclined to flee to (or remain with) the safety of low-risk assets. Scarcity is exemplified, typically, by the availability of higher returns in mature, stable markets. For instance, when U.S. Treasury bond rates are high, investors can find good returns in these relatively riskless assets and they need not tolerate the higher risk presented by many countries' domestic political institutions and events. This logic suggests that global market conditions are not merely a backdrop to sovereign debt issuance (nor a control variable in statistical models). Rather, riskier governments and their debt managers are more likely to find buyers with an appetite for new bond issues in times of global capital liquidity, while political risks become more salient as capital dries up. Our argument builds on an important trend in international political economy research, by theorizing around—rather than merely controlling for—the effects of global market dynamics.³

This article and the accompanying issue-level dataset hold promise for a new generation of research in the international political economy of finance, in which we understand governments as active players in their own strategies around international finance. Our focus here is on the timing of sovereign bond issuance as well as on the amount of debt issued. Of course, while sovereign bonds have been the most common form of government finance for the last two decades, governments choose whether to satisfy their borrowing needs via bonds, commercial bank loans, bilateral official credit, or multilateral official credit. Depending on their perceived creditworthiness, some governments may have more choice than others, so scholars would do well to consider how governments and their debt managers choose—or, in more extreme cases, have little choice—among forms of finance. Additionally, while the timing and amount of sovereign bond issuance are important elements of primary capital market operation, we recognize that debt managers' overall debt issuance strategies also include trade-offs among the price, maturity, and currency denomination of issues. We anticipate future work that analyzes the influence of both domestic political institutions and global market conditions on these trade-offs.

The article proceeds as follows. First, we explain debt issues on primary capital markets. We then present a set of hypotheses linking regime type and electoral competition, as filtered through global market conditions, to governments' debt issuance strategies. We introduce and

³See, for example, Brooks, Cunha and Mosley 2015; Chaudoin, Milner and Pang 2015; Mosley 2003; Oatley 2011.

utilize our new dataset of over 150,000 individual issues of sovereign debt from 1990 through 2015 to provide evidence. We conclude with opportunities for future research and reiterate that governments should be considered strategic actors in international capital markets, with their capacity to engage in preferred fiscal activity conditioned by the broader financial environment.

Primary Capital Markets

Scholars of sovereign debt have focused largely on the economic and political determinants of governments' overall cost of borrowing. These costs are usually captured by the risk premium on sovereign debt and measured in terms of secondary market interest rates on outstanding debt issues, or alternatively in terms of the costs of insuring against defaults.⁴ A focus on aggregate debt pricing in secondary markets, however, presents several analytical problems.

First, governments' actual borrowing costs are determined at the point of issuance, in the primary capital market (when a bond is initially issued). Secondary markets for government bonds often are active and liquid, and secondary market pricing does change as investors reassess risks related to specific assets. But changes in secondary market prices do not immediately affect governments' financing costs.⁵ Nor do changes in a country's sovereign credit rating immediately affect borrowing costs. It is only when governments re-enter the debt markets—with new issues—that we might expect the connection between primary and secondary markets to matter for governments.⁶ For example, a bond issued at 5 percent today, but trading at 7 percent next year, costs the government 5 percent in interest rate payments throughout its term. The 7 percent in secondary markets surely correlates with terms available in the primary market, but this is relevant only when a government decides to make a new issue in the primary market. The most accurate picture of how investors impose costs on governments therefore comes from evaluating primary capital markets: when are governments able to issue bonds, how much are they able to borrow, and at what cost?

Second, scholars of sovereign debt typically have not considered the process by which borrowing governments, underwriting agents and potential bond investors interact, despite the fact

⁴E.g., Longstaff et al. 2011; Pan and Singleton 2008.

⁵Changes in secondary markets have limitations in capturing cross-sectional, relative changes in financing costs as well. For example, not every country has a liquid market in the benchmark instrument (e.g. a ten-year domestic currency bond), nor does every country have comparable credit default swap (CDS) pricing.

⁶Along these lines, international financial institutions have identified the strategic timing around public debt management as central to preventing financial crises (*Revised Guidelines for Public Debt Management*, 2014).

that governments' debt management offices are strategic actors in primary capital markets.⁷ This contrasts with analyses of sovereign debt rescheduling and default, which treat governments as active and strategic participants. Additionally, as hinted at by legal scholarship on the specific contract terms that prevail in primary capital markets, government debt managers are not simply price-takers.⁸ Rather, following mandates from political officials, they attempt to access markets on terms that best match the guidance they receive from their principals. Some debt management offices, for instance, are asked to borrow in ways that minimize interest payments on public debt; others are asked to consider costs, but also to take into account the risks associated with borrowing short-term and/or in foreign currencies.⁹ One means of doing so is by strategically timing entry to primary capital markets.

A government's interest in new borrowing generally results from a gap between government revenues and desired government expenditures. Borrowing is especially attractive when funding fiscal transfers through increased taxation is politically perilous, such as in pre-election periods. While governments may borrow from various sources, including commercial banks and multilateral financial institutions, bond-based lending has dominated bank-based lending since the 1990s.¹⁰ Being active in international bond markets is attractive even to governments with fiscal surpluses, as they too seek to smooth expenditures, maintain liquidity in benchmark bond instruments, and (in the words of an attorney who works with issuing governments), "remind investors they exist."¹¹

Given a potential supply of sovereign bonds, investors active in primary capital markets must consider whether to purchase such bonds and at what price to do so. Investment banks typically underwrite sovereign (as well as corporate) debt issues, and they advise issuing governments' debt management offices on the market conditions they will face. Today, governments frequently move between underwriters or use a syndicate of underwriters for each issue.¹² While contempo-

⁷But see Gelos, Sahay and Sandleris 2011; Nieto-Parra 2009. This relative inattention contrasts with scholarly work that analyzes trade-offs around monetary (central bank) and fiscal (budgetary) institutions. See Bodea and Hicks 2015; Hallerberg, Strauch and von Hagen N.d.; Maxfield 1997.

⁸Bradley, Salvatierra and Gulati 2014; Weidemaier and Gulati N.d..

⁹Melecky 2007; Missale 2000; Nieto-Parra 2009. On debt managers' mandates, see Datz 2008; Melecky 2007; Wolswijk and de Haan 2005. Variation in debt managers' mandates underscores the importance of a country fixed-effects approach in our analysis. Incidentally, Colombia is famous among market players for having particularly skilled debt managers relative to its developing country peers.

¹⁰Campello 2015; Copelovitch 2010; Kaplan and Thomsson 2016.

¹¹Author interview, June 2016. For example, Israel is known to regularly issue debt in order to keep up an international presence, rather than to fill financing shortfalls.

¹²This contrasts with the pre-World War I era, in which issuing governments often had long-standing relationships with a specific underwriter (Flandreau et al., 2009).

rary underwriters earn a relatively small fee (between 10 and 25 basis points) for their sovereign debt work, sovereign underwriting is attractive because it often brings additional business from the country's corporate sector. Many governments also employ (often international) legal counsel, intended to mediate their relationship with investment banks and to ensure that the government's interests are well served. Law firms with practices in primary capital markets typically view this work as a gateway to other work with an issuing government, or with sub-national and quasi-sovereign entities in the issuing country. Additionally, in the wake of a successful issue by one government, underwriters often contact other governments' debt managers to encourage them to consider entering the market, reminding us that it is not only governments that have an interest in creation of new debt issues.¹³

Prior to a debt issue, the underwriter and the issuing government are in regular contact regarding the possibility of bringing a bond to market. Together, underwriters and government debt managers often make presentations to the investment community. These "road shows" allow debt managers to present information about the economic and political situation in their state and to gauge market demand for and concerns related to their state's sovereign assets.¹⁴ Road shows also facilitate the setting of the pricing and terms of new debt.¹⁵ Once a government debt manager and underwriter agree on an issue and its terms, the underwriter gathers potential buyers.¹⁶ On the day of issue, the underwriter buys the entire primary issue (typically at a small discount), and the underwriter then places the issue with investors, typically institutional investors, central banks, and, increasingly, sovereign wealth funds.¹⁷ A successful issue may be placed in an hour or less; for new or riskier sovereign borrowers, the marketing period may last a few weeks. Yet, despite these commonalities in the world of sovereign issuance, there exists substantial variation in the timing and frequency of bond sales by governments, as well as their size. What explains this variation?

¹³Devlin 1989.

¹⁴Debt managers and underwriters frequently use comparisons between countries to frame their information. For example, Slovakian debt managers explicitly compare the country to the Czech Republic and Belgium in recent "road show" sales pitches to potential investors.

¹⁵Because information relevant to sovereign risk is available from credit ratings agencies and other sources, underwriter efforts today provide less certification to potential bond purchasers than has been true historically (Flandreau et al., 2009).

¹⁶For offerings registered in the United States, underwriters are not permitted to take orders, but they can pre-arrange placement of the issue through "expressions of interest."

¹⁷Chwiero 2014; Datz 2008.

Theory

Governments and their debt managers are one half (the “sell side”) of primary capital markets for sovereign bonds. Government principals and their debt management agents are active parties to these transactions (in contrast, for instance, to situations in which governments regulate otherwise private market transactions).¹⁸ Governments, as debt issuers, must persuade profit-driven market actors to voluntarily underwrite and buy their debt. How do domestic politics and institutions affect investors’ interest in a government’s sovereign bonds? How does that relationship change if global markets are such that investors are willing to stomach more political risk?

We start by considering the incentives of agents in the market that buy initial issues of government bonds. One commonly-cited source of risk or advantage in international markets is a state’s regime type. A long literature argues that democracies generate fewer political risks and should therefore enjoy an advantage in sovereign borrowing, and scholars have identified several mechanisms that lead to a “democratic advantage.”¹⁹ For example, market actors might have an easier time evaluating political risks associated with a democratic regime,²⁰ and democratic leaders may rely less on sovereign debt as a source of “short-term political gain.”²¹ In addition, legislatures can limit executives’ fiscal profligacy²²—particularly when sovereign bondholders are directly represented²³—and voters can vote executives out in the event of a default.²⁴ Finally, democracies may provide better property rights protections and thus lessen the risk of their own default, thanks to higher constraints on executive power, greater institutional transparency, or judicial independence.²⁵ All of these mechanisms could contribute to investors’ beliefs that, all else equal, democratic governments are more likely to repay their debts. Certainly, democracy is not a perfect predictor of creditworthiness: scholars have identified situations in which default can provide

¹⁸One also might consider the interaction between heads of state and debt managers, as the two actors may not share the same views on debt issuance. In some countries, for instance, the debt management agency is structured as somewhat autonomous from elected officials, or is located in a politically independent central bank. In other countries, debt management is carried out within the treasury or finance ministry. Future work could consider how these varying institutional structures also affect debt issuance generally and choices over the parameters of debt specifically. In this article, we use country fixed-effects to compare within-country variation in issuance.

