Financial Statecraft:

Government Choice of Debt Instruments*

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Abstract

We explore the diversity of means by which governments borrow – from commercial banks, sovereign bond issues, official bilateral creditors, and multilateral financial institutions. Although political economy scholars tend to analyze financing instruments in isolation from one another, governments make choices across borrowing instruments. Although these choices partly reflect governments' macroeconomic profiles and country creditworthiness, they also reflect governments' efforts to engage in financial statecraft, often for domestic reasons. These motivations include transparency: governments that are inclined not to make available information about the state of their economy and financial institutions will, all else equal, tend to borrow from commercial banks (versus to issue bonds), or to borrow from official bilateral creditors (rather than multilateral ones). Borrowing from these entities imposes fewer disclosure requirements, and disclosures are made to a narrower audience. We test, and find support for, our hypotheses using data on the composition of government debt over time, for a large set of developing countries. We further assess, and again find support for, our expectations using data on the borrowing behavior of Mexican municipalities.

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Nearly all governments borrow to finance their activities. The ways in which they borrow, however, vary markedly: some governments access credit mostly from official sources (international financial institutions or individual governments), while others seek capital largely from private sources (commercial banks, sovereign bonds). Within these broad categories, governments' choices also differ: for instance, some governments continue to access private credit via borrowing from commercial banks, rather than via bond issuance. Creditors vary in their interest over government policy. Government choices among financing instruments have important implications for governments' policy-making autonomy (Mosley 2003*b*, Hardie 2011, Stone 2008), as well as for exposure to and the resolution of debt and financial crises (Ballard-Rosa 2020). While creditor composition partly reflects country creditworthiness, all but the weakest borrowing governments have a significant degree of agency in choosing from where to borrow.

Yet we know relatively little about the domestic political economy of these choices. This reflects a prevailing assumption that markets are relatively more powerful than governments. Governments, especially those of developing countries, are treated largely as price-takers, with little agency relative to supply-side creditors (Ballard-Rosa, Mosley and Wellhausen forthcoming). To the extent that domestic politics affects the allocation of credit, it does so by influencing creditors' assessments of default risk or willingness to impose and enforce loan conditions (Beaulieu, Cox and Saiegh 2012, Rickard and Caraway 2014). It also reflects a siloed approach to creditors: as a field, we tend to analyze international financial institutions (e.g. the World Bank and the International Monetary Fund); foreign aid (which includes concessional lending); and sovereign bond markets as distinct entities. For borrowing governments, however, these are all sources of financing. We suggest that governments' financing decisions entail a consideration of the costs and benefits of various instruments.

In terms of what motivates these choices, we suggest that many governments practice a form of financial statecraft (Steil and Litan 2006). We argue that governments' preferences

over information disclosure are centrally important to this statecraft. Governments with an underlying desire for opacity are inclined to prioritize financing sources which require less disclosure of economic information, and which share that information with a more limited audience. These less transparent governments therefore are, we predict, more inclined to borrow from commercial banks (rather than via sovereign bond markets), and from bilateral creditors (rather than from multilateral financial institutions). We test our hypotheses using data on the composition of government debt over time, for a large set of developing countries. We find evidence that transparency correlates positively with the choice of disintermediated (bond-based), rather than intermediated (bank-based), credit. We further test, and find support for, our claims using data on the borrowing behavior of Mexican municipalities.

This analysis calls attention to the role of borrowing governments in determining not only how much but also from whom to borrow. We highlight the importance of treating sovereign credit as a more general phenomenon, rather than confining analysis to sovereign bonds, multilateral lending or foreign aid. We also conceptualize states as active players in their own financing strategies on competitive international markets, rather than as passive recipients of market assessments (e.g., Bunte 2019, Campello 2015, Copelovitch 2010, Kaplan and Thomsson 2017). As such, this analysis contributes to an emerging literature on the *financial statecraft* of debtor governments, including Zeitz's analysis of how governments in sub-Saharan Africa seek financing from the Chinese government (Zeitz 2019), multilateral development banks or private bond markets and Bunte's consideration of how societal interest groups affect Latin American governments' propensity to seek credit from new versus traditional official sources (Bunte 2019). Finally, we ground the choice of borrowing instruments in domestic politics; we emphasize how and when transparency matters for government finance, thus adding to the burgeoning research analyzing the link between transparency and political stability.

1 The Domestic Politics of Sovereign Finance

Political leaders rely on three main sources of revenue to finance government activities – taxation (at the workplace, the cash register or at the border),"unearned" income, (resource rents, the profits of state owned enterprises or foreign aid), or borrowing. While taxation may contribute to state-building, taxes are often politically costly (e.g., Acemoglu and Robinson 2006, Boix 2003, Levi 1989, Morrison 2014, Tilly 1985), and taxation has both short- and long-run consequences (e.g., Stasavage 2011). Other windfalls, such as oil or aid, are not always available. Borrowing is different in that creditors expect repayment,[1] which is likely to be made via future tax revenues or resource rents.[2] Nevertheless, whether it is to smooth expenditures or to engage in counter cyclical fiscal policy (Alesina and Passalacqua 2015, Barseghyan, Battaglini and Coate 2013), to buy political support (Arias 2019, DiGiuseppe and Shea 2016), to finance wars (Queralt 2019, Slantchev 2012), or even to smooth temporary balance of payments concerns, leaders in most cases have access to credit from various sources.

Indeed, there is substantial empirical heterogeneity – even among low- and middle-income countries – in the decisions governments make regarding not only how much to borrow, but from what sources to borrow. As we note below, the variation in credit instruments is not explained fully by economic features of debtor states. Rather, leaders can access private debt markets, which include bonds that are typically publicly issued and traded in secondary markets; and loans from commercial banks and other financial institutions. Governments also may draw on private credits from manufacturers, exporters, and other suppliers of goods, sometimes with guarantees from export credit agencies. Alternatively, leaders can seek funds

[1] We treat borrowing as distinct from other forms of non-tax revenue, such as resource-based revenues. By contrast, Morrison (2014) treats all non-tax revenue as somewhat equivalent.

[2] Ricardian equivalence suggests that borrowing today reduces private spending today in anticipation of being taxed in the future to repay the loan. However, empirical evidence supporting the Ricardian equivalence proposition are mixed at best. And governments often roll over maturing debt to new instruments, sometimes in near-perpetuity.

from official creditors, including international organizations as well as other governments. Borrowing from international organizations include loans and credits from the World Bank, regional development banks, and other multilateral and intergovernmental agencies. Bilateral official credit comprises loans from governments and their agencies (including national central banks), loans from autonomous government bodies, and direct loans from official export credit agencies.

In analyzing the political economy of sovereign borrowing, political scientists have treated bond markets as the prominent form of (at least private) credit since the 1990s. This reflects, at least in some part, the resolution of the 1980s debt crisis via the conversion of commercial bank-held developing country debt into dollar-guaranteed Brady Bonds. And, for developed economies, private market bond finance indeed dominates. However, among developing countries —the focus of our study— governments indeed choose among a variety of creditors and instruments. On average, private lending has declined since the early 1980s as a share of total sovereign borrowing from a high of approximately 40% to its low of about 15% in the mid-2000s.[3] Within the subset of government borrowing which is private, sovereign bonds have been the most common form of government finance for the last two decades, with bonds expanding to more than 50% of all private sovereign lending (see Figure A2). Especially in periods of high global capital market liquidity, lower-income borrowers – including several in Africa – have been able to join the ranks of sovereign bond issuers (International Monetary Fund 2018, Mecagni et al. 2014, Zeitz 2019). There is also variation across time within the category of official lending. Recent decades have witnessed a significant decline in the share of bilateral lending in total official lending in the recent decades (strikingly evident in Figure A3).

While there is a growing literature on governments' choices among tax instruments (e.g.,

[3]Figure A1 shows the time series of private versus official borrowing among the non-OECD countries between 1970 and 2015. The error bars indicate one standard deviation above and below the mean value for each year.

Scheve and Stasavage 2016, Bastiaens and Rudra 2016, Timmons 2005), much less is known about government decisions regarding borrowing instruments.[4] On the supply side, we know that professional investors are attentive to political institutions and events, as well as to peer group effects, when evaluating the risks associated with government bonds (Brooks, Cunha and Mosley 2015, Ballard-Rosa, Mosley and Wellhausen forthcoming, Gray 2013). And in the foreign aid sector, domestic publics' concerns over burden-sharing and control affect the choice between multilateral and bilateral aid delivery (Milner and Tingley 2013). Similarly, Schneider and Tobin (2020) suggest that the provision of bilateral bailouts – often in conjunction with multilateral loans – is constrained by domestic audiences in donor countries. These accounts, however, say very little about the demand-side processes by which borrowing profiles emerge.

Governments' borrowing choices are crucially important, however, not only for meeting their current and anticipated revenue needs, but also in affecting the extent to which and ways in which creditors hold sway over governments' future policy choices. The traditional "market constraints" view of private creditors (such as bondholders) is that governments' dependence on capital gives investors the upper hand in influencing government macroeconomic, and perhaps microeconomic, policies (e.g., Bodea and Hicks 2015, Mosley 2003*b*, Przeworski and Wallerstein 1988). Moreover, international financial institutions may be even more effective at extracting concessions and reforms from borrowers, especially those with limited strategic importance (e.g., Rodrik 1995, Stone 2011). More recently, many observers would suggest that borrowing from "new" creditors such as China frees governments from the constraints imposed by the international financial institutions (IFIs) (like the The World Bank (WB) and the International Monetary Fund (IMF)), and perhaps allows them to express displeasure with the global financial system (Broz and Wang 2019), but simultaneously subjects them to different sorts of policy pressures (Bunte 2019, Zeitz 2019).

[4]Some exceptions include Bunte (2019), Kaplan and Thomsson (2017).

Choices among borrowing instruments also affect the likelihood and speed of crisis resolution: disintermediated finance, in which sovereign bonds often are held by a large and varied set of investors, presents challenges to orderly debt renegotiation in the face of crisis. This stands in contrast, many times, to the crises involving intermediated finance (commercial bank loans), in which the number of creditors is significantly smaller, and collective action problems are less severe. Along these lines, Kaplan and Thomsson (2017) argue that, because commercial banks are more likely to continue to extend credit even during crisis, whereas bondholders more readily exit lending relationships, Latin American governments with a greater reliance on bond rather than bank financing face greater pressures for fiscal austerity during crisis periods.

Therefore, to the extent that governments have the capacity to make choices among borrowing instruments, they exercise (some) autonomy with respect to the demands of any specific set of creditors. Different creditors make different demands on debtors.[5] A demand-side analysis, focused on governments' choices over credit instruments, highlights the agency of developing country governments in choosing how to borrow. Such a focus echoes scholarship on conditional borrowing from IFIs. Vreeland (2003), for instance, points out that governments' decisions to seek IMF loans are not merely the result of macroeconomic distress: some governments use IMF programs to tie their hands, even when their macroeconomic fundamentals do not require seeking out the lender of last resort. At the same time, governments on the brink of default may avoid IMF lending, as they worry that the IMF will restrict programs important to their political survival, such as food subsidies (Ballard-Rosa 2020, Stone 2008). Likewise, analyses of foreign aid note that governments not only use foreign aid revenues to provide benefits to politically-important domestic constituents, but also claim credit domestically for attracting aid revenues (Cruz and Schneider 2017).

[5]On heterogeneity among investors with regard to the interpretation of political events and political institutions, see Bernhard and Leblang (2006), Cunha (2017), Wellhausen (2015).

Similarly, in the realm of private sector finance, Betz and Pond (2019) illustrate that, to facilitate their capacity to fund their activities, many governments impose financial regulatory policies which privilege national or sovereign debt relative to other assets, in domestic capital markets. Focusing on interest group coalitions more broadly, Bunte (2019) posits that varying domestic political strength of finance-, industry- and labor-led borrowing governments to prefer different combinations of multilateral official, bilateral official and private sector creditors.[6] Moreover, sovereign borrowers might act strategically when deciding to default: Schlegl, Trebesch and Wright (2019) show that, in the aggregate, developing country governments repay and default on their debt at different rates, depending on the type of creditor, suggesting a *de facto* seniority among creditors.

