

Contingent Advantage? Sovereign Borrowing, Democratic Institutions, and Global Capital Cycles

Cameron Ballard-Rosa[†] Layna Mosley[‡] Rachel L. Wellhausen[§]

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Abstract

How do domestic and global factors shape governments' capacity to issue debt in primary capital markets? Consistent with the “democratic advantage,” we identify domestic institutional mechanisms, including executive constraints and policy transparency, that facilitate debt issuance rather than electoral events. Most importantly, we argue that the democratic advantage is contingent: investors' attention to domestic politics varies with conditions in global capital markets. When global financial liquidity is low, investors are risk-averse, and political risk constrains governments' capacity to borrow. But when global markets are flush, investors are risk-tolerant and less sensitive to political risk. We support our argument with new data on 245,000 government bond issues in primary capital markets—the point at which governments' costs of market access matter most—for 131 sovereign issuers (1990-2016). In doing so, we highlight the role of systemic factors, which are under-appreciated in much “open economy politics” research, in determining access to capital markets.

[†]UNC Chapel Hill, cameron.ballard-rosa@unc.edu.

[‡]UNC Chapel Hill, mosley@unc.edu.

[§]University of Texas at Austin, rwellhausen@utexas.edu.

Introduction

While governments satisfy some of their borrowing needs via commercial bank loans, bilateral official credit, or multilateral official credit, bond-based private financing has been a central element of sovereign finance since the early 1990s.¹ To explore the political economy of sovereign debt, we analyze 245,000 initial bond issues in primary markets by 131 countries (1990-2016). With these unique data, we examine the full population of recent issuers, including dozens of developing countries excluded from other recent analyses, at the point when sovereign borrowers and their creditors transact directly.

Our core contribution is to establish that global capital market dynamics generate a conditional, rather than constant, “democratic advantage” for sovereign borrowers. We establish that democracies are able to issue more debt, more often in primary capital markets, consistent with the interrelated mechanisms that increased “liberal” democracy, executive constraints, rule of law, and policy transparency reassure investors and reduce their estimations of sovereign risk.² Yet this advantage depends on dynamics in global capital markets. When interest rates and returns on safe assets are relatively high, global liquidity is low. Investors have attractive outside options and are therefore discerning regarding risk, including sovereign risk. Under these conditions, risk-mitigating domestic political institutions affect governments’ capacity to borrow. In contrast, when returns on safe assets are relatively low, global markets are liquid. Investors’ search for higher yield renders them more tolerant of risk. Under these conditions, democratic institutions are unlikely to significantly affect the placement of investments. Flush global markets improve even non-democratic, developing countries’ capacity to issue more debt, more often. Our theory of a conditional democratic advantage departs from the traditional “open economy politics” approach: much more than a background feature, global conditions are a central mediating force in international economic relations.³

Our novel, comprehensive issue-level data provide us the optimal setting in which to test our claims. Borrowers sell and investors buy sovereign bonds in primary capital markets. It is at this bond issuance stage that governments have the ability to choose whether to issue and in what

¹World Bank International Debt Statistics.

²E.g., Beaulieu, Cox and Saiegh (2012); Biglaiser and Staats (2012); Cordes (2012); Schultz and Weingast (2003); Stasavage (2011). We further demonstrate that it is the institutional aspects of democracy that generate the advantage in primary markets and that elections do not affect issuance. See Robustness.

³Chaudoin, Milner and Pang (2015); Oatley (2011)

amount. As governments coordinate with potential investors in timing an issue, they necessarily factor in the effects of global conditions on their access to capital. Any democratic advantage should manifest exactly when a democratic government chooses to lock in its financing costs. Previous scholarship has focused on the pricing of debt when it is traded in secondary markets. While trends in trading on secondary markets may correlate with governments' future borrowing costs, those correlations only bite when the government chooses to issue in primary markets. Moreover, examining primary capital markets allows us to test our claims on the population of sovereign borrowers, rather than subsets that issue a benchmark instrument (such as a ten-year, domestic currency bond); that are included in an index (for instance, JP Morgan's Emerging Markets Bond Index (EMBI)); those for which a market for credit default swaps (CDS) exists; or those that have a sovereign credit rating. Non-random selection processes underlie these samples, which impede generalizability.⁴ Most importantly, these samples exclude large numbers of developing countries that issue debt on international markets, many of which have non-democratic institutions and thus would particularly benefit from a conditional democratic advantage. When global capital markets are flush, non-democratic countries will be able to issue considerable amounts of debt—as they have been able to do in recent years.

The Democratic Advantage and its Limits

Contemporary capital account openness allows governments access to a broad pool of international capital, often facilitating reductions in financing costs. Openness also can subject borrowing governments to market discipline.⁵ Investors are better able to demand higher interest rates in response to greater perceived sovereign risk, because openness renders credible their threats of exit. At the extreme, investors can refuse to lend to a government at any rate of return, a phenomenon known as credit rationing.⁶ When governments find themselves highly indebted and facing the prospect of default, cuts in fiscal outlays are often necessary to restore investors' confidence, even if such cuts have devastating effects on the real economy. Indeed, a common trope beginning in the 1990s was the “golden straitjacket,” in which financial globalization afforded opportunities for

⁴Beaulieu, Cox and Saiegh (2012).

⁵Przeworski and Wallerstein (1988); Kaplan and Thomsson (2016).

⁶Tomz (2007).

governments but also constrained their policy choices.⁷

Investors are interested in governments' future ability and willingness to repay sovereign debt, because sovereigns possess the unique ability to repudiate their financial obligations.⁸ Ability to pay is often associated with economic outcomes: governments with lower inflation, smaller fiscal deficits, lower levels of public debt and higher rates of economic growth are better able to service their debt. Governments commonly engage in reforms to improve these outcomes—reducing fiscal deficits, liberalizing labor markets or making monetary authorities more independent from political officials—with the stated purpose of reassuring bond market investors, especially in times of crisis.⁹ Willingness to pay, in contrast, is driven by politics. To convince investors of its willingness to pay, a government must establish the extent to which it will privilege external commitments, including sovereign bond contracts, over internal motivations to resist payment. A central finding regarding “willingness” is the democratic advantage: investors expect that countries with democratic political institutions are more willing than their non-democratic counterparts to honor their debt commitments.¹⁰ As such, democracies have easier access to sovereign finance, all else equal.

Scholars have identified a number of mechanisms driving the democratic advantage. Legislative constraints on executive power can limit leaders' fiscal profligacy.¹¹ Democratic leaders may fear electoral penalties in response to default, either because some bondholders are part of the electorate, or because the electorate prefers that leaders uphold their foreign obligations.¹² So-called “liberal” democracies are characterized by strong respect for the rule of law and judicial independence; these limits on arbitrary government action further enhance investors' confidence that governments will honor contracts.¹³ Additionally, because democracies tend to be more transparent in their release of economic and financial information, as well as policymaking processes, investors may be more confident in their ability to price risk.¹⁴ Several empirical studies establish

⁷E.g. Kurzer (1993); Strange (1998).

⁸Ballard-Rosa (2016); Eaton and Gersovitz (1981); North and Weingast (1989); Simmons (1994).

⁹Bodea and Hicks (2015); Campello (2015); Kaplan (2013); Maxfield (1997).

¹⁰Note that democracy is not a perfect predictor of creditworthiness: default sometimes provides benefits to democratically-elected governments. Ballard-Rosa (2018); Saiegh (2005); Tomz (2004); Tomz and Wright (2013).

¹¹North and Weingast (1989); Cox (2016); Cox and Saiegh (2018).

¹²Saiegh (2005); Schultz and Weingast (2003); Stasavage (2011).

¹³Biglaiser and Staats (2012); Cordes (2012).

¹⁴Campello (2015); Devlin (1989); Hollyer, Rosendorff and Vreeland (2011); Copelovitch, Gandrud and Hallerberg (2018).

that, via these reinforcing mechanisms, democracy leads to lower risk premiums on outstanding (secondary market) debt, lower prices for insurance against default (credit default swaps) and higher sovereign credit ratings.¹⁵ We confirm these democratic advantage mechanisms, conditional on global liquidity, in our empirical analyses of primary market outcomes. At the same time, we establish that elections and election outcomes do not systematically disrupt democracies' debt issuance. In secondary markets, pre-election stimulus, partisan swings, and protracted cabinet formation negotiations involving new players can increase sovereign risk premiums.¹⁶ However, unlike outstanding debt for which only the price can adjust, governments and investors can adjust the price and other terms of debt at issuance. Thus, governments can creatively continue issuing debt around elections while benefiting from underlying stable institutions. This distinction between institutions and elections is especially important for developing countries marked by electoral volatility.

Despite our confirmation of an average democratic advantage in primary markets, we challenge the premise in the literature that the democratic advantage is absolute, operating independently of external factors. Global capital market conditions affect investors' sensitivity to risk and, therefore, to domestic political institutions and the mechanisms through which they affect risk. When global markets are liquid, and investors are searching for yield, investors tolerate more political risk. We argue that, at these moments, borrowers with non-democratic institutional features are as able to get credit as their democratic counterparts, and we provide compelling evidence via primary market data.

Democracy and Primary Capital Markets

Scholars have relied on secondary market indicators to understand the political economy of sovereign debt, including spreads versus low-risk bonds; spreads versus a composite bond index; credit default swap prices; trading prices of existing debt instruments; and sovereign credit ratings. Secondary market outcomes allow us to see how investors and ratings agencies adjust their assessments of

¹⁵Beaulieu, Cox and Saiegh (2012); North and Weingast (1989); Saiegh (2005); DiGiuseppe and Shea (2016).

¹⁶Bechtel (2009); Bernhard and Leblang (2006); Block, Schrage and Vaaler (2005); Campello (2015); Hardie (2006); Jensen and Schmith (2005); Leblang and Satyanath (2006); McMenamin, Breen and Muoz-Portillo (2016); Mosley (2003); Spanakos and Renno (2009).

risk over time.¹⁷ Yet political scientists' key interest in sovereign bond markets is the extent to which markets affect governments' policy autonomy.¹⁸ Once governments have coordinated with sovereign bond buyers, they issue debt instruments in primary capital markets. It is at this point that the government commits to the cost of borrowing. A bond issued at 5 percent interest today, but trading at 7 percent next year, costs the government 5 percent in annual interest payments throughout the life of the bond. The 7 percent in secondary markets correlates with terms available for new primary market debt, but those terms are relevant only when a government selects to issue new debt. Analysis of primary market access is thus a crucial, and somewhat overlooked, arena of fiscal politics.¹⁹

In addition to this theoretical motivation, studying bond issues in primary markets mitigates problems that plague secondary market data. Secondary market data are available at high frequency and over long periods of time for OECD countries with well-developed government bond markets. These governments routinely issue benchmark bonds (ten-year maturity, local currency denominated instruments), facilitating comparison across markets. Additionally, insurers typically offer CDS contracts for issuers with moderate to high credit quality, and with high levels of bond market liquidity; as a result, CDS price datasets typically include fewer than thirty sovereign issuers.²⁰ Analyzing the population of primary issuers allows us to demonstrate that the democratic advantage is not a function of wealth-driven selection effects. Moreover, as political scientists, much of the variation in political institutions in which we are interested occurs outside the OECD, in emerging or frontier market countries, for which secondary market data is limited. The full population of sovereign borrowers issue a wide variety of instruments, making price comparisons more challenging. Secondary market indices help to address this challenge: JP Morgan's Emerging Market Bond (EMBI) indices capture countries with debt outstanding above a liquidity threshold (EMBI +); with comparable foreign currency denominated issues (EMBI Global Diversified); or with sufficiently developed domestic currency debt markets (GBI-EM Global Diversified). Yet because of these strict criteria, emerging market bond indices record data for non-random subsets of

¹⁷E.g. Longstaff et al. (2011); Pan and Singleton (2008); Wellhausen (2015); Archer, Biglaiser and DeRouen (2007); Beaulieu, Cox and Saiegh (2012); Saiegh (2005); Cox and Saiegh (2018).