¹⁹E.g., Beaulieu and Saiegh 2012.

²⁰Campello 2015; Devlin 1989.

²¹DiGiuseppe and Shea 2016:342.

²²North and Weingast 1989.

²³Saiegh 2005; Stasavage 2011.

²⁴Schultz and Weingast 2003.

²⁵Cordes 2012; Hollyer, Rosendorff and Vreeland 2011; Biglaiser and Staats 2012.

electoral benefits to democratically elected governments.²⁶ And within democracies, differences in monetary, fiscal and electoral institutions can generate variations in perceptions of investment risk. Still, on balance, existing scholarship leads us to expect that, all else equal, democracies should be better able than their non-democratic counterparts to access primary capital markets.²⁷

Hypothesis 1. *More democratic states are more likely to issue sovereign bonds.*

While we expect the basic “democratic advantage” relationship to hold with respect to debt issuance, we posit that this claim ignores variation over space and time in the influence of domestic institutional structures on bond issuance.²⁸ We point to two sources of variation: global market liquidity and elections. First, research in financial economics indicates that investors’ risk preferences are not fixed over time, but rather vary systematically with the yield environment.²⁹ Investors’ attention to risk is often attenuated under conditions of abundant global capital liquidity, such as when interest rates on relatively riskless assets, like U.S. Treasury bonds, are low.³⁰ For example, Rajan shows that exceptionally low returns on U.S. Treasury bonds in the early to mid-2000s pushed investors to search for other sources of yield, even on opaque instruments like collateralized debt obligations.³¹ Similarly, low rates in developed markets in the 1970s led commercial banks to seek out higher returns by lending to developing country governments, setting the stage for the debt crises of the 1980s.

We argue that investors are more likely to take on political risk associated with sovereign bond issues—as yet another source of risk—in times of global capital liquidity. Conversely, if safe assets like U.S. Treasury bonds provide attractive rates of return, then global capital scarcity suggests investors are less compelled to take a chance on bonds issued by risky governments. Any democratic advantage should therefore increase with capital scarcity. Our argument is consistent with work that explores how the political economic effects of domestic factors are linked to, and

²⁶Ballard-Rosa N.d.; Saiegh 2005; Tomz 2004; Tomz and Wright 2013.

²⁷Note that this discussion of regime type focuses primarily on the ways in which democracy or autocracy may affect the demand by bond holders for sovereign issuances. While it is possible that regimes may differ in their need for borrowing, we follow Levi (1989) in conceptualizing rulers across regimes generally as revenue maximizers, subject to certain constraints.

²⁸Thus, we focus on variation in the democratic advantage rather than adjudicating across different mechanisms, although we include some consideration of mechanisms in the Appendix.

²⁹This work builds on the early insights of Minsky (1977) and Kindleberger (1978).

³⁰Note that the perception that U.S. bonds are safe suggests that the dynamics surrounding sovereign debt issuance by the United States are likely to vary from those in other states. It is for this reason that we exclude U.S. Treasury bonds from our dataset.

³¹Rajan 2011.

sometimes dependent on, attributes of the international environment.³²

Hypothesis 2. *As interest rates on U.S. Treasury bonds increase, the magnitude of the “democratic advantage” in sovereign bond issuance increases.*

In treating global risk appetites in this way, we go beyond work that includes a measure of systemic market conditions (such as a proxy for world interest rates) simply as a control variable. We do not merely wish to remove any independent effect of global conditions on our outcomes of interest. Rather, by arguing that risk appetite is a factor that mediates the influence of key political variables on investors’ behavior, we take seriously recent methodological critiques of international political economy and “open-economy politics.”³³

Beyond democracy in the aggregate, we argue that domestic electoral cycles in democracies have an effect on sovereign bond issuance. In many political economy applications, elections can be a source of risk.³⁴ Scholars have linked dynamics in secondary sovereign debt markets to election outcomes, such as Lula’s 2002 campaign for the Brazilian presidency or Mitterrand’s 1981 election victory and subsequent policy U-turn in France.³⁵ We consider two mechanisms by which elections may influence sovereign debt issuance: political business cycles and uncertainty over the election outcome.

Incumbents seeking re-election want to appease important constituencies by providing them with benefits, but this requires fiscal resources. If winning political support were free, or if governments could deficit spend without constraints, survival in office would be easy. Increasing government revenues in advance of elections is, however, a thorny problem. In particular, raising taxes before an election may constitute political suicide, and gutting some spending in favor of other projects will undercut support from the beneficiaries of foregone transfers.³⁶ In contrast, a government that is able to issue new sovereign debt on international markets can generate revenues today and push consequences to the future. Hence, political business cycles suggest an incentive to issue debt as an election approaches.³⁷ But rational investors understand government temptations in advance of elections. Spending in pre-election periods is more likely to be allocated based on

³²See, for example, Kindleberger 1978; Devlin 1989; Eichengreen and Mody 1998; Mosley 2003; Longstaff et al. 2011; Campello 2014; Brooks, Cunha and Mosley 2015; Reinhart, Reinhart and Trebesch 2016.

³³See, for example, Oatley 2011 and Chaudoin, Milner and Pang 2015.

³⁴Leblang and Satyanath 2006.

³⁵Bernhard and Leblang 2006; Campello 2015; Jensen and Schmith 2005; Hardie 2006.

³⁶For a formalization of this dynamic, see Ballard-Rosa N.d..

³⁷Nordhaus 1975; Hibbs 1977.

political motives and less likely to be aimed at generating broader macroeconomic growth (which would make sovereign debt repayment more secure). As such, investors may be less willing to buy bonds exactly when a government wants to issue them.³⁸ These supply- and demand-side dynamics occur simultaneously and might offset.

However, recall our expectation that the salience of investment risk varies with global capital liquidity. This variation allows us to leverage variation in returns on relatively riskless assets—in particular, U.S. Treasury rates—to identify times when we expect either the supply or demand side effects of elections to predominate. When U.S. Treasury bonds offer modest returns, investors will look for higher yields elsewhere. In so doing, investors will necessarily tolerate greater risks – including, we posit, the political risks generated by impending elections. Thus, the demand-side “penalty” for issuing in advance of impending elections should be attenuated when U.S. interest rates are low, and pre-election fiscal expansion through sovereign debt issuance should dominate. In contrast, when returns on U.S. Treasury bonds are high, investors can flee to quality while still earning significant returns. In such periods, international investors are less risk tolerant. In these times, the demand-side “penalty” for issuing in advance of impending elections should be more binding, and impending elections should deter bond issuance.³⁹

Hypothesis 3. *As interest rates on U.S. Treasury bonds increase, governments are less likely to issue sovereign bonds in advance of elections.*

We have outlined expectations over the issuance of new sovereign debt, considering issuance as a binary outcome. However, if some government debt managers spread a given amount of debt over several issues, while others elect to offer fewer, large issues, our binary issuance measure would be flawed. In fact, governments that issue more frequently in a given year also issue a greater amount in that year. This makes sense: underwriting institutions charge relatively low fees, suggesting that transaction costs around multiple issuances are not prohibitive. Further, debt managers’ standard operating procedures call for them to smooth the profile of maturing debt over time, which suggests issuing more debt in more bonds. Figure 1, drawn from our data, shows that

³⁸A further implication is that what new debt a government is able to issue should be relatively expensive. As described above, we focus on the decision to issue in this article and save trade-offs across terms (including price) for future work.

³⁹In Robustness and Extensions below, we examine partisanship, the closeness of elections, and the effect of elections versus the moment new governments are actually formed and take office. It appears investors are good at “pricing in” these kinds of specific political risks that accompany elections, and they do not disturb governments’ ability to issue debt.

the choice to issue debt is tightly linked with the amount of debt brought to market. Below, we confirm that our results are robust to a dependent variable measuring amount rather than issuance.

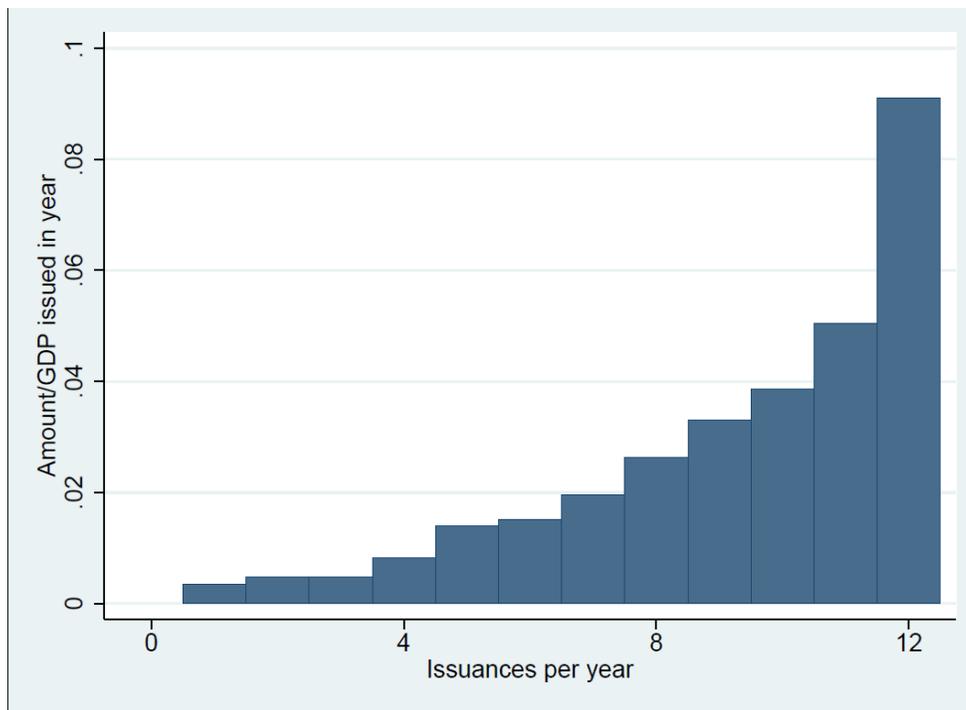


Figure 1: *Average amount issued in a year, by number of months issued.* This reports the distribution of the median amount issued by a country in a given year (in constant US\$), as a function of the number of months in that year in which the country issued sovereign bonds (1990-2015).