Our core claim, developed below, is that governments' underlying preferences over disclosure – their propensity to share information about their economic performance – influence the choice among credit instruments. We begin our exploration of this contention with a study of non-OECD countries from 1980 to 2010. Using the World Bank's International Debt Statistics (IDS), we find that transparency is a strong predictor across the choice of borrowing instruments. More transparency —as proxied by the HRV Transparency Index (Hollyer, Rosendorff and Vreeland 2014)— is associated with a larger share of bond borrowing within private credit and greater transparency is associated with a lower share of bilateral borrowing within official credit. This finding is remarkably robust to alternative measures of transparency (such as subscription to the IMF's Special Data Dissemination Standard, or the adoption of freedom of information laws), to alternative estimation specifications (from OLS and SUR models to differences-in-differences strategies), and to alternative controls for the degree to which the borrowing sovereign is credit-constrained.

[6]Bunte does not explore variation in choices over private sector creditors, as our analysis does. Nor does his analysis consider how the material interests of societal groups interact with domestic political institutions. He does, however, distinguish between "old" official bilateral creditors – traditional aid donors, as represented by the OECD's Development Assistance Committee – and new bilateral donors and lenders, such as Brazil and China.

Cross country analyses, of course, must confront the possibility of uncontrolled heterogeneity of unobservables across countries. Macroeconomic and socio-political factors that vary across countries are likely to matter for borrowing strategies in ways that we cannot observe. To address this risk to inference, we also test our claims at the subnational level, where many of these unobserved factors are presumably held constant. Using the same methodological approach as the cross-national HRV transparency index, we generate a local-level measure of transparency for Mexican municipalities. Mexico offers a good case to test our argument as its municipalities not only have the independent ability to borrow, but also often choose to do between accessing the credit bond market or commercial banks, thus mapping our hypothesis about bonds versus banks within private borrowing instruments.[7] These subnational analyses also confirm our expectations: bond credit as a share of total private credit rises with municipal transparency.

Our analyses contribute to the study of the political economy of government finance, particularly to the growing emphasis on unpacking lenders (Bunte 2019). These findings stand in contrast to the well known literature surrounding the positive effects that financial globalization can have in improving domestic institutions (Eichengreen and Leblang 2008, Freeman and Quinn 2012, Rudra 2005).[8] Paradoxically, opaque countries – frequently pressured by the IFIs or bond market investors to improve their domestic informational environment – are shown here to be the ones who circumvent these pressures by accessing bilateral and commercial loans. Transparent states – under less pressure to reform with respect to information provision – have fewer qualms seeking finance from bond markets or from international financial institutions.

[7] Another option is to access credit from development banks (akin to official banks) but this does not map to our general hypothesis surrounding official credit.

[8] This is in line with a large literature around the pernicious consequences of international markets (e.g., Ross 2012, Pinto and Zhu 2016, Zhu 2017).

2 Theorizing Disclosure across Instruments

Governments are often faced with choices among instruments. International trade economists have long debated the consequences of tariffs versus quotas (Findlay and Wellisz 1986, Rodrik 1986); fixed versus flexible exchange rates (Reinhart and Rogoff 2004); or exchange rate devaluation versus domestic austerity to address a balance of payments crisis (Krugman 1979). Economists have typically assessed such choices on efficiency or social welfare grounds. Political economists, however, recognize that these choices are not usually made with social welfare in mind, but rather with an eye to their electoral or political consequences. When the instruments differ in their domestic distributive effects, leaders are inclined to choose the instrument (that may indeed be less efficient on economic grounds (Robinson 1998) because it is politically preferable.[9]

We therefore begin with the premise that leaders finance and implement their distributional strategies – which involve taxation, borrowing and expenditures – with an eye to remaining in power (e.g., Morrison 2009, Bueno de Mesquita et al. 2003).[10] We expect that governments' choices across sovereign borrowing instruments reflect leaders' desire for political survival. We put our attention on one particular dimension of the logic of political survival – information disclosure. Transparency is a central element in any polity. When a government is more transparent, more current, policy relevant information is available to the public.

We emphasize the importance of the availability of current and recent information on

[9] See for instance Naoi (2009) on how electoral rules affect the choice of trade instruments. Rosendorff (1996*a*,*b*) shows how trade instruments with the same effects on prices and imports can have differing saliences across interest groups and therefore differ in their political attractiveness. Pinto and Pinto (2008) consider how party ideology matters for choosing which foreign investment flows to tax. Davis (2012) notes that the use of legalistic instruments is more likely when the political returns from a more public approach to protectionism exceed those from a more subtle bargaining-based approach.

[10] In their review of research related to sovereign default, Panizza, Sturzenegger and Zettelmeyer (N.d.) note that the availability of multiple sources of consumption smoothing reduce the impact of threats of exclusion from global capital markets. Similarly, we can expect a diversified pool of creditors to increase governments' capacity to engage in distributional politics.

aggregate policy *outcomes*, the metrics of greatest interest to potential creditors. For our purposes, transparency captures the underlying willingness or reticence of leaders to release information to the general public that may affect their political behavior. For example, transparency has been shown to be associated with political stability in more democratic states and instability in less democratic ones (Hollyer, Rosendorff and Vreeland 2018*a*). Within democratic states, more shared information about policy and outcomes also enhances the electoral accountability of leaders, and leads to a reduced incidence of mass political protest designed to remove a leader. Transparency in autocratic states is associated with larger and more frequent mass political protest, threatening the survival of autocratic leaders; interestingly, transparency in autocracies has been shown to reduce the incidence of coups (Hollyer, Rosendorff and Vreeland 2015, 2018*b*,*c*). We expect that governments' choice over borrowing instruments is driven, in part, by leaders' concerns over the degree to which information provision might affect their political survival. In the context of sovereign borrowing, we focus on the extent of information disclosure preferred by creditors, as well as the size of the audience with which such information is shared.[11]

Different types of creditors make different informational demands on debtors. Any leader contemplating a loan will consider the informational requirements of potential creditors, as well as the anticipated effects of providing that information on the political behavior of their publics (or their political rivals). Information granted to a lender in the course of applying for a loan or fulfilling its disclosure requirements also could motivate coordinated political action among the borrowing governments' domestic public, or its rival elites. Indeed, if the political survival of leaders, or even the mere risk of protest against leaders is affected by information disclosure, then those leaders most at risk are less inclined to choose instruments with greater disclosure expectations. Opaque governments prefer credit instruments that

[11]In this case, the information required and the size of the audience are positively correlated, so there is no trade-off. Of course, theoretically, this need not to be the case.

require less disclosure.

This is not to argue that mass publics are necessarily paying attention to the slide decks presented by government debt managers at international road shows. Rather we view a government's willingness to provide more information – to be more transparent with respect to (perhaps more) potential creditors – to be correlated with, or a sufficient proxy for, a willingness to be more transparent more generally. We presume that a leader's unwillingness to make aggregate data available to their publics will extend to a similar desire to limit the extent to which information about government policies and outcomes is made available to their creditors.

Debt issuance typically is carried out by government debt management offices (DMOs). These bodies (headquartered in central banks, finance ministries or established as autonomous government agencies) are typically comprised of well-trained, technocratic professionals who actively and regularly interact with institutional investors, foreign central banks, commercial banks, and other actors that purchase debt in primary and secondary capital markets. For example, in trying to attract foreign capital, Uzbekistan appointed an experienced HSBC banker to head its new debt-management office in 2018.[12] Debt managers are sensitive to market appetites and assessments: they rarely, if ever, issue debt that is not fully subscribed. Our conceptualization of debt managers – and their political principals – as strategic actors fits with an important and growing literature that identifies debtor governments' agency in renegotiating debt and repayment terms during crises (see, e.g., Ballard-Rosa 2016, Copelovitch 2010, Vreeland 2003).

Sovereign debt instruments, regardless of their form, ultimately are legal contracts which obligate the parties to take certain actions (including payment of interest and repayment of principal), and to provide specific disclosures relevant to the good faith execution of the

[12]See here. DMOs vary in their professionalization as well as in their autonomy from government principals. Future analysis would do well to consider both how DMO structures result from, and how they mediate, governments' underlying preferences regarding transparency and disclosure.

contract. There are two fundamental dimensions on which to consider the degree of disclosure associated with any class of debt instrument: the *extensive* and the *intensive* margins. The extensive margin refers to the size of the audience receiving the information that is provided by the borrowing state. How *broadly* is the information about the borrower likely to spread? Is the data being presented to the creditor likely to remain within the room in which a loan is being negotiated, or will it become part of the public record in order to satisfy legal disclosure requirements and creditors' expectations for information?

The intensive margin refers to how much information is shared with any specific lender, or the *depth* of the information provision. A bond prospectus, for instance, will provide a detailed accounting of the issuing state's balance of payments, monetary and fiscal conditions, forecasts of political, military and economic events, and even data on potential natural disasters. Commercial bank contracts rarely address these contingencies in such detail. Importantly, these two dimensions move in tandem, so governments are unlikely to face any trade-off between the two.

Within the realm of private borrowing, bond issues typically are accompanied by broad disclosure expectations. Sovereign bonds are usually issued with the advice of underwriting firms (investment banks), and those designed to appeal to international investors are often (but not always) issued under London or New York law. Prior to offering a debt issue, borrowers – especially those who are new to the bond market or have been absent for a significant period of time – will participate in "road shows," presenting information about their country and its economy to potential institutional investors. And, if they do not have one already, sovereign borrowers will seek a credit rating from at least one ratings agency (e.g., Fitch, Moody's or Standard & Poor's). When a bond is offered, its prospectus usually runs to hundreds of pages, detailing specifics such as monetary and fiscal policy history and risk, upcoming political events and resource endowments. This prospectus is presented to a wide array of potential investors; it typically is filed with regulatory authorities as well, as a

condition of listing the bond on secondary markets overseas.

By contrast, commercial bank lending is characterized by a narrow process: commercial bank loan contracts are rarely, if ever, made public. Information collected from sovereign borrowers is shared with the lead bank and perhaps with members of the bank syndicate (if one exists). Disclosure is often restricted to the parties themselves; the debt instrument is not usually subject to public scrutiny, legal examination or regulatory filings. Indeed, commercial bank loan contracts typically are subject to non-disclosure provisions, leading to their absence from –among other places– archival holdings related to debt rescheduling. Indeed, in June 2019, the G-20 governments endorsed the Institute of International Finance's Voluntary Principles for Debt Transparency. These principles, to be applied prospectively, focus on the disclosure of information about private sector lending to sovereigns; they noted that, while bond-based financing is quite transparent already, commercial bank financing is not.For the period covered by our analysis, bond financing requires greater disclosure at the extensive margin than does bank lending.

On the intensive margin within private sovereign borrowing, banks (at least when compared to bonds) appear to apply fewer legal requirements, and rely more on relationship specific conditions. For some, this creates an "information asymmetry" vis-à-vis bond financing, as banks form a close relationship with the sovereign precisely to gather information and monitor the prospective borrowers (World Bank 2006, Kaplan and Thomsson 2017). Similarly, banks tend to keep their credit assessments private. This concentrated management and private monitoring of loans stands in contrast to bonds, which are managed and held by a large number of (anonymous) creditors along with public monitoring and assessments lead by credit rating agencies (Tanaka 2006). Zeitz (2019) finds that publics in African nations are much less aware of bank borrowing than of bond issues; the latter tends to receive extensive coverage in the local financial press. Especially when governments are facing criticism from opposition parties for their borrowing and spending behaviors, they seek to avoid the

spotlight that comes with bond issues, preferring instead syndicated loans.[13] Bond financing, then, requires greater disclosure at the intensive margin that does bank lending.

Likewise, official creditors differ substantially on both the intensive and the extensive margin. Multilateral lending naturally involves more principals —likely all members of an international financial institution, perhaps with some delegation to staff (Copelovitch 2010). On the intensive margin (depth), multilaterals like the World Bank have specific and explicit disclosure requirements. Since the mid-1990s, the International Monetary Fund has made its letters of agreement, as well as its annual Article IV consultations, public (except in cases where the borrower disallows this).

Indeed, in a recent review, the IMF noted that significant gaps exist regarding the terms, conditions and disbursement schedules of bilateral official loans to developing country governments (International Monetary Fund 2018). The IMF attributes these gaps not only to the capacity of some debtor governments (see below), but also to creditor practices, including confidentiality requirements.

