

GOVERNMENT CHOICES OF DEBT INSTRUMENTS*

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Abstract

Governments borrow from a range of creditors – commercial banks, sovereign bondholders, official bilateral creditors, and multilateral financial institutions. Sovereigns’ creditor portfolios vary significantly across space and time, partly reflecting countries’ macroeconomic profiles and creditworthiness. We suggest that these supply-side considerations are only part of the story: creditor composition also reflects governments’ (demand-side) attention to domestic political concerns. Governments with a desire to avoid scrutiny for their fiscal choices will prefer borrowing instruments that are less public. These include private sector borrowing from banks (versus bondholders) and official sector borrowing from bilateral (versus multilateral) creditors. We use governments’ overall level of transparency to proxy for their more specific preferences over fiscal policy disclosure. Our empirical analyses of government debt composition in developing nations suggest that, indeed, less transparent governments tend to borrow from commercial banks (rather than issue issue bonds) and to borrow from official bilateral (rather than multilateral) creditors. We also find support for our claims 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: some governments continue to access private credit mostly via borrowing from commercial banks, rather than via bond issuance. Government choices among financing instruments have important implications for governments' policy-making autonomy (Mosley 2003b, Hardie 2011, Stone 2008), as well as for exposure to and the resolution of debt and financial crises (Ballard-Rosa 2020).

Creditor composition partly reflects supply-side attention to country creditworthiness: underwriters of and investors in government bonds are not willing to offer such instruments to each and every sovereign, for example. Yet all but the weakest borrowing governments do have some agency in choosing from where to borrow. We know surprisingly little, however, about the demand-side process which drives governments' borrowing choices. This reflects a long-standing assumption that markets are relatively more powerful than governments. Governments, especially those of developing countries, have been treated largely as price-takers, with little agency relative to supply-side creditors (Ballard-Rosa, Mosley and Wellhausen 2019). Domestic politics has been assumed to affect the allocation of credit via its influence on creditors' assessments of default risk or willingness to impose and enforce loan conditions (Beaulieu, Cox and Saiegh 2012, Mosley 2003b, Rickard and Caraway 2014). The relative inattention to demand-side factors also reflects international political economy's siloed approach to creditors. Scholars have tended to treat international financial institutions (e.g. International Monetary Fund and the World Bank), sovereign bond markets, and foreign aid (which includes concessional lending) as distinct entities.

Borrowing governments, however, make choices across these potential sources of financing, considering their costs and benefits. We argue that these choices reflect a logic of

political survival: some governments worry that the disclosure of information related to the amount and terms of their borrowing will weaken their domestic standing. Those governments are inclined to prioritize financing sources which involve less public disclosure of debt commitments – both their existence as well as their terms. In the sphere of private credit, they will be more inclined to borrow from commercial banks (rather than via sovereign bond issuance); with respect to official credit, such governments seek financing from bilateral creditors, rather than from multilateral financial institutions). Using governments’ overall transparency practices as a proxy for these preferences over disclosing fiscal activity, we test these hypotheses for a large set of developing countries. Transparency correlates positively with the choice of disintermediated (bond-based), rather than intermediated (bank-based), credit. We further test, and find support for, these 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 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 2010a](#), [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](#)). Moreover, we ground the choice of borrowing instruments in domestic politics; we emphasize how and when preferences over disclosure matter for government finance, thus adding to the burgeoning research analyzing the link between transparency and political stability. Finally, we highlight the importance of treating sovereign credit more broadly, rather than confining analysis only to sovereign bonds,

multilateral lending or foreign aid.

The Domestic Politics of Sovereign Finance

Political leaders fund government activities via 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 as well as consequential (e.g., [Acemoglu and Robinson 2006](#), [Boix 2003](#), [Levi 1989](#), [Morrison 2014](#), [Queralt 2019](#), [Stasavage 2011](#), [Tilly 1985](#)). 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 Whether it is to smooth expenditures; 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 address temporary balance of payments deficits, leaders usually have access to credit.

There is substantial empirical heterogeneity – even among low- and middle-income countries – not only in how much governments borrow, but also from what sources they borrow. 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 from official creditors, including international organizations

¹We 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.

²Ricardian equivalence suggests that borrowing today reduces private spending today in anticipation of being taxed in the future to repay the loan. Empirical evidence supporting the Ricardian equivalence proposition is mixed at best, and governments often roll over maturing debt to new instruments, sometimes in near-perpetuity. Also see [Queralt \(forthcoming\)](#)

as well as other governments. Borrowing from international organizations include loans and credits from the World Bank, regional development banks, and other multilateral and inter-governmental 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.

As we note below, variation in creditor type is not explained fully by economic features of debtor states. 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-2010s.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), although the more recent rise of China as a bilateral creditor – albeit one with distinct practices from its Paris Club counterparts – has more recently offset some of this decline⁴

While there is a growing literature on governments’ choices among tax instruments (e.g., Scheve and Stasavage 2016, Bastiaens and Rudra 2016, Timmons 2005), much less is known about government decisions regarding borrowing instruments.⁵ On the supply side, we know

³Figure 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.

⁴Much of the increase in Chinese bilateral lending occurs after the time frame of our analyses; we discuss our expectations related to accessing Chinese bilateral credit in the conclusion. Note that Chinese loans often are opaque with respect to their terms and, indeed, may sometimes contain strict non-disclosure provisions. See Gelpern et al. (2021).

⁵Some exceptions include Bunte (2019), Kaplan (2021), Kaplan and Thomsson (2017), Zeitz (2019).

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 2019, 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, typically say much less about the demand-side processes by which borrowing profiles emerge.

Moreover, 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.

These borrowing choices are crucially important not only for meeting governments' current and anticipated revenue needs, but also in affecting the nature of creditors' future influence over governments' policy choices. The traditional “market constraints” view of private creditors 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 2003b, Przeworski and Wallerstein 1988). International financial institutions may be even more effective at extracting concessions and reforms from borrowers, especially from those with limited strategic or economic importance (e.g., Clark and Dolan 2021, Copelovitch 2010b, 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) and perhaps allows them to express displeasure with the global financial system (Broz, Zhang and Wang 2019), while simultaneously subjecting them to diplomatic and political pressures (Bunte 2019, Zeitz 2019).

Creditor composition also affects 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 crisis⁶ This stands in contrast, many times, to crises involving intermediated finance (commercial bank loans), in which the number of creditors is significantly smaller, and collective action problems are less severe⁷ 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. More recently, worries about unsustainable debt burdens in the wake of the COVID-19 pandemic are exacerbated by uncertainty over credit coordination: it is unclear, for instance, whether Chinese creditors will participate in Paris Club rescheduling processes.