Data and Empirical Strategy

To investigate the political determinants of sovereign bond issuance, we compiled a new database containing approximately 150,000 individual issues, by 76 states, of central government bonds on international markets during the period covering 1 January 1990 through 31 December 2015.⁴⁰ We exclude the United States from the dataset as its sovereign debt plays an important role in making markets for other sovereign issuers (emphasized in our hypotheses above). The unit of analysis in the raw data is an individual issuance. In some cases, a security is simply issued once.⁴¹ In other cases, a government chooses to “reissue” or “tap” securities, which means that a government

⁴⁰Data were compiled from Bloomberg terminals. See Appendix for the list of issuing states.

⁴¹For example, on 20 May 2005, Austria issued a sovereign bond valued at US\$62.8 million. There is a corresponding entry in the database reflecting this bond and its key characteristics.

raises money by issuing additional debt through an existing security.⁴² As the responsiveness of “tapped” bonds to political institutions and events is less clear-cut than in the case of fresh issues, in this article we focus on the subset of bonds that are newly issued, although our primary findings are not driven by this theoretically-informed parsing of the data.⁴³

It is worth noting that, in addition to the theoretical justification for considering primary issues of debt—as the most direct measure of financial market influence on governments’ operating costs—there also are empirical ones. Secondary market measures of sovereign risk premia typically require comparable instruments, such as a benchmark (ten-year maturity, domestic currency-denominated) government bond. But many countries, especially outside the OECD, do not issue this standard instrument. Some analyses attempt to overcome this limitation by instead using government bond indices, especially various forms of J.P. Morgan’s EMBI Index, or by considering the pricing of credit default swaps (CDS). These measures also suffer, however, from significant selection bias: only developing countries with a sufficient stock of outstanding bonds are eligible for inclusion in the EMBI; similarly, CDS instruments typically exist only when there is sufficient market demand for them. Therefore, while primary bond issuance data no doubt suffer from some selection effects—not every sovereign state worldwide has the capacity or creditworthiness to issue international bonds—our data represents a far broader swath of sovereign borrowers than existing studies.

In our data, the median government issues about 12 new bonds per year.⁴⁴ Governments occasionally issue several bonds at the same time or within days of each other, at different prices or with different terms. This is because government debt managers may direct their underwriters to place a set of bonds across a cross-section of investors with different risk appetites. In this article, we consider the determinants of issuance and not of terms; therefore, we treat such groupings of bonds as a single entry to the market. To do so, we collapse the database such that the unit of analysis is the presence or absence of any sovereign bond issue(s) on international markets by country-month. The average government issues new sovereign bonds in 7 months of the year (with

⁴²The reissued bond retains the same name, ISIN number, maturity date, and coupon rate as the original issuance. For example, Austria issued a sovereign bond on 14 January 2000. The government reissued the same bond on 7 March 2000, and then several more times thereafter.

⁴³Results available from the authors.

⁴⁴The amount of bonds issued is subject to outliers at the upper end: the mean number of bonds issued per year in our data is 40.

a standard deviation of 5). Figure 2 reports the distribution of the number of months a country issues sovereign bonds within a particular year.

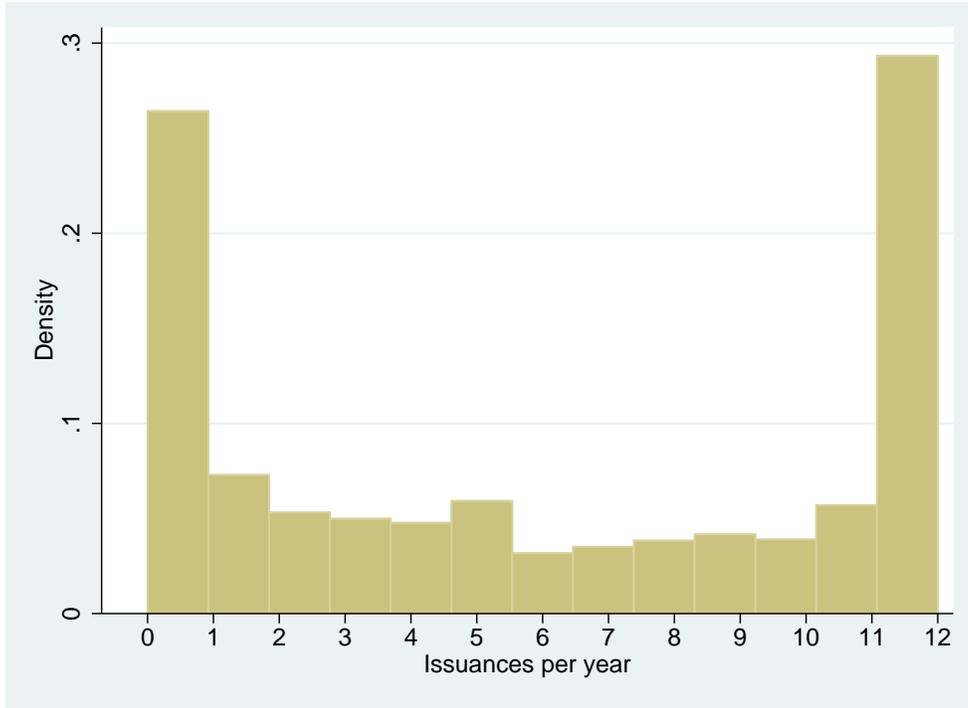


Figure 2: *Distribution of number of months with issuance per year.* This reports the distribution of the number of months a country issued a new (untapped) sovereign bond(s) in a given year (1990-2015).

Our first political covariate of interest, *Democracy*, is the one-year lag of a country’s PolityIV score (-10 to 10). This continuous measure of democracy allows us to detect marginal differences arising from gradations of political liberalization, in addition to providing more room for variation within countries over time.⁴⁵ To capture the effects of elections on bond issuance, we created a dummy variable *Impending election* that takes a value of 1 if an election for the head of government or a national legislative election will occur in the next calendar month.⁴⁶ We are interested in meaningful elections in democratic systems, so we code and analyze elections only in our democratic subset of countries.⁴⁷ All told, there are 504 country-months with an election in our sample.

To proxy for global capital liquidity, we use *US Treasury*, the interest rate on U.S. 10-year

⁴⁵Nonetheless, given the debate over whether democracy is a difference of kind rather than degree, we report results with a dichotomous measure in the Appendix. Przeworski et al. 2000.

⁴⁶In Robustness and Extensions below, we break this variable down into executive or legislative elections, in parliamentary or non-parliamentary systems. Data on legislative and executive elections, as well as parliamentary institutions, from the Database of Political Institutions (DPI).

⁴⁷Here, we employ a binary classification of democracies following Magaloni and Min (2013).

constant maturity Treasury bonds. For our time sample, interest rates on U.S. Treasuries ranged from 1.5% to nearly 9%; the median interest rate over our period was approximately 4.7%, and nearly a quarter of our observations are above 6%.

We include a set of covariates to account for other determinants of sovereign bond issuance. Most importantly, a country’s economic health is likely to influence the perceived attractiveness of its debt. We introduce a baseline series of macroeconomic controls, including *GDP per capita*; *GDP growth (annual %)*; and the *Chinn-Ito index* which controls for a country’s openness to international capital.⁴⁸ Trade imbalances are another determinant of sovereign borrowing, so we include the *Customs balance (% GDP)* as the (nominal) customs balance scaled by (nominal) GDP.⁴⁹ Additionally, current and potential investors may grow increasingly wary of countries with large outstanding debt burdens, as this is likely to constrain future finances, so we include *Public debt (% GDP)*.⁵⁰

Work in political economy suggests that international investors may suffer from informational overload and therefore resort to heuristics to guide their investment decisions.⁵¹ One heuristic is the idea of “peer group” effects.⁵² We expect that, as more peers issue bonds, members of the peer group should be assessed more positively and thus be more likely to issue bonds themselves. In order to identify the relevant set of peers for a given country, we use market categories of Developed, Emerging, Frontier, or unrated (MSCI).⁵³ The *MSCI peer issuance* variable is the one-month lag of the proportion of countries in that category (excluding the country in question) that have issued debt in a given month.

In our full specification, we account for a number of additional potential determinants of sovereign debt issuance. A country’s exchange rate regime may affect issuance via its impact on currency risk, so we include both the dummy *Pegged XR* that equals 1 if the exchange rate is fixed as well as *Change in XR index* to identify month-on-month exchange rate movements.⁵⁴

⁴⁸All variables are lagged one year unless otherwise noted. From WDI, Chinn and Ito 2006.

⁴⁹This is available quarterly (and thus lagged one quarter) from IHS Global Insight.

⁵⁰Abbas et al. 2010.

⁵¹Brooks, Cunha and Mosley 2015; Gray 2013; Gray and Hicks 2014; Mosley 2003.

⁵²Gray 2013. The existence of peer group effects suggests that sovereign debt markets are not necessarily efficient and that investors’ ideas regarding appropriate policies and institutions can also affect governments’ borrowing costs. Amstad and Remolona 2016; Chwioroth 2009; McNamara 2002; MacKenzie 2006; Sinclair 2005.

⁵³Countries’ categorizations can change over time. The Frontier category began in 2008. We avoid losing observations by assigning all countries not otherwise categorized to an “unrated” category. Results are robust to dropping observations of unrated countries.

⁵⁴From IHS, Shambaugh 2004.

Commodity exporters might have different borrowing needs at different times, so we include *Oil rents (% GDP)*.⁵⁵ Additionally, a country’s ability to issue debt is clearly affected by economic crisis. We include a dummy capturing whether there is an *IMF program in place*,⁵⁶ a measure of inflation as captured in monthly changes in consumer prices (*Change in CPI*),⁵⁷ and a dummy *Sovereign default* that equals 1 if a state is in default in a given year.⁵⁸

We endeavor to robustly account for time trends. First, we include *Issued this year*, under the presumption that a government that has already issued in a given calendar year will find it easier to issue again (although their need to issue likely declines). Second, we include *Quarter of the year*. Interestingly, market actors recognize that sovereign debt tends to be issued earlier in the calendar year, all else equal: corporations’ fiscal years typically are off-cycle relative to the calendar such that governments issuing early face less competition for investors’ attention. Sovereign issues early in the year also set a financing cost benchmark for later corporate debt offerings by entities within a given state.⁵⁹ Finally, in order to account for the possibility of evolving dynamics in sovereign debt markets as a function of the passage of time, we include linear and quadratic time trends.

As is standard with binary outcomes like ours, we use a probit regression on our panel data, with country-fixed effects, time controls, and standard errors clustered by country to account for within-unit serial correlation.⁶⁰ Unless otherwise specified, all covariates are lagged one period, based on data availability.