¹⁸e.g. Mosley 2003.

¹⁹When governments more frequently roll over existing debt by financing old bonds with new ones, the salience of changes in secondary markets is likely heightened.

²⁰Brooks, Cunha and Mosley (2015); Longstaff et al. (2011).

developing countries. For example, JP Morgan’s indices include from 16 to 63 developing countries, while we have data on 131 countries.

One also could turn to sovereign credit ratings from agencies such as Moody’s and Standard and Poor’s to overcome limits in secondary market data, as a large number of countries are rated. Beaulieu, Cox and Saiegh (2012) use credit ratings to substantiate the democratic advantage, in particular by leveraging the fact that governments select into getting rated. It is problematic for our purposes that credit ratings move in response to sovereign risk rather than anticipating it. They are also a blunt instrument, as there are a limited number of ratings categories and, again, high-risk countries may select out of getting rated. And credit ratings move much more slowly than political institutions and events: changes occur in only two percent of our country-year-month observations. Nonetheless, as one of our robustness checks, we repeat our analyses using sovereign ratings as the dependent variable.²¹

Our measures of primary market outcomes—a government’s issuance of new sovereign debt as well as how much debt it issues—reflect joint decisions by governments (the sell side) and investors (the buy side). On the sell side, governments seek to issue debt for a variety of reasons: to fill gaps between revenues and expenditures; to smooth expenditures given a fiscal surplus; to maintain liquidity; or, in the words of an attorney working with sovereigns, “remind investors they exist.”²² A government issues via its debt management office (DMO). DMO mandates typically emphasize (1) minimizing the cost of financing and (2) considering refinancing risk. DMOs, however, vary in their specific mandates, their degree of professionalization, and their institutional location.²³ On the buy side, private sector financial actors, typically investment banks, underwrite sovereign issues.²⁴ While investment banks earn a relatively small fee for their sovereign debt work (between 10 and 25 basis points), underwriting is attractive because it often brings additional business from the country’s corporate sector.

Government DMOs and private sector underwriters work jointly to assess the existence

²¹See Appendix Tables 12, 13, 14.

²²Author interview, June 2016. For example, Israel is known to regularly issue debt to keep up an international presence, rather than to fill financing shortfalls.

²³In our empirical models, we account for this variation with country fixed-effects. For analyses of DMOs, see Melecky (2007); Missale (2000); Nieto-Parra (2009); Datz (2008); Wolswijk and de Haan (2005).

²⁴Today, governments frequently move between underwriters or use a syndicate of underwriters for each issue. This contrasts with the pre-World War I era, in which issuing governments often had long-standing relationships with specific underwriters. Flandreau et al. (2009).

and nature of the market for a given sovereign issue, with an eye toward accessing markets when conditions are most favorable.²⁵ Through “road show” presentations to pools of potential investors, DMOs and their underwriters present information about the sovereign’s economic and political situation and gauge market sentiment.²⁶ Governments typically employ legal counsel to mediate their relationship with underwriters. Similar to the benefits investment banks gain from serving as underwriters, law firms with practices in primary capital markets typically expect to be awarded other work with an issuing government, or with sub-national and quasi-sovereign entities in the issuing country.

Once the DMO and the underwriter agree on the parameters of an issue, the underwriter gathers potential buyers.²⁷ On the day of issue, the underwriter buys the entire primary issue, typically at a small discount. Then the underwriter places the issue with a diverse investor base: institutional investors, hedge funds, foreign central banks, commercial banks, retail investors, and, increasingly, sovereign wealth funds.²⁸ 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. 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.²⁹ The quick turnaround between issuance and resale highlights the importance to governments of timing market entry.³⁰

To explore the political economy of government-financial market interactions in primary markets, we employ a novel dataset of all available issues of central government sovereign bonds from 1990 to 2016; it encompasses approximately 245,000 individual issues by 131 countries.³¹ From this issue-level dataset, we construct a dichotomous measure of whether a government issues

²⁵Sovereigns can use financial repression to ensure a domestic captive audience for government notes, by, for example, requiring state retirement agencies or private banks to hold a large fraction of state-issued assets. Some governments offer favorable tax treatment of their own assets. However, nearly all sovereign debt is issued on international markets, where sovereigns have very little capacity to force investors to buy.

²⁶These presentations often compare the issuer to its (carefully-chosen) peers, for instance, comparing Slovak outcomes with Czech and Belgian data. Given the broader availability of country-specific data today, underwriter efforts today provide less certification to potential bond purchasers than in the past. Flandreau et al. (2009).

²⁷For 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.”

²⁸Chwioroth (2014); Datz (2008).

²⁹For developing country borrowers, an issue on the same day by another sovereign, and resulting concerns about insufficient market demand, can motivate a delay in an issue. Author interview, World Bank, May 2018.

³⁰Bradley, Salvatierra and Gulati (2014); Gelos, Sahay and Sandleris (2011); Nieto-Parra (2009); Weidemaier and Gulati (2016).

³¹Data were gathered from Bloomberg terminals. We assume that any missing data is as-if randomly distributed. We exclude countries with populations less than 100,000. See Appendix for countries.

new debt in a given month. The average government issues new bonds in 5 months of the year, with a standard deviation of 5 (see Figure 1).³² The binary variable *Issuance* is our key measure of the timing of, and thus global conditions under which, governments and investors coordinate such that the government issues debt.

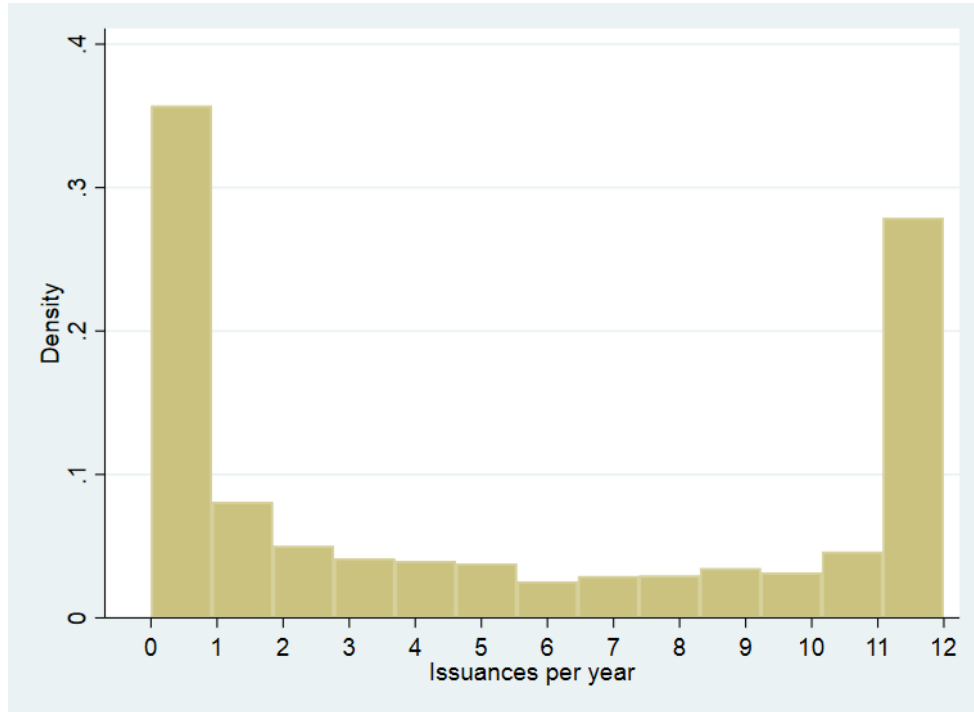


Figure 1: Distribution of number of months with issue(s) of sovereign bonds per country-year (1990-2016).

Issuance would be less useful if some government DMOs spread a given amount of debt over several issues, while others offer fewer, larger issues. Figure 2—which shows the average amount of debt issued against the average number of months with issues—offers evidence that the choice to issue debt is closely linked to the amount of debt brought to market. This strong positive correlation makes sense, as underwriters charge relatively low fees, so government transaction costs around multiple issuances should not be 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. Nonetheless, our second outcome measure is *Amount*, the amount of debt a government issues in a given month (logged, constant USD).

³²The median government issues 0.6 new bonds per month, although upper-end outliers pull the average to 3.1 per month. Given our theoretical interest in initial issues, we restrict the data to government issuance of “untapped” bonds with maturities longer than six months. See below for discussion.

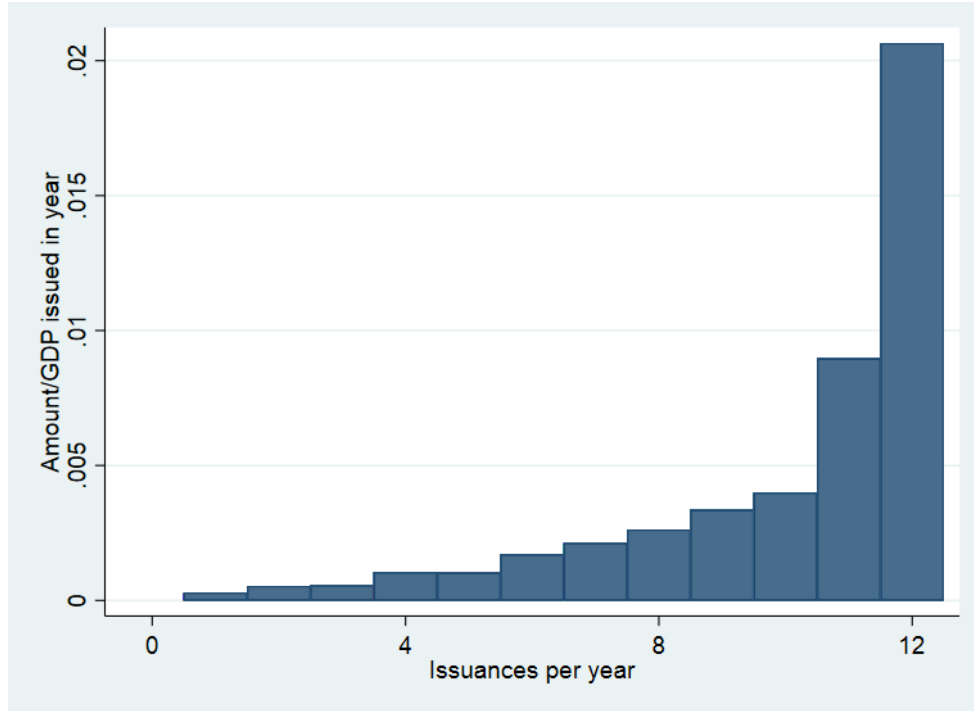


Figure 2: Distribution of amount (logged, constant USD) issued per year, by count of months issued (country-years, 1990-2016).