This leads to our central hypotheses:

Hypothesis 1 (Transparency & Private Borrowing)**.** *More transparent governments are more likely to borrow in bonds (as a share of private borrowing)*

Hypothesis 2 (Transparency & Official Borrowing)**.** *More transparent governments are more likely to borrow multilaterally (as a share of official borrowing)*

We test these expectations in the remainder of this paper. Within the category of private lending, we show that since bank lending requires less public disclosure than do appeals to the bond market, countries that are less transparent are more likely to borrow from banks

[13]Of course, leaders also have reputational concerns that may affect their degree of disclosure to bank creditors in practice – a repeated interaction between a sovereign and a bank may rely less on official requirements to disclose sensitive information about domestic political and economic conditions and more on the sovereign's desire to return to that bank in the future for further financing (Tomz 2007). But to the extent that such disclosure might occur, it would be to a very specific audience.

than issue bonds. Within the category of official lending, a negotiated loan between two sovereigns presumably requires less (public) sharing of sensitive economic information than does a deal negotiated with a multilateral lending institution; we offer evidence that less transparent states are more likely to borrow bilaterally than multilaterally. That is, opaque governments prefer credit instruments that require less disclosure.

3 Cross-Country Research Design

3.1 Data & Measurement

We analyze the borrowing behavior of developing countries from 1980 to 2015, with the end year varying based on the measure of transparency employed.[14] For government transparency, we rely primarily on the HRV Transparency Index, which measures the disclosure of policy-relevant information —i.e., credible aggregate economic data— by the government to the public (Hollyer, Rosendorff and Vreeland 2014).[15] The HRV Transparency Index captures the reporting of countries with respect to 240 variables from the World Bank's *World Development Indicators* (WDI); it summarizes such disclosure on a single dimension via an item response model. In the sample of developing countries analyzed here, the HRV index has a mean (SD) of about 0.63 (1.9), where higher values indicate higher transparency.[16] The HRV index treats transparency as a latent predictor of the reporting/non-reporting of data to the WDI data series, which is extracted using an item response model fit to a binary measure of whether a given variable j is reported by a given country c in a particular year t. Of course countries may fail to report data because they wish to withhold that information from their publics or from the international community; it is also possible that data fails to be

[14] We define developing countries as time-invariant non-membership of the OECD, with the exception of Chile and Mexico, which are included in our sample. Our findings are unchanged when removing them from our sample, or using different definitions of developing countries.

[15] Our findings also are robust to alternative measures of government transparency, as we discuss below.

[16] This sample spans from 1980 to 2010, the last year for which the HRV index is available.

reported because the country has insufficient data collection capacity or technical sophistication to conduct the relevant collection and aggregation procedures. In what follows we add measures of technical capacity as covariates to control for this concern. Importantly however, HRV has been shown to correlate with GDP per capita only in democracies; rich democracies disclose much more than autocracies at similar levels of wealth, suggesting that something other than capacity is at work (Hollyer, Rosendorff and Vreeland 2018*a*, p.84-88).[17]

To investigate the structure of sovereign borrowing portfolios we rely on disbursements of public and publicly guaranteed debt owed by, or guaranteed by, the government from the International Debt Statistics (IDS), hosted by The World Bank. Two points are worth noting. First, the IDS covers international borrowing, and such, we focus our analysis on borrowing decisions over *external* debt.[18] Second, by including publicly guaranteed (vs. purely public) debt, these measures also capture the behavior of final borrowers like state-owned enterprises (Petrobras in Brazil is a good example).[19]

We also note that borrowing outcomes and patterns reflect the intersection of supply (creditors) and demand (debtor governments). While borrowers are motivated in part by transparency-related concerns, lenders' assessments are affected by macroeconomic considerations, the risk of default and their overall willingness to trade risk against return (Beaulieu, Cox and Saiegh 2012, Tomz 2007). As such, we control for various economic factors in our empirical analyses, but beyond that, we also note the importance of global market conditions. We expect that, when credit markets are tight – as indicated by high global interest

[17]A potential concern from the investor side is the extent to which governments choose to disclosure information, but they manipulate it (e.g., Martinez 2019). Indeed, standard economic fundamentals that are key to creditors, such as trade (as % of GDP), inflation and GDP have reporting rates of around 95% –and higher in the last couple of decades. At the same time, manipulation in these cases has been relatively easy to detect (e.g., Argentina's inflation under Cristina Fernández, or China's growth numbers in the recent years).

[18]We are aware that domestic borrowing might be crucial, especially on the private side. We leave this for future research, which we discuss in the concluding section.

[19]Pooling state-owned enterprise debt with public debt is supported by the literature (Wagner, Jara and Musacchio 2018), and it's similar to how the oil literature thinks about government revenues (e.g., Morrison 2014).

rates – governments' set of choices is more constrained: investors of various sorts are less likely to accept higher degrees of risk in exchange for the promise of higher returns. As such, risk aversion decreases investors' willingness to tolerate opaque governments, all else equal. We therefore expect that transparency will affect choice of instruments to a greater extent when risk aversion is low and international liquidity is high.

3.2 Baseline Analysis

Consider a simple OLS estimation of the form:

$$\textsc{Type of Borrowing}_{it+1} = \alpha_i + \delta_t + \beta_1 \textsc{Transparency}_{it} + \mathbf{X}'_{it}\phi + \epsilon_{it} \tag{1}$$

where we define Type of Borrowing for country i in year t in two ways, for private and official borrowing respectively: First, we analyze Bonds Credit (as a share of total private credit). Second, we examine Non-concessional Bilateral Credit (as a share of total official credit). Note that these measures are specific to disbursements, not net flows.

The vector of controls $\mathbf{X}_{it}$ includes standard economic and political variables. For analytical clarity, we offer first a simple model without covariate adjustment. Then, we include population and GDP in logged terms, GDP growth (in %), Trade (as % of GDP) (from the WDI), thus accounting for key economic fundamentals relevant for creditors. Our measures of country size (population and GDP) also address the possibility that bank-based lending might be more appealing, given that it does not require seeking a sovereign credit rating or engaging in investor relations campaigns, to borrowers with more limited credit needs.

Finally, we present a more saturated model with additional covariates for government resources as well as political variables. Here, we include measures of net FDI inflows, natural resource rents, and foreign aid. We also include two debt-related covariates, namely *Debt*

crisis, an indicator on whether the country is undergoing a debt crises (from Laeven and Valencia (2018)) as well as *External debt* stocks (as % of GNI).[20] For political controls, we control for Democracy from Polity IV. We also probe the robustness of our results to additional variables that might be important. For instance, does government partisanship matter for choice among creditors, especially on the official side? Left-leaning governments may be particularly inclined to avoid IFIs, pushing them toward bilateral credit instead. Similarly, right-leaning governments, in contrast, may be more willing to go to the bond markets – perhaps as a hands-tying mechanism not only for themselves, but also for their successors. Consequently we also control for political ideology using indicators for right and left-leaning ideology of the government (from DPI).

Finally, in all models we include both country (α_i) and year (δ_t) fixed effects. These are important for several reasons. Country fixed-effects absorb any idiosyncratic characteristics (such as culture, region, and institutions that are time-invariant) ensuring that our results are not driven by these factors. Similarly, year fixed-effects absorb any global-shock – for example, one might be concerned about the overall trend in bond lending, driven by technological and legal innovations. Year fixed-effects not only capture these considerations, but do so in a more flexible way than, say, time-trends (which is, by definition, a specific case of year fixed-effects).

Table 1 shows these results. The positive and statistically significant coefficient of the HRV Transparency Index in Panel A provides robust support for Hypothesis 1. More transparency is associated with a larger share of bond borrowing within the category of private credit.[21] Substantively, a unit increase in the HRV Transparency Index (about half standard deviation) corresponds to an increase in bond borrowing of about 5 to 9 percentage points,

[20] Alternative controls related to the level of indebtedness are total credit disbursements (in logged terms) and the share of private credit as a share of total credit, where applicable. Including these does not change our results.

[21] This result is robust to changes in the denominator: the results for bonds relative to bank lending are similar can can be found in the Appendix in Table A3.

Table 1: **Transparency and types of borrowing, by creditor category**

	Types of Borrowing		
	(1)	(2)	(3)
Panel A: Bonds Credit (share of private credit)			
Transparency (HRV)	0.051**	0.049*	0.094***
	(0.022)	(0.025)	(0.014)
Observations	1,763	1,599	1,472
R^2	0.25	0.27	0.34
Countries	86	83	79
Outcome mean	0.16	0.16	0.16
Outcome std. dev.	0.31	0.32	0.31
Panel B: Bilateral Credit (share of official credit)			
Transparency (HRV)	-0.034***	-0.023**	-0.024*
	(0.009)	(0.010)	(0.013)
Observations	2,554	2,298	2,132
R^2	0.21	0.22	0.21
Countries	88	86	82
Outcome mean	0.10	0.10	0.09
Outcome std. dev.	0.17	0.17	0.16
Country FE	✓	✓	✓
Year FE	✓	✓	✓
Econ. fundamentals		✓	✓
Additional covariates			✓

Notes: All specifications are estimated using OLS. Economic fundamentals controls are population, GDP, growth, and trade. Additional covariates are FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

a non-trivial magnitude given that the average bonds share is 16%.

In contrast, and in line with Hypothesis 2, Panel B demonstrates that greater transparency is associated with lower share of bilateral borrowing within official credit. In this case, the unit increase in transparency corresponds to an decrease in bilateral borrowing of about 2 percentage points, which represents an increase of over 20% from the mean.

3.3 Robustness

Alternative considerations. Our findings could be confounded by other mechanisms for which we have not accounted. For instance, borrowing choices could be affected by geostrategic considerations where key creditor countries may be more willing to extend bilateral loans to strategically important governments. This would tilt the balance of official credit in the direction of bilateral, versus multilateral, lenders.

To address these concerns we test the robustness of our findings to the inclusion of three different measures of geopolitical significance. First, using Ideal Point estimates from UN Voting from Bailey, Strezhnev and Voeten (2017), we control for the Ideal Point difference between the given country and the US. This captures the overlap in geopolitical interests between the most important bilateral creditor worldwide and the borrowing country. Second, we include an indicator that takes the value of 1 if the country is a member UN Security Council in a given year and 0 otherwise. This addresses the potential that permanent UNSC members will direct financial resources to rotating members as a means of influencing their voting behavior (Vreeland and Dreher 2014). Finally, we control for the presence of US troops in the debtor country. This follows Aklin and Kern (2019) in using military presence as a measure of US commitment to the countries economic health; this commitment could translates into an implicit bailout guarantee, helping again to explain debtor countries' borrowing profiles. Appendix Tables A8 and A9 demonstrated, however, that our core results remain unchanged when we account for these various geopolitical variables.

Estimation Strategy. The dynamic we identify occurs within broad categories of borrowing (for example, within private sector credit), rather than across these categories (private versus official). This is consistent with the notion that creditor preferences over transparency vary within private sector creditors as well as within official sector creditors, but not (in an overall sense) between them. Indeed, when we model aggregate shares of private versus official borrowing, we find no systematic relationship with transparency (see Table A2).

The official versus private distinction, however, does highlight the fact that, for borrowing governments, the choice of within-category instrument (bilateral versus multilateral official credit) may not be independent of the choice of broad credit type (official versus private credit). To address this concern, we implement a series of Seemingly Unrelated Regression (SUR) models. This approach allows us to model a system of equations, two in our case, as a demand system for different types of borrowing. Here, the error terms of the two equations are allowed to be correlated with each other. Table 2 shows the results analogous to Table 1. The SUR estimation is more precise, increasing confidence in the strength and robustness of our results. (The same is true for the international liquidity results presented in Table A7.)

We also confirm that our results are robust to examining the binary decision to take on any bond debt at all (Ballard-Rosa, Mosley and Wellhausen forthcoming), rather than modeling bonds as share of total private credit. We therefore repeat our main analysis using a binary dependent variable (whether a given country-year receives any bond credit at all). For official credit, we similarly use "any bilateral credit" as a dichotomous dependent variable (Panels A and B, respectively in Tables A5-A6). Our findings remain robust and precisely estimated when using these alternative dependent variables. Specifically, a one-point increase in HRV transparency (again, about a half standard deviation) is associated with a nearly 9 percentage point increase (about 30% with respect to the mean) in the likelihood that the sovereign will issue bonds (vis-à-vis commercial banks), and an approximately 3 percentage point decrease (also about 30% with respect to the mean) in the likelihood of contracting

Table 2: **Transparency and types of borrowing, by creditor category: SUR model**

	Model 1		Model 2		Model 3	
	Bonds	Bilateral	Bonds	Bilateral	Bonds	Bilateral
Transparency (HRV)	0.051***	-0.030***	0.048***	-0.018***	0.093***	-0.019***
	(0.007)	(0.004)	(0.008)	(0.005)	(0.010)	(0.006)
Observations	1748		1584		1461	
R^2	0.50	0.37	0.52	0.39	0.56	0.39
Country FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Econ. fundamentals			✓	✓	✓	✓
Additional covariates					✓	✓

Notes: All specifications are estimated using SUR. Outcome variables: bonds represent the share of bond credit over total private credit; bilateral represents the share of bilateral credit over total official credit. Economic fundamentals controls are population, GDP, growth, and trade. Additional covariates are FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

any bilateral credit (vis-à-vis multilateral official creditors).