Therefore, to the extent that governments have the capacity to make choices among borrowing instruments, they exercise (some) autonomy with respect to the preferences and demands of any specific set of creditors⁸ 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

⁶The presence of collective action clauses may mitigate this problem, although the empirical evidence is thus far mixed. See Bardozzetti and Dottori (2014).

⁷On empirical patterns of seniority in the servicing of sovereign debt, see (Cordella and Powell 2019, Schlegl, Trebesch and Wright 2019a).

⁸On heterogeneity among investors with regard to the interpretation of political events and political institutions, see Bernhard and Leblang (2006), Cunha (2017), Wellhausen (2015).

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).

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 as the domestic political strength of finance, industry and labor interests varies, so do the preferred combinations of multilateral official, bilateral official and private sector creditors.⁹ Moreover, sovereign borrowers might act strategically when deciding to default: Schlegl, Trebesch and Wright (2019b) 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. We contribute to this emergent domestic political economy of the choice across creditors.

Our core claim, developed below, is that governments vary, as a function of their domestic political environment, in their willingness to disclose information about the amount and terms of their borrowing. Certainly, all governments worry that accumulating debt will be viewed negatively by their constituents: borrowed funds may be viewed as serving the narrow

⁹Bunte 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.

interests of elites or their supporters, rather than broader societal purposes. High-profile cases in which governments take on or guarantee questionable debt, sometimes secured via natural resources, and enrich themselves as well as foreign financiers, amplify these concerns¹⁰. And even when debt is used to improve productive capacity, the positive economic effects of such investments appear only in the medium- to long-term.

Some governments, however, are keener to obfuscate their fiscal practices than others. In some countries, little budget or borrowing information is shared with the public or even with opposition parties; governments frequently make use of extra-budgetary funds (often without legislative approval); and there is little or no independent oversight of fiscal policy behavior. We expect that governments in such political systems will strongly prefer financing instruments which align with these *de jure* rules and *de facto* practices. We also expect that governments will be even more inclined to obscure the details of their borrowing behavior in countries with a history of debt crises, in which the austerity required post-crisis negatively affects significant swaths of the population [Ballard-Rosa \(2020\)](#); with high levels of existing debt (so that opposition parties and the mass public worry about the potential for new crises); or in political systems characterized by corruption (and, therefore, by suspicion of government economic policy choices).

We test our expectations with a study of non-OECD countries from 1980 to 2015. Using the World Bank’s International Debt Statistics (IDS), we find that transparency is a strong predictor across the choice of borrowing instruments. More opaque fiscal behaviors —as proxied by the HRV Transparency Index ([Hollyer, Rosendorff and Vreeland 2014](#))— are associated with a larger share of bank borrowing within private credit, as well as a lower share of bilateral borrowing within official credit. This finding is remarkably robust to alternative

¹⁰Perhaps the best-known recent case involves Mozambique, where in 2013 and 2014 three government-connected firms took on debt – to three European banks – equivalent to nearly 13 percent of GDP. The government guaranteed these loans, even though they were not – as legally required – approved by parliament. See <https://www.economist.com/middle-east-and-africa/2019/08/22/a-2bn-loan-scandal-sank-mozambiques-economy>

proxies for fiscal 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.

To address the risks to inference that inhere in the use of cross-country statistical analyses, 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.¹¹ These subnational analyses also confirm our expectations: bond credit as a share of total private credit rises with municipal-level transparency.

Our analyses contribute to the study of the political economy of government finance, particularly to the growing emphasis on unpacking lenders (Bunte 2019). Our findings also suggest that international financial markets may not create incentives to improve domestic institutions (Eichengreen and Leblang 2008, Freeman and Quinn 2012, Rudra 2005). Rather, governments with a desire to obfuscate, and which are often pressured by the IFIs or bond market investors to improve their domestic informational environment can circumvent such pressures by accessing bilateral credit or commercial bank loans. Low transparency borrowers are better able to access credit markets when global liquidity is high, suggesting a potentially pernicious effect of capital market booms¹²

¹¹Another option is to access credit from development banks (akin to official banks) but this does not map to our general hypothesis surrounding official credit.

¹²Also see Ross (2012), Pinto and Zhu (2016), Zhu (2017).

Theorizing Disclosure across Instruments

Governments often make choices among financing instruments, just as they choose among instruments in other policy areas. 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 political consequences. When the instruments differ in their domestic political effects, leaders are inclined to choose an instrument that is preferable on political grounds, even if it is indeed less efficient on economic grounds (Robinson 1998).¹³ Rosendorff (1996a,b) shows how trade instruments with the same effects on prices and imports can differ in salience across interest groups and, therefore, in their attractiveness to governments. Pinto and Pinto (2008) considers how government 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 (also see (Kono 2006)).

We begin with the premise that leaders finance and implement their fiscal strategies – which involve taxation, borrowing and expenditures – with an eye to remaining in power (e.g., Morrison 2009, Bueno de Mesquita et al. 2003).¹⁴ We expect that governments’ choices across sovereign borrowing instruments reflect leaders’ desire for political support. When governments worry that the disclosure of information related to the amount and terms of

¹³See for instance Naoi (2009) on how electoral rules affect the choice of trade instruments.

¹⁴In 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.

government borrowing will undermine their political support, they will seek debt instruments that involve less disclosure.

Governments frequently choose policies that are less “legible” (Lee and Zhang 2017) to their domestic audiences when they are attempting to obscure the redistributive effects of their policies. Kono (2006) finds that polities with higher levels of accountability are more likely to adopt more obscure trade policy instruments such as non-tariff barriers in order to hide them from (some) domestic audiences. Esberg and Perlman (2020) suggest that democracies use “more subtle methods” of expropriation of foreign direct investment than their less constrained counterparts, permitting escape from both domestic and international protections of property rights. Shambaugh and Shen (2018) show that transparent national governments choose policies that are more likely to align with those of their central banks, decreasing the duration of inflation and currency crises.

With respect to fiscal policy and government borrowing, we expect that governments are sometimes inclined to obscure both the amounts and the terms (the cost, in terms of interest rates as well as need for foreign currency or need to rollover debt; see Ballard-Rosa, Mosley and Wellhausen (forthcoming)) of their sovereign borrowing. Domestic audiences often worry that debt puts governments at risk of financial crisis (and, perhaps, of austerity measures); that debt will serve the interests of a narrow group of domestic actors; and that debt (and debt service) can increase future tax burdens. Political opponents or mass publics may use information regarding borrowing behaviors to undermine the incumbent government.¹⁵

Our key theoretical assumption is that some leaders anticipate political costs when their fiscal policy choices are disseminated to a wider audience. Some governments share less information about their fiscal policy decisions; experience weaker bureaucratic oversight of fiscal policy; and are more inclined to adjust spending and borrowing outside of the

¹⁵It may be argued that the political benefits of debt, perhaps from income smoothing or for buying political support implies debt may have its political supporters. We argue that debt is a *salient* political issue only when mass publics or rival elites perceive debt as a source of potential economic hardship.

regular political process. These governments also will prefer to borrow in ways that are less transparent to their publics. This preferences will be exacerbated when there is a history of debt crises; a higher levels of accumulated debt; and a more contentious domestic political environment.