Note that *Issuance* and *Amount* capture transactions in which the seller and buyers were able to come to a satisfactory agreement on the terms of the issue, including its interest rate, maturity, and currency denomination. Tradeoffs across terms are likely to be shaped by politics and thus are important phenomena to be examined in future research.³³ Already advancing that agenda, Cox and Saiegh (2018) compare the secondary market pricing of two Argentine government bonds with different revenue guarantees to assess the importance of executive constraints to investors' responses to the 1890 Baring Crisis.

Our choice to set aside terms in this study of debt issuance and amount is motivated, first, by the need to test a key implication in the democratic advantage literature: democracies should have better access to international debt markets from the moment of issuance, and not just in secondary market or credit rating outcomes. Second, our data show that the terms of bond issues vary, implying that governments do not simply time their entries to the market based on their ability to negotiate the most favorable terms. For example, for non-OECD borrowers in our data, issue level yield has a mean of 7.9 percent and a large standard deviation of 11.6 percent; maturity averages

³³Sadeh and Porath (N.d.).

5 years, with a large standard deviation of 5.3 years. Because borrowers coordinate market entry with a wide variety of underlying terms, we know that issuance is not a product of the incidence of the “right” terms. Third, our argument that the democratic advantage is conditional rests on the expectation that governments and investors vary in their ability to coordinate on debt issuance based on global conditions. It is a more difficult test for us to provide evidence of a conditional effect when using issuance as the outcome variable rather than terms. If governments and investors could always find mutually agreeable terms under which to issue debt whatever the liquidity on global capital markets, then results on issuance would not be conditional on global dynamics.

Hypotheses

We first confirm that the several mechanisms identified as sources of the democratic advantage in the literature operate at the moment of issuance. Since constraints on arbitrary executive behavior, respect for rule of law, and policy transparency are highly correlated and have all been found important in explaining secondary market dynamics, we expect to find evidence that democracy overall and each mechanism in isolation have expected effects in primary markets.³⁴

Hypothesis 1. *More democratic countries are more likely to issue debt and in greater amounts. Democracy will be associated with issuance (1) when treated as an overall measure of regime type, as well as when separated into its component parts, including (2) limits on arbitrary government, (3) legislative constraints on the executive, (4) judicial independence, and (5) transparency.*

However, repeated examples of market access for sovereign borrowers with weak or nonexistent democratic political institutions challenge the unconditional logic of the democratic advantage as presented in Hypothesis 1. In the mid-2000s, when global capital markets were flush in advance of the 2008 financial crisis, weak or non-democratic sub-Saharan African countries including Kenya, Nigeria, Senegal, Gabon, and Uganda first sought sovereign credit ratings and issued debt on international markets. In 2014, non-democracies Ethiopia and Vietnam issued debt. In recent years, investors have been willing to hold Venezuela’s public debt, despite the severe deterioration of its democratic institutions and corresponding concerns about high default risk (not to mention its economic crisis). In a 2017 article, *Bloomberg News* posited that investors now love authoritarian regimes, citing dollar-denominated issues by Bahrain, Belarus, Cameroon, Ethiopia, Iraq, and

³⁴In Robustness below, we consider possible effects of elections and corruption.

Tajikistan. The author raises the classic hypothesis that investors appreciate the policy certainty that comes with (stable) autocratic regimes.³⁵

Our take on these trends in authoritarian borrowing is consistent with that offered by one emerging markets fund manager: “The quest for yield squeezes money into some strange places.”³⁶ In an environment of low US and European interest rates in 2017, some of those “strange places” have included democracies in which core institutions like property rights protections have eroded. In June 2017, Argentina—a country that has defaulted five times in the last century, remains classified by the MSCI equity index as “frontier,” and had only returned to international markets in 2016, after a fifteen year absence—issued a 100-year maturity bond offering an effective yield of 8 percent. The USD 9.75 billion in orders far exceeded the supply of USD 2.75 billion.³⁷ July 2017 saw Greece’s first bond sale in five years; the five-year maturity bond it issued, at a yield of 4.625 percent, was also oversubscribed. To explain the Greek sale, the *Financial Times* put it simply: “investors do not seem to care [about political risk].”³⁸

Consistent with a large literature in financial economics, we argue that investors’ risk preferences are not fixed over time but rather depend on the yield environment.³⁹ When markets are flush, the hunt for yield incentivizes investors to buy riskier assets. For example, exceptionally low returns on US Treasuries in the early to mid-2000s pushed investors to invest in assets including opaque collateralized debt obligations, credit default swaps, and mortgage-backed securities.⁴⁰ We hypothesize that an analogous dynamic plays out with regard to sovereign debt issued by less-democratic regimes. What might be an investment carrying untenable political risk in the presence of attractive outside options may be tolerable when those attractive outside options disappear. Democracies gain an advantage when yields on global safe assets are relatively high, because it is at that time—and not others—that risk-sensitive investors care most about the political risks of a sovereign borrower.

Hypothesis 2. *More democratic states are more likely to issue sovereign debt, and to issue greater*

³⁵<https://www.bloomberg.com/news/articles/2017-04-20/autocracies-beating-democracies-in-emerging-market-bond-world>.

³⁶<https://www.bloomberg.com/news/articles/2017-09-14/no-democracy-no-problem-is-the-mantra-as-wall-street-hunts-yield>.

³⁷<https://www.ft.com/content/0c73b8f4-5670-11e7-9fed-c19e2700005f>.

³⁸<https://www.ft.com/content/0c73b8f4-5670-11e7-9fed-c19e2700005f>

³⁹This work builds on the early insights of Minsky (1977) and Kindleberger (1978).

⁴⁰Rajan (2011).

amounts of debt, when yields on global safe assets are high.

Data and Empirical Strategy

We collapse our data of bond issues such that the unit of analysis is (1) the instance or (2) the (logged) amount of any sovereign bond issue on international markets in a country-month.⁴¹ Our aggregated data include only new issues and not tapped bonds, as their responsiveness to political institutions is less clear-cut.⁴² Additionally, we exclude money-management bonds with maturities under six months. Our primary findings are not driven by either of these theoretically-informed choices.⁴³ We exclude the United States, as its sovereign debt shapes global capital markets.

Our aggregate measure of *Democracy* is a country’s (lagged) Polyarchy score, a continuous variable that measures the ruler’s responsiveness to citizens (VDem).⁴⁴ In our sample, *Democracy* ranges from essentially zero (most autocratic) to one (most democratic), with a mean of 0.6 and standard deviation of 0.25. All analyses use country fixed-effects to identify off within-unit heterogeneity, which is substantial (within variance is about 0.25). Results are robust to decade-by-decade analyses to address the changing composition of democracies in the world over time (Appendix Table 8). To isolate potential effects of regime stability rather than institutional type, we control for *Regime duration* or the count of the years since the current (binary) regime was established.⁴⁵

We draw from the literature to measure four main mechanisms via which democratic institutions are expected to signal reduced risk to international investors. First, a “liberal” conception of democracy often views the advantages of popular rule in terms of the limits placed on arbitrary government activity;⁴⁶ to capture this, we include VDem’s *Liberal democracy* measure, which captures the “quality of democracy by the limits placed on government. This is achieved by constitutionally protected civil liberties, strong rule of law, an independent judiciary, and effective checks

⁴¹Governments occasionally issue several bonds at the same time or within days of each other, with different terms, as underwriters place a set of bonds across a cross-section of investors with different risk appetites.

⁴²A tapped bond is a bond reissued under the same name and terms as a previous issue. For example, Austria issued a sovereign bond on 14 January 2000 and reissued the bond on 7 March. We count only the 14 January initial issue.

⁴³Results available from the authors.

⁴⁴Results are robust to PolityIV and to a dichotomous measure of regime type (Appendix Table 6).

⁴⁵Magaloni and Min (2013).

⁴⁶Biglaiser and Staats (2012)

and balances.” Given heavy theoretical emphasis by the original work on democratic advantage on the importance of *Legislative constraints* on the executive,⁴⁷ we also include VDem’s measure capturing “to what extent...the legislature and government agencies...[are] capable of questioning, investigating, and exercising oversight over the executive.” Third, following accounts that emphasize the importance of rule of law in democratic societies,⁴⁸ we include a measure from VDem of *Judicial independence*. Finally, given the importance of accurate reporting of domestic conditions for investors to make well-informed decisions,⁴⁹ we also introduce a measure of government *Transparency*, taken from work by Hollyer, Rosendorff and Vreeland (2011).

Because the US economy significantly affects global asset allocation, we capture global yield conditions with the interest rate on US 10-year constant maturity Treasury bonds (*US Treasury*).⁵⁰ During our sample period, interest rates on US Treasuries ranged from nearly 9% to 1.5%; there is a definite downward trend across years. To help safeguard against estimating the effects of secular trends in democracy and Treasury rates, in all specifications we include year fixed effects; this ensures that we leverage only intra-annual variation in interest rates (Figure 3).⁵¹ We also include dummies for the *Quarter* of the year, because sovereign debt tends to be issued earlier in the calendar year: first, corporations’ fiscal years typically are off-cycle, so governments issuing early face less competition for investors’ attention; second, early sovereign issues set a financing cost benchmark for later domestic corporate debt.⁵²

⁴⁷North and Weingast (1989); Schultz and Weingast (2003)

⁴⁸Cordes (2012)

⁴⁹Campello (2015); Copelovitch, Gandrud and Hallerberg (2018)

⁵⁰Bauerle Danzman, Oatley and Winecoff (2017). Results are robust to using German, Japanese, or an average of all three countries’ 10-year bond rates, or Miranda-Agrippino and Rey (2015)’s measure of global asset valuations. (Appendix Table 10).

⁵¹Results are robust to inclusion of up to a quartic polynomial of time (Appendix Table 7) as well as when limiting the sample to pre-2008 (Appendix Table 8).

⁵²Author interviews, May 2016. Results robust to *Month* dummies.