Results

We present evidence in support of our hypotheses in stripped-down estimations, with baseline controls, full controls, and taking into account our expectations about the conditional effects of global capital liquidity.

⁵⁵From WDI.

⁵⁶Dreher 2006.

⁵⁷From IHS.

⁵⁸Valencia and Laeven 2012. Note that, while Gelos, Sahay and Sandleris (2011) find that default does not matter for access to bond markets, Tomz (2007) argues that the reputational consequences of default are likely to limit subsequent market access.

⁵⁹Author interviews, May 2016. These are further indicators that debt managers and underwriters in sovereign debt markets are strategic and should be treated as such.

⁶⁰Table 11 in the Appendix demonstrates that we find very similar results when employing ordinary least squares (OLS) instead of probit.

Starting in column 1 of Table 1, we see that in a simple regression of sovereign bond issuance on democracy we recover evidence of the “democratic advantage” in issuance – the coefficient on democracy is positive and statistically significant. This effect does not disappear when we introduce our baseline set of macroeconomic controls in column 2, nor when we include our full battery of covariates in column 3, suggesting a consistently strong and positive effect of democracy on sovereign bond issuance.

[Table 1 about here.]

Yet, our Hypothesis 2 suggests that the importance of democratic regimes for assuaging concerns over political risk varies with global capital market conditions. Column 4 introduces the U.S. Treasury interest rate and interacts this term with democracy. Note that, as expected, the direct effect of a higher U.S. Treasury rate is to depress sovereign issuance on average, as a higher U.S. rate should translate generally into higher costs to borrowing. Importantly, we find strong support for our conditional hypothesis that the perceived benefit of democracy is mediated in an environment of a high U.S. rate and relative global capital scarcity. In this specification, the direct effect of democracy becomes statistically insignificant.

To interpret the marginal effect of democracy, conditional on the prevailing U.S. Treasury rate, we plot the estimated marginal change in the probability a country issues a sovereign bond resulting from a one-unit shift in its Polity score, holding all other covariates at sample means. As can be seen in Figure 3, while increases in Polity are associated with a significant increase in the probability of issuance when interest rates are high, this effect is statistically indistinguishable from zero during periods of global capital scarcity.⁶¹ We take this as support for our argument that the advantages provided by a democratic regime type depend on the degree to which investors take political risks into account. Further, the “democratic advantage,” when it exists, is not trivial. For example, when U.S. Treasury rates are 7%, moving from a full autocracy (-10) to a full democracy (10) increases the likelihood of issuance by approximately 40%.

⁶¹Recall that about one-quarter of observations of in the period have a US treasury rate about 6%, around which the effect becomes positive and significant.

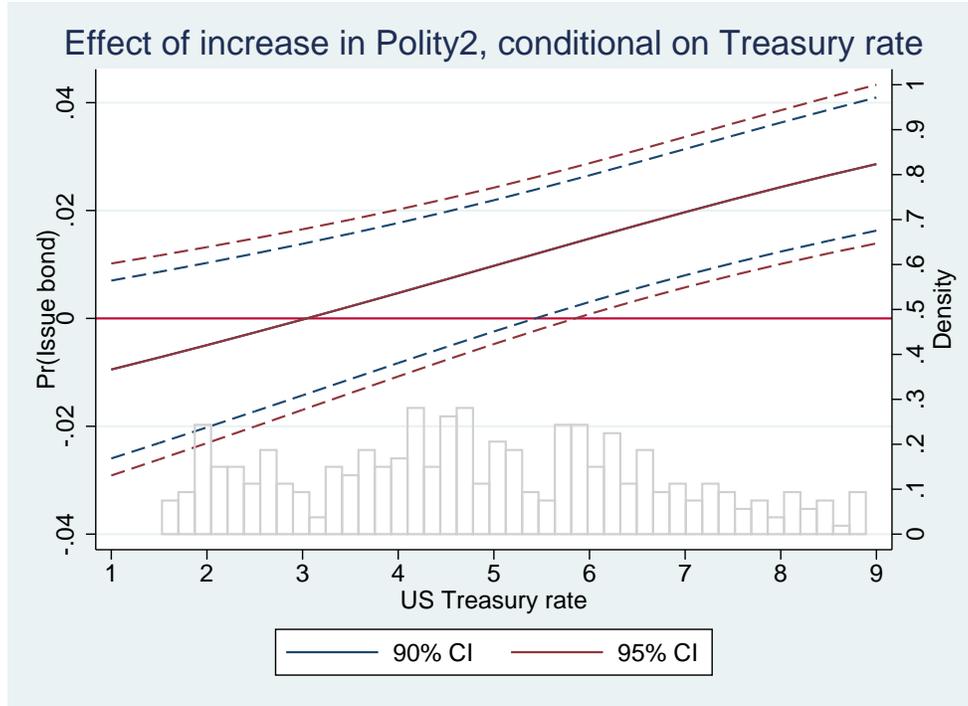


Figure 3: *Marginal effect of democracy, by U.S. Treasury rate.* Shows marginal effects for increase in Polity2 score, conditional on interest rate on 10-year Treasury bond. Grey boxes show density of U.S. Treasury rates across distribution.

Controls in Table 1 behave as expected. Regarding peer group effects, a country is more likely to issue when countries in its same market category have been successful in issuing (*MSCI peer issuance*). Additionally, states with higher *GDP per capita* issue more often, whereas states with a higher *Customs balance (% GDP)* issue less. There is evidence in columns 3 and 4 that states with a *Pegged XR* issue less, while the presence of an *IMF program* in a state makes issuing more likely. There also appears to be a momentum effect in issuance: states that have already *Issued this year* are more likely to issue again. Finally, we find confirmation about market actors' intuitions on within-year timing: sovereign debt issues are indeed more likely in an earlier *Quarter*.

Having identified conditional evidence for a democratic advantage in bond issuance, we next turn to an analysis of the effects of elections on issuance by democratic governments. While democracies are not unique in holding elections, the role of elections in autocracies is a subject of ongoing debate in political science.⁶² For purposes of analytic clarity, we therefore restrict our subsequent analysis to the subset of countries identified in our sample as democratic. However, we note that our primary findings regarding the effects of elections hold even in the full sample

⁶²See, for example, Magaloni 2006.

of countries, although are estimated with somewhat less precision as should be expected if the function of elections varies across different regime settings.⁶³

Table 2 provides evidence on our expectations about the effects of impending elections. As expected, the general relationship between bond issuance and impending elections is unclear, whether we regress issuance on elections only in column 1, or when we include our baseline and our full set of covariates in columns 2 and 3. However, in Hypothesis 3 we spell out the global capital market conditions under which an effect should be present. In column 4, once the effect of impending elections is made conditional on global capital liquidity, the direct effect of elections is positive and statistically significant, whereas its interaction is negative and significant. Figure 4 reports marginal effects and makes clear that demand-side effects dominate when U.S. Treasury rates are high and global capital is scarce, whereas supply side effects dominate in low yield environments.

[Table 2 about here.]

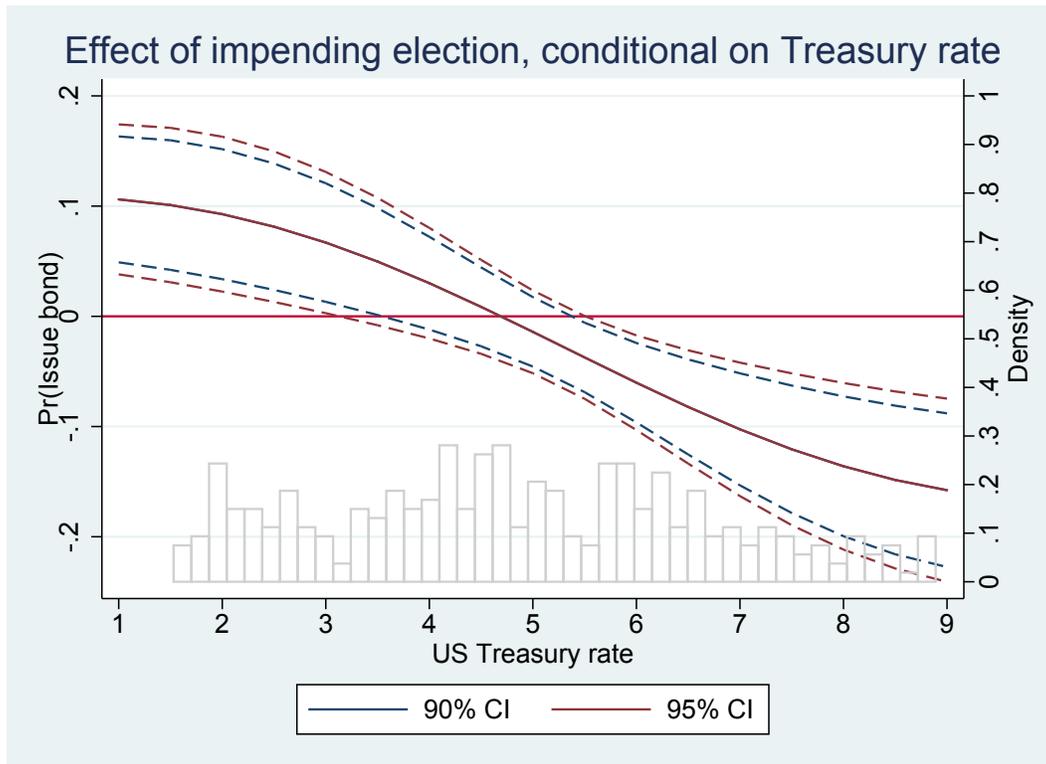


Figure 4: *Marginal effect of election, by US Treasury rates.* Shows marginal effects for election in next month, conditional on interest rate on 10 year treasury bond.

⁶³Results available upon request.

To this point, this article has identified political determinants of the likelihood of sovereign bond issuance. Issuance—the ability to access international markets—is a central part of activity in the primary capital markets, and variation in access affects the extent to which governments can pursue their agendas. That said, the analyses presented so far cannot directly speak to a related question: do considerations of political risk affect not only whether a country can tap private bond markets, but also how much debt a country can raise from private markets? At a basic level, Figure 1 above demonstrates that, on average, countries that issue more frequently also issue greater amounts; the average amount issued by a country in a given year is strictly increasing in the number of months in that year that the country issued.