Measurement. We also confirm that our findings are not driven by our particular measure of government transparency. One potential concern regarding the HRV index is that it is constructed using both economic and non-economic variables, all of which are included in the World Development Indicators. Presumably, however, creditors care mostly about the availability of information regarding economic fundamentals, rather than about non-economic outcomes. To address this concern, we construct "Economic HRV Index," using economic indicators. This index is highly correlated with the main HRV index (0.93). Given the high degree of overlap, it is unsurprising that our findings are unchanged when we use the new Economic HRV Index instead (Tables A10 and A11).

But what about transparency measures not based on the HRV methodology? While we believe there are theoretical and methodological advantages to the HRV approach, it is important to show that our results are not sensitive to the use of this measure. To do so, we instead consider two additional proxies for transparency. First, the IMF created the Special Data Dissemination Standard (SDDS). The SDDS, part of the IMF's broader Data Dissemination Initiative, was intended to enhance member country transparency in the provision of economic and financial data. The Standard addresses data quality, methodology and dissemination. As such, the aim of the SDDS was to improve access to international capital markets. While subscription is voluntary, it implies a commitment to comply with the standards by those who subscribe. Past analyses have considered the motivations behind governments' decisions to join the SDDS (Mosley 2003*a*), and they have highlighted the possible effect of SDDS participation on sovereign borrowing costs (Cady and Pellechio 2008).

More than 75 countries have subscribed to the SDDS, of which 39 are part of the 121 developing countries in our full sample. We create a variable SDDS SUBSCRIPTION which

takes a value of 1 the year after the date of subscription and 0 otherwise.[22] When we use SDDS rather than HRV, we can use a broader set of years, based on the IDS data coverage (1970-2015). Importantly, our results – which confirm the relationship between transparency and reliance on bonds versus bank loans, as well as use of multilateral versus bilateral credit – are substantially the same when we restrict them to the 1980-2010 period. Tables A13, A14, and A12 display the results using the SDDS measure; they are analogous to Tables 1, 3, and A2.

Second, we use Williams's (2015) Information Transparency measure, which attempts not only to capture the amount of information governments provide, but also its quality and ease of acquisition and use by the public.[23] Appendix Tables A17 and A18 show that, again, our main findings hold when using this alternative transparency measure.

While these results are reassuring in that our results appear not to be driven by a specific measure of transparency, another potential concern is that HRV, Economic HRV, SDDS and –to some degree– William's measures are all affected by interactions between governments and official creditors. For instance, the IMF both encourages participation in SDDS and serves as a source of official multilateral credit. And the World Bank, another multilateral creditor, oversees the creation of the World Development Indicators database (on which the HRV measures are based).

To address this potential confounding dynamic, we establish the robustness of our results to yet another measure of transparency, Freedom of Information (FOI) laws. Chaitanya Vadlamannati and de Soysa (2018) treat the adoption of FOI laws as a government

[22] We code the country's first year of subscription as the proportion of the year in which the country is under subscription. For example, Argentina subscribed on August 16, 1996; hence SDDS SUBSCRIPTION= 0.62 in 1996. Alternative coding schemes for the first year produce the same substantive results. The correlation between the HRV INDEX and SDDS SUBSCRIPTION is 0.4, perhaps reflecting a limited uptake of the standard, or its limited de facto impact.

[23] This measure uses 13 separate indicators for the Information Transparency Index (six for the quantity of information, four for the processes that generate that information, and three for the infrastructure required to disseminate that information), from 1980-2010. For further details, see Williams (2015).

action intended to promote transparency, and Islam (2006) links FOI laws with improved governance. When we use a dichotomous indicator for whether a country has a FOI law in place, our findings continue to hold (although the estimates on bilateral credit are less precise than the ones on bond credit. See Tables A15 and A16.)

Transparency and Corruption. If corruption and the related misappropriation of public funds are closely associated with government opacity, one might worry that our results are capturing the effect of corruption, rather than of transparency, on governments' borrowing preferences and outcomes. Corrupt sovereign borrowers, intent on pocketing the proceeds of external loans, might be more likely to appeal to private banks rather than public bond markets, exactly because fewer conditions and disclosures are required of them.

At the same time, to the extent that creditors are aware of corruption, or if a state has a reputation for corruption (Tomz 2007), creditors will demand lending terms that compensate for the political and economic risk (including higher risk of default). And lenders should have little concern about the degree of disclosure over and above its effects on political risk. Moreover, when sovereign credit markets are somewhat competitive and efficient, loan terms (including not only the interest rate, but also the maturity structure and currency denomination, *inter alia*) will reflect the political risk generated by corruption. Assuming that sovereign credit markets are in equilibrium, the borrowing government therefore should be indifferent across instruments. Hence we expect the relationship between corruption and the choice of borrowing instrument to be absent in observed quantity data; any residual relationship between opacity and loan type should be evidence of the effect we postulate – the borrower's (but not the lender's) concern for disclosure.

Our analyses support this argument. To begin with, the in-sample correlation between our preferred measure of transparency (HRV) and a measure of corruption (the index created by the International Country Risk Guide) is essentially 0 –more specifically, 0.0077. When regressing corruption on transparency, across different models and estimations, with different

covariates and fixed effects, we still find no significant association between transparency and corruption (see Table A19). Finally, all of our results are unchanged when we include corruption as an additional covariate (see Tables A20-A21).

3.4 Transparency, Borrowing & International Liquidity

While we demonstrate that transparency is a key factor to the domestic political economy of sovereign credit, we also know that the impact of domestic politics on sovereign borrowing outcomes varies with global capital market conditions (Ballard-Rosa, Mosley and Wellhausen forthcoming). When international markets are highly liquid and investors are therefore more risk acceptant, they are willing to extend credit to a wider range of borrowers. In such circumstances, developing country governments face fewer constraints, and have greater choices in accessing capital (Mosley 2003*b*). On the other hand, as global interest rates increase, investors become more risk averse; as a result, governments – especially those with an inclination toward opacity – have fewer financing options.

We therefore expect that governments are more able to structure their portfolios to match their preferences over borrowing instruments when liquidity is high. When, on the other hand, global liquidity is low, supply- (rather than demand-) side factors play a greater role in determining financing outcomes. We analyze the extent to which international liquidity, here proxied by the US Federal Funds Rate moderates the effects of Transparency. The Federal Funds Rate is the primary indicator of US monetary policy (Bernanke and Blinder 1992) and is widely used in the political economy literature to proxy for international liquidity (e.g. Longstaff et al. 2011). Indeed, it is well established that monetary conditions in the United States influence aggregate risk aversion and capital flows in the international financial system and, therefore, the global search for yield (Rey 2016, Miranda-Agrippino and Rey 2015, Rajan 2005).

We take a low US Federal Funds rate as generating greater risk acceptance among in-

ternational creditors. When returns in mature markets are low, investors' search for higher absolute returns leads to fewer concerns about risk – economic as well as political Ballard-Rosa, Mosley and Wellhausen (forthcoming). Although one might worry that, in the post-2008 period, low rates also correspond to post-global financial crisis quantitative easing (and therefore to risk aversion rather than risk acceptance), we note that this would bias against finding support for our expectations regarding the mediating role of global market conditions. That said, we address this concern via the inclusion of year fixed-effects, which absorb these common-shocks.

We implement two empirical strategies. First, we estimate a simple interaction model (Equation 2).

$$\begin{aligned}\textsc{Type of Borrowing}_{it+1} = \beta_2 \textsc{Transparency}_{it} + \gamma_1(\textsc{Transparency}_{it} \times \text{US } \textsc{Fed Funds}_t) \\ + \mathbf{X}'_{it}\phi + \alpha_i + \delta_t + \epsilon_{it} \end{aligned} \tag{2}$$

Second, as a robustness check and to aid interpretation, we implement a type of *difference-in-differences* strategy: we construct a time-invariant indicator on whether a country is Transparent, if its mean Transparency Index over the sample is greater than the sample average:

$$\textsc{Type of Borrowing}_{it+1} = \gamma_2(\textsc{Transparent}_i \times \text{US } \textsc{Fed Funds}_t) + \phi\mathbf{X}_{it} + \alpha_i + \delta_t + \epsilon_{it} \tag{3}$$

The expectation is that the coefficients γ_2 in Equation 3 and γ_1 in Equation 2 have the opposite sign of β_2 in Equation 2. Conceptually, analyzing this effect is akin to a *difference-in-differences* design, in which we compare the effects of international liquidity in transparent countries to countries that are relatively less transparent, in years with greater international liquidity relative to years with lower liquidity.

Table 3: **Transparency, liquidity and types of borrowing, by creditor category**

	Types of Borrowing			
	(1)	(2)	(3)	(4)
Panel A: Bonds Credit (as a share of total private credit)				
Transparency (HRV)	0.080***	0.116***		
	(0.023)	(0.015)		
Transparency (HRV) × US Federal Funds Rate	-0.009***	-0.010***		
	(0.002)	(0.003)		
Transparent × US Federal Funds Rate			-0.025***	-0.021***
			(0.005)	(0.005)
Observations	1,763	1,472	2,598	2,039
R^2	0.27	0.35	0.30	0.33
Countries	86	79	86	80
Outcome mean	0.16	0.16	0.15	0.16
Outcome std. dev.	0.31	0.31	0.31	0.32
Panel B: Bilateral Credit (as a share of total official credit)				
Transparency (HRV)	-0.045***	-0.032***		
	(0.009)	(0.012)		
Transparency (HRV) × US Federal Funds Rate	0.003***	0.004***		
	(0.001)	(0.001)		
Transparent × US Federal Funds Rate			0.008***	0.007**
			(0.003)	(0.003)
Observations	2,554	2,132	3,628	2,862
R^2	0.22	0.22	0.20	0.24
Countries	88	82	88	84
Outcome mean	0.10	0.09	0.10	0.10
Outcome std. dev.	0.17	0.16	0.17	0.16
Year FE	✓	✓	✓	✓
Country FE	✓	✓	✓	✓
Covariates		✓		✓

Notes: All specifications are estimated using OLS. Covariates are population, GDP, growth, trade, FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table 3 shows these results. Panel A again supports our expectation that more transparent countries utilize bonds relatively more than commercial banks for private borrowing, and that they do so at a higher rate when international liquidity is high (and global interest rates are low). Similarly, Panel B reinforces the finding that transparent governments rely less on bilateral credit as a share of total official credit, and they do so even less when global liquidity is high.[24]

4 Within-Country Analysis: Evidence from Mexican Municipalities

We complement our cross-country analyses by presenting within-country evidence from Mexican municipalities. There are several advantages, beyond establishing the robustness of our claims, to pursuing a subnational analysis. Macro-socioeconomic and political factors that affect market access are relatively constant within a country, providing stronger internal validity. Additionally, by testing our theoretical expectations at the subnational level, we are able to test the generalizability and scope of our argument.

Mexico presents substantial variation in budget composition as well as transparency across its municipalities, making it an appropriate test for our case. Additionally, the disclosure of political information surrounding municipal finances has been shown to have substantial effects of electoral accountability (Arias et al. 2019*a*, Larreguy, Marshall and Snyder 2019).[25]

Mexican municipalities have the independent ability to borrow. On average, 7% of their expenditure is financed through credit, which comes from the three sources: bonds, commer-

[24]Once again the result is robust to changes in the denominator: the results for bonds relative to bank lending are similar; these are reported in the Appendix in Table A4.

[25]It has also seen resistance and opposition from local politicians (Arias et al. 2019*b*).

cial banks, and development banks.[26] Here, we focus on comparing within private borrowing – issuing bonds versus borrowing from commercial banks. This maps closely to the classifications outlined in our cross-country analysis; following Hypothesis 1, we expect more transparent municipalities to be more likely to borrow from bonds rather than from commercial banks (as a share of commercial borrowing). We restrict our sample to those municipalities which borrowed funds from the private sector during the 2004 to 2013 time period. It therefore includes a total of 408 municipalities (borrowing, on average, about 44% of their private credit from bond sources).