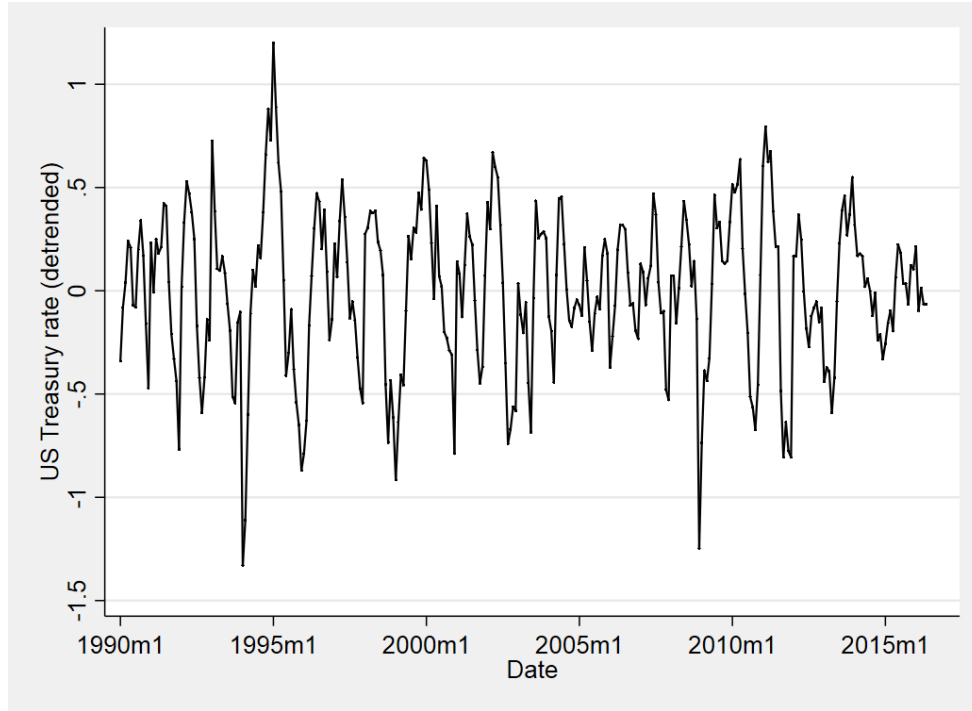


Figure 3: Residualized monthly interest rate on 10-year constant maturity US Treasury bonds (1990-2016), after regressing on year fixed effects.

Controls include standard (lagged) annual economic determinants of borrowing: *GDP per capita*; *GDP growth*; *Current account balance*; *Chinn-Ito index* (financial openness); and *Public debt*.⁵³ For robustness, we include *CBI*, if central bank independence affects bond market behavior; a dummy for *Pegged XR*, which could impact currency risk; and *Oil rents (% GDP)*, as the borrowing needs of commodity exporters track world prices.⁵⁴ We also control for economic crisis with dummies for *IMF program in place*, *Inflation crisis*, and *Default crisis*.⁵⁵

Notwithstanding country-specific economic covariates, investors often use cognitive heuristics in the process of evaluating huge amounts of information relevant to sovereign risk, in particular by categorizing countries in peer groups.⁵⁶ We expect that as more of a country's peers issue bonds, the country will be assessed more positively and more likely to issue, such that institutions in peer countries affect government borrowing costs. First, we expect peer issuance in a country's geographic region to influence investors.⁵⁷ Second, we define the relevant peer groups as Developed,

⁵³WDI, Chinn and Ito (2006).

⁵⁴Garriga (2016); Shambaugh (2004); WDI .

⁵⁵Dreher (2006); Valencia and Laeven (2012). Contra Tomz (2007) , Gelos, Sahay and Sandleris (2011) argue that default does not limit subsequent market access.

⁵⁶Brooks, Cunha and Mosley (2015); Gray (2013); Gray and Hicks (2014); Mosley (2003).

⁵⁷Brooks, Cunha and Mosley (2015).

Emerging, Frontier, or unrated countries per a measure of portfolio market development.⁵⁸ Each peer issuance measure is the (one-month lag of) the proportion of countries in the category that have issued debt in a given month (excluding the country in question). We also include region and MSCI category dummies.

With *Issuance* as the dependent variable, we use probit with country-fixed effects and standard errors clustered by country to account for within-unit serial correlation.⁵⁹ With *Amount* as the dependent variable, we employ tobit regression to account for the censoring of values at zero.⁶⁰ Unless otherwise specified, all covariates are lagged by twelve months to protect against concerns of simultaneity bias. Finally, we note that including our full set of controls substantially reduces sample size; our findings are robust to multiple imputation to deal with concerns of data missingness that is not orthogonal to the political or economic conditions we argue are important.⁶¹

Results

We begin with a straightforward test of the democratic advantage in primary capital markets (Hypothesis 1). In our full sample, we recover a positive and statistically significant relationship between *Democracy* and *Issuance* (column 1, Table 1). When we drop OECD countries, the coefficient is positive but insignificant (column 2). However, per Hypothesis 2, we expect to recover evidence of the democratic advantage even in the subset of developing countries, once we take into account the conditioning role of international capital market dynamics on investors' tolerance for political risk. Once we interact *Democracy* and *US Treasury*, we recover a positive and significant effect as expected (columns 3 and 4): as rates rise on US Treasuries, and global capital becomes scarce, the benefits of democratic institutions increase even in developing countries.

⁵⁸MSCI. "Frontier" began in 2008; most of these countries were previously unrated. Results are robust to dropping unrated observations.

⁵⁹Although our observation count greatly exceeds common practice in studies of bond ratings, so the assumption of convergence in distribution required for consistency in probit should be likely to hold, results are robust to using bootstrapped standard errors, resampling by country (Appendix Table 11).

⁶⁰Results are robust to OLS (Appendix Table 9).

⁶¹Results available from authors. See Lall (2016) for a discussion of the perils of employing listwise deletion approaches.

Table 1: Sovereign Bond Issuance and Democracy (1990-2016)

VARIABLES	(1) Full sample	(2) No OECD	(3) No OECD	(4) No OECD
Democracy (VDem)	1.462** (0.638)	1.067 (0.659)	-1.536 (0.966)	-1.298 (1.181)
US treasury rate	0.016 (0.019)	0.010 (0.021)	-0.286*** (0.084)	-0.280*** (0.101)
Democ. X UST			0.523*** (0.144)	0.534*** (0.171)
GDP per capita	0.610** (0.242)	0.483* (0.264)	0.433* (0.256)	0.624** (0.269)
GDP growth (annual %)	0.003 (0.008)	0.003 (0.009)	0.002 (0.009)	0.000 (0.009)
Current account balance (% of GDP)	0.012* (0.007)	0.012* (0.007)	0.010 (0.007)	0.024** (0.010)
Chinn-Ito index	-0.004 (0.080)	0.002 (0.091)	0.051 (0.085)	-0.062 (0.089)
Public debt (% GDP)	-0.006* (0.003)	-0.006 (0.004)	-0.005 (0.004)	-0.003 (0.003)
Region peer issuance	0.826* (0.485)	1.066** (0.525)	0.937* (0.533)	0.288 (0.544)
MSCI peer issuance	0.571 (0.558)	-0.365 (0.489)	-0.303 (0.499)	-0.350 (0.372)
CBI Garriga (weighted)				-0.259 (0.484)
Regime duration				0.023*** (0.005)
Pegged XR				-0.018 (0.117)
Oil rents (% of GDP)				-0.045** (0.018)
IMF prog. in place				0.166 (0.121)
Inflation crisis				-0.087 (0.212)
Default crisis				-0.577** (0.284)
Observations	25,374	21,028	21,028	16,890
Log likelihood	-12277	-9926	-9807	-8010
Pseudo-R2	0.287	0.300	0.308	0.304
Countries	110	91	91	78

Robust standard errors clustered by country in parentheses

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

This table reports results of probit regressions using sovereign bond issuance as the dependent variable. Country and year fixed effects are suppressed, as are region, MSCI, and quarter dummies.

Figure 4 shows the marginal effect of increases in democracy on issuance, conditional on prevailing US Treasury rates. To best communicate the substantive meaning of our results, these estimates are based on a model that replicates Table 1, column 4 but changes the measurement

of *Democracy* so that estimated marginal effects in Figure 4 arise from one-standard-deviation increases in democracy.⁶² For example, when US Treasuries are around 7 percent, a one-standard-deviation increase in *Democracy* increases the probability of issuance by 24 percentage points. Consistent with Hypothesis 2, the democratic advantage exists when US Treasuries are high. In contrast, a one-standard-deviation increase in democracy does not increase the probability of issuance when US Treasuries are low, at about 5 percent or less.⁶³

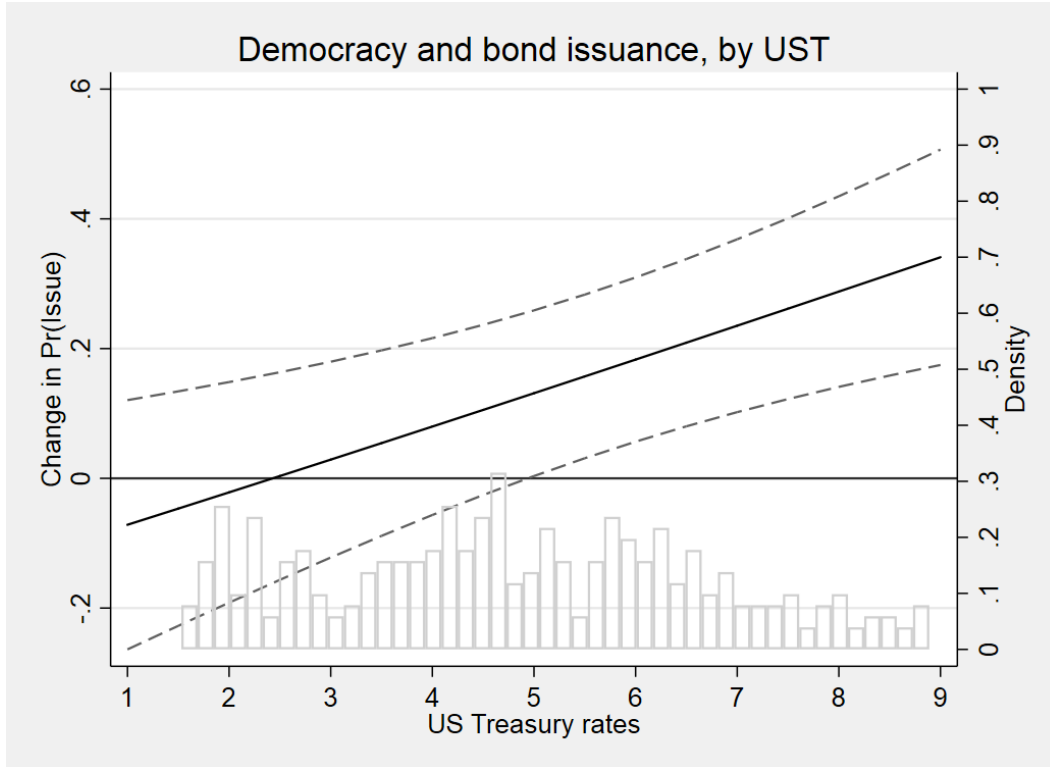


Figure 4: The figure reports the marginal effect of an increase in a standardized measure of *Democracy* on the probability of issuance, conditional on *US Treasuries* (Appendix Table 15, model 1), with dotted lines representing 95% confidence intervals. Grey boxes show the density of US Treasury rates across the distribution.

While it is common to report substantive effects for standardized increases in measures like democracy using sample variation, the fact that we employ country fixed effects suggests that a more conservative estimate of our effect sizes would be to consider the impact of within-country variation in *Democracy*. The “within” standard deviation for *Democracy* is approximately 0.35 times the

⁶²See Appendix Table 15 for the full results of this specification.