In Table 3, we replicate our primary results taking the amount issued by a country in a given month as our outcome of interest. We compute the (constant US\$) amount issued across all bonds by a country in a given month; as these data are log-normally distributed, we subsequently add one dollar to this amount and then take the log in order to create our outcome (*logged*) *total amount* issued. As reported in Table 3, in accordance with our argument that issuance and amount are intimately linked, we find essentially identical results for the effects of democracy and impending elections—conditional on global capital liquidity—on the amount of bonds a country is able to issue.⁶⁴

[Table 3 about here.]

We report marginal effects in Figures 5 and 6. As can be seen, these marginal effects for amount issued are strikingly similar to those for issuance itself, further reinforcing our claim that the two outcomes are tightly interwoven.

⁶⁴Note that, as the data exhibit clustering at zero, we estimate these results using a Tobit model to account for the possibility of censoring. However, results are unchanged if instead estimated via OLS.

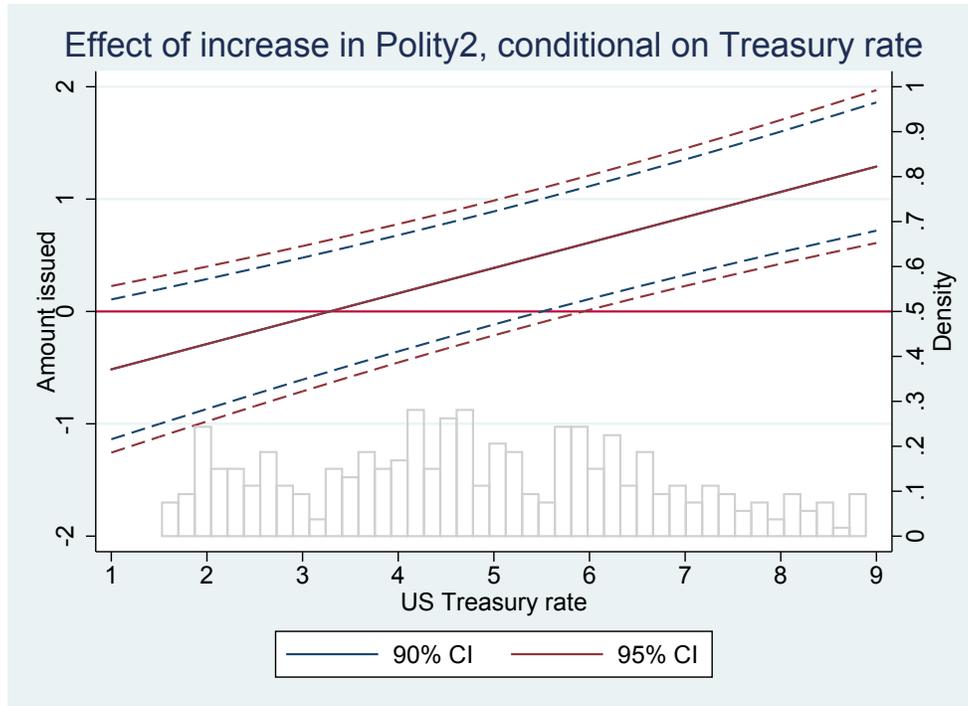


Figure 5: *Marginal effect of democracy, by US Treasury rates, on amount issued.* Shows marginal effects for increase in Polity2 score, conditional on interest rate on 10 year treasury bond. Grey boxes show density of US treasury rates across distribution.

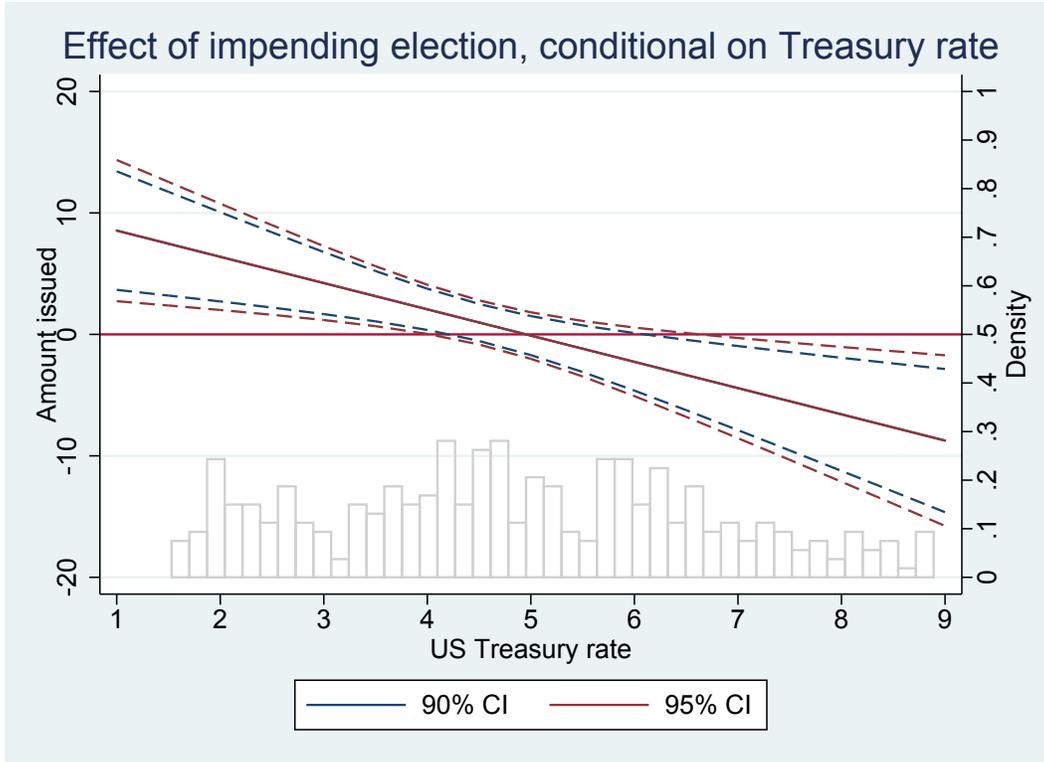


Figure 6: *Marginal effect of executive election, by US Treasury rates, on amount issued.* Shows marginal effects for executive election in next month, conditional on interest rate on 10 year treasury bond.

Robustness and Extensions

In this section, we demonstrate the robustness of our results to considering the competitiveness of elections; partisanship; variation in government systems (parliamentary vs. presidential); and the inclusion of additional covariates. (In the Appendix, we demonstrate the robustness of our results to multiple imputation; a dichotomous measure of democracy; and estimation using OLS. We also explore mechanisms to which previous work attributes the “democratic advantage.”)

First, investors must consider not only political business cycle dynamics, but also the implications of election outcomes. When an election outcome is more uncertain, investors may be less able to “price in” potential political risks ex ante. That said, savvy investors likely have well-informed priors over the effects different governing coalitions would have on political risk, such that they are capable of pricing risk associated with government continuity or turnover. We examine whether around “tight” elections investors are not as confident in their assumptions about which

government will hold office in the future and thus debt issuance is disturbed. We measure outcome uncertainty with the margin of victory in an election: the smaller the margin of victory, the more likely the outcome was uncertain *ex ante*. To identify elections that are particularly uncertain *ex ante*, we create *Tight election*, which equals 1 if the vote margin between the top two vote-getters was less than 10 percent and 0 otherwise.⁶⁵ Tight elections occur in 104 months (across 38 countries), or approximately 20 percent of months in which elections occurred. In contrast, a more predictable or *Easy election* equals 1 if the vote margin between the top two vote-getters was greater than 10 percent. Easy elections occur in 300 months, or approximately 60 percent of months with elections.⁶⁶ In fact, as demonstrated in Table 4, we find that our results look largely similar across “tight” or “easy” elections.⁶⁷ If anything, the positive direct effect of tight elections is somewhat larger in magnitude than the comparable effect for easy elections. These results suggest that outcome uncertainty may not be an important determinant of political risk, or that investors are good at pricing in risks *ex ante* even when elections are close.

[Table 4 about here.]

Second, prior work has suggested that investors may behave differently when interacting with governments of differing partisan orientation. However, our data do not support such a differentiation by partisanship. Table 5 shows, first of all, that the effects of impending elections do not appear to systematically differ when the incumbent government is of either a leftwing or rightwing partisan orientation.⁶⁸ Nor does partisanship become significant around tightly contested races.⁶⁹ Further, we test whether partisanship, and particularly partisan turnover, becomes relevant not on election day, but at the moment a new executive is inaugurated or a new government is formed. Again, investors seem to be good at pricing in risks, and we do not find effects on issuance.⁷⁰

[Table 5 about here.]

Third, the countries in our sample employ a variety of electoral and political institutions and, given our emphasis on elections as a source of political risk, it is reasonable to ask whether the

⁶⁵ *Tight election* equals 1 so long as at least one election in a given country-month fits the criteria (V-Dem).

⁶⁶ The remaining 100 elections did not include voting margins and so cannot be classified as either tight or easy.

⁶⁷ Similarly, we do not find effects when using smaller margins of victory.

⁶⁸ Partisan orientation coded using the *execrlc* measure from the DPI.

⁶⁹ Results available upon request.

⁷⁰ Nonetheless, we intend to test in future work these kinds of considerations for the determinants of bond terms and pricing, given issuance.

impact of elections we identify varies with these institutional differences. Specifically, while we find that executive elections are particularly important for issuance, especially in times of global capital market scarcity, we might expect such elections to matter more (or only) in presidential systems. In contrast, legislative elections might take on more importance to investors in parliamentary systems. In Table 6, we therefore report models that include a dichotomous measure for parliamentary (versus presidential) systems. We consider the direct effect of the system of government on debt issuance, as well as whether impending election effects are conditional on the system of government (alone, or in conjunction with global capital market conditions). The results from these analyses offer no evidence that elections (all, executive, or legislative) differ in their association with issuance as the system of government varies. Again, it is executive elections that are significantly associated with issuance, both directly and conditional upon global capital market conditions. One explanation for this finding is that, regardless of the system of government, it is executive elections that are most visible to, or most easily interpretable by, participants in primary capital markets. Another possibility is that, to the extent that debt managers are directly accountable to political actors, it is the executive that is most capable of applying pressure to debt management offices.

[Table 6 about here.]

Fourth, our results are robust to the inclusion of additional covariates and alternative measures, including sovereign credit ratings issued by credit ratings agencies. Several analyses of secondary markets for sovereign debt treat these ratings as the dependent variable.⁷¹ Many of our other covariates are likely endogenous to these ratings, so we do not include them in our main models because of concerns of collinearity. Additionally, we are concerned over the possibility of including post-treatment measures if market determinants of political risk are likely to be channelled via credit ratings. Results of interest are nonetheless robust to including the one-month lag of the numeric conversions of Standard & Poor's, Moody's, or Fitch ratings. Results are also robust to a direct measure of interest rate differentials between a country's interest rate and the U.S. rate.