Also important for our purposes, Mexico's federal government has over the last two decades taken steps to improve and enhance government transparency at all levels. For instance, the first law surrounding these topics was passed in 2002 (*Ley Federal de Transparencia y Acceso a la Información Pública Gubernamental*), similar to the Freedom of Information Act in the US. At that time, the federal government also created the *Instituto Federal de Acceso a la Información y Protección de Datos* (IFAI) (currently, *Instituto Nacional de Transparencia, Acceso a la Información y Protección de Datos Personales* (INAI)), an autonomous constitutional body in charge of protecting and guaranteeing the rights to access public information as well as the protection of personal data.

Simultaneously, civil society organizations have emerged to advocate for enhanced transparency in governmental policymaking. For instance, a group of non-governmental organizations (NGOs) created CIMTRA (*Colectivo Ciudadanos por Municipios Transparentes*) in 2002 to both assess and encourage political and financial transparency at the local level.In similar fashion, the *Instituto Mexicano para la Competitividad* (IMCO), an NGO founded in 2003, has worked to promote transparency in public finance. Both NGOs have created their

[26]Development banks —known as the *Banca de Desarrollo*— are a group of banks run by the Federal government whose aim is to develop specific sectors, such as fishing enterprises under the *Financiera Nacional de Desarrollo Agropecuario, Rural, Forestal y Pesquero* (FND), and to aid municipal and local development under *Banco Nacional de Obras y Servicios Públicos* (Banobras).

own transparency indexes, although their time and geographic coverage are limited.[27] Here, we replicate the HRV method (Hollyer, Rosendorff and Vreeland 2014) and create an original transparency index at the municipal level.[28] On average, the municipalities in our sample had a TRANSPARENCY score of 0.4 (SD of 0.25), where higher values, again, represent more transparent governments.

Following the research design presented above, we test our expectations using an OLS estimation as in Equation (4), analogous to the cross-country estimation in Equation (1):

$$\text{BOND CREDIT (SHARE)}_{it+1} = \alpha_i + \delta_t + \beta_4 \text{TRANSPARENCY}_{it} + \mathbf{X}'_{it}\phi + \epsilon_{it} \tag{4}$$

where we define BOND CREDIT (SHARE) for a given municipality-year as the share of bond credit over total commercial credit. The vector $\mathbf{X}$ represents a series of economic and political controls, namely total municipal debt, fiscal transfers, tax revenue, population, and agricultural production. To ensure our findings are not driven by partisan differences or electoral cycles, we control for the political identity of the incumbent party as well as election years, namely gubernatorial, and congressional.[29] We include both municipality and year fixed effects in all models (Table A22 presents descriptive statistics).

Table 4 displays the results. In all model specifications, the results align with our expectations. More transparent municipalities are indeed more likely to borrow via bonds, measured as a share of total commercial credit. Based on the estimates from Column 3, a one standard deviation increase in the Municipal Transparency Index is correlated with

[27] IMCO's index can cover over 400 municipalities, beginning in 2010. CIMTRA's measurement starts in 2008 but it tracks fewer than 20 municipalities over time.

[28] To replicate the HRV approach, we rely on patterns of missingness of data reported by Mexican municipalities to the INEGI. In particular, we take advantage of the standard *Banco de Información INEGI* (Information Bank) and their bulk data download — *descarga masiva* – on INEGI's website. Our measure analyzes 221 indicators since 1994, which represent less than a third of the total indicators provided. To conserve computing power, we use those indicators with the greatest variance.

[29] Data drawn from the Municipal Elections Database compiled by the Centro de Investigación Para el Desarrollo, A.C. (CIDAC). For further discussion of municipal debt policy with respect to parties and elections, see Benton and Smith (2017).

Table 4: **Transparency and Commercial Borrowing in Mexican Municipalities**

Bond Credit (as a share of total commercial credit)			
	(1)	(2)	(3)
Transparency	0.108**	0.136**	0.197**
	(0.050)	(0.065)	(0.083)
Observations	1,733	762	762
Outcome mean	0.44	0.43	0.43
Outcome std. dev.	0.49	0.49	0.49
Year FE	✓	✓	✓
Municipality FE	✓	✓	✓
Economic fundamentals		✓	✓
Party/Electoral controls			✓

Notes: All specifications are estimated using OLS. Economic fundamentals are municipal debt, fiscal transfers, tax revenue, population and agricultural production. Partisan and electoral controls are indicators for party ID of the incumbent and indicators for congressional and gubernatorial elections. Standard errors clustered by municipality are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

approximately a 5 percentage point increase in bond credit as a share of total commercial credit (more than a 10% increase with respect to the mean). Our analysis of subnational borrowing in Mexico therefore provides additional evidence to support our claims regarding transparency and the structure of public sector finance.

5 Conclusion

Sovereign finance is central to governments' behavior. While much has been written about government choices among taxation regimes (e.g., direct vs. indirect taxes), or the effects of non-tax revenue (natural resource rents, or bilateral and multilateral foreign aid), we know much less about the political economy of governments' choice across borrowing instruments. This affords an opportunity to draw together scholarship on sovereign bond markets, international financial institutions and concessional lending (a subset of foreign aid).

We present a theory, founded in domestic political economy, of how governments prefer to borrow. We ground our explanation in the transparency of a polity, an expression of the willingness of governments to be open about their policies and economic outcomes. We show that opaque governments prefer debt instruments that require less disclosure, especially in more liquid or less credit-constrained environments. We examine developing countries' borrowing choices between bonds and commercial bank loans, and between multilateral and bilateral official borrowing. We find robust support for our argument across a variety of tests and measures of transparency. Furthermore, we also find support for argument at the subnational level; evidence from municipal-level borrowing in Mexico substantiates our claims.

Less transparent regimes prefer to borrow in ways that limit their information disclosure. Where lenders, or the legal environments that govern these loan contracts, require more disclosure, transparent borrowers will be willing to accommodate these demands. More

opaque sovereign borrowers are drawn to situations in which lenders demand less in the way of public disclosure. Overall, opacity suggests more bank rather than bond borrowing, and more bilateral rather than multilateral official borrowing.

While our results are significant and important, our analysis and findings are necessarily limited. These limitations, however, highlight a series of opportunities for further research. First, what is the price of opacity? Presumably more opaque governments, associated with greater political instability, and perhaps with higher political and default risk, find the terms of their loans more severe than their transparent counterparts. What does this preference for opacity cost when it comes to sovereign borrowing? This remains an open question; answering it requires the collection of commercial bank loan contracts – which both banks and sovereign borrowers have been very reluctant to make public, or even to share with international financial institutions.

Second, our focus is on international borrowing; government preferences over transparency also may effect sovereigns' use of domestic credit, especially in the context of financial repression.[30] Further research therefore could explore the role of transparency in domestic credit markets, and in particular its effect on domestic holdings of national government debt. More broadly, borrowers have agency in international credit markets; they can, and do, choose how to borrow.

[30]For work on government policies towards domestic debt, see Betz and Pond (2019).

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Appendix

A1 Main variable definitions

A1.1 Variable definitions and sources

Bilateral Credit (share of official credit) Bilateral debt includes loans from governments and their agencies (including central banks), loans from autonomous bodies, and direct loans from official export credit agencies as a share of total official credit. Source: International Debt Statistics, hosted by the World Bank.

Bonds Credit (share of private credit) Public and publicly guaranteed debt from bonds that are either publicly issued or privately placed as a share of total private credit. Source: International Debt Statistics, hosted by the World Bank.

Bonds Credit (share of bonds and banks credit) Public and publicly guaranteed debt from bonds that are either publicly issued or privately placed as a share of bond and commercial banks credit. Source: International Debt Statistics, hosted by the World Bank.

Debt crisis Indicator on whether a given country undergoes a debt crises on a given year. Source: Laeven and Valencia (2018).

Democracy Polity 2 Score (from -10 to +10.) Source: Polity IV

Economic Transparency (E-HRV) Measures the disclosure of economic policy-relevant information —i.e., credible aggregate economic data— by the government to the public based on the reporting of countries with respect to 142 economic related variables from the World Bank's *World Development Indicators* (WDI); it summarizes such disclosure on a single dimension via an item response model for a given country on a given year.

External debt (% of GNI) External debt stocks as a share of GNI. Source: World Development Indicators, hosted by the World Bank.

Foreign Aid Natural log of the net official development assistance received. Source: World Development Indicators, hosted by the World Bank.

FDI Inflows Foreign direct investment, net inflows as a share of GDP. Source: World Development Indicators, hosted by the World Bank.

Freedom of Information Law Dichotomous indicator on whether a country has an FOI law in place in a given year. Source: Chaitanya Vadlamannati and de Soysa (2018).

Information Transparency (AW) This measure uses 13 separate indicators for the Information Transparency Index (six for the quantity of information, four for the processes that generate that information, and three for the infrastructure required to disseminate that information). Source: Williams (2015).

Left Indicator for left-leaning ideology of the incumbent on a given year. Source: Database of Political Institutions. It is based on the party orientation with respect to economic policy, coded based on the description of the party. Left stands for parties that are defined as communist, socialist, social democratic, or left-wing. Source: Database of Political Institutions.

GDP Natural log of the total GDP. Source: World Development Indicators, hosted by the World Bank.

GDP Growth Annual rate of GDP growth (in %). Source: World Development Indicators, hosted by the World Bank.

Natural resource rents Total natural resources rents as a share of GDP. Source: World Development Indicators, hosted by the World Bank.

Population Natural log of the total population. World Development Indicators, hosted by the World Bank.

Private Credit (share of total credit) Public and publicly guaranteed debt from private creditors include bonds that are either publicly issued or privately placed; commercial bank loans from private banks and other private financial institutions; and other private credits from manufacturers, exporters, and other suppliers of goods, and bank credits covered by a guarantee of an export credit agency as a share of total public and publicly guaranteed debt. Source: International Debt Statistics, hosted by the World Bank.

Right Indicator for right-leaning ideology of the incumbent on a given year. It is based on the party orientation with respect to economic policy, coded based on the description of the party. Right stands for parties that are defined as conservative, Christian democratic, or right-wing. Source: Database of Political Institutions.

SDDS subscription Takes a value of 1 the year after the date of subscription and 0 otherwise, with the following exception: we code the first year of subscription as the proportion of the year in which the country is under subscription. For example, Argentina subscribed on August 16, 1996; hence SDDS SUBSCRIPTION= 0.62 in 1996. Subscriptions dates coded from `http://dsbb.imf.org/Pages/SDDS/DateOfSubscription.aspx`

Trade (% of GDP) Total imports plus total exports as a share of total GDP. Source: World Development Indicators, hosted by the World Bank.

Transparency (HRV) Measures the disclosure of policy-relevant information —i.e., credible aggregate economic data— by the government to the public based on the reporting of countries with respect to 240 variables from the World Bank's *World Development Indicators* (WDI); it summarizes such disclosure on a single dimension via an item response model for a given country on a given year. Source: Hollyer, Rosendorff and Vreeland (2014)

UN Ideal Point difference with US Difference in Ideal Point estimates between a given country and the US on a given year, based on UN Voting Ideal Points from Bailey, Strezhnev and Voeten (2017).

UNSC membership indicator on whether the country is a member of the UN Security Council on a given year. Source: Dreher, Sturm and Vreeland (2009).

US Federal Funds Rate Yearly average of the US Federal Funds rate. Source: Board of Governors of the Federal Reserve System.

