Measuring Debt Transparency in Developing Countries

Nicolas Bau
University of Geneva
nicolas.bau@unige.ch

Zoe Ge
IE University
xincheng.ge@ie.edu

Layna Mosley
Princeton University
layna.mosley@princeton.edu

Peter Rosendorff
New York University
bpr1@nyu.edu

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Abstract

Debt transparency is essential for managing sovereign debt, but it is often hindered by political and technical constraints. This paper introduces the Princeton-NYU Debt Transparency (PNDT) measure, a standardized index of debt transparency over time and across countries. The PNDT leverages missing data from the World Bank's Debtor Reporting System using a Bayesian item response theory model. Covering 113 countries from 1994 to 2022, the index is correlated with the domestic electoral cycle, openness, financial crises, and other international political dynamics. Debt transparency is not merely a matter of technical capacity but is also a political choice made by elected officials.

1 Introduction

The call for more transparency of sovereign debt statistics has become widespread and increasingly urgent. Debt transparency is a prerequisite for monitoring debt sustainability and for engineering orderly restructurings when needed. Debt reporting by debtor states is frequently incomplete, and debt is often hidden from observers due to both capacity, political, and legal constraints. Regulatory provisions that require reporting and oversight are often absent. Debt management offices (DMOs) may have limited access to qualified staff and limited independence from governments, and they may also be restricted from accessing relevant information.

The full and timely disclosure of debt by borrowers, creditors, and international financial institutions is now an essential element of multilateral attempts to reform the international architecture for resolving debt crises, ensure responsible debt management, and safeguard debt sustainability. Several attempts to compile relevant debt data have emerged,[1] and numerous recent initiatives aim to improve governments' capacity to collect and disseminate debt statistics.[2]

Crucial to improving debt transparency is its rigorous and reproducible measurement. This requires a method that monitors changes over time and differences across countries in a standardized way, consistently applied, and independent of political or bureaucratic influence.

[1]The World Bank has launched the Debt Reporting Heat Map, which records countries' debt reporting practices since 2020 (Rivetti, 2021). Horn et al. (2024) track countries' ex post revision of their debt stocks and flows from 1970 to 2020 to reveal the status of hidden debt. The Public Expenditure and Financial Accountability (PEFA) framework provides periodic assessments on the strengths and weaknesses of public financial management from 2005 to 2024. Lastly, #PublicDebtIsPublic is an ongoing web-based searchable database of public debt contracts, which, by making full-text legal documents available and standardized, aims to shift debt transparency norms and practices.

[2]Many of these target capacity-building, such as the Joint IMF-World Bank Multipronged Approach to Address Debt Vulnerabilities (MPA) and the Debt Management Performance Assessment (DeMPA). The G-20 also has encouraged transparency, via its Global Sovereign Debt Roundtable, as well as by calling on commercial creditors to voluntarily disclose transactions with sovereigns. Additional initiatives, such as those run by the International Budget Partnership, as well as the IMF's long-running Special Data Dissemination Standard (SDDS), target fiscal transparency more generally. In June 2025, the World Bank noted that bolder efforts – "Radical [Debt] Transparency" – are needed.

The Princeton-NYU Debt Transparency measure (PNDT) offers a country-year index that achieves these objectives. It reflects the degree to which low- and middle-income country governments are willing and able to report debt and debt-related data to the World Bank's Debtor Reporting System (DRS). The PNDT index provides an annual measure for 113 countries from 1994 to 2022, offering the opportunity to explore how and where transparency has improved or declined.

Our new measure of debt transparency leverages missing data in the DRS using a Bayesian item response theory (IRT) model. Commonly used in standardized testing, the IRT model estimates countries' latent debt data availability, much like SATs that estimate a college applicant's latent "aptitude." This is based on whether a respondent (in this case, a country providing data for a particular variable) provides any information on an item (equivalent to the "correct" answer in the SAT).

The items used to compile the PNDT index are those reported by governments within the DRS process. These indicators offer a range of information about a country's debt-related activity in the reporting year. These include commitments, disbursements, and outstanding debt; interest payments, principal repayments, and total debt service; as well as net flows and net transfers. Governments report such activity across a range of sectors, such as the central bank, general government, other public sector, and private sector; for various creditor types (bilateral official, multilateral official, commercial banks, bonds, other private); and for concessional, as well as non-concessional loans.