⁶³In the Appendix, we also demonstrate that the predictive accuracy of our models is significantly improved once we take into account the conditional advantage of democracy, as compared to models that do not include an interaction between *democracy* and *UST*. See the discussion of Figure 6 in the Appendix for further detail.

size of the full sample standard deviation; a one-standard deviation increase in the within measure is associated with an increased probability of issuance of approximately 8 percentage points when US Treasury rates are at 7 percent.⁶⁴ Even this conservative estimate represents a meaningful increase. For comparison, consider that, all else equal, analysts expect investors to be more willing to buy debt from wealthier countries, as wealth reduces repayment risk. Accordingly, we find that *GDP per capita* is always positively and significantly associated with issuance (Table 1). Using the estimates in column 1, a one-standard-deviation (sample) increase in *GDP per capita* is associated with a 25 percentage point increase in the likelihood of issuance. Most importantly, a one-standard-deviation increase in “within-country” *GDP per capita* is associated with an 8 percentage point increase in issuance. Thus, the substantive benefit we detect for democracy—when yields on safe assets are high—is of nearly identical magnitude to that from economic development.

Yet, what is it about democracy that generates reductions in perceived investment risk? As we discuss, extant literature emphasizes several (potentially interrelated) mechanisms via which democratic institutions are expected to reduce investors’ worries about default. We consider four such pathways explicitly below: “liberal” limits on arbitrary government, legislative constraints on the executive, judicial independence, and government transparency. As reported in Table 2, we find that each of these democratic sub-mechanisms are associated with systematically greater capacity to issue sovereign bonds; however, consistent with our general argument that these institutional sources of risk reduction are conditional on the broader yield regime, each of these is significantly positive only when global interest rates are high.

⁶⁴ $0.35 * 0.24 = 0.082$.

Table 2: Sovereign Bond Issuance and Subindices of Democracy (1990-2016)

VARIABLES	(1) No OECD	(2) No OECD	(3) No OECD	(4) No OECD
Liberal democ.	-1.476 (1.359)			
Lib. democ. X UST	0.481*** (0.181)			
Legis. constraints on exec.		-0.745 (1.044)		
Legis. constraints X UST		0.362** (0.153)		
Judicial independence			-1.304 (1.131)	
Jud. indep. X UST			0.362** (0.157)	
Transparency				-0.513*** (0.182)
Transparency X UST				0.069** (0.032)
US treasury rate	-0.304*** (0.117)	-0.217** (0.095)	-0.218** (0.099)	-0.130* (0.073)
GDP per capita	0.420 (0.270)	0.436 (0.273)	0.446 (0.278)	1.026*** (0.314)
GDP growth (annual %)	0.003 (0.009)	0.004 (0.009)	0.003 (0.009)	0.001 (0.011)
Current account balance (% of GDP)	0.009 (0.007)	0.009 (0.007)	0.010 (0.007)	0.010 (0.010)
Chinn-Ito index	0.041 (0.084)	0.032 (0.084)	0.031 (0.085)	0.037 (0.100)
Public debt (% GDP)	-0.005 (0.004)	-0.006 (0.004)	-0.005 (0.004)	-0.002 (0.003)
Regional peer issuance	1.123** (0.533)	1.128** (0.530)	1.152** (0.530)	0.459 (0.532)
MSCI peer issuance	-0.380 (0.475)	-0.392 (0.475)	-0.412 (0.463)	-0.547 (0.390)
Observations	21,148	21,145	21,157	15,408
Log likelihood	-9899	-9882	-9928	-6943
Pseudo-R2	0.305	0.306	0.303	0.319
Countries	91	91	91	68

Robust standard errors clustered by country in parentheses

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

This table reports results of probit regression of sovereign bond issuance. Country and year fixed effects are suppressed, as are region, MSCI, and quarter dummies.

Amount

To this point, we have measured the political determinants of the likelihood of sovereign bond issuance. Variation in issuance, or the ability to access international markets, affects the extent

to which governments can pursue their agendas. That said, the analyses presented so far cannot answer whether the conditional democratic advantage affects how much debt a country can raise from private markets. Recall that, as described in Figure 2 above, countries that issue more frequently also issue a greater amount of debt. We use these data to replicate our primary results, computing the (logged constant US\$) total amount issued by a country in a given month.⁶⁵

In Table 3 we report results of tobit regressions on the amount issued by a sovereign in a given month.⁶⁶ We again focus specifically on non-OECD countries, seeking to avoid any conflation of “democracy” with economic development. The conditional effect of *Democracy* on amount issued, when *US Treasuries* are high, is remarkably similar to that on issuance (Figure 5) – when markets are sufficiently attentive to risk, democracies not only issue more frequently, but issue sovereign bonds in greater amounts. The (conditional) benefits of each of the four democratic mechanisms are also found to be significantly related to amount issued, as reported in columns 2-5.

⁶⁵As discussed above, we again limit the data to untapped bonds with maturities greater than 6 months. In logging, we add one dollar to country-months without issues.

⁶⁶Given the truncation of observations when issuance is equal to zero, a tobit approach that accounts for cut-points in distributions is appropriate.

Table 3: Amount of Bond Issuance and Democracy (1990-2016)

VARIABLES	(1) No OECD	(2) No OECD	(3) No OECD	(4) No OECD	(5) No OECD
US treasury rate	-2.848*** (0.979)	-3.020*** (1.090)	-2.028** (0.857)	-2.526*** (0.961)	-2.529*** (0.669)
Democracy (VDem)	-20.733** (10.073)				
Democ. X UST	5.564*** (1.655)				
Liberal democracy		-17.640* (9.573)			
Liberal democ. X UST		5.062*** (1.655)			
Legis. constraints on exec.			-12.693* (7.251)		
Legis. const. X UST			3.682*** (1.361)		
Judicial independence				-14.732* (8.263)	
Jud. indep. X UST				4.461*** (1.500)	
Transparency					-5.996*** (1.680)
Transparency X UST					1.339*** (0.306)
GDP per capita	0.279 (1.070)	0.201 (1.065)	0.458 (1.022)	0.064 (1.095)	1.867 (1.267)
GDP growth (annual %)	0.128 (0.097)	0.144 (0.095)	0.153 (0.097)	0.157* (0.095)	0.206* (0.124)
Current account balance (% of GDP)	0.113 (0.081)	0.115 (0.083)	0.105 (0.083)	0.123 (0.083)	0.071 (0.106)
Chinn-Ito index	1.062 (0.666)	1.039 (0.670)	1.000 (0.667)	1.033 (0.669)	1.192 (0.764)
Public debt (% GDP)	-0.027 (0.026)	-0.027 (0.027)	-0.031 (0.027)	-0.023 (0.028)	-0.007 (0.025)
Regional peer issuance	-4.172 (6.504)	-1.939 (6.498)	-1.220 (6.372)	-1.779 (6.533)	-10.922 (6.740)
MSCI peer issuance	-2.402 (3.363)	-2.356 (3.353)	-2.615 (3.287)	-2.067 (3.431)	-1.018 (3.912)
Observations	22,196	22,316	22,313	22,325	16,428
Log likelihood	-49385	-49534	-49551	-49507	-33724
Pseudo-R2	0.0605	0.0602	0.0599	0.0609	0.0840
Countries	97	97	97	97	73

Robust standard errors clustered by country in parentheses

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

This table reports results of tobit regressions of the amount of debt issued. Country and year fixed effects are suppressed, as are region, MSCI, and quarter dummies.

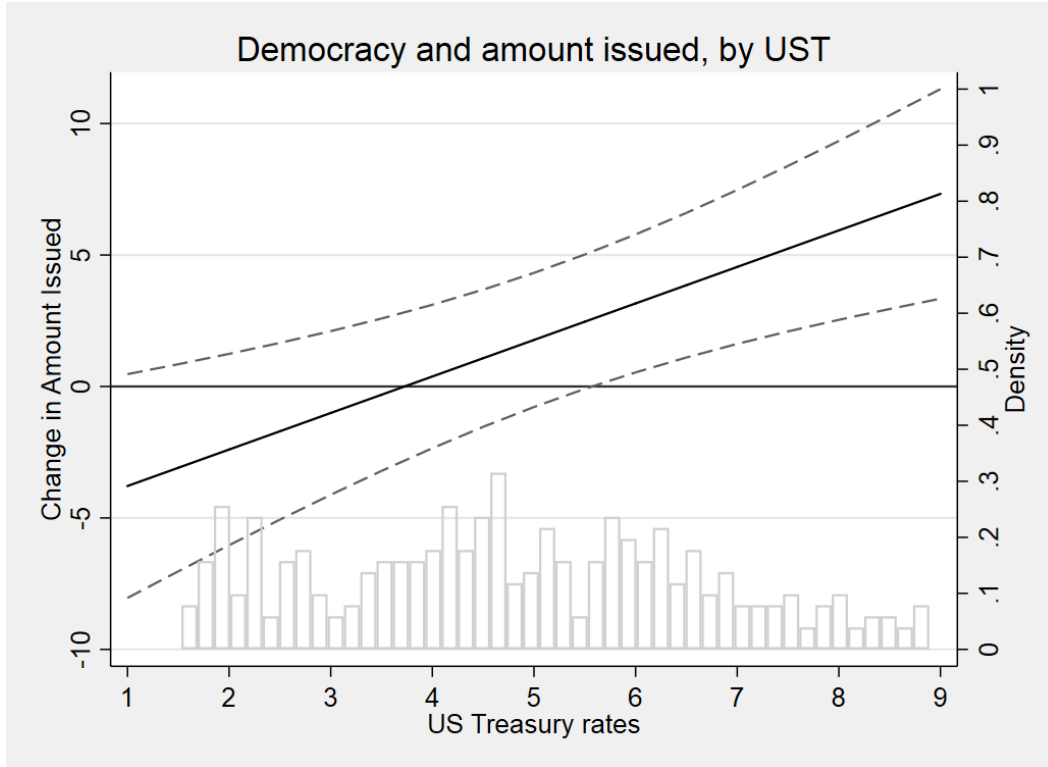


Figure 5: The figure shows marginal effects for increases in *Democracy* on the amount of debt issued, conditional on *US Treasuries* (Table 15, column 3), with dotted lines representing 95% confidence intervals. Grey boxes show the density of US Treasury rates across the distribution.

Robustness

Recall that we hypothesize that democratic institutions shape primary market outcomes, but we do not hypothesize that elections have effects. Why? First, stable institutions can blunt investors' concerns about electoral risks. Governments may engage in pre-electoral economic expansion, but leaders facing greater institutional constraints are less likely to do so to extremes. Orderly transitions of power can minimize the impact of closely contested or surprising elections. Moreover, given their credible threat of exit, investors can expect with some certainty that democratically-elected governments will pursue policies that include monetary restraint and respect for property rights.⁶⁷

Here, we provide evidence that elections do not have effects on the incidence of debt issued, consistent with these arguments. These null findings do not allow us to establish that strong institutions alone are doing all the work of mitigating electoral risk. In fact, we posit that sellers

⁶⁷Bodea and Hicks (2015); Pandya (2014); Campello (2014); Kaplan and Thomsson (2016).

and buyers may address remaining electoral risk by pricing it into an election-proximate issue’s interest rate, maturity structure, and/or currency denomination. For instance, in September 2016, Ghana—rated as a strong democracy—was in the run-up to what was expected to be a contentious December election. Observers worried about pre-election fiscal expansion, yet they nevertheless submitted orders more than five times greater than the offered bond. This came at a cost, however, with a 9.25 rate of interest for the 10 year bond, in a year marked by low global interest rates.⁶⁸ Consistent with this example, we expect future research may find significant effects of elections on the tradeoffs across bond terms.