The existence of a variety of debt instruments offers a means for governments with concerns over the transparency of their borrowing behavior to both meet their fiscal needs and increase their odds of political survival. Specifically, debt instruments vary in the extent to which their existence and features are disclosed to wide audiences; that is, their legibility to domestic audiences varies. On the demand side, governments will be inclined to choose instruments that match their disclosure preferences. To the extent that supply-side creditors worry that a given borrower presents greater risk – because of its debt burden; its lack of domestic political accountability; or the purposes for which it intends to use credit – they will adjust the terms of the loan accordingly. For borrowers that are less reliable counter-parties, they will demand higher bond yields, shorter maturities, foreign currency denomination or a variety (depending on the creditor) of non-financial terms and conditions.

We consider the demand-side preferences over credit instruments, first in the realm of private sector sources of finance, and then in the area of official credit. Within the realm of private borrowing, the principal choice facing governments is between bond issuance and commercial bank loans. 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. These events, typically run by governments’ debt management offices (DMOs) seek not only to provide information about a borrowing government, but also to position that sovereign relative to “peer” or

”aspirational peer” borrowers [Brooks, Cunha and Mosley \(2015\)](#), [Gray \(2013\)](#).

As part of their professionalized marketing of bond issues, DMOs 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 ¹⁶. Additionally, 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. Bond prospectuses, the dates of the bond auctions, the credit ratings of the country and the bond and are not only publicly available, but often publicized via the press and other media, and not infrequently a source of fodder for political conflict. [Zeitz \(2019\)](#)’s study of sovereign credit in African nations notes that bond issues tend to receive extensive coverage in the local press, given the public’s concerns regarding government borrowing and spending behavior.

Commercial bank lending, by contrast, 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). Commercial bank creditors may well insist that governments disclose information to them about domestic economic and political conditions; such disclosures facilitate the development of longer-term relationships between banks and sovereigns ([Tomz 2007](#)). But to the extent that such disclosures occur, they are to a narrow, private audience. While commercial banks may need to disclose country exposures to regulators, specific sovereign

¹⁶DMOs vary in their level of professionalization as well as their autonomy from political principles. Political scientists have recently begun, but have not fully explored, the causes and consequences of DMO structures. See [Cormier \(2020\)](#), [Sadeh and Porath \(2019\)](#).

loan instruments are not usually subject to public scrutiny, legal examination or regulatory filings. Banks also tend to keep their credit assessments, and the rationales for them, private.

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. Concerned with the opacity of bank lending, 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 information about bond-based financing is often publicly available, commercial bank financing is not.¹⁷

In general, bond-based financing is more public than bank-based financing. Banks apply fewer legal requirements, and their loan decisions often rely more on relationship-specific dynamics. The concentrated management and private monitoring of bank loans stands in contrast to bonds, which are managed and held by a large number of (often somewhat anonymous) creditors, relying partly on public monitoring and assessments lead by credit rating agencies (Tanaka 2006). Along these lines, Zeitz (2019) finds that publics in African nations are much less aware of bank borrowing than of bond issues. While sovereigns that are newly able to access bond markets may tout their access as indicative of their policy prowess, many sovereigns prefer to avoid this spotlight. Especially when public scrutiny over borrowing and spending is acute, governments will seek to avoid the spotlight that comes with bond issues, preferring instead syndicated loans.

Turning to official sources of funding, official creditors also differ substantially on the degree and depth of information that they make publicly available. Multilateral lending naturally involves more principals —likely all members of an international financial institution,

¹⁷The IIF principles are available at <https://tinyurl.com/y5rwnmfp>. There is an evident “information asymmetry” across bank and 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).

perhaps with some delegation to staff in the negotiation of specific loan packages (Clark and Dolan 2021, Copelovitch 2010b). Moreover, 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).

By contrast, the terms of bilateral lending are rarely made public. Although much has been made of the opacity of debt contracts offered by Chinese official and quasi-official lenders, other (Paris Club) bilateral lenders also have included non-disclosure (among other) provisions in their sovereign contracts Gelpern et al. (2021). 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, but also to creditor practices, including confidentiality requirements. We therefore expect that governments with a propensity for fiscal opacity will, all else equal, prefer to seek credit from bilateral, rather than multilateral, official creditors ¹⁸.

In the context of private lending, less public sources correspond to bank credit, while more public sources refer to the bond market. In official lending, more public sources corresponds to the international financial institutions and other multilateral sources; less public refers to borrowing from other sovereigns. This leads to our central hypotheses:

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

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

¹⁸We do not explore governments' choices within the bilateral creditor category, as Bunte (2019) does. We expect, however, that because non-Paris Club creditors on average offer even more opaque loan arrangements than their Paris Club counterparts, the least transparent governments will prefer to borrow from bilateral creditors such as China and India

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

Cross-Country Research Design

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.¹⁹ We expect that governments with a greater propensity to obfuscate fiscal outcomes will prefer to borrow from creditors with more narrow disclosure practices – commercial banks rather than bond markets, and bilateral rather than multilateral creditors. A direct measure of governments’ disclosure in practice is the International Budget Partnership’s Open Budget Index (OBI), a measure focused on the extent to which governments make comprehensive and timely budget information available to their publics. The International Budget Partnership surveys in-country (typically) researchers (with a focus on budgetary and fiscal issues) working in civil society organizations and academic institutions. The survey includes a total of 228 items, capturing the transparency of the budgetary process as well as public participation in and institutional

¹⁹We 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.

oversight of the budget process.²⁰

The survey directly captures aspects of governments’ fiscal practices relevant to our analysis. The survey, however, is available for only 7 (non-consecutive) years, beginning in 2006 (and then 2008, 2010, 2012, 2015, 2017 and 2019). Given the limited overlap with our dependent variable and other covariates of interest, we elect instead to use a more general measure of the government’s willingness to disclose (fiscal as well as other) information. The HRV Transparency Index, which measures the government’s willingness to disclose policy-relevant information —i.e., credible aggregate economic data— to the public (Hollyer, Rosendorff and Vreeland 2014).²¹