The PNDT index correlates closely with related measures, most notably the World Bank's Debt Heat Map index (Rivetti, 2021), the Open Budget Index (International Budget Partnership, 2023), and the PEFA index (PEFA, 2011), but offers greater coverage across time and countries, which allows us to systematically examine factors shaping debt transparency. Specifically, we find that financiall openness and economic crises are closely correlated with PNDT. International political dynamics are also a factor in a country's debt transparency.

Moreover, this measure informs scholars of the debt statistics that are more difficult to report and permits greater discrimination across countries. More specifically, private debt that is guaranteed by the public sector is both difficult to report and informative of countries' overall reporting transparency, confirming governments' strategic choice of debt instruments when in need of fiscal opacity. Debt statistics related to debt service are also highly difficult and discriminative.

We also explore the relationship between domestic political institutions – elections and the electoral cycle – on the PNDT measure. Governments that anticipate elections in the near future appear to reduce the degree to which debt data is publicly available; the exception is when elections are unexpected or irregular, in which case there hasn't been enough time for incumbents to adjust their information revelation processes. The decline in debt transparency during elections is more pronounced in presidential democracies than in non-presidential ones, highlighting that the concealment of sovereign debt is only feasible when domestic political institutions permit.

The key finding here is that debt transparency is a choice that serves the interests of elected officials rather than societal welfare. While technical capacity for data collection is essential for effective debt reporting (UNCTAD, 2025), political will may ultimately be the most decisive factor in determining whether a state and its government are transparent about their debt. Debt transparency is not merely about capacity, or legal framework, or norms and expectations; it is also a political choice.

2 Existing Measures of Debt Transparency

Transparency in countries' sovereign debt profiles is essential for global financial stability. Clear, timely disclosure of how much a government owes, to whom, and on what terms helps facilitate accurate risk pricing and borrowing costs (Copelovitch, Gandrud and Hallerberg, 2018) in good times and enables credible restructuring negotiations (Ferry

and Zeitz, 2024) in bad times.

To improve the transparency of sovereign debt statistics, various initiatives target capacity-building, such as the Joint IMF-World Bank Multipronged Approach to Address Debt Vulnerabilities (MPA) and the Debt Management Performance Assessment (DeMPA). The G-20 has also encouraged transparency, via its Global Sovereign Debt Roundtable, as well as by calling on commercial creditors to voluntarily disclose transactions with sovereigns. Additional initiatives, such as those run by the International Budget Partnership, as well as the IMF's long-running Special Data Dissemination Standard (SDDS), target fiscal transparency more generally. In June 2025, the World Bank noted that bolder efforts – "Radical [Debt] Transparency" – are needed.

Yet, despite these efforts and explicit calls, the understanding of whether these initiatives worked or not is lacking. An analytical measurement to evaluate the level of debt transparency across countries over time is needed. Several attempts to measure debt transparency have emerged, which vary in their operationalization. First, the World Bank offers the Debt Reporting Heat Map, which records countries' debt reporting practices since 2020 (Rivetti, 2021). This approach evaluates the availability, completeness, and timeliness of public debt statistics and publicly available debt management documents. These assessments generate a 4-point score for each dimension of assessment. While this approach provides a comprehensive conceptualization of debt transparency that goes beyond the availability of debt statistics and captures debt management processes, it is empirically challenging to employ this approach to uncover the historical variation of debt transparency.

Second, with a similar assessment-based approach, The Public Expenditure and Financial Accountability (PEFA) framework provides periodic assessments on the strengths and weaknesses of public financial management from 2005 to 2024. This approach employs an evidence-based assessment based on document review and in-country fieldwork to evaluate countries public financial management on seven dimensions: budget relia-

bility, transparency of public finances, management of assets and liabilities, policy-based fiscal strategy and budgeting, predictability and control in budget execution, accounting and reporting, and external scrutiny and audit. Hence, this approach provides a much broader assessment of public debt sustainability than transparency alone. However, given the relatively expensive assessment process, this approach only provides assessment for a selective group of countries, often on a three-year—rather than annual—basis. Such a data structure challenges the credibility of the inference of the variation across time and countries.

Third, Horn et al. (2024) track countries' ex post revision of their debt stocks and flows from 1970 to 2020 to uncover the presence of hidden debt. Their empirical strategy uses changes in debt statistics across different vintages of the IDS dataset to quantify the size, characteristics, and timing of hidden debt accumulation and revelation. Hence, this approach's conceptualization of debt transparency focuses on missing debt from a historical perspective, which allows for comparative analyses of the status of debt concealment across time and countries. Yet, as hidden debt is defined strictly in terms of stocks and flows, this approach cannot capture the concealment of other debt statistics that are crucial for financial stability, such as debt services and terms on loan contracts, to name a few. Such information is crucial to evaluate the sustainability of countries' borrowing profiles and may suffer from a different motivation of concealment than the stock and flow statistics.