Among non-OECD countries for which we have information on elections, there are 3,842 country-months with an election (19 percent of observations). We subset on non-OECD countries to conduct the most compelling tests, given that these countries have greater financing needs, greater exposure to externally-induced economic volatility, and often particularly tumultuous elections. In Table 4, we first consider possible effects on issuance of *Any election* for the executive or for a national legislature in the next three months, to approximate the political business cycle (column 1). We also code only *Leader election*, or the election of the executive in a presidential system or the legislature in a parliamentary system (column 2). As expected, we find no conditional effects on issuance. Null findings remain if we (1) increase the election window up to 12 months, (2) subset on parliamentary or non-parliamentary systems, (3) subset on close elections (5 percent or less margin of victory) or (4) subset on country-months in which a given country is a democracy.⁶⁹ Finally, null effects remain when amount is the dependent variable. In contrast, and consistent with our theory on the institutional democratic advantage, we do find that an institutional measure of elections—whether they are “free and fair”—has a significant and positive effect on issuance when interacted with *US Treasury*.⁷⁰

⁶⁸Julie Wernau and Christopher Whittall. “Global Finance: Ghana’s Bonds are Suddenly Hot.” Wall Street Journal, September 9, 2016, p. c3.

⁶⁹Using the binary measure from Magaloni and Min (2013). Results available from authors.

⁷⁰VDem.

Table 4: Sovereign Bond Issuance and Elections (1990-2016)

VARIABLES	(1) No OECD	(2) No OECD	(3) No OECD
Any election (next 3 mo.)	-0.087 (0.088)		
Any elect. X UST	0.019 (0.018)		
Leader election (next 3 mo.)		0.053 (0.262)	
Leader elect. X UST		-0.022 (0.051)	
Elect. free & fair			-2.099*** (0.668)
Free & fair X UST			0.495*** (0.112)
US treasury rate	0.005 (0.022)	0.018 (0.021)	-0.301*** (0.072)
GDP per capita	0.491* (0.266)	0.495** (0.251)	0.420 (0.259)
GDP growth (annual %)	0.004 (0.009)	0.002 (0.008)	0.003 (0.009)
Current account balance (% of GDP)	0.011 (0.007)	0.010 (0.006)	0.009 (0.007)
Chinn-Ito index	-0.002 (0.090)	0.006 (0.084)	0.049 (0.083)
Public debt (% GDP)	-0.005 (0.004)	-0.005 (0.004)	-0.004 (0.004)
Regional peer issuance	1.049** (0.526)	1.064** (0.495)	0.887* (0.525)
MSCI peer issuance	-0.463 (0.456)	-0.460 (0.452)	-0.418 (0.464)
Observations	21,720	23,328	21,720
Log likelihood	-10138	-10662	-9950
Pseudo-R2	0.304	0.310	0.317
Countries	91	97	91

Robust standard errors clustered by country in parentheses

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

This table reports results of probit regressions of determinants of sovereign bond issuance. Country and year fixed effects are suppressed, as are region, MSCI, and quarter dummies.

Our theory implies that, if any aspects of political institutions are in fact associated with increased risk, then they should have conditional negative effects on issuance. We expect corrupt or non-functioning institutions in a given country to be sources of increased perceptions of (conditional) political risk. In Table 5, we show that the interaction of *Political corruption* and *US Treasury* is negative and significant (column 1), as is the interaction with *Election interruption*

(column 2).⁷¹ This conditional effect suggests limits on the downside risk of corrupt or non-functioning democratic institutions: when global capital markets are flush, failing institutions are not systematically correlated with penalties to issuance.

Table 5: Sovereign Bond Issuance and Corrupt or Non-Functioning Democratic Institutions (1990-2016)

VARIABLES	(1) No OECD	(2) No OECD
Political corruption	1.816*	
	(0.976)	
Corruption X UST	-0.475***	
	(0.144)	
Exec. no longer elected		6.442***
		(1.137)
Elect. interrupt. X UST		-1.119***
		(0.240)
US treasury rate	0.254***	0.009
	(0.082)	(0.021)
GDP per capita	0.442*	0.494*
	(0.260)	(0.266)
GDP growth (annual %)	0.003	0.004
	(0.009)	(0.009)
Current account balance (% of GDP)	0.012*	0.011*
	(0.006)	(0.007)
Chinn-Ito index	0.034	-0.002
	(0.083)	(0.090)
Public debt (% GDP)	-0.004	-0.005
	(0.004)	(0.004)
Regional peer issuance	1.180**	1.049**
	(0.520)	(0.526)
MSCI peer issuance	-0.537	-0.457
	(0.454)	(0.458)
Observations	21,720	21,720
Log likelihood	-10011	-10132
Pseudo-R2	0.312	0.304
Countries	91	91

Robust standard errors clustered by country in parentheses

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

This table reports results of probit regression of sovereign bond issuance on sources of political risk. Country and year fixed effects are suppressed, as are region, MSCI, and quarter dummies.

⁷¹VDem. Political corruption is measured by expert opinion on the pervasiveness of corruption within the executive, legislative, and judicial system. Election interruption captures country-months in which the chief executive is no longer elected.

Conclusion

We explore the political economy of the interaction between governments and investors in the issuance of sovereign bonds in primary markets. First, we confirm that the democratic advantage holds in primary capital markets, at the point when governments and investors interact to effect debt issuance. At this stage, constrained executives, rule of law, and transparent policymaking all are associated with the capacity of governments—via their effect on investors’ risk perceptions—to issue more debt more often. However, the democratic advantage is conditional: it depends on structural factors in global finance. When global liquidity is low, investors act in a more discriminating fashion; democratic political institutions are a means of discrimination. When capital market liquidity is high, however, investors seek out higher yields and are less sensitive to risk, including political risk. Hence, global capital cycles, which are exogenous to all but the largest sovereign borrowers, mediate the effects of domestic institutions.⁷²

Our argument represents a departure from typical open economy politics theories, as we identify a top-down global effect of international markets. We pick up on the role of global capital liquidity as a push factor, a feature external to borrowers, in addition to borrower-specific pull factors. Our focus on global push factors amplifies recent methodological critiques of open economy politics approaches by theorizing about, rather than merely controlling for, the effects of global market dynamics.⁷³

Future work would do well to explore not only when and in what amounts governments borrow, but also the price, maturity structure, and currency denomination of sovereign debt issues. We expect tradeoffs across bond terms to be associated with regime type, as well as other political variables like ideology, government time horizons, and the features of government DMOs. Additionally, underwriters sell government bonds to a diverse array of purchasers, including institutional investors, hedge funds, foreign central banks, commercial banks, retail investors, and sovereign wealth funds. Some are resident to the country of issue, while many are not. The composition of the investor base likely affects the ways in which governments are constrained in their ability to access global capital markets at the time, in the amount, and with the terms that they prefer.

Finally, exploring governments’ strategic considerations in accessing primary capital mar-

⁷²Bauerle Danzman, Oatley and Winecoff (2017). We treat the agency of political actors in core countries as exogenous determinants of the liquidity dynamics confronting sovereign issuers.

⁷³Brooks, Cunha and Mosley (2015); Chaudoin, Milner and Pang (2015); Mosley (2003); Oatley (2011).

kets allows us to address bigger questions related to the international relations of sovereign finance. The monetary policy decisions made by large, mature economies—especially the United States—have consequences for other governments’ financing strategies. Our findings imply that future tightening in the US is likely to intensify borrowing constraints for developing countries, especially those with non-democratic political systems. Given the centrality of fiscal policy to government, US financial decisions could therefore affect low- and middle-income countries’ tax policies, social policies, and societal conflict.

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Tables and Figures

Country List

Full List of Countries:

Albania, Angola, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bolivia, Bosnia-Herze., Botswana, Brazil, Bulgaria, Burkina Faso, Cameroon, Canada, Cape Verde, Chile, China, Congo, Croatia, Cyprus, Czech Rep., Dem. Rep. Congo, Denmark, Estonia, Fiji, Nigeria, Finland, Colombia, Norway, France, Costa Rica, Cote d'Ivoire, Dom. Republic, Ecuador, Egypt, El Salvador, Ethiopia, Gabon, Georgia, Germany, Ghana, Greece, Grenada, Guatemala, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iraq, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Korea, Kuwait, Kyrgyzstan, Latvia, Lebanon, Lesotho, Lithuania, Luxembourg, Macedonia, Malaysia, Malta, Mauritius, Mexico, Moldova, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Netherlands, New Zealand, Nicaragua, Oman, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russia, Rwanda, Saudi Arabia, Senegal, Serbia, Seychelles, Singapore, Slovakia, Slovenia, Solomon Island, South Africa, Spain, Sri Lanka, St. Vincent, Suriname, Sweden, Switzerland, Taiwan, Thailand, Trinidad And Tobago, Tunisia, Turkey, UAE, Uganda, Ukraine, United Kingdom, Venezuela, Vietnam

A Online Appendix

Included below are additional empirical results mentioned in the main text of the manuscript; these are intended to be included with the online appendix for the paper.

Table 6: Sovereign Bond Issuance and Alternative Measures of Democracy (1990-2016)

VARIABLES	(1) No OECD	(2) No OECD	(3) No OECD	(4) No OECD
Polity	0.002 (0.040)	0.017 (0.051)		
Polity X UST	0.012** (0.005)	0.012* (0.007)		
Democracy dummy			-0.261 (0.489)	-0.113 (0.494)
Democ. dummy X UST			0.128* (0.075)	0.175* (0.093)
US treasury rate	-0.048 (0.030)	-0.036 (0.038)	-0.070 (0.051)	-0.093 (0.067)
GDP per capita	0.528** (0.258)	0.657** (0.278)	0.541** (0.260)	0.649** (0.275)
GDP growth (annual %)	0.002 (0.009)	0.002 (0.009)	0.002 (0.009)	0.002 (0.009)
Current account balance (% of GDP)	0.010 (0.007)	0.021** (0.010)	0.012* (0.007)	0.022** (0.010)
Chinn-Ito index	-0.000 (0.089)	-0.108 (0.089)	0.011 (0.087)	-0.092 (0.089)
Public debt (% GDP)	-0.004 (0.004)	-0.002 (0.003)	-0.005 (0.004)	-0.002 (0.003)
Regional peer issuance	0.894* (0.514)	0.296 (0.518)	0.837* (0.487)	0.204 (0.494)
MSCI peer issuance	-0.472 (0.467)	-0.507 (0.368)	-0.446 (0.453)	-0.432 (0.355)
CBI Garriga (weighted)		-0.407 (0.469)		-0.218 (0.518)
Regime duration		0.023*** (0.006)		0.029*** (0.006)
Pegged XR		-0.022 (0.119)		0.000 (0.114)
Oil rents (% of GDP)		-0.040** (0.018)		-0.040** (0.016)
IMF prog. in place		0.182 (0.122)		0.183 (0.124)
Inflation crisis		-0.037 (0.197)		-0.000 (0.205)
Default crisis		-0.732*** (0.279)		-0.721*** (0.275)
Observations	20,964	17,352	21,432	17,544
Log likelihood	-9896	-8159	-10025	-8226
Pseudo-R2	0.301	0.307	0.304	0.308
Countries	88	78	90	79

Robust standard errors, clustered by country, in parentheses

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

This table reports results of probit regressions using sovereign bond issuance as the dependent variable. Country and year fixed effects, as well as MSCI ratings and region dummies, are suppressed for presentation.