The HRV Transparency Index summarizes along a single dimension the degree of voluntary reporting by countries of 240 economic variables from the World Bank’s *World Development Indicators* (WDI). 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.²² The HRV index treats transparency as a latent predictor of the willingness of governments to report data to The World Bank for inclusion in the WDI; we take it as a proxy for government’s willingness to tolerate the public availability of economic policy and outcome measures. The measure 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 .²³

Those leaders that are less willing to share information are likely less accountable to their

²⁰More information about this measure, as well as the data, are available at <https://www.internationalbudget.org/open-budget-survey/about>

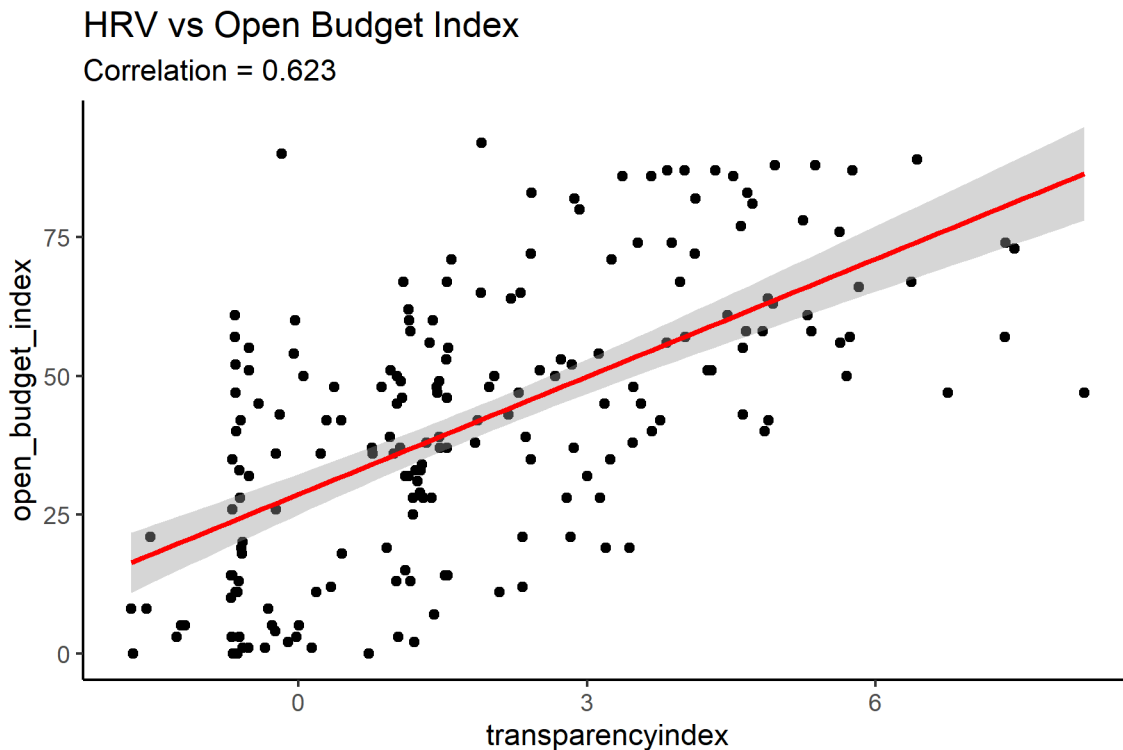
²¹Our findings also are robust to additional measures of government transparency, as we discuss below.

²²This sample spans from 1980 to 2010, the last year for which the HRV index is available.

²³The HRV algorithm summarizes the reporting of 240 variables by 125 countries over 31 years (1980-2010) with a country-year transparency score. This is estimated using a system of 240 equations (one for each variable j), where reporting in a given country-year is treated as a function of a latent transparency value, a coefficient on this transparency term, and an intercept coefficient. The measurement model thus adjusts for the fact that some data are easier to collect than others, and for the fact that the reporting of some items is more reflective of a country-year’s general tendency to disclose. This provides a continuous measure, based on objective information, with a consistent definition over time of a government’s tendency to report credible information on aggregate policy-relevant outcomes – and proxies for the availability of such information to the public.

publics; indeed, when democracies are more transparent, they are less likely to experience mass protests(Hollyer, Rosendorff and Vreeland 2018b).; more transparent autocracies have a lower incidence of coups(Hollyer, Rosendorff and Vreeland 2015, 2018b,c). For our purposes, transparency captures the underlying tolerance or reticence of leaders to have fiscal information that may affect their political prospects made more broadly available.

Figure 1: HRV Transparency and Open Budget Index



Indeed, for the country-year observations in which the HRV transparency measure overlaps with the Open Budget Index (OBI), the correlation is strong and positive. Figure 1 plots the overall OBI against HRV, for which the bivariate correlation is 0.62. We also calculate the correlation between HRV and OBI scores based on a subset of survey items most closely related to government borrowing and fiscal accountability²⁴ The debt-related

²⁴The six item subset relates directly to sovereign debt, including the provision of information on outstanding debt, new borrowing, interest payments and the terms of new borrowing. The twenty-five item

sub-index has a bivariate correlation with HRV of 0.65; the accountability-and-debt-focused sub-index has a bivariate correlation of 0.66. These associations provide confidence that the more widely available HRV measure captures the domestic political features in which we are most interested.

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 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 2018a, p.84-88).²⁵

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.²⁶ 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).²⁷

subset includes not only these debt-related items, but also measures of independent oversight, the capacity of governments to use extra-budgetary funds; and the release of broader fiscal information to the public.

²⁵A potential concern from the investor side is that governments elect to disclose 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).

²⁶We 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.

²⁷Pooling 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

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 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.

Baseline Analysis

Consider a simple OLS estimation of the form:

$$\text{TYPE OF BORROWING}_{it+1} = \alpha_i + \delta_t + \beta_1 \text{TRANSPARENCY}_{it} + \mathbf{X}'_{it}\phi + \epsilon_{it} \quad (1)$$

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

2014).

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.

Moreover, 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).²⁸ 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

²⁸Alternative 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.

do so in a more flexible way than, say, time-trends (which is, by definition, a specific case of year fixed-effects).

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** (0.022) | 0.049* (0.025) | 0.094*** (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*** (0.009) | -0.023** (0.010) | -0.024* (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. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

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.²⁹ Substantively, a unit increase in the HRV Transparency Index (about half standard

²⁹Our results are similar if we instead measure the ratio of bond to bank borrowing. These results are in Appendix Table A3.

deviation) corresponds to an increase in bond borrowing of about 5 to 9 percentage points, 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.

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.