Lastly, #PublicDebtIsPublic is an ongoing web-based searchable database of public debt contracts, which, by making full-text legal documents available and standardized, aims to shift debt transparency norms and practices. This approach provides valuable information on the design of debt contracts, such as confidentiality clauses that would be crucial for our understanding of the source of opacity.

Our measure combines the element of debt statistics availability in the heat map approach (Rivetti, 2021) with the historical perspective in the hidden debt approach (Horn

et al., 2024). By exploring the variation in missingness across different debt statistics (Hollyer, Rosendorff and Vreeland, 2014), our approach conceptualizes debt transparency based on the completeness of debt statistics. This operation complements the heat map and hidden debt approach by incorporating a comprehensive set of debt statistics that reflect important characteristics of sovereign borrowing in a cross-country and over-time manner. Incorporating these additional debt statistics allows us to study how countries report different debt statistics differently. In addition, since our approach does not require expert-based assessment, it is a cost-effective and replicable approach that can be updated on a regular basis.

While our approach does not directly measure the variation in the debt management process, our debt transparency index reflects an equilibrium outcome of debt transparency, incorporating influences of both domestic political processes and various international forces—such as domestic political competitions, efforts, and capacity of international institutions, creditor transparency, etc—which collectively determine what information can be available. Therefore, our measure of debt transparency offers an analytical tool to study factors that facilitate or hinder debt transparency, whether existing initiatives are effective in promoting transparency, and why.

3 A Simple Model of Debt Transparency

We present a simple model to illustrate the intuition of using the item response theory to measure debt transparency. Specifically, we use missing data as a lens to transparency while accounting for the heterogeneity of debt statistics to be reported by states.

Assume that Country $i \in \{1, 2, ..., N\}$ has a choice to report ($y = 1$) or not ($y = 0$) on item j, which can take the form of specific information in debt contracts that countries disclose. Country i's utility from reporting on item i is

$$u_{ij}(y) = y(\eta_j \theta_i - \beta_j) + \epsilon_{ijy}$$

Reporting has both benefits and costs. The benefit of reporting is represented by $\eta_j\theta_i$. θ_i is a country-level parameter that represents a country's propensity to report. Greater propensity implies more benefits from reporting. Hence, θ_i summarizes Country i's latent trait of debt transparency. η_j is an item-level parameter and captures the item's importance for Country i's reporting. Higher item importance increases the willingness to report for countries with greater transparency propensity, while low item importance does not differentiate the reporting behavior of countries with different levels of transparency. Hence, η_j captures the item j's discriminative ability, or how informative reporting on item j is of a country's overall debt transparency. The cost of reporting is β_j, which is an item-level parameter and captures the overall difficulty of reporting. Lastly, $\epsilon_{ijy} \sim N(0, \sigma_y^2)$ capture idiosyncratic utility shocks.

Based on this utility function, Country i reports on item j if and only if $u_{ij}(1) > u_{ij}(0)$. After plugging in the specific utility functions and rearranging, we obtain $\epsilon_{ij0} - \epsilon_{ij1} < \eta_j\theta_i - \beta_j$. Hence, Country i's probability to report on item j given its transparency θ_i is $Pr(y = 1|\theta_i) = \Phi(\eta_j\theta_i - \beta_j)$. Constraining $\sqrt{\sigma_{ij0}^2 + \sigma_{ij1}^2} = 1$, we obtain an item response model for estimation:

$$y_{ij} \sim Bernoulli(\pi_{ij})$$

$$\pi_{ij} = \Phi(\eta_j\theta_i - \beta_j)$$

from which, we can estimate the transparency index θ_i, item discrimination η_j, and item difficulty β_j using the International Debt Statistics (IDS) dataset.

4 Measuring Debt Transparency Using the IRT Model

4.1 Data Generating Process

One key assumption underlying this approach is that the missing data in the IDS reflects a country's willingness and capacity to report, rather than technical factors that make

reporting irrelevant, such as the absence of reporting obligations or the irrelevance of certain debt instruments.