Table 7: Sovereign Bond Issuance and Alternative Time Trends (1990-2016)

VARIABLES	(1) No OECD	(2) No OECD	(3) No OECD	(4) No OECD
Democracy (VDem)	-1.494 (0.940)	-1.506 (0.940)	-1.569* (0.948)	-1.571* (0.950)
Democ. X UST	0.533*** (0.138)	0.522*** (0.141)	0.529*** (0.144)	0.528*** (0.144)
US treasury rate	-0.341*** (0.080)	-0.346*** (0.080)	-0.306*** (0.085)	-0.294*** (0.085)
GDP per capita	0.340 (0.218)	0.400* (0.237)	0.403* (0.237)	0.434* (0.247)
GDP growth (annual %)	-0.004 (0.008)	-0.005 (0.008)	-0.002 (0.008)	-0.003 (0.008)
Chinn-Ito index	0.060 (0.085)	0.049 (0.088)	0.057 (0.087)	0.058 (0.087)
Current account balance (% of GDP)	0.006 (0.007)	0.006 (0.007)	0.007 (0.007)	0.007 (0.007)
Public debt (% GDP)	-0.005 (0.004)	-0.005 (0.004)	-0.005 (0.004)	-0.006 (0.004)
MSCI peer issuance	0.913* (0.473) (0.508)	0.745 (0.468) (0.517)	0.465 (0.451) (0.522)	0.470 (0.448) (0.525)
Time	0.000 (0.002)	0.003 (0.004)	0.026*** (0.009)	0.011 (0.018)
Time ²		-0.000 (0.000)	-0.000*** (0.000)	0.000 (0.000)
Time ³			0.000*** (0.000)	-0.000 (0.000)
Time ⁴				0.000 (0.000)
Observations	20,822	20,822	20,822	20,822
Log likelihood	-9749	-9743	-9706	-9703
Pseudo-R2	0.305	0.306	0.308	0.309
Countries	91	91	91	91

Robust standard errors clustered on country in parentheses

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

This table reports results of probit regressions using sovereign bond issuance as the dependent variable. Country fixed effects, MSCI ratings dummies, and dummies for quarter are suppressed for presentation.

Table 8: Sovereign Bond Issuance by Decade

VARIABLES	(1) 1990s	(2) 2000s	(3) 2010s	(4) Pre-crisis
Democracy (VDem)	-2.772* (1.494)	-2.013 (1.374)	-3.494** (1.426)	-2.987** (1.229)
US treasury rate	-0.090 (0.110)	-0.295* (0.151)	-0.355** (0.154)	-0.447*** (0.114)
Democ. X UST	0.338** (0.163)	0.469** (0.234)	0.496** (0.231)	0.725*** (0.167)
GDP per capita	1.385*** (0.473)	0.536 (0.345)	-0.764 (0.652)	0.563* (0.312)
GDP growth (annual %)	-0.021 (0.015)	-0.005 (0.013)	-0.014 (0.015)	-0.007 (0.011)
Current account balance (% of GDP)	0.036* (0.019)	0.018 (0.011)	0.006 (0.011)	0.023** (0.010)
Chinn-Ito index	-0.060 (0.098)	-0.095 (0.121)	-0.105 (0.151)	0.070 (0.087)
Public debt (% GDP)	-0.002 (0.003)	-0.004 (0.005)	-0.021** (0.009)	-0.003 (0.003)
Proportion of peers issuing by region	-0.987 (0.652)	1.282* (0.672)	-0.359 (0.584)	-0.224 (0.502)
MSCI peer issuance	0.506 (0.549)	-0.117 (0.576)	0.499 (0.565)	0.016 (0.537)
Observations	5,823	11,833	4,332	16,719
Log likelihood	-2375	-5464	-2108	-7579
Pseudo-R2	0.396	0.316	0.298	0.320
Countries	73	104	91	100

Robust standard errors, clustered by country, in parentheses

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

This table reports results of probit regressions using sovereign bond issuance as the dependent variable. Country and year fixed effects, as well as MSCI ratings and region dummies, are suppressed for presentation.

Table 9: Sovereign Bond Issuance and Democracy (using OLS)

VARIABLES	(1) Full sample	(2) No OECD	(3) No OECD	(4) No OECD
Democracy (VDem)	0.405** (0.161)	0.312* (0.162)	-0.384 (0.248)	-0.308 (0.310)
US treasury rate	0.003 (0.005)	0.001 (0.005)	-0.071*** (0.020)	-0.068*** (0.025)
Democ. X UST			0.132*** (0.037)	0.132*** (0.044)
GDP per capita	0.191*** (0.062)	0.169** (0.065)	0.160** (0.062)	0.199*** (0.070)
GDP growth (annual %)	0.001 (0.002)	0.000 (0.002)	-0.000 (0.002)	-0.001 (0.002)
Current account balance (% of GDP)	0.003** (0.002)	0.003* (0.002)	0.003* (0.002)	0.005** (0.002)
Chinn-Ito index	0.001 (0.023)	0.003 (0.024)	0.016 (0.023)	-0.013 (0.025)
Public debt (% GDP)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.000 (0.001)
Regional peer issuance	0.220* (0.131)	0.266* (0.141)	0.241* (0.142)	0.109 (0.143)
MSCI peer issuance	0.154 (0.148)	-0.097 (0.133)	-0.081 (0.135)	-0.098 (0.106)
CBI Garriga (weighted)				-0.013 (0.147)
Regime duration				0.006*** (0.002)
Pegged XR				0.005 (0.031)
Oil rents (% of GDP)				-0.008* (0.004)
IMF prog. in place				0.047 (0.034)
Inflation crisis				-0.054 (0.059)
Default crisis				-0.132 (0.088)
Observations	26,746	22,196	22,196	17,673
R-squared	0.081	0.100	0.111	0.105
Number of countries	117	97	97	83

Robust standard errors, clustered by country, in parentheses

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

This table reports results of OLS regressions using sovereign bond issuance as the dependent variable. Country and year fixed effects, as well as MSCI ratings and region dummies, are suppressed for presentation.

Table 10: Sovereign Bond Issuance and Democracy (Alternative Global Measures)

VARIABLES	(1)	(2)	(3)	(4)
	No OECD	No OECD	No OECD	No OECD
Democracy (VDem)	-1.238 (0.954)	0.183 (0.735)	-1.066 (0.916)	0.629 (0.738)
German 10yr rates	-0.280*** (0.088)			
German rates X UST	0.480*** (0.147)			
Japanese 10yr rates		-0.242** (0.104)		
Japanese rates X UST		0.390** (0.174)		
Average 10yr rates			-0.303*** (0.098)	
Avg. rates X UST			0.532*** (0.167)	
Global asset values (Rey)				-0.490** (0.192)
Rey X UST				0.894*** (0.311)
GDP per capita	0.438* (0.258)	0.472* (0.261)	0.443* (0.258)	0.598** (0.279)
GDP growth (annual %)	0.002 (0.009)	0.003 (0.009)	0.002 (0.009)	-0.000 (0.009)
Current account balance (% of GDP)	0.010 (0.007)	0.011 (0.007)	0.010 (0.007)	0.016** (0.008)
Chinn-Ito index	0.053 (0.085)	0.032 (0.087)	0.051 (0.085)	0.012 (0.094)
Public debt (% GDP)	-0.005 (0.004)	-0.005 (0.004)	-0.005 (0.004)	-0.004 (0.004)
Regional peer issuance	0.958* (0.536)	1.022* (0.540)	0.963* (0.539)	0.694 (0.502)
MSCI peer issuance	-0.328 (0.506)	-0.340 (0.513)	-0.320 (0.509)	-0.706* (0.402)
Observations	21,028	21,028	21,028	18,880
Log likelihood	-9813	-9876	-9822	-8597
Pseudo-R2	0.308	0.304	0.307	0.315
Countries	91	91	91	90

Robust standard errors, clustered by country, in parentheses

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

This table reports results of OLS regressions using sovereign bond issuance as the dependent variable. Country and year fixed effects, as well as MSCI ratings and region dummies, are suppressed for presentation.

Table 11: Sovereign Bond Issuance and Democracy (Bootstrapped Standard Errors)

VARIABLES	(1) Full sample	(2) No OECD	(3) No OECD	(4) No OECD
Elect. democ. (VDem)	1.476*** (0.096)	1.123*** (0.129)	-1.512*** (0.262)	-1.303*** (0.231)
US treasury rate	0.018 (0.027)	0.012 (0.034)	-0.288*** (0.048)	-0.287*** (0.041)
Democ. X UST			0.529*** (0.046)	0.543*** (0.036)
GDP per capita	0.622*** (0.031)	0.488*** (0.024)	0.435*** (0.051)	0.630*** (0.053)
GDP growth (annual %)	0.003 (0.003)	0.003 (0.002)	0.002 (0.003)	-0.001 (0.003)
Current account balance (% of GDP)	0.012*** (0.001)	0.012*** (0.002)	0.010*** (0.001)	0.023*** (0.002)
Chinn-Ito index	-0.000 (0.016)	0.001 (0.011)	0.050*** (0.012)	-0.065*** (0.014)
Public debt (% GDP)	-0.006*** (0.000)	-0.006*** (0.000)	-0.005*** (0.000)	-0.003*** (0.001)
Proportion of peers issuing by region	0.456*** (0.118)	0.844*** (0.120)	0.725*** (0.129)	0.293** (0.125)
MSCI peer issuance	0.139 (0.144)	-0.650*** (0.169)	-0.600*** (0.169)	-0.640*** (0.134)
CBI Garriga (weighted)				-0.272*** (0.099)
Regime duration				0.023*** (0.002)
Pegged XR				-0.021 (0.042)
Oil rents (% of GDP)				-0.043*** (0.006)
IMF prog. in place				0.160*** (0.039)
Inflation crisis				-0.115** (0.049)
Default crisis				-0.548*** (0.098)
Observations	25,374	21,028	21,028	16,890
Log likelihood	-12298	-9932	-9810	-8010
Pseudo-R2	0.286	0.300	0.308	0.304

Bootstrapped standard errors, resampling by country, in parentheses

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

This table reports results of probit regressions using sovereign bond issuance as the dependent variable, employing bootstrapped standard errors (resampling by country). Country and year fixed effects, as well as MSCI ratings and region dummies, are suppressed for presentation.