We therefore 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](#)). Lastly, 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](#) demonstrate, 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 2019), rather than modeling bonds as share of total private credit. We 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. 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

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*** (0.007) | -0.030*** (0.004) | 0.048*** (0.008) | -0.018*** (0.005) | 0.093*** (0.010) | -0.019*** (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 $p < 0.01$.

approximately 3 percentage point decrease (also about 30% with respect to the mean) in the likelihood of contracting 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. What is even closer to our proposed causal process, though, is the government’s willingness to disclose economic information. We construct an Economic HRV Index, using economic indicators only. 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 advantages to the HRV approach, we also consider two additional proxies for governments’ preferences over fiscal disclosure. First, we make use of the Special Data

Dissemination Standard (SDDS), part of the IMF’s broader Data Dissemination Initiative to enhance member country transparency in the provision of economic and financial data. The Standard addresses data quality, methodology and dissemination, and was designed to improve developing country 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 2003a](#)), 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.³⁰ 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.³¹ Appendix Tables [A17](#) and [A18](#) show that, again, our main findings hold when using this alternative transparency measure.

³⁰We 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.

³¹This 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 \(2015\)](#).

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 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 governments’ fiscal opacity, one might worry that our results are capturing the effect of corruption, rather than of fiscal disclosure practices, 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 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](#)).

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 2019](#)). 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 2003b](#)). By contrast, when 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 international 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 (2019)). 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).

$$\begin{aligned}
 \text{TYPE OF BORROWING}_{it+1} &= \beta_2 \text{TRANSPARENCY}_{it} \\
 &+ \gamma_1 (\text{TRANSPARENCY}_{it} \times \text{US FED FUNDS}_t) \\
 &+ \mathbf{X}'_{it} \phi + \alpha_i + \delta_t + \epsilon_{it}
 \end{aligned} \tag{2}$$

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:

$$\text{TYPE OF BORROWING}_{it+1} = \gamma_2(\text{TRANSPARENT}_i \times \text{US FED FUNDS}_t) + \phi \mathbf{X}_{it} + \alpha_i + \delta_t + \epsilon_{it} \quad (3)$$

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 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.³²

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

³²Once 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.

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*** (0.023) | 0.116*** (0.015) | | |
| Transparency (HRV) \times US Federal Funds Rate | -0.009*** (0.002) | -0.010*** (0.003) | | |
| Transparent \times US Federal Funds Rate | | | -0.025*** (0.005) | -0.021*** (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*** (0.009) | -0.032*** (0.012) | | |
| Transparency (HRV) \times US Federal Funds Rate | 0.003*** (0.001) | 0.004*** (0.001) | | |
| Transparent \times US Federal Funds Rate | | | 0.008*** (0.003) | 0.007** (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 $p < 0.01$.

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 sub-

stantial effects of electoral accountability (Arias et al. 2019a, Larreguy, Marshall and Snyder 2019).³³

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, commercial banks, and development banks.³⁴ 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 organi-

³³It has also seen resistance and opposition from local politicians (Arias et al. 2019b).

³⁴Development 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).

zations (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 own transparency indexes, although their time and geographic coverage are limited.³⁵ Here, we replicate the HRV method (Hollyer, Rosendorff and Vreeland 2014) and create an original transparency index at the municipal level.³⁶ 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):

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

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.³⁷ We include both municipality and year fixed effects in all models (Table A22 presents descriptive statistics).

³⁵IMCO'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.

³⁶To 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.

³⁷Data 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 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 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.

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

| | Bond Credit (as a share of total commercial credit) | | |
|--------------------------|---|--------------------|--------------------|
| | (1) | (2) | (3) |
| Transparency | 0.108** (0.050) | 0.136** (0.065) | 0.197** (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 $p < 0.01$.

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) on

governance, we know much less about the political economy of governments' choices regarding sovereign borrowing. A focus on choices across borrowing instruments 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 desire of some governments to obfuscate their fiscal behavior generally and their borrowing behavior specifically. We show that opaque governments tend to borrow via 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.

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 a preference for fiscal 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 affect sovereigns' use of domestic credit, especially in the context of

financial repression.³⁸ Further research therefore could explore the domestic political dynamics by which governments choose between domestic and foreign sources of credit. While much recent research on sovereign borrowing in Global South countries tends to assume that private sector creditors are foreign, some creditors (banks as well as bondholders) are domestic. Lending dynamics, as well as the effects of credit on state-building ([Levi 1989](#), [Queralt forthcoming](#), [Stasavage 2011](#)), are likely different when creditors also are part of the electorate.

Third, future research could delve further into creditor composition by considering variation *within* the categories of financing we examine. This may be most obvious in the realm of bilateral official credit, where opacity-inclined governments are even more drawn to credit from non-Paris Club lenders (especially China) than from Paris Club creditors ([Bunte 2019](#)). While the scope of our empirical analyses largely predates the rise of China as a source of official credit, future analyses could test this expectation. We also might imagine that governments vary in their preferences between accessing credit via regional development banks versus Bretton Woods financial institutions.

Finally, the ability of governments to make choices among sources of credit, especially in times of high global capital market liquidity, suggests a pessimistic view for the role of official multilateral lenders, or bondholders, to exert pressure on governments to improve their domestic institutions and practices. To the extent that opaque governments have attract options in the form of similarly opaque lenders ([Gelpern et al. 2021](#)), credit is unlikely to be a motive for reform.

³⁸For work on government policies towards domestic debt, see [Betz and Pond \(2019\)](#).

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Appendices

A1 Model of the Supply and Demand for Debt

Consider an infinite sequence of short term debt contracts, starting at time t . In some periods, there is no need for borrowing. When there is a need to borrow, which happens with probability ρ an amount L is borrowed (determined endogeneously) and repaid at the end of every period (or not if there is default). The borrower's value of the loan is $a(\cdot)L - L^2/2$. That is the benefit of the loan exhibits decreasing returns.

The benefit of a loan will depend on the “publicness,” ($C > 0$) of the instrument. Some instruments are more “public” than others: details of these loans are publicly available, are matters for public debate and discussion, are publicized in the press and elsewhere. Bonds more public than banks, and IFIs are more public than bilaterals. Some leaders don't mind having this debate, having the details of the loans in the public domain, while others dislike having the the details of these loans in the public domain. We call this the willingness to be transparent, $s \in (0, 1)$, so the value to the leader of a loan is $a(C, s)$, with $a_C < 0$ and $a_s > 0$ and most importantly $a_{Cs} > 0$. That is a more public loan results in an even lower gain when there is little willingness to be transparent.

Assumption 1. *Assume that there is some $\tilde{C} > 0$ such that $a(\tilde{C}, 0) = 0$, that is there some combination of publicness and unwillingness to be transparent such that the benefit to the leader of any loan is zero, $a(\tilde{C}, 0) = 0$*

Also there is no discounting and the risk-free interest rate is set equal to 1.