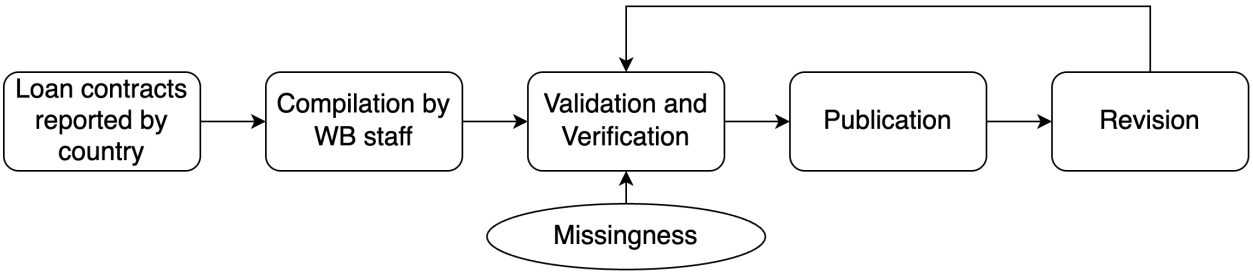


Figure 1. Data Generating Process of Missingness in DRS

To evaluate this assumption, Figure 1 shows the data-generating process of the missing data in the DRS data based on the DRS Manual (2000), IDS methodology documents (World Bank Group, 2023), and our conversations with World Bank staff members. First, countries report public debt on a loan-by-loan basis, while private debt is reported at the aggregate level annually. Then, World Bank staff members compile the countries' reporting based on the DRS Manual. In this process, staff members validate the information provided by countries based on additional sources of information, including the market, creditors, and debt sustainability analyses (DSAs), among others. If the information is not coherent across different sources, staff members proceed to verify the information with the country, after which the information can be published. Further, if a country needs to update information for previous years, there is a revision process, which follows the same validation and verification process. Missingness emerges if staff members believe that certain debt statistics are not supposed to be zero, but the country fails to provide information about them. Hence, missing entries in the DRS do reflect a country's failure to report, whether due to a lack of will or capacity.

One caveat with this approach is that it cannot account for data revision across time, which turned out to be prevalent, especially in bad times (Horn et al., 2024). Given this complication in the data-generating process, what our measure captures is a snapshot of the pattern of debt transparency for the specific vintage of the DRS data under analysis.

4.2 Preparing Data for the IRT Model

We prepare the IDS data for the IRT model estimation in 3 steps. First, we remove irrelevant variables, which include three categories. The first are variables that do not start with "DT" in their IDS series code.[3] The second category includes variables that are only relevant for a subset of countries. For example, indicators related to debt relief are only relevant for countries experiencing debt forgiveness, leading to missingness due to irrelevance for countries without any debt relief experiences. The same issue applies to debt statistics related to multilateral development bank loans due to the regional and income eligibility. Hence, the presence of irrelevant variables may bias the IRT estimation and lead to lower transparency for countries that have more irrelevant variables.[4] The last category is related to debt statistics on private debt that is not guaranteed by the public sector (PNG). These variables are included in the IDS dataset due to private debt's increasing importance in the economy, but these variables are irrelevant to the definition of public debt. In total, we removed 82 variables due to the irrelevance issue.[5]

Second, we transform the data into binary indicators with 1 indicating reported and 0 indicating missing. In this process, we aggregate the variables on two dimensions. On one dimension, the reporting on a debt instrument includes the following information: amortization (AMT), disbursements (DIS), debt outstanding and disbursed (DOD), interest payments (INT), net flows (NFL), net transfers (NTR), and total debt service (TDS). We aggregate these variables into one, with the rule that as long as one variable is reported, the aggregated variable is reported. This aggregation helps mitigate the relevance issue because when a debt instrument is irrelevant, the corresponding disbursement variable takes the value zero, while the other six variables are missing due to the irrelevance. On a

[3]The removed variables include balance on current account, official transfers (grants), excluding technical cooperation, official transfers (grants) for technical cooperation, and total reserves as a percentage of total external debt stocks indicators.

[4]Based on our experience with the IRT model, this issue is to some extent addressed by the discriminative parameter in the IRT model, as the irrelevant variables tend to have a lower discriminative parameter. Hence, these variables carry lower weight in the overall transparency index.

[5]Table A2 shows the full list of removed variables.

second dimension, we aggregate the variables based on the debtor type. After a reform in 2019, the IDS started to publish the breakdown information of the debtor type, i.e., central bank (CB), general government (GG), public sector (PS), and other public sector (OPS) (Huang, 2019).[6] We aggregate these debtor types into one variable—with the same rule as the other aggregation dimension—to account for the institutional differences across countries, which also suffer from the same relevance issue. After these two pre-processing steps, we end up with 119 variables for the IRT model estimation.

Lastly, we chose a time period that allows for the maximum country coverage. Hence, we removed countries with