US Troops Natural log of the total number of US Troops on a country on a given year. Source: Aklin and Kern (2019)

A2 Additional Cross-Country Results

Table A1: **Cross-country - Summary statistics**

Variable	Mean	Std. Dev.	Min.	Max.	N
Private Credit (share of total)	0.239	0.295	0	1	4743
Bonds Credit (share of private)	0.148	0.315	0	1	3123
Bonds Credit (share of bonds and banks)	0.208	0.362	0	1	2410
Bilateral Credit (share of official)	0.098	0.177	0	1	4723
Transparency Index (HRV)	0.6	1.932	-10.87	8.345	3162
SDDS subscription	0.08	0.27	0	1	7775
Freedom of Information Law	0.159	0.366	0	1	3630
US Federal Funds Rate	5.489	3.792	0.09	16.39	7452
Population	15.042	2.29	8.778	21.039	7155
GDP	23.024	2.148	16.881	29.818	6374
GDP Growth	3.86	7.053	-64.047	149.973	6451
Trade (% of GDP)	80.374	49.274	0.021	531.737	5501
FDI Inflows	3.718	12.683	-82.892	451.716	5304
Natural Resource Rents	8.525	11.842	0	89.166	5989
Foreign Aid	18.082	2.907	0	23.817	6023
Debt crisis	0.015	0.121	0	1	7775
External debt (% of GNI)	63.372	80.022	0.239	1380.766	4374
Democracy	-0.594	6.886	-10	10	5639
Right	0.119	0.323	0	1	7775
Left	0.214	0.41	0	1	7775

Table A2: **Transparency and private vs. official borrowing**

	Private Credit (as a share of total credit)		
	(1)	(2)	(3)
Transparency (HRV)	0.014	0.009	0.030**
	(0.019)	(0.020)	(0.012)
Population		-0.029	-0.211*
		(0.175)	(0.123)
GDP		0.114**	0.079
		(0.052)	(0.049)
GDP Growth		-0.001	-0.001
		(0.001)	(0.001)
Trade (% of GDP)		-0.000	-0.001
		(0.000)	(0.000)
FDI Inflows			0.003
			(0.002)
Natural Resource Rents			-0.002
			(0.002)
Foreign Aid			-0.009***
			(0.003)
Debt crisis			-0.011
			(0.019)
External debt (% of GNI)			0.000
			(0.000)
Democracy			0.002
			(0.002)
Right			-0.002
			(0.025)
Left			-0.010
			(0.019)
Observations	2567	2311	2142
R^2	0.10	0.13	0.16
Countries	88	86	82
Outcome mean	0.24	0.25	0.24
Outcome std. dev.	0.30	0.30	0.29
Country FE	✓	✓	✓
Year FE	✓	✓	✓

Notes: All specifications are estimated using OLS. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Figure A1: **Private vs. official borrowing**

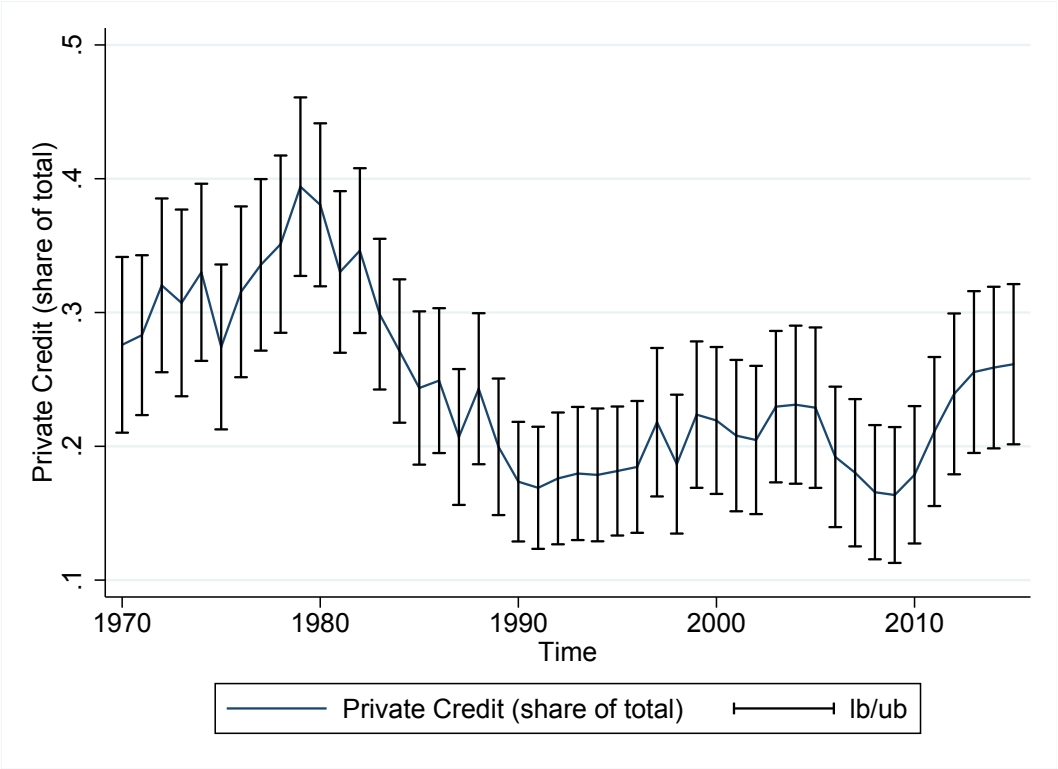

Figure A2: **Within private: Bonds vs. banks borrowing**

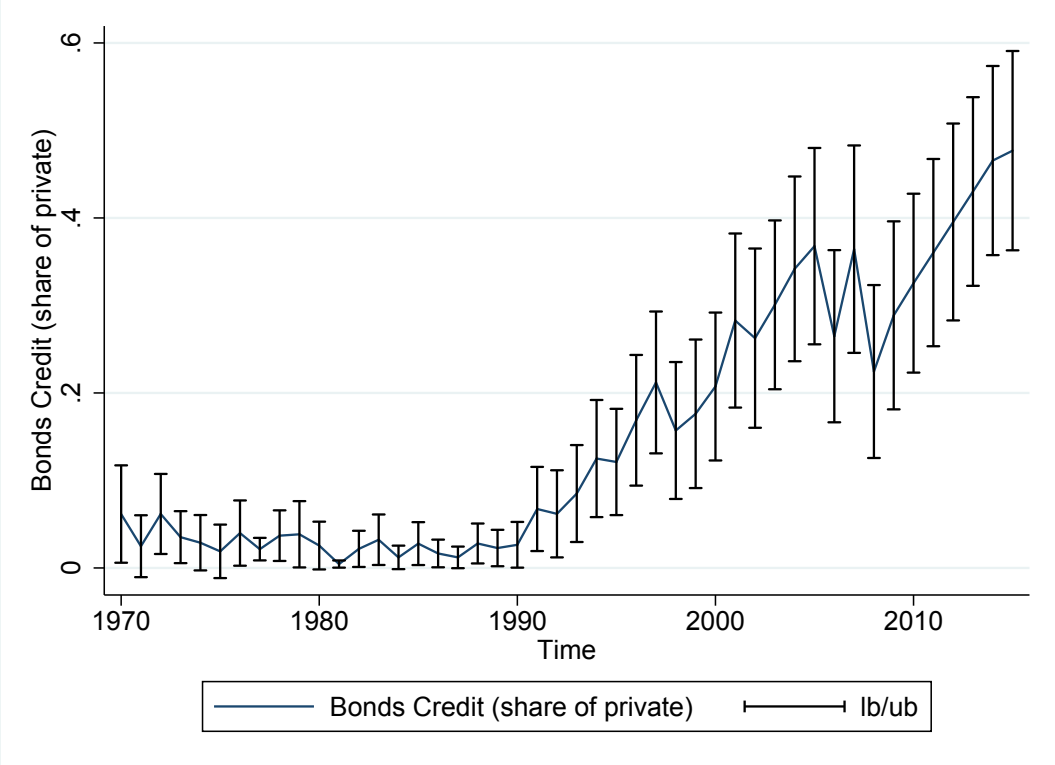

Figure A3: **Within official: Bilateral vs. multilateral borrowing**

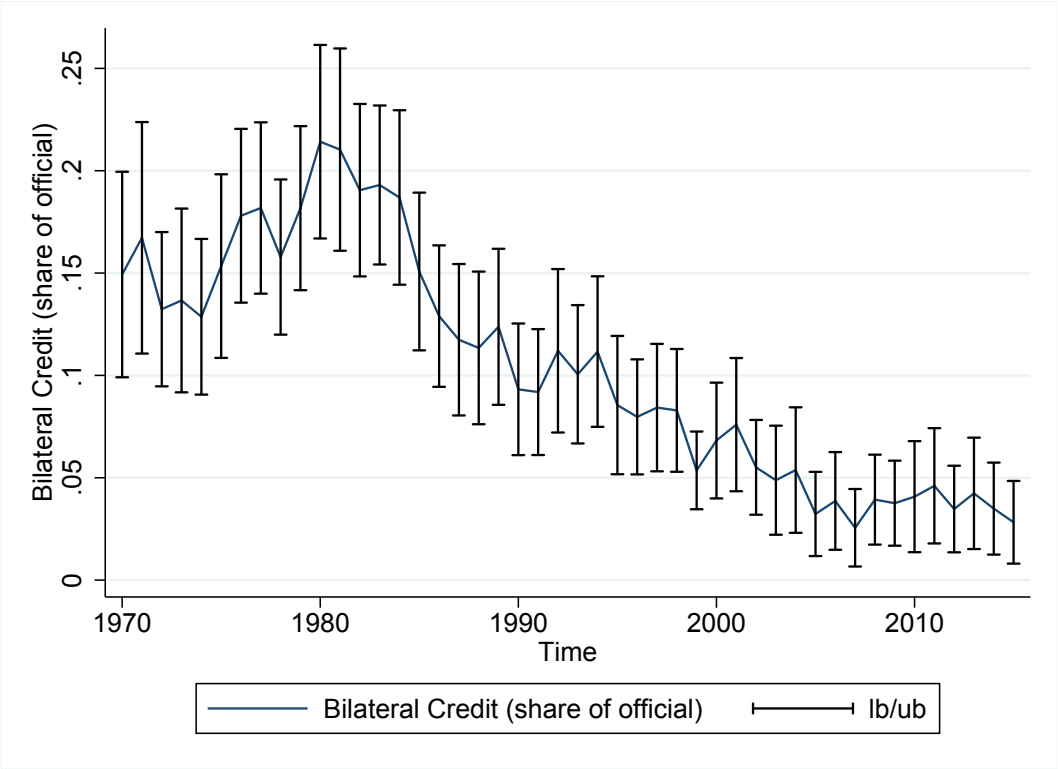

Table A3: **Transparency and private types of borrowing**

	Bonds Credit (as a share of Bonds & Banks credit)		
	(1)	(2)	(3))
Transparency (HRV)	0.044*	0.044	0.092***
	(0.024)	(0.027)	(0.015)
Population		-0.205	-0.493**
		(0.233)	(0.190)
GDP		-0.006	-0.092
		(0.071)	(0.068)
GDP Growth		0.000	0.002
		(0.001)	(0.001)
Trade (% of GDP)		0.000	-0.000
		(0.001)	(0.001)
FDI Inflows			0.003
			(0.005)
Natural Resource Rents			-0.005**
			(0.002)
Foreign Aid			-0.007
			(0.005)
Debt crisis			-0.083**
			(0.036)
External debt (% of GNI)			0.000
			(0.000)
Democracy			0.002
			(0.005)
Right			0.008
			(0.050)
Left			0.012
			(0.046)
Observations	1,417	1,307	1,204
R^2	0.24	0.26	0.33
Countries	80	78	75
Outcome mean	0.22	0.22	0.22
Outcome std. dev.	0.36	0.36	0.35
Country FE	✓	✓	✓
Year FE	✓	✓	✓

Notes: All specifications are estimated using OLS. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A4: **Transparency and private types of borrowing (liquidity)**

	Bonds Credit (as a share of Bonds & Banks credit)			
	(1)	(2)	(3)	(4)
Transparency (HRV)	0.074***	0.114***		
	(0.025)	(0.018)		
Transparency (HRV) × US Federal Funds Rate	-0.009***	-0.009***		
	(0.002)	(0.003)		
Transparent × US Federal Funds Rate			-0.026***	-0.022***
			(0.005)	(0.006)
Observations	1,417	1,204	2,056	1,675
R^2	0.26	0.33	0.29	0.32
Countries	80	75	83	79
Outcome mean	0.22	0.22	0.21	0.22
Outcome std. dev.	0.36	0.35	0.35	0.36
Year FE	✓	✓	✓	✓
Country FE	✓	✓	✓	✓
Covariates		✓		✓

Notes: All specifications are estimated using OLS. Covariates are population, GDP, growth, trade, FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A5: **Transparency and types of borrowing, by creditor category: Binary measure**

	Types of Borrowing		
	(1)	(2)	(3)
Panel A: Any Bond Credit			
Transparency (HRV)	0.062**	0.057*	0.088***
	(0.025)	(0.031)	(0.020)
Observations	1,763	1,599	1,472
R^2	0.13	0.13	0.15
Countries	86	83	79
Outcome mean	0.27	0.29	0.29
Panel B: Any Bilateral Credit			
Transparency (HRV)	-0.034***	-0.023**	-0.024*
	(0.009)	(0.010)	(0.013)
Observations	2554	2298	2132
R^2	0.21	0.22	0.21
Countries	88	86	82
Outcome mean	0.10	0.10	0.09
Country FE	✓	✓	✓
Year FE	✓	✓	✓
Econ. fundamentals		✓	✓
Additional covariates			✓