Table 12: Sovereign Credit Ratings and Democracy

VARIABLES	(1) Avg. Rating	(2) Moody's	(3) Fitch	(4) S&P
Democracy (VDem)	1.273 (1.384)	1.111 (1.530)	1.392 (1.489)	1.020 (1.496)
US treasury rate	0.121 (0.126)	0.140 (0.142)	0.078 (0.144)	0.148 (0.130)
Democ. X UST	-0.087 (0.193)	-0.121 (0.215)	-0.055 (0.211)	-0.122 (0.194)
GDP per capita	2.751*** (0.398)	3.004*** (0.457)	2.159*** (0.353)	2.748*** (0.389)
GDP growth (annual %)	0.072*** (0.020)	0.077*** (0.024)	0.071*** (0.019)	0.093*** (0.022)
Current account balance (% of GDP)	0.004 (0.011)	0.002 (0.011)	-0.001 (0.010)	0.014 (0.011)
Chinn-Ito index	0.275** (0.121)	0.313*** (0.118)	0.354** (0.171)	0.173 (0.121)
Public debt (% GDP)	-0.023*** (0.009)	-0.021** (0.009)	-0.037*** (0.007)	-0.041*** (0.007)
Regional peer issuance	-0.167 (0.441)	0.072 (0.518)	-0.977* (0.575)	-0.535 (0.440)
MSCI peer issuance	-0.750 (0.517)	-0.812 (0.623)	-0.539 (0.680)	-0.362 (0.550)
Observations	20,439	18,055	14,673	17,897
R-squared	0.377	0.357	0.402	0.409
Number of ccode	110	100	90	103
Countries	110	100	90	103

Robust standard errors clustered by country in parentheses

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

This table reports results of OLS regressions using sovereign credit ratings as the dependent variable. Country and year fixed effects, as well as MSCI ratings and region dummies, are suppressed for presentation.

Table 13: Heckman Selection - Rating

EQUATION	VARIABLES	(1) Avg. Rating	(2) Avg. Rating	
Average rating	Democracy (VDem)	1.026 (1.248)	1.094 (1.535)	
	US treasury rate	0.553*** (0.077)	0.560** (0.279)	
	Democ. X UST		-0.012 (0.371)	
	Current account balance (% of GDP)	0.067*** (0.025)	0.067*** (0.025)	
	GDP growth (annual %)	0.129*** (0.039)	0.129*** (0.039)	
	GDP per capita	3.186*** (0.210)	3.186*** (0.210)	
	Inflation (annual %)	-0.004*** (0.002)	-0.004*** (0.002)	
	Trade (% of GDP)	-0.000 (0.005)	-0.000 (0.005)	
	Default crisis	-4.800*** (1.439)	-4.802*** (1.437)	
	Has Rating	Democracy (VDem)	1.625*** (0.456)	2.165** (0.889)
		US treasury rate	-0.180*** (0.041)	-0.129 (0.087)
Democ. X UST			-0.098 (0.152)	
Current account balance (% of GDP)		-0.002 (0.011)	-0.001 (0.011)	
GDP growth (annual %)		-0.002 (0.014)	-0.001 (0.013)	
GDP per capita		0.842*** (0.135)	0.843*** (0.135)	
Inflation (annual %)		-0.000 (0.001)	-0.000 (0.000)	
Trade (% of GDP)		-0.006*** (0.002)	-0.006*** (0.002)	
Default crisis		-0.126 (0.279)	-0.137 (0.281)	
Exports to US		0.000 (0.000)	0.000 (0.000)	
2000s		0.749*** (0.095)	0.747*** (0.094)	
2010s		0.660*** (0.194)	0.670*** (0.192)	
Observations		31,531	31,531	
Countries		120	120	

Robust standard errors clustered by country in parentheses

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

This table reports results of 2-stage Heckman selection estimation, taking whether a country has received a rating by any of the 3 major rating agencies as the first stage “selection” model, and the average rating across the 3 agencies in the second stage “outcome” model. Covariates are based on Beaulieu, Cox and Saiegh (2012).

Table 14: Heckman Selection - Issuance

EQUATION	VARIABLES	(1) Issue	(2) Issue	
Bond Issuance	Democracy (VDem)	-0.121 (0.108)	-0.704*** (0.188)	
	US treasury rate	0.004 (0.010)	-0.096*** (0.025)	
	Democ. X UST		0.144*** (0.034)	
	Current account balance (% of GDP)	0.002 (0.003)	0.002 (0.003)	
	GDP growth (annual %)	-0.001 (0.003)	-0.001 (0.003)	
	GDP per capita	-0.040 (0.028)	-0.037 (0.029)	
	Inflation (annual %)	-0.000 (0.000)	-0.000 (0.000)	
	Trade (% of GDP)	-0.001 (0.000)	-0.001 (0.000)	
	Default crisis	-0.302*** (0.092)	-0.282*** (0.090)	
	Has Rating	Democracy (VDem)	1.501*** (0.444)	1.448*** (0.452)
		US treasury rate	-0.230*** (0.036)	-0.224*** (0.037)
Current account balance (% of GDP)		-0.013 (0.011)	-0.013 (0.011)	
GDP growth (annual %)		-0.006 (0.013)	-0.006 (0.013)	
GDP per capita		0.654*** (0.124)	0.664*** (0.125)	
Inflation (annual %)		-0.000 (0.000)	-0.000 (0.000)	
Trade (% of GDP)		-0.006** (0.002)	-0.006** (0.002)	
Default crisis		0.065 (0.258)	0.066 (0.258)	
Exports to US		0.001** (0.000)	0.001** (0.000)	
2000s		0.644*** (0.109)	0.665*** (0.110)	
2010s		0.698*** (0.219)	0.683*** (0.222)	
Observations		31,531	31,531	
Countries		120	120	

Robust standard errors clustered by country in parentheses

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

This table reports results of 2-stage Heckman selection estimation, taking whether a country has received a rating by any of the 3 major rating agencies as the first stage “selection” model, and a dummy for bond issuance in the second stage “outcome” model. Covariates are based on Beaulieu, Cox and Saiegh (2012).

Table 15: Standardized Measure of Democracy (1990-2016)

VARIABLES	(1) Issue (No OECD)	(2) Issue (No OECD)	(3) Amount (No OECD)	(4) Amount (No OECD)
Standardized democracy	-0.384 (0.241)	-0.324 (0.295)	-5.176** (2.515)	-5.081* (2.717)
US treasury rate	0.027 (0.025)	0.038 (0.028)	0.472* (0.243)	0.473* (0.251)
Std. democ. X UST	0.131*** (0.036)	0.133*** (0.043)	1.389*** (0.413)	1.096** (0.426)
GDP per capita	0.433* (0.256)	0.624** (0.269)	0.279 (1.070)	2.045* (1.206)
GDP growth (annual %)	0.002 (0.009)	0.000 (0.009)	0.128 (0.097)	0.149 (0.098)
Current account balance (% of GDP)	0.010 (0.007)	0.024** (0.010)	0.113 (0.081)	0.171 (0.119)
Chinn-Ito index	0.051 (0.085)	-0.062 (0.089)	1.062 (0.667)	0.467 (0.658)
Public debt (% GDP)	-0.005 (0.004)	-0.003 (0.003)	-0.027 (0.026)	-0.019 (0.027)
Regional peer issuance	0.937* (0.533)	0.288 (0.544)	-4.172 (6.504)	-8.070 (6.297)
MSCI peer issuance	-0.303 (0.499)	-0.350 (0.372)	-2.402 (3.363)	-2.575 (3.024)
CBI Garriga (weighted)		-0.259 (0.484)		-5.566 (4.216)
Regime duration		0.023*** (0.005)		0.034 (0.069)
Pegged XR		-0.018 (0.117)		-2.782* (1.646)
Oil rents (% of GDP)		-0.045** (0.018)		-0.239* (0.140)
IMF prog. in place		0.166 (0.121)		2.797** (1.375)
Inflation crisis		-0.087 (0.212)		3.577* (2.144)
Default crisis		-0.577** (0.284)		-10.367*** (2.563)
Observations	21,028	16,890	22,196	17,673
Log likelihood	-9807	-8010	-49385	-40973
Pseudo-R2	0.308	0.304	0.0605	0.0636
Countries	91	78	97	83

Robust standard errors clustered by country in parentheses

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

This table reports results of probit regressions using sovereign bond issuance as the dependent variable (Columns 1 and 2) and tobit regressions using amount issued as the dependent variable (Columns 3 and 4), after standardizing the measure of democracy. Country and year fixed effects, as well as MSCI ratings and region dummies, are suppressed for presentation.

Predictive power

To address the issue of predictive power of our models, we provide below a figure mapping the receiver operator curve (ROC) for our model that includes an interaction to capture the conditional nature of the democratic advantage, as opposed to one that does not.⁷⁴ As demonstrated below in Figure 6, the dark gray ROC for the model including the interaction term (model A) exhibits superior performance in terms of area under the curve as compared to the light gray ROC estimated without the interaction (model B). A test of equality of areas under the two ROCs rejects the null hypothesis of equal areas at $p < 0.000$.

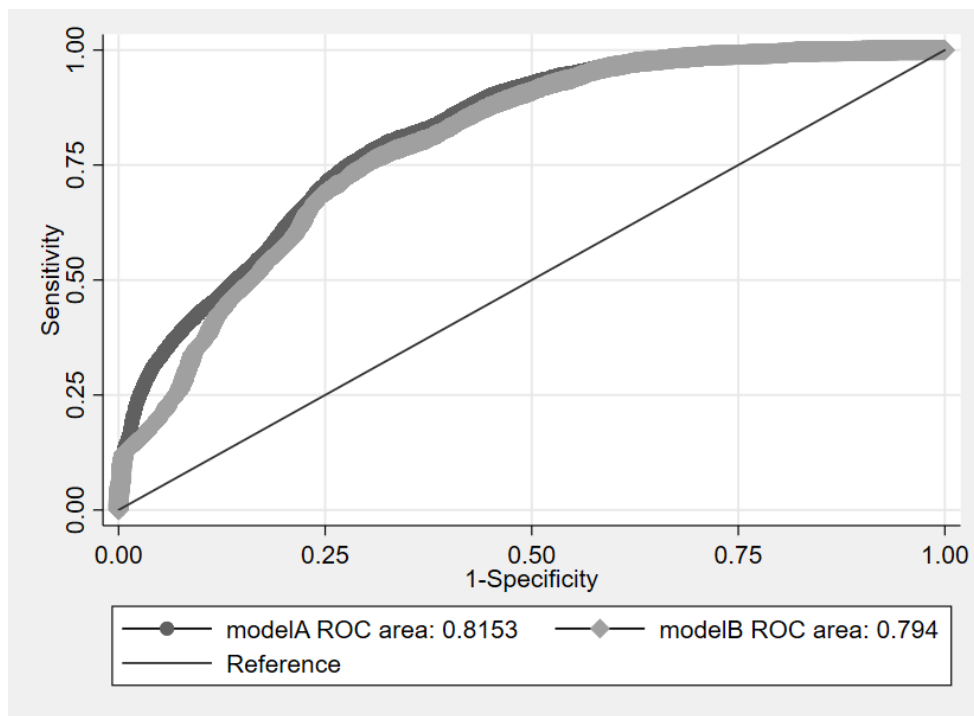


Figure 6: Receiver operator curves (ROC) for model including an interaction between *Democracy* and *US Treasury rates* (model A), and a model without the interaction (model B).

⁷⁴Figure calculated using the *roccomp* command in Stata 15.