Might countries strategically trade off private bond issuance against alternative sources of international finance? We find that our results are robust to including measures of *IBRD loans*, *IDA loans*, *bilateral loans*, *commercial bank loans*, and *IMF credits used*, even though including all

⁷¹E.g., Archer, Biglaiser and DeRouen 2007.

these measures results in a nearly 70 percent reduction in our sample size.⁷²

Our main results are robust when defining peer groups based on geographical region. They are also robust when defining peer groups based on whether their debt is currently rated as “investment grade” or below. This last approach is particularly important, since more variance may be soaked up by economic (rather than political) indicators for below-investment grade debt, similar to the notion that bondholders apply different levels of scrutiny to developed and developing states.⁷³ We have also found similar results when controlling for *trade/GDP*, *regime duration*, *debt*², *EMU membership*, *EU membership*, *population*, *FDI*, *total debt service over GNI*, *total reserves over external debt*, *region*, *Financial crises (count)*, and *Central bank independence*.⁷⁴ Finally, results are also robust to replacing the U.S. Treasury rate on 10-year bonds with the equivalent German or Japanese rates.

Conclusion

Government debt managers operate with a mandate from politicians, attempting to strike a balance between government demands for funds and international investors’ appetites. Although the degree of professionalization and sophistication varies across debt management offices, debt managers typically are savvy and skilled: they work closely with investment banks that underwrite their debt and help to market bond issues to institutional investors, foreign central banks, and other purchasers of government debt. These debt managers are not mere price-takers, accepting the terms on offer when the need for sovereign credit emerges. Rather, debt managers are strategic actors who practice their trade in an explicitly political context.

Yet government debt managers have received little notice from political economists, who instead focus on the strategic behavior and sophistication (or not) of professional investors. Our analysis takes sovereign borrowing strategies seriously. Moreover, our focus on the primary (rather than secondary) capital market allows us to capture directly the financial market dynamics that are most relevant to borrowing strategies. While liquid secondary markets exist for most sovereign debt issues (and, in some cases, for credit default swap insurance contracts on such issues), pricing

⁷²World Bank IDS.

⁷³Mosley 2003.

⁷⁴World Bank WDI, Reinhart and Rogoff 2009; Garriga 2016.

in secondary markets is only an indirect measure of the market-based constraints and opportunities encountered by governments. Secondary market risk premiums are determined by the trading of outstanding debt issues. But it is the market for new issues that affects governments' financing costs. Hence, for scholars interested in understanding the conditions under which markets allow governments "room to move," analyzing primary market dynamics is essential.

We argue that domestic political institutions and events have effects on how government debt managers, underwriters, and buyers interact in international markets. Specifically, we show that democracies are better able to issue debt more often and in greater amounts—but the importance of regime type varies as a function of global capital market conditions. Additionally, impending elections affect issuance, but their effects too are mediated by global liquidity. Rather than simply treating global liquidity as a control variable, we theorize its mediating effects: when global markets are flush, investors are less inclined to be deterred by domestic politics. But when markets are characterized by risk aversion, domestic politics becomes an important constraint. Our empirical analyses, based on a newly-constructed database of sovereign bond issues in a broad range of countries, provide support for these expectations.

Finally, we hope to spur a new research agenda that takes sovereign borrowers seriously as strategic players in international financial markets. Our future research aims include a deeper analysis of the terms (price, maturity, and currency denomination) at which governments borrow and how debt managers trade off across them. More broadly, political economists could help explain government strategies for structuring their sovereign borrowing. While bond market financing has been the most prominent form of sovereign finance since the early 1990s, governments looking to borrow still choose between a variety of options (contingent on their creditworthiness), including commercial bank loans, bilateral official credit, and multilateral official credit. The strategic interaction between governments and bank creditors is likely to differ from that between governments and sovereign bondholders, or that between governments and official creditors.⁷⁵ Exploring each of these dimensions of sovereign debt management will allow us to further understand how modern capital markets work and to identify more precisely how modern governments go about taking advantage of, and also might be constrained by, financial globalization.

⁷⁵Gelos, Sahay and Sandleris 2011; Kaplan and Thomsson 2016.

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Tables and Figures

Regression Tables

Table 1: Sovereign Bond Issuance and Democracy (1990-2015)

VARIABLES	(1) No controls	(2) Baseline controls	(3) Full controls	(4) Intl environ.
Democracy	0.056** (0.024)	0.057** (0.028)	0.061** (0.028)	-0.066 (0.045)
US Treasury rate				-0.236*** (0.054)
Democ. * US Treasury				0.021*** (0.006)
MSCI peer issuance		0.614* (0.321)	0.672** (0.330)	0.599* (0.330)
GDP per capita		0.554** (0.249)	0.681*** (0.248)	0.543** (0.226)
GDP growth (annual %)		-0.014* (0.008)	-0.011 (0.008)	-0.008 (0.008)
Chinn-Ito index		-0.075 (0.105)	-0.089 (0.112)	-0.058 (0.110)
Customs balance (% GDP)		-2.994 (1.894)	-2.694 (1.861)	-2.872* (1.716)
Public debt (% GDP)		-0.002 (0.004)	-0.004 (0.004)	-0.004 (0.004)
Δ XR			-0.257 (0.803)	-0.319 (0.831)
Pegged XR			-0.222* (0.130)	-0.234* (0.133)
Oil rents (% of GDP)			-0.004 (0.021)	-0.005 (0.020)
Δ CPI			-0.354 (0.538)	-0.432 (0.573)
IMF prog. in place			0.342*** (0.128)	0.388*** (0.125)
Sovereign Default			-0.494 (0.368)	-0.516 (0.349)
Issued this year	1.308*** (0.082)	1.095*** (0.082)	1.080*** (0.083)	1.040*** (0.081)
Quarter	-0.218*** (0.013)	-0.186*** (0.017)	-0.180*** (0.018)	-0.183*** (0.018)
Observations	18,252	13,215	12,869	12,869
Log likelihood	-7797	-5782	-5514	-5450
Pseudo-R2	0.383	0.361	0.375	0.382

Robust standard errors, clustered by country

*** p<0.01, ** p<0.05, * p<0.1

This table reports results from probit regressions of sovereign bond issuance on the level of democracy plus a set of controls. Country fixed effects, MSCI ratings dummies, and quadratic time trends were also included, but are suppressed for presentation.

Table 2: Sovereign Bond Issuance and Impending Elections (1990-2015)

VARIABLES	(1) No controls	(2) Baseline controls	(3) Full controls	(4) Intl environ.
Impending election	-0.003 (0.066)	-0.001 (0.084)	0.026 (0.089)	0.910** (0.360)
US Treasury rate				-0.247*** (0.041)
Impending elect. * US Treasury				-0.194*** (0.067)
Democracy		-0.046 (0.041)	-0.030 (0.033)	-0.033 (0.034)
MSCI peer issuance		0.881** (0.350)	0.966*** (0.357)	1.269*** (0.364)
GDP per capita		0.320 (0.290)	0.295 (0.276)	0.400 (0.274)
GDP growth (annual %)		-0.010 (0.010)	-0.006 (0.009)	-0.006 (0.009)
Chinn-Ito index		-0.044 (0.126)	-0.040 (0.131)	-0.037 (0.132)
Customs balance (% GDP)		-4.696*** (1.245)	-4.299*** (1.040)	-4.717*** (1.023)
Public debt (% GDP)		0.001 (0.004)	0.000 (0.004)	-0.000 (0.004)
Δ XR			-7.576*** (2.824)	-5.816** (2.680)
Pegged XR			-0.455*** (0.173)	-0.463*** (0.174)
Oil rents (% of GDP)			-0.208** (0.083)	-0.192** (0.083)
Δ CPI			-8.139*** (2.732)	-6.368** (2.616)
IMF prog. in place			0.252* (0.131)	0.273** (0.131)
Sovereign Default			-0.593* (0.322)	-0.605 (0.380)
Issued this year	1.133*** (0.091)	0.943*** (0.105)	0.892*** (0.100)	0.892*** (0.101)
Quarter	-0.219*** (0.015)	-0.201*** (0.020)	-0.193*** (0.020)	-0.204*** (0.020)
Observations	14,004	9,597	9,275	9,275
Log likelihood	-6275	-4336	-4032	-3989
Pseudo-R2	0.349	0.330	0.355	0.362

Robust standard errors, clustered by country

*** p<0.01, ** p<0.05, * p<0.1

This table reports results from probit regressions of sovereign bond issuance on impending elections, plus a set of controls, on our democratic subsample of countries. Country fixed effects, MSCI ratings dummies, and quadratic time trends were also included, but are suppressed for presentation.

Table 3: Amount Issued and Democracy (1990-2015)

VARIABLES	(1) Democracy	(2) Elect.
Democracy	-0.741* (0.409)	-0.119 (0.210)
US Treasury rate	-2.332*** (0.478)	-1.818*** (0.368)
Democ. * US Treasury	0.226*** (0.049)	
Impending election		10.710*** (3.720)
Impending elect. * US Treasury		-2.161*** (0.785)
MSCI peer issuance	5.578 (3.520)	10.456*** (3.905)
GDP per capita	5.463*** (2.042)	3.727* (2.236)
GDP growth (annual %)	-0.024 (0.075)	-0.022 (0.076)
Chinn-Ito index	0.088 (0.963)	0.376 (1.067)
Customs balance (% GDP)	-30.932** (14.919)	-42.143*** (9.274)
Public debt (% GDP)	0.008 (0.034)	0.040 (0.028)
Δ XR	-7.580 (8.643)	-63.517*** (22.454)
Pegged XR	-1.450 (1.094)	-3.510** (1.390)
Oil rents (% of GDP)	-0.154 (0.190)	-2.323*** (0.852)
Δ CPI	-4.865 (6.957)	-62.766*** (21.569)
IMF prog. in place	2.874** (1.119)	1.527 (1.157)
Sovereign Default	-4.742 (3.541)	-5.386 (3.367)
Issued this year	10.767*** (1.106)	8.594*** (1.280)
Quarter	-1.462*** (0.181)	-1.520*** (0.220)
Full controls	Yes	Yes
Observations	13,896	9,963

Robust standard errors, clustered by country

*** p<0.01, ** p<0.05, * p<0.1

This table reports results from tobit regressions of amount of sovereign bonds issued on democracy and impending elections, plus a set of controls. Results for elections are estimate on the democratic subsample of countries. Country fixed effects, MSCI ratings dummies, and quadratic time trends were also included, but are suppressed for presentation.