Notes: All specifications are estimated using OLS. Economic fundamentals controls are population, GDP, growth, and trade. Additional covariates are FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A6: **Transparency and types of borrowing, by creditor category: Binary measure with Interaction**

	Types of Borrowing			
	(1)	(2)	(3)	(4)
Panel A: Any Bond Credit				
Transparency (HRV)	0.073***	0.098***		
	(0.027)	(0.022)		
Transparency (HRV) × US FFR	-0.003	-0.004		
	(0.002)	(0.003)		
Transparent × US FFR			-0.015**	-0.013**
			(0.006)	(0.006)
Observations	1,763	1,472	2,598	2,039
R^2	0.13	0.16	0.14	0.14
Countries	86	79	86	80
Outcome mean	0.27	0.29	0.27	0.30
Panel B: Any Bilateral Credit				
Transparency (HRV)	-0.045***	-0.032***		
	(0.009)	(0.012)		
Transparency (HRV) × US FFR	0.003***	0.004***		
	(0.001)	(0.001)		
Transparent × US FFR			0.008***	0.007**
			(0.003)	(0.003)
Observations	2,554	2,132	3,628	2,862
R^2	0.22	0.22	0.20	0.24
Countries	88	82	88	84
Outcome mean	0.10	0.09	0.10	0.10
Year FE	✓	✓	✓	✓
Country FE	✓	✓	✓	✓
Covariates		✓		✓

Notes: All specifications are estimated using OLS. Covariates are population, GDP, growth, trade, FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A7: **Transparency and type of borrowing, by creditor category: SUR model**

	Types of Borrowing			
	(1)	(2)	(3)	(4)
Panel A: Bonds Credit (as a share of total private credit)				
Transparency (HRV)	0.080***	0.115***		
	(0.008)	(0.010)		
Transparency (HRV) × US FFR	-0.009***	-0.010***		
	(0.001)	(0.002)		
Transparent × US FFR			-0.025***	-0.021***
			(0.002)	(0.003)
Panel B: Bilateral Credit (as a share of total official credit)				
Transparency (HRV)	-0.038***	-0.029***		
	(0.005)	(0.007)		
Transparency (HRV) × US FFR	0.003***	0.004***		
	(0.001)	(0.001)		
Transparent × US FFR			0.007***	0.006***
			(0.002)	(0.002)
Observations	1,748	1,461	2,578	2,025
R^2 Panel A	0.52	0.57	0.48	0.51
R^2 Panel B	0.37	0.40	0.35	0.41
Year FE	✓	✓	✓	✓
Country FE	✓	✓	✓	✓
Covariates		✓		✓

Notes: All specifications are estimated using SUR. Covariates are population, GDP, growth, trade, FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A8: **Transparency and types of borrowing, by creditor category: Robustness to Geopolitical Controls**

	Types of Borrowing		
	(1)	(2)	(3)
Panel A: Any Bond Credit			
Transparency Index [HRV]	0.062***	0.053*	0.092***
	(0.022)	(0.027)	(0.016)
Observations	1,685	1,524	1,425
R^2	0.28	0.30	0.36
Countries	82	79	76
Outcome mean	0.15	0.16	0.16
Outcome std. dev.	0.31	0.32	0.32
Panel B: Any Bilateral Credit			
Transparency Index [HRV]	-0.025***	-0.020*	-0.024*
	(0.008)	(0.011)	(0.012)
Observations	2,405	2,160	2,026
R^2	0.24	0.24	0.22
Countries	84	82	79
Outcome mean	0.10	0.10	0.10
Outcome std. dev.	0.17	0.16	0.16
Country FE	✓	✓	✓
Year FE	✓	✓	✓
Geopolitical controls	✓	✓	✓
Econ. fundamentals		✓	✓
Additional covariates			✓

Notes: All specifications are estimated using OLS. Geopolitical controls are: UNSC membership, US Troops, and UN Ideal Point Difference with the US. Economic fundamentals controls are population, GDP, growth, and trade. Additional covariates are FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A9: **Transparency and types of borrowing, by creditor category: Robustness to Geopolitical Controls**

	Types of Borrowing			
	(1)	(2)	(3)	(4)
Panel A: Any Bond Credit				
Transparency Index [HRV]	0.084***	0.110***		
	(0.024)	(0.017)		
Transparency Index [HRV] × US FFR	-0.007***	-0.008***		
	(0.002)	(0.002)		
Transparent × US FFR			-0.023***	-0.021***
			(0.005)	(0.005)
Observations	1,685	1,425	2,389	1,880
R^2	0.30	0.37	0.31	0.35
Countries	82	76	82	77
Outcome mean	0.15	0.16	0.13	0.14
Outcome std. dev.	0.31	0.32	0.29	0.30
Panel B: Any Bilateral Credit				
Transparency Index [HRV]	-0.036***	-0.033***		
	(0.008)	(0.011)		
Transparency Index [HRV] × US FFR	0.004***	0.004***		
	(0.001)	(0.001)		
Transparent × US FFR			0.008***	0.008**
			(0.003)	(0.003)
Observations	2,405	2,026	3,269	2,574
R^2	0.25	0.23	0.21	0.24
Countries	84	79	84	80
Outcome mean	0.10	0.10	0.11	0.11
Outcome std. dev.	0.17	0.16	0.17	0.17
Year FE	✓	✓	✓	✓
Country FE	✓	✓	✓	✓
Geopolitical controls	✓	✓	✓	✓
Additional controls		✓		✓

Notes: All specifications are estimated using OLS. Geopolitical controls are: UNSC membership, US Troops, and UN Ideal Point Difference with the US. Additional controls are: population, GDP, growth, trade, FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A10: **Economic transparency and type of borrowing, by creditor category**

	Types of Borrowing		
	(1)	(2)	(3)
Panel A: Bonds Credit (as share of private)			
Econ. Transparency	0.058***	0.052**	0.086***
	(0.020)	(0.021)	(0.016)
Observations	1,763	1,599	1,472
R^2	0.25	0.27	0.33
Countries	86	83	79
Outcome mean	0.16	0.16	0.16
Outcome std. dev.	0.31	0.32	0.31
Panel B: Bilateral Credit (as share of official)			
Econ. Transparency	-0.027**	-0.022**	-0.022
	(0.011)	(0.011)	(0.013)
Observations	2,554	2,298	2,132
R^2	0.20	0.22	0.21
Countries	88	86	82
Outcome mean	0.10	0.10	0.09
Outcome std. dev.	0.17	0.17	0.16
Country FE	✓	✓	✓
Year FE	✓	✓	✓
Econ. fundamentals		✓	✓
Additional covariates			✓

Notes: All specifications are estimated using OLS. Economic fundamentals controls are population, GDP, growth, and trade. Additional covariates are FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A11: **Economic transparency, liquidity and types of borrowing, by creditor category**

	Types of Borrowing			
	(1)	(2)	(3)	(4)
Panel A: Bonds Credit (as a share of total private credit)				
Econ. Transparency	0.087***	0.112***		
	(0.022)	(0.017)		
Econ. Transparency × US Federal Funds Rate	-0.007**	-0.009***		
	(0.003)	(0.003)		
Econ. Transparent × US Federal Funds Rate			-0.025***	-0.023***
			(0.005)	(0.003)
Observations	1,763	1,472	2,598	2,039
R^2	0.26	0.34	0.30	0.27
Countries	86	79	86	80
Outcome mean	0.16	0.16	0.15	0.16
Outcome std. dev.	0.31	0.31	0.31	0.32
Panel B: Bilateral Credit (as a share of total official credit)				
Econ. Transparency	-0.049***	-0.039***		
	(0.010)	(0.012)		
Econ. Transparency × US Federal Funds Rate	0.005***	0.006***		
	(0.001)	(0.002)		
Econ. Transparent × US Federal Funds Rate			0.008***	0.012***
			(0.003)	(0.002)
Observations	2,554	2,132	3,628	2,862
R^2	0.22	0.23	0.20	0.18
Countries	88	82	88	84
Outcome mean	0.10	0.09	0.10	0.10
Outcome std. dev.	0.17	0.16	0.17	0.16
Year FE	✓	✓	✓	✓
Country FE	✓	✓	✓	✓
Covariates		✓		✓

Notes: All specifications are estimated using OLS. Covariates are population, GDP, growth, and trade, FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A12: **SDDS and private vs. official borrowing (1970-2015)**

	Private Credit (as a share of total credit)		
	(1)	(2)	(3)
SDDS subscription	0.083**	0.057	0.063
	(0.035)	(0.038)	(0.043)
Observations	4,665	4,034	3,249
R^2	0.10	0.17	0.19
Countries	121	118	105
Outcome mean	0.24	0.25	0.25
Outcome std. dev.	0.29	0.30	0.30
Country FE	✓	✓	✓
Year FE	✓	✓	✓
Econ. fundamentals		✓	✓
Additional covariates			✓

Notes: All specifications are estimated using OLS. Economic fundamentals controls are population, GDP, growth, and trade. Additional covariates are FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A13: **SDDS and types of borrowing, by creditor category (1970-2015)**

	Types of Borrowing		
	(1)	(2)	(3)
Panel A: Bonds Credit (as share of private)			
SDDS subscription	0.248***	0.214***	0.213***
	(0.048)	(0.051)	(0.051)
Observations	3,062	2,696	2,213
R^2	0.28	0.29	0.32
Countries	119	114	99
Outcome mean	0.14	0.16	0.16
Outcome std. dev.	0.31	0.32	0.32
Panel B: Bilateral Credit (as share of official)			
SDDS subscription	-0.061**	-0.046*	-0.044
	(0.025)	(0.026)	(0.027)
Observations	4,646	4,017	3,237
R^2	0.14	0.18	0.21
Countries	121	118	105
Outcome mean	0.10	0.10	0.10
Outcome std. dev.	0.18	0.18	0.17
Country FE	✓	✓	✓
Year FE	✓	✓	✓
Econ. fundamentals		✓	✓
Additional covariates			✓

Notes: All specifications are estimated using OLS. Economic fundamentals controls are population, GDP, growth, and trade. Additional covariates are FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A14: **SDDS, liquidity and types of borrowing, by creditor category**

	Types of Borrowing			
	(1)	(2)	(3)	(4)
Panel A: Bonds Credit (as a share of total private credit)				
SDDS subscription	0.267***	0.223***		
	(0.060)	(0.060)		
SDDS subscription × US Federal Funds Rate	-0.008	-0.004		
	(0.014)	(0.013)		
SDDS sub. × US FFR			-0.025***	-0.017***
			(0.005)	(0.006)
Observations	3,062	2,213	3,062	2,213
R^2	0.28	0.32	0.27	0.31
Countries	119	99	119	99
Outcome mean	0.14	0.16	0.14	0.16
Outcome std. dev.	0.31	0.32	0.31	0.32
Panel B: Bilateral Credit (as a share of total official credit)				
SDDS subscription	-0.060**	-0.038		
	(0.026)	(0.031)		
SDDS subscription × US Federal Funds Rate	-0.000	-0.003		
	(0.005)	(0.005)		
SDDS sub. × US FFR			0.006**	0.001
			(0.003)	(0.004)
Observations	4,646	3,237	4,646	3,237
R^2	0.14	0.21	0.14	0.20
Countries	121	105	121	105
Outcome mean	0.10	0.10	0.10	0.10
Outcome std. dev.	0.18	0.17	0.18	0.17
Year FE	✓	✓	✓	✓
Country FE	✓	✓	✓	✓
Covariates		✓		✓

Notes: All specifications are estimated using OLS. Covariates are population, GDP, growth, trade, FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A15: **FOI laws and types of borrowing, by creditor category (1980-2013)**