In periods in which the country borrows, at the end of the period when repayment is due, the country will either repay in full or default. This is determined randomly and exogenously: repayment occurs with probability π and default with probability $1 - \pi$. We can view this as some periods the debt service constraint is loose, and debt service happens, and in other crisis periods, there is default.

Assumption 2. *If a country ever defaults, it is locked out of all future borrowing. The political cost of this is K in any period where borrowing would have been chosen had it been available. Then the continuation value of defaulting is $-\sum_{\tau=t}^{\infty} \rho^{\tau-t} K = -\frac{\rho}{1-\rho} K$.*

If the country default it pays zero. With probability π it pays the full amount. In expectation therefore, the effective interest rate on the loan is r , it must be that $r\pi L = L$ or $r = 1/\pi$

Then the value function of the loan is

$$V(L) = \rho(a(C, s)L - L^2/2 + \pi(-L/\pi + V(L))) + (1 - \pi)\frac{-\rho}{1 - \rho}K$$

Solving,

$$V(L) = \frac{\rho}{2(1 - \rho)(1 - \pi\rho)}(2L(1 - \rho)(a - 1) + 2K(\pi - 1)\rho + L^2(\rho - 1)) \quad (\text{A1})$$

On the supply side, for the market to be willing to offer loans at this interest rate, the country must be willing to repay the debt in the low-repayment-cost state. This condition can be written as

$$V(L) - L/\pi \geq -\frac{\rho}{1-\rho}K \quad (\text{A2})$$

Then the borrower's problem is to choose the size of the loan in order to maximize **A1** subject to **A2**.

Absent the constraint

$$\begin{aligned} V'(L) &= \frac{\rho}{(1-\rho)(1-\pi\rho)}((1-\rho)(a-1) - L(1-\rho)) = 0 \\ L &= a-1 = \hat{L} \end{aligned}$$

With the constraint: substituting

$$\begin{aligned} &\frac{\rho}{2(1-\rho)(1-\pi\rho)}(2L(1-\rho)(a-1) + 2K(\pi-1)\rho + L^2(\rho-1)) - L/\pi + \frac{\rho}{1-\rho}K \\ &\geq 0 \end{aligned}$$

Maximizing with respect to L

$$\begin{aligned} 0 &= 2\rho(a-1)(1-\rho) - 2L\rho(1-\rho) - 2(1-\rho)(1-\pi\rho)/\pi \\ 0 &= \pi\rho(a-1) - L\pi\rho - (1-\pi\rho) \\ L &= a - \frac{1}{\pi\rho} > 0 \text{ iff } \rho > 1/\pi a \end{aligned}$$

So $\rho < 1/\pi a$ means no lending; for $\rho \geq 1/\pi a$, $L = a-1$ if $a-1 < a-1/\pi\rho$, which occurs if $\rho > 1/\pi$.

Proposition 1. *The optimal amount of borrowing is*

$$L^* = \begin{cases} 0 & \text{if } \rho < \frac{1}{a(C,s)\pi} \\ a(C,s) - \frac{1}{\pi\rho} & \text{if } \frac{1}{a(C,s)\pi} < \rho < \frac{1}{\pi} \\ a(C,s) - 1 & \text{if } \rho > \frac{1}{\pi} \end{cases}$$

And the associated expected utilities can be computed:

Proposition 2.

$$V^* = \begin{cases} -\frac{\rho^2 K(1-\pi)}{(1-\rho)(1-\pi\rho)} & \text{if } \rho < \frac{1}{a(C,s)\pi} \\ -\frac{\rho^2 K(1-\pi)}{(1-\rho)(1-\pi\rho)} + \frac{(\pi a(C,s)\rho - 2\pi\rho + 1)(\pi a(C,s)\rho - 1)}{2\pi^2\rho(1-\pi\rho)} & \text{if } \frac{1}{a(C,s)\pi} < \rho < \frac{1}{\pi} \\ -\frac{\rho^2 K(1-\pi)}{(1-\rho)(1-\pi\rho)} + \frac{((2-a(C,s))a(C,s)-1)\rho}{2(1-\pi\rho)} & \text{if } \rho > \frac{1}{\pi} \end{cases}$$

We are now in a position to think about the publicness of the debt instruments, C , and the willingness to tolerate publicness s .

Proposition 3. *A leader does not borrow at all if the publicness of the instrument is too large, or the leader's willingness to be transparent is too small.*

Proof. There is no lending in equilibrium if $\rho < \frac{1}{a(C,s)}\pi \iff a(C,s) < \frac{\pi}{\rho}$. By assumption we have $a(\tilde{C}, 0) = 0$; then by continuity, there are values of (C, s) in the neighborhood of $(\tilde{C}, 0)$ such that $a(C, s) \approx 0 < \frac{\pi}{\rho}$. □

Proposition 4. *In equilibrium, the loan size falls with the publicness of the instrument, rises with a willingness to be transparent, and more opaque countries borrow more when the instrument is less public. That is*

- $\frac{dL^*}{dC} < 0$
- $\frac{dL^*}{ds} > 0$
- $\frac{d^2L^*}{dCds} > 0$

Proof. Follows directly from the assumptions that $a_C < 0$, $a_s > 0$ and $a_{Cs} > 0$. □

A2 Main variable definitions

A2.1 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.

Open Budget Index A measure of whether governments give public access to budget information and opportunities to participate in the budget process at the national level, based on expert surveys. Source: <http://survey.internationalbudget.org/home>

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 \(2019\)](#)

A3 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 (0.019) | 0.009 (0.020) |
| Population | | -0.029 (0.175) | -0.211* (0.123) |
| GDP | | 0.114** (0.052) | 0.079 (0.049) |
| GDP Growth | | -0.001 (0.001) | -0.001 (0.001) |
| Trade (% of GDP) | | -0.000 (0.000) | -0.001 (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