Table 4: Sovereign Bond Issuance and Electoral Competition (1990-2015)

VARIABLES	(1)	(2)
US Treasury rate	-0.210*** (0.045)	-0.209*** (0.045)
Impending Tight election	1.794** (0.763)	
Impending Tight elect. * US Treasury	-0.301** (0.149)	
Impending Easy election		0.951** (0.384)
Impending Easy elect. * US Treasury		-0.218*** (0.072)
Democracy	-0.043 (0.043)	-0.048 (0.044)
MSCI peer issuance	0.924*** (0.357)	0.913** (0.359)
GDP per capita	0.447 (0.274)	0.455* (0.274)
GDP growth (annual %)	-0.006 (0.011)	-0.007 (0.011)
Chinn-Ito index	-0.104 (0.117)	-0.102 (0.117)
Customs balance (% GDP)	-3.904*** (0.942)	-3.874*** (0.938)
Public debt (% GDP)	0.002 (0.004)	0.002 (0.004)
Δ XR	-7.328*** (2.728)	-7.210** (2.839)
Pegged XR	-0.350* (0.182)	-0.345* (0.182)
Oil rents (% of GDP)	-0.184 (0.125)	-0.183 (0.125)
Δ CPI	-7.586*** (2.692)	-7.493*** (2.805)
IMF prog. in place	0.334** (0.135)	0.331** (0.136)
Sovereign Default	-0.478 (0.476)	-0.485 (0.474)
Issued this year	0.848*** (0.103)	0.850*** (0.103)
Quarter	-0.199*** (0.022)	-0.199*** (0.022)
Observations	8,364	8,364

Robust standard errors, clustered by country

*** p<0.01, ** p<0.05, * p<0.1

This table reports estimates from probit regression of sovereign bond issuance on either “tight” (where the margin of victory was less than 10%) or “easy” (greater than 10% margin) impending elections, plus a set of controls, on our democratic subsample of countries. Country fixed effects, MSCI ratings dummies, and quadratic time trends were also included, but are suppressed for presentation.

Table 5: Sovereign Bond Issuance and Incumbent Partisanship (1990-2015)

VARIABLES	(1)	(2)
US Treasury rate	-0.244*** (0.050)	-0.168*** (0.052)
Impending election	1.849** (0.729)	1.913*** (0.740)
Impending elect. * US Treasury	-0.356*** (0.130)	-0.415*** (0.143)
Leftwing exec.	-0.308 (0.408)	
Leftwing exec. * US Treasury	0.111 (0.081)	
Impending elect. * Leftwing	-0.473 (1.203)	
Impending elect. * Leftwing * US Treasury	0.080 (0.257)	
Rightwing exec.		0.118 (0.398)
Rightwing * US Treasury		-0.073 (0.079)
Impending elect. * Rightwing		-0.256 (1.009)
Impending elect. * Rightwing * Treasury		0.119 (0.199)
Democracy	-0.052* (0.028)	-0.055* (0.029)
MSCI peer issuance	1.212*** (0.395)	1.204*** (0.378)
GDP per capita	0.667** (0.306)	0.693** (0.307)
GDP growth (annual %)	-0.011 (0.010)	-0.011 (0.010)
Chinn-Ito index	0.134 (0.137)	0.122 (0.138)
Customs balance (% GDP)	-19.999** (9.424)	-19.799** (8.825)
Public debt (% GDP)	0.005 (0.005)	0.006 (0.005)
Δ XR	-8.018** (3.649)	-8.066** (3.778)
Pegged XR	-0.378* (0.194)	-0.351* (0.190)
Oil rents (% of GDP)	-0.158* (0.094)	-0.143 (0.097)
Δ CPI	-8.701** (3.579)	-8.796** (3.701)
IMF prog. in place	0.217 (0.150)	0.235 (0.156)
Sovereign Default	-0.822*** (0.274)	-0.763*** (0.262)
Issued this year	0.806*** (0.095)	0.813*** (0.096)
Quarter	-0.187*** (0.021)	-0.187*** (0.021)
Observations	7,694	7,694

Robust standard errors, clustered by country
*** p<0.01, ** p<0.05, * p<0.1

This table reports estimates from probit regression of sovereign bond issuance on impending executive elections conditioned by the partisan orientation of the incumbent government, plus a set of controls, on our democratic subsample of countries. Country fixed effects, MSCI ratings dummies, and quadratic time trends were also included, but are suppressed for presentation.

Table 6: Sovereign Bond Issuance and Systems of Government (1990-2015)

VARIABLES	(1) Any election	(2) Executive election	(3) Legislative election
US Treasury rate	-0.293*** (0.066)	-0.292*** (0.066)	-0.296*** (0.066)
Impending election	0.675 (0.468)	1.498** (0.637)	0.345 (0.581)
Parliamentary system	-0.909 (0.630)	-0.906 (0.628)	-0.896 (0.629)
Impending elect. * US Treasury	-0.157 (0.098)	-0.330*** (0.124)	-0.063 (0.117)
Impending elect. * Parl.	-0.001 (0.630)	-0.453 (1.231)	0.125 (0.753)
Parl. * US Treasury	0.066 (0.097)	0.061 (0.098)	0.067 (0.097)
Impending elect. * Parl. * US Treasury	0.010 (0.127)	0.192 (0.288)	-0.058 (0.143)
Democracy	-0.027 (0.065)	-0.029 (0.066)	-0.025 (0.065)
MSCI peer issuance	1.065*** (0.327)	1.069*** (0.326)	1.068*** (0.327)
GDP per capita	0.438 (0.279)	0.438 (0.278)	0.437 (0.278)
GDP growth (annual %)	-0.012 (0.009)	-0.012 (0.009)	-0.012 (0.009)
Chinn-Ito index	-0.037 (0.125)	-0.038 (0.125)	-0.037 (0.125)
Customs balance (% GDP)	-4.954*** (1.282)	-4.949*** (1.286)	-4.964*** (1.274)
Public debt (% GDP)	0.000 (0.004)	0.000 (0.004)	0.000 (0.004)
Issued this year	0.938*** (0.106)	0.938*** (0.106)	0.938*** (0.106)
Quarter	-0.217*** (0.020)	-0.216*** (0.020)	-0.217*** (0.020)
Observations	9,597	9,597	9,597
Log likelihood	-4282	-4280	-4283
Pseudo-R2	0.338	0.338	0.338

Robust standard errors, clustered by country

***p<0.01, **p<0.05, *p<0.1

This table reports estimates from probit regression of sovereign bond issuance on executive or legislative impending elections across parliamentary and non-parliamentary regimes, plus a set of controls, on our democratic subsample of countries. Country fixed effects, MSCI ratings dummies, and quadratic time trends were also included, but are suppressed for presentation.

Appendix

Table 7: Countries in Dataset, by Market Category (MSCI, as of 2015)

Developed	Emerging	Frontier	Unrated
Australia	Brazil	Argentina	Angola
Austria	Chile	Bulgaria	Azerbaijan
Belgium	China	Croatia	Costa Rica
Canada	Colombia	Estonia	Cote d'Ivoire
Denmark	Czech Republic	Kazakhstan	Cyprus
Finland	Egypt	Kenya	Dominican Republic
France	Greece	Lebanon	Ecuador
Germany	Hungary	Lithuania	El Salvador
Ireland	Indonesia	Morocco	Ethiopia
Italy	Malaysia	Nigeria	Gabon
Japan	Mexico	Romania	Iceland
Netherlands	Peru	Serbia	Iraq
New Zealand	Philippines	Slovenia	Latvia
Norway	Poland	Sri Lanka	Luxembourg
Portugal	Russia	Tunisia	Malta
Spain	South Africa	Ukraine	Mongolia
Sweden	South Korea	Vietnam	Panama
Switzerland	Turkey		Paraguay
United Kingdom			Slovakia
			Uruguay
			Venezuela
			Zambia

Multiple Imputation

While concerns regarding the possibility of omitted variable bias suggest the inclusion of a large set of covariates in our analysis, this inclusion is not without cost. Perhaps most serious among these costs is the reduction in sample size that results from data missingness distributed across these variables: as shown at the bottom of Table 1, our sample size is reduced by approximately 30% in our full specification in column 4. While most researchers are aware that smaller samples may limit statistical power, recent work by Lall has re-emphasized that a much more serious issue can arise when data are not missing at random.⁷⁶ In particular, Lall argues that researchers should be particularly concerned when investigating the effects of regime dynamics on outcomes using data in which missingness is non-trivial, since the process of reporting data may itself be a function of political regime characteristics.

Given our theoretical interests in the effects of democracy on sovereign issuance, Lall's critique is particularly relevant. In such cases, one standard practice is to employ "multiple imputation."⁷⁷ In brief, multiple imputation involves, first, an imputation step in which existing data are used to generate a posterior distribution of expected values for missing data, conditional on other non-missing covariates; this posterior distribution is subsequently used to generate a series of "complete" datasets. Having generated this collection of imputed datasets without missing data, standard statistical analyses can be performed on each dataset, with the results combined to take account of both within-sample variation as well as across-sample variation induced during imputation. Under relatively weak assumptions about the structure of data missingness, multiple imputation enjoys several advantages over standard approaches that employ "listwise deletion," including efficiency gains from preserving information in observations that would otherwise be discarded, in addition to robustness against concerns of bias arising from systematic features of data missingness.

[Table 8 about here.]

We followed standard practice by first implementing the imputation process using Honaker and King's *Amelia II* program.⁷⁸ After generating five imputed datasets, we replicated our primary

⁷⁶Lall 2016.

⁷⁷King et al. 2001.

⁷⁸Honaker, King and Blackwell 2011.

analyses on these imputed data using Stata's *mi estimate* command, which properly accounts for both within- and across-sample variation. To conserve space, we report the results from estimation of our conditional findings for both democracy and elections (that is, specifications that include the interaction term with US Treasury rates). Table 8 demonstrates that, despite potentially legitimate concerns regarding the possibility of sample bias arising from a correlation between regime type and data missingness, our results are if anything strengthened under multiple imputation: none of our coefficients of interest change sign, and the statistical significance of each is either unchanged or stronger. Given the relatively low degree of missingness for our democracy measure, this is perhaps unsurprising, suggesting that while sample bias concerns are unlikely to drive our findings, the efficiency considerations of multiple imputation are a potential improvement.