	Types of Borrowing		
	(1)	(2)	(3)
Panel A: Bonds Credit (as a share of total private credit)			
Freedom of Information Law	0.109***	0.085*	0.121***
	(0.041)	(0.043)	(0.044)
Observations	1,933	1,755	1,572
R^2	0.24	0.26	0.29
Countries	87	86	81
Outcome mean	0.17	0.18	0.18
Outcome std. dev.	0.33	0.33	0.33
Panel B: Bilateral Credit (as a share of total official credit)			
Freedom of Information Law	-0.047*	-0.017	-0.002
	(0.026)	(0.027)	(0.031)
Observations	2,657	2,409	2,181
R^2	0.18	0.22	0.22
Countries	88	88	83
Outcome mean	0.10	0.10	0.10
Outcome std. dev.	0.18	0.18	0.17
Country FE	✓	✓	✓
Year FE	✓	✓	✓
Econ. fundamentals		✓	✓
Additional covariates			✓

Notes: All specifications are estimated using OLS. Economic fundamentals controls are population, GDP, growth, and trade. Additional covariates are FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A16: **FOI Laws, liquidity and types of borrowing, by creditor category (1980-2013)**

	Types of Borrowing			
	(1)	(2)	(3)	(4)
Panel A: Bonds Credit (as a share of total private credit)				
Freedom of Information Law	0.177***	0.156***		
	(0.057)	(0.059)		
Freedom of Information Law × US Federal Funds Rate	-0.026**	-0.014		
	(0.012)	(0.012)		
FOI Law (ever) × US FFR			-0.021***	-0.018***
			(0.005)	(0.005)
Observations	1,933	1,572	3,062	2,213
R^2	0.25	0.29	0.27	0.31
Countries	87	81	119	99
Outcome mean	0.17	0.18	0.14	0.16
Outcome std. dev.	0.33	0.33	0.31	0.32
Panel B: Bilateral Credit (as a share of total official credit)				
Freedom of Information Law	-0.056*	-0.009		
	(0.029)	(0.035)		
Freedom of Information LAW × US Federal Funds Rate	0.004	0.003		
	(0.004)	(0.005)		
FOI Law (ever) × US FFR			0.007**	0.004
			(0.003)	(0.003)
Observations	2,657	2,181	4,646	3,237
R^2	0.18	0.22	0.14	0.21
Countries	88	83	121	105
Outcome mean	0.10	0.10	0.10	0.10
Outcome std. dev.	0.18	0.17	0.18	0.17
Year FE	✓	✓	✓	✓
Country FE	✓	✓	✓	✓
Covariates		✓		✓

Notes: All specifications are estimated using OLS. Covariates are population, GDP, growth, trade, FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A17: **Williams's (2015) Transparency and types of borrowing, by creditor category (1980-2010)**

	Types of Borrowing		
	(1)	(2)	(3)
Panel A: Bonds Credit (as a share of total private credit)			
Information Transparency [AW]	0.004**	0.004*	0.006**
	(0.002)	(0.002)	(0.003)
Observations	2,062	1,848	1,574
R^2	0.21	0.23	0.29
Countries	117	111	96
Outcome mean	0.15	0.16	0.16
Outcome std. dev.	0.31	0.31	0.31
Panel B: Bilateral Credit (as a share of total official credit)			
Information Transparency [AW]	-0.002	-0.002	-0.001
	(0.001)	(0.001)	(0.001)
Observations	3,260	2,883	2,388
R^2	0.13	0.16	0.19
Countries	119	115	100
Outcome mean	0.09	0.10	0.10
Outcome std. dev.	0.18	0.18	0.17
Country FE	✓	✓	✓
Year FE	✓	✓	✓
Econ. fundamentals		✓	✓
Additional covariates			✓

Notes: All specifications are estimated using OLS. Economic fundamentals controls are population, GDP, growth, and trade. Additional covariates are FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A18: **Williams's (2015) Transparency, liquidity and types of borrowing, by creditor category (1980-2010)**

	Types of Borrowing			
	(1)	(2)	(3)	(4)
Panel A: Bonds Credit (as a share of total private credit)				
Information Transparency [AW]	0.012***	0.011***		
	(0.002)	(0.003)		
Information Transparency [AW] × US Federal Funds Rate	-0.002***	-0.001***		
	(0.000)	(0.000)		
Transparent [AW] × US Federal Funds Rate			-0.028***	-0.022***
			(0.004)	(0.004)
Observations	2,062	1,574	3,005	2,183
R^2	0.25	0.31	0.28	0.31
Countries	117	96	117	97
Outcome mean	0.15	0.16	0.15	0.17
Outcome std. dev.	0.31	0.31	0.31	0.32
Panel B: Bilateral Credit (as a share of total official credit)				
Information Transparency [AW]	-0.005***	-0.003**		
	(0.002)	(0.001)		
Information Transparency [AW] × US Federal Funds Rate	0.001***	0.001***		
	(0.000)	(0.000)		
Transparent [AW] × US Federal Funds Rate			0.011***	0.009***
			(0.003)	(0.003)
Observations	3,260	2,388	4,559	3,180
R^2	0.15	0.20	0.15	0.22
Countries	119	100	119	103
Outcome mean	0.09	0.10	0.10	0.10
Outcome std. dev.	0.18	0.17	0.18	0.17
Year FE	✓	✓	✓	✓
Country FE	✓	✓	✓	✓
Covariates		✓		✓

Notes: All specifications are estimated using OLS. Covariates are population, GDP, growth, trade, FDI inflows, natural resource rents, foreign aid, debt crisis, external debt, democracy, right and left ideology. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A19: **Corruption and Transparency**

	Corruption Index		
	(1)	(2)	(3)
Transparency Index [HRV]	-0.011	-0.054	0.052
	(0.064)	(0.061)	(0.083)
Population		0.150	-0.580
		(0.616)	(0.836)
GDP		-0.033	-0.284
		(0.297)	(0.372)
GDP Growth		-0.002	0.003
		(0.003)	(0.005)
Trade (% of GDP)		0.001	0.001
		(0.002)	(0.002)
FDI Inflows			-0.003
			(0.006)
Natural Resource Rents			-0.005
			(0.007)
Foreign Aid			0.005
			(0.009)
Debt crisis			-0.121*
			(0.072)
External debt (% of GNI)			-0.000
			(0.001)
Democracy			0.025**
			(0.013)
Right			-0.189
			(0.123)
Left			-0.115
			(0.118)
Observations	2,456	2,188	1,682
Countries	88	86	69
R^2	0.21	0.24	0.28
Outcome mean	2.57	2.59	2.51
Outcome std. dev.	1.04	1.02	0.97
Country FE	✓	✓	✓
Year FE	✓	✓	✓

Notes: All specifications are estimated using OLS. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A20: **Transparency and Private borrowing, controlling for corruption**

	Bonds Credit (as a share of total private credit)				
	(1)	(2)	(3)	(4)	(5)
Transparency Index [HRV]	0.051**		0.054**	0.049*	0.094***
	(0.022)		(0.023)	(0.025)	(0.014)
Corruption Index		0.005	-0.001	0.006	0.003
		(0.008)	(0.012)	(0.011)	(0.010)
Population				-0.297	-0.551***
				(0.200)	(0.161)
GDP				0.037	-0.074
				(0.064)	(0.061)
GDP Growth				-0.001	0.001
				(0.001)	(0.001)
Trade (% of GDP)				0.000	0.000
				(0.001)	(0.001)
FDI Inflows					0.001
					(0.003)
Natural Resource Rents					-0.005***
					(0.002)
Foreign Aid					-0.008
					(0.005)
Debt crisis					-0.066**
					(0.028)
External debt (% of GNI)					0.000
					(0.000)
Democracy					0.001
					(0.004)
Right					0.003
					(0.044)
Left					0.003
					(0.040)
Observations	1,763	2,826	1,707	1,599	1472
Countries	86	115	85	83	79
Year FE	✓	✓	✓	✓	
Country FE	✓	✓	✓	✓	
Covariates		✓		✓	

Notes: All specifications are estimated using OLS. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

Table A21: **Transparency and Official borrowing, controlling for corruption**

	Bilateral Credit (as a share of total official credit)				
	(1)	(2)	(3)	(4)	(5)
Transparency Index [HRV]	-0.034***		-0.038***	-0.023**	-0.023*
	(0.009)		(0.010)	(0.010)	(0.012)
Corruption Index		0.003	0.000	-0.001	-0.001
		(0.005)	(0.007)	(0.008)	(0.008)
Population				0.202**	0.131
				(0.091)	(0.091)
GDP				0.047	0.056
				(0.043)	(0.052)
GDP Growth				-0.001	-0.002
				(0.001)	(0.001)
Trade (% of GDP)				0.000	0.000
				(0.000)	(0.000)
FDI Inflows					-0.000
					(0.001)
Natural Resource Rents					-0.000
					(0.001)
Foreign Aid					0.003*
					(0.001)
Debt crisis					0.008
					(0.013)
External debt (% of GNI)					0.000
					(0.000)
Democracy					0.000
					(0.002)
Right					0.000
					(0.013)
Left					0.025*
					(0.014)
Observations	2,554	4,214	2,468	2,298	2132
Countries	88	119	88	86	82
Year FE	✓	✓	✓	✓	✓
Country FE	✓	✓	✓	✓	✓

Notes: All specifications are estimated using OLS. Standard errors clustered by country are in parentheses. * denotes $p < 0.1$, ** denotes $p < 0.05$, *** denotes $p < 0.01$.

A3 Mexican Municipalities Analyses

Table A22: **Mexican municipalities - Summary statistics**

Variable	Mean	Std. Dev.	Min.	Max.	N
Bond Credit (share of total commercial credit)	0.381	0.483	0	1	1733
Transparency Index	0.403	0.252	0	0.813	1733
Municipal Debt (Ln)	15.39	2.863	1.504	21.449	1468
Transfers (Ln)	10.733	1.532	5.46	14.738	1211
Tax Revenue (Ln)	15.737	2.54	7.365	20.863	1714
Population (Ln)	11.099	1.576	7.432	14.324	1008
Agricultural Production Value (Ln)	10.635	2.651	0	15.751	1232
PAN Incumbent	0.304	0.46	0	1	1733
PRI Incumbent	0.504	0.5	0	1	1733
PRD Incumbent	0.142	0.349	0	1	1733
PAN-PRD Incumbent	0.003	0.054	0	1	1733
PRI-PRD Incumbent	0.003	0.054	0	1	1733
Congressional Elections	0.407	0.491	0	1	1733
Gov. Election	0.463	0.499	0	1	1733

A3.1 Variable definitions and sources - Mexican municipalities

Agricultural Production Value (Ln) Total total value of all agricultural production in the municipality. Source: INEGI.

Bond Credit (share of total commercial credit) Bond credit as a share of total private credit (i.e., credit from bonds and commercial banks). Source: Secretaría de Hacienda y Crédito Público.

Congressional Election Indicator for congressional election year. Source: Municipal Elections Database compiled by the Centro de Investigación Para el Desarrollo, A.C. (CIDAC)

Gubernatorial Election Indicator for gubernatorial election year. Source: Municipal Elections Database compiled by the Centro de Investigación Para el Desarrollo, A.C. (CIDAC)

Municipal Debt (Ln) Total municipal debt. Source: Secretaría de Hacienda y Crédito Público.

PAN Incumbent Indicator for PAN partisan identity of the incumbent mayor. Source: Municipal Elections Database compiled by the Centro de Investigación Para el Desarrollo, A.C. (CIDAC)

PAN-PRD Incumbent Indicator for PAN-PRD partisan identity of the incumbent mayor. Source: Municipal Elections Database compiled by the Centro de Investigación Para el Desarrollo, A.C. (CIDAC)

Population (Ln) Total population. Source: INEGI.

PRD Incumbent Indicator for PRD partisan identity of the incumbent mayor. Source: Municipal Elections Database compiled by the Centro de Investigación Para el Desarrollo, A.C. (CIDAC)

PRI Incumbent Indicator for PRI partisan identity of the incumbent mayor. Source: Municipal Elections Database compiled by the Centro de Investigación Para el Desarrollo, A.C. (CIDAC)

PRI-PRD Incumbent Indicator for PRI-PRD partisan identity of the incumbent mayor. Source: Municipal Elections Database compiled by the Centro de Investigación Para el Desarrollo, A.C. (CIDAC)

Tax Revenue (Ln) Total tax revenue. Source: INEGI.

Transparency Index Measures the disclosure of policy-relevant information —i.e., credible aggregate economic data— by the government to the public based on the reporting of municipalities with respect to 221 variables from the *Banco de Información INEGI* (Information Bank); it summarizes such disclosure on a single dimension via an item response model for a given municipality on a given year (as in Hollyer, Rosendorff and Vreeland (2014)).

Transfers (Ln) Total fiscal transfers (i.e., including both Federal and State level transfers). Source: INEGI.