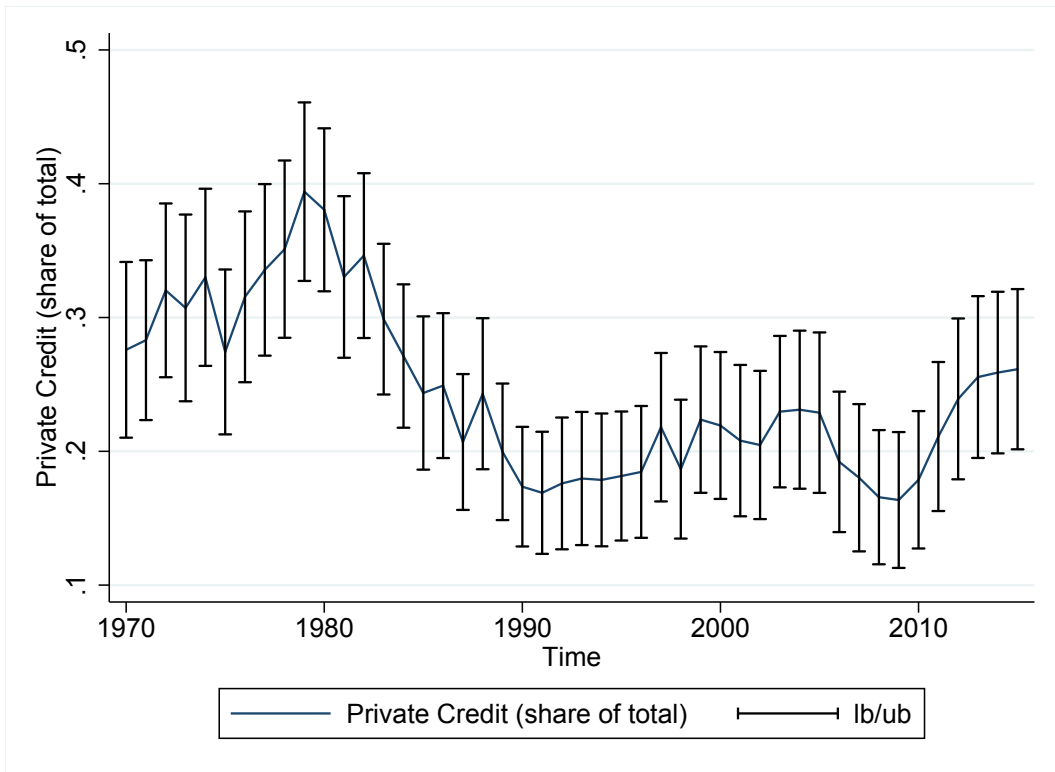


Figure A2: Within private: Bonds vs. banks borrowing

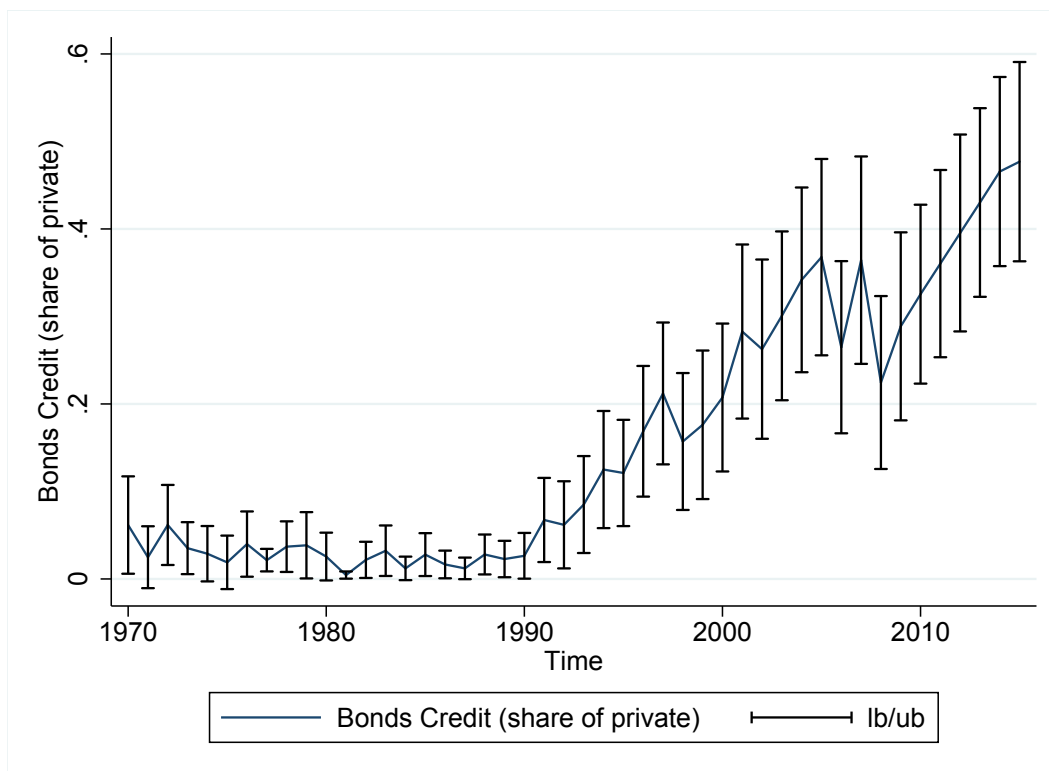


Figure A3: **Within official: Bilateral vs. multilateral borrowing**

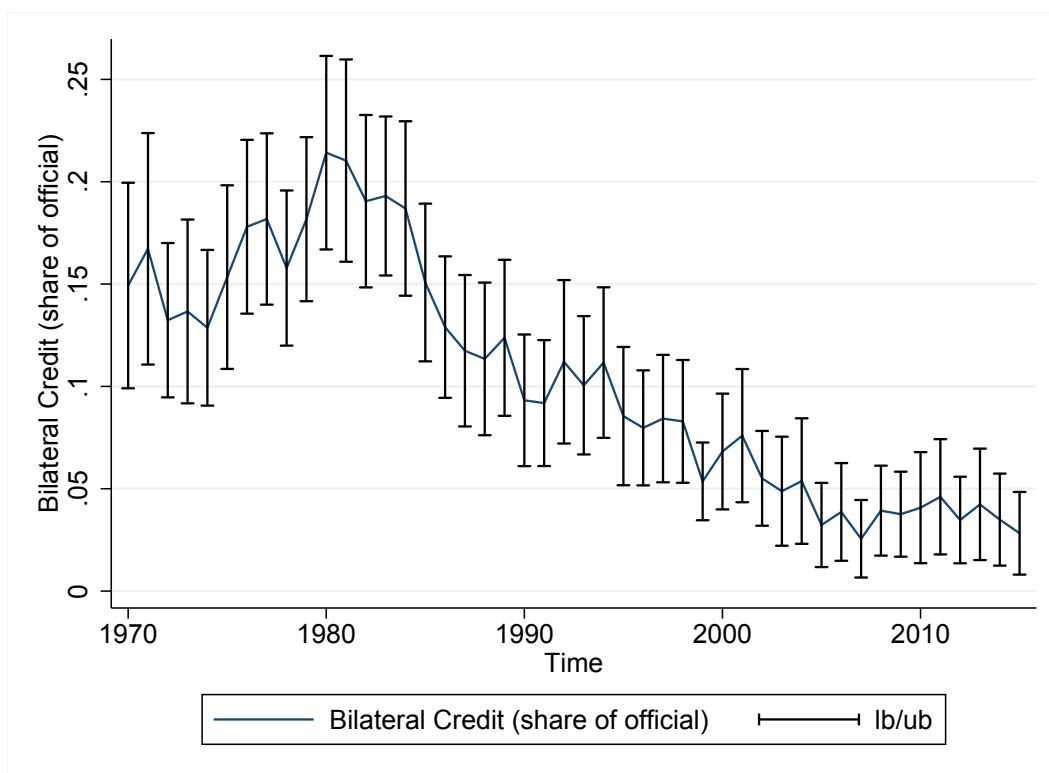


Table A3: **Transparency and private types of borrowing**

| | 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*** (0.025) | 0.114*** (0.018) | | |
| Transparency (HRV) \times US Federal Funds Rate | -0.009*** (0.002) | -0.009*** (0.003) | | |
| Transparent \times US Federal Funds Rate | | | -0.026*** (0.005) | -0.022*** (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** (0.025) | 0.057* (0.031) | 0.088*** (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*** (0.009) | -0.023** (0.010) | -0.024* (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*** (0.027) | 0.098*** (0.022) | | |
| Transparency (HRV) \times US FFR | -0.003 (0.002) | -0.004 (0.003) | | |
| Transparent \times US FFR | | | -0.015** (0.006) | -0.013** (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*** (0.009) | -0.032*** (0.012) | | |
| Transparency (HRV) \times US FFR | 0.003*** (0.001) | 0.004*** (0.001) | | |
| Transparent \times US FFR | | | 0.008*** (0.003) | 0.007** (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*** (0.008) | 0.115*** (0.010) | | |
| Transparency (HRV) \times US FFR | -0.009*** (0.001) | -0.010*** (0.002) | | |
| Transparent \times US FFR | | | -0.025*** (0.002) | -0.021*** (0.003) |
| Panel B: Bilateral Credit (as a share of total official credit) | | | | |
| Transparency (HRV) | -0.038*** (0.005) | -0.029*** (0.007) | | |
| Transparency (HRV) \times US FFR | 0.003*** (0.001) | 0.004*** (0.001) | | |
| Transparent \times US FFR | | | 0.007*** (0.002) | 0.006*** (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*** (0.022) | 0.053* (0.027) | 0.092*** (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*** (0.008) | -0.020* (0.011) | -0.024* (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*** (0.024) | 0.110*** (0.017) | | |
| Transparency Index [HRV] × US FFR | -0.007*** (0.002) | -0.008*** (0.002) | | |
| Transparent × US FFR | | | -0.023*** (0.005) | -0.021*** (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*** (0.008) | -0.033*** (0.011) | | |
| Transparency Index [HRV] × US FFR | 0.004*** (0.001) | 0.004*** (0.001) | | |
| Transparent × US FFR | | | 0.008*** (0.003) | 0.008** (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*** (0.020) | 0.052** (0.021) | 0.086*** (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** (0.011) | -0.022** (0.011) | -0.022 (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*** (0.022) | 0.112*** (0.017) | | |
| Econ. Transparency \times US Federal Funds Rate | -0.007** (0.003) | -0.009*** (0.003) | | |
| Econ. Transparent \times US Federal Funds Rate | | | -0.025*** (0.005) | -0.023*** (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*** (0.010) | -0.039*** (0.012) | | |
| Econ. Transparency \times US Federal Funds Rate | 0.005*** (0.001) | 0.006*** (0.002) | | |