Table 8: Multiple Imputation: Sovereign Bond Issuance and Democracy (1990-2015)

VARIABLES	(1)	(2)
Democracy	-0.003 (0.027)	0.027 (0.020)
US Treasury	-0.194*** (0.038)	0.227*** (0.037)
Democ. * US Treasury	0.011*** (0.004)	
Impending election		0.561** (0.256)
Impending elect. * US Treasury		-0.129*** (0.047)
MSCI peer issuance	0.605*** (0.179)	1.257*** (0.287)
GDP per capita	0.721*** (0.135)	0.694*** (0.229)
GDP growth (annual %)	-0.000 (0.005)	-0.001 (0.008)
Chinn-Ito index	-0.057 (0.050)	-0.051 (0.079)
Customs balance (% GDP)	-3.672*** (1.204)	-5.115*** (0.966)
Public debt (% GDP)	-0.001 (0.002)	0.001 (0.002)
Δ XR	0.018 (0.055)	-1.081* (0.616)
Pegged XR	-0.086 (0.101)	-0.256* (0.132)
Oil rents (% GDP)	-0.010 (0.007)	-0.062*** (0.021)
Δ CPI	-0.045 (0.078)	-0.818** (0.327)
IMF prog. in place	0.348*** (0.090)	0.239** (0.108)
Sovereign default	-0.212 (0.297)	-0.277 (0.412)
Issued this year	1.153*** (0.068)	1.050*** (0.085)
Quarter	-0.227*** (0.013)	-0.212*** (0.015)
Observations	22,500	13,596

Robust standard errors, clustered by country

*** p<0.01, ** p<0.05, * p<0.1

This table reports multiple imputation estimates from probit regressions of sovereign bond issuance on democratic regime and impending elections, plus a set of controls, on (1) all countries and (2) our democratic subsample of countries. Country fixed effects, MSCI ratings dummies, and quadratic time trends were also included, but are suppressed for presentation. Note that *US Treasury* is lagged by one year for its interaction with *Democracy* in column 1, but is front-lagged by one month for its interaction with *Impending election* in column 2.

Democratic Advantage: Exploring Mechanisms

As we summarized in the article, existing work on the democratic advantage in borrowing has identified three dominant sets of mechanisms via which democracy is expected to reduce political risks. In an effort to tease out which of these three effects dominates in our analysis, we include measures that prior work has argued captures each of these dynamics in our specifications. First, to test the claim that democracies are considered less risky because they are more transparent, we include Hollyer, Rosendorff, and Vreeland’s measure of transparency (*HRV*) which is constructed by accounting for variation in data reporting across a variety of economic and political indexes; if the advantage of democracy shown above arises only from greater access to consistent reports for market actors, then the independent effect of Polity should disappear once we directly account for this mechanism.⁷⁹ Second, several accounts have emphasized that constraints on arbitrary expropriation by the executive are the critical advantage provided by democracy; following Cordes, we use the *Xconst* sub-index from Polity to evaluate this hypothesis.⁸⁰ Finally, others posit that democracies are perceived as less risky because of a broader “liberal society,” which includes values like respect for the rule of law and judicial independence.⁸¹ To capture this proposed mechanism, we include *Liberal rule*, the liberal component index from the Varieties of Democracy dataset, which is intended to measure the degree to which regimes establish “constitutionally protected civil liberties, strong rule of law, an independent judiciary, and effective checks and balances.”⁸²

[Table 9 about here.]

As reported in Table 9, we recover little direct evidence that any of the three major mechanisms proposed in prior work drives the main effect of democracy on bond issuance. Columns 1 through 3 introduce each of our measures of the proposed mechanisms individually, while column 4 introduces all three simultaneously. Somewhat surprisingly, in none of these specifications is the independent impact of democracy weakened – if anything, the size of the coefficient on democracy is strengthened, particularly once the direct effect of executive constraints is taken into account. In addition, while the measure of *Liberal rule* does not approach statistical significance, direct

⁷⁹Hollyer, Rosendorff and Vreeland 2011.

⁸⁰Cordes 2012.

⁸¹Biglaiser and Staats 2012.

⁸²See the V-Dem codebook (version 6), available at: www.v-dem.net.

measures of transparency and executive constraint appear to be significantly negatively associated with issuance of sovereign bonds. These unexpected results suggest the need for additional work to isolate the mechanisms through which democracy affects potential investors in sovereign debt.

Table 9: Exploring Mechanisms: Sovereign Bond Issuance and Democracy (1990-2015)

VARIABLES	(1)	(2)	(3)	(4)
Democracy	0.077** (0.033)	0.157*** (0.056)	0.067* (0.036)	0.183*** (0.068)
HRV	-0.192*** (0.074)			-0.192** (0.079)
Xconst		-0.312** (0.158)		-0.444** (0.185)
Liberal rule			-0.238 (0.828)	1.344 (1.144)
MSCI peer issuance	1.302*** (0.390)	0.635* (0.334)	0.677** (0.326)	1.219*** (0.394)
GDP per capita	0.685** (0.268)	0.708*** (0.245)	0.682*** (0.247)	0.704*** (0.262)
GDP growth (annual %)	-0.009 (0.009)	-0.010 (0.008)	-0.011 (0.008)	-0.008 (0.009)
Chinn-Ito index	-0.004 (0.120)	-0.102 (0.113)	-0.091 (0.112)	-0.005 (0.123)
Customs balance (% GDP)	9.166 (13.996)	-2.532 (1.852)	-2.648 (1.869)	8.692 (13.809)
Public debt (% GDP)	-0.005 (0.004)	-0.003 (0.004)	-0.004 (0.004)	-0.004 (0.004)
Δ XR	-1.164 (0.980)	-1.999 (1.790)	-0.261 (0.801)	-3.788* (2.181)
Pegged XR	-0.077 (0.171)	-0.221* (0.130)	-0.223* (0.129)	-0.060 (0.180)
Oil rents (% of GDP)	-0.026 (0.021)	-0.006 (0.022)	-0.004 (0.021)	-0.031 (0.022)
Δ CPI	-0.668 (0.619)	-2.053 (1.539)	-0.359 (0.537)	-3.261* (1.808)
IMF prog. in place	0.330** (0.145)	0.318** (0.128)	0.343*** (0.128)	0.294** (0.144)
Sovereign Default	-0.601* (0.311)	-0.469 (0.365)	-0.490 (0.369)	-0.622* (0.326)
Issued this year	1.018*** (0.094)	1.069*** (0.083)	1.080*** (0.083)	0.995*** (0.092)
Quarter	-0.175*** (0.022)	-0.177*** (0.018)	-0.180*** (0.018)	-0.170*** (0.022)
Observations	10,204	12,665	12,869	10,024
Log likelihood	-4345	-5428	-5513	-4260
Pseudo-R2	0.384	0.373	0.375	0.384

Robust standard errors, clustered by country

*** p<0.01, ** p<0.05, * p<0.1

This table reports results from probit regression of sovereign bond issuance on the level of democracy plus a set of controls, including direct measures for three proposed mechanisms for the democratic advantage. Country fixed effects, MSCI ratings dummies, and quadratic time trends were also included, but are suppressed for presentation.

Additional Robustness Results

Table 10: Dichotomous Democracy: Sovereign Bond Issuance and Democracy (1990-2015)

VARIABLES	(1) Baseline	(2) Full controls
Democracy	-1.599** (0.631)	-1.669*** (0.595)
US treasury rate	-0.308*** (0.076)	-0.333*** (0.073)
Democ. * US Treasury	0.312*** (0.087)	0.322*** (0.084)
MSCI peer issuance	0.588* (0.324)	0.661** (0.334)
GDP per capita	0.431** (0.215)	0.496** (0.223)
GDP growth (annual %)	-0.010 (0.008)	-0.005 (0.007)
Chinn-Ito index	-0.026 (0.100)	-0.029 (0.107)
Customs balance (% GDP)	-3.388** (1.642)	-2.874* (1.563)
Public debt (% GDP)	-0.000 (0.003)	-0.003 (0.004)
Δ XR		-0.336 (0.849)
Pegged XR		-0.243* (0.132)
Oil rents (% of GDP)		-0.007 (0.021)
Δ CPI		-0.411 (0.580)
IMF prog. in place		0.382*** (0.123)
Sovereign Default		-0.413 (0.385)
Issued this year	1.077*** (0.079)	1.049*** (0.080)
Quarter	-0.191*** (0.017)	-0.185*** (0.018)
Observations	13,368	12,906
Log likelihood	-5808	-5483
Pseudo-R2	0.366	0.380

Robust standard errors, clustered by country

*** p \leq 0.01, ** p \leq 0.05, * p \leq 0.1

This table reports results from probit regressions of sovereign bond issuance on a dichotomous measure of democracy, plus a set of controls. Country fixed effects, MSCI rating dummies, and quadratic time trends were also included, but are suppressed for presentation.

Table 11: OLS Results: Sovereign Bond Issuance and Democracy (1990-2015)

VARIABLES	(1)	(2)
Democracy	-0.011 (0.009)	-0.008 (0.008)
US Treasury rate	-0.044*** (0.012)	-0.054*** (0.010)
Democ. * US Treasury	0.004*** (0.001)	
Impending election		0.341*** (0.106)
Impending elect. * US Treasury		-0.068*** (0.021)
MSCI peer issuance	0.101 (0.091)	0.269** (0.104)
GDP per capita	0.165*** (0.053)	0.112 (0.070)
GDP growth (annual %)	-0.002 (0.002)	-0.002 (0.002)
Chinn-Ito index	-0.003 (0.028)	0.000 (0.033)
Customs balance (% GDP)	-0.835 (0.582)	-1.420*** (0.320)
Public debt (% GDP)	-0.000 (0.001)	0.000 (0.001)
Δ XR	-0.142 (0.186)	-1.501*** (0.481)
Pegged XR	-0.046 (0.031)	-0.113** (0.045)
Oil rents (% of GDP)	-0.001 (0.005)	-0.049** (0.022)
Δ CPI	-0.087 (0.114)	-1.550*** (0.469)
IMF prog. in place	0.077** (0.032)	0.057 (0.036)
Sovereign Default	-0.111 (0.072)	-0.179* (0.106)
Issued this year	0.296*** (0.025)	0.238*** (0.030)
Quarter	-0.039*** (0.004)	-0.045*** (0.005)
Observations	14,246	10,292
R-squared	0.160	0.117
Number of countries	66	51

Robust standard errors, clustered by country

*** p \leq 0.01, ** p \leq 0.05, * p \leq 0.1

This table reports results from OLS regression of sovereign bond issuance on democracy and impending elections, plus a set of controls. Results in (2) are estimated on our democratic subsample of countries. Country fixed effects, MSCI rating dummies, and quadratic time trends were also included, but are suppressed for presentation.