| Econ. Transparent \times US Federal Funds Rate | | | 0.008*** (0.003) | 0.012*** (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** (0.035) | 0.057 (0.038) | 0.063 (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*** (0.048) | 0.214*** (0.051) | 0.213*** (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** (0.025) | -0.046* (0.026) | -0.044 (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*** (0.041) | 0.085* (0.043) | 0.121*** (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* (0.026) | -0.017 (0.027) | -0.002 (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*** (0.057) | 0.156*** (0.059) | | |
| Freedom of Information Law \times US Federal Funds Rate | -0.026** (0.012) | -0.014 (0.012) | | |
| FOI Law (ever) \times US FFR | | | -0.021*** (0.005) | -0.018*** (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* (0.029) | -0.009 (0.035) | | |
| Freedom of Information LAW \times US Federal Funds Rate | 0.004 (0.004) | 0.003 (0.005) | | |
| FOI Law (ever) \times US FFR | | | 0.007** (0.003) | 0.004 (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** (0.002) | 0.004* (0.002) | 0.006** (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 (0.001) | -0.002 (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*** (0.002) | 0.011*** (0.003) | | |
| Information Transparency [AW] × US Federal Funds Rate | -0.002*** (0.000) | -0.001*** (0.000) | | |
| Transparent [AW] × US Federal Funds Rate | | | -0.028*** (0.004) | -0.022*** (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*** (0.002) | -0.003** (0.001) | | |
| Information Transparency [AW] × US Federal Funds Rate | 0.001*** (0.000) | 0.001*** (0.000) | | |
| Transparent [AW] × US Federal Funds Rate | | | 0.011*** (0.003) | 0.009*** (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 (0.064) | -0.054 (0.061) | 0.052 (0.083) |
| Population | | 0.150 (0.616) | -0.580 (0.836) |
| GDP | | -0.033 (0.297) | -0.284 (0.372) |
| GDP Growth | | -0.002 (0.003) | 0.003 (0.005) |
| Trade (% of GDP) | | 0.001 (0.002) | 0.001 (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** (0.022) | | 0.054** (0.023) | 0.049* (0.025) | 0.094*** (0.014) |
| Corruption Index | | 0.005 (0.008) | -0.001 (0.012) | 0.006 (0.011) | 0.003 (0.010) |
| Population | | | | -0.297 (0.200) | -0.551*** (0.161) |
| GDP | | | | 0.037 (0.064) | -0.074 (0.061) |
| GDP Growth | | | | -0.001 (0.001) | 0.001 (0.001) |
| Trade (% of GDP) | | | | 0.000 (0.001) | 0.000 (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*** (0.009) | | -0.038*** (0.010) | -0.023** (0.010) | -0.023* (0.012) |
| Corruption Index | | 0.003 (0.005) | 0.000 (0.007) | -0.001 (0.008) | -0.001 (0.008) |
| Population | | | | 0.202** (0.091) | 0.131 (0.091) |
| GDP | | | | 0.047 (0.043) | 0.056 (0.052) |
| GDP Growth | | | | -0.001 (0.001) | -0.002 (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 $p < 0.01$.

A4 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 |

A4.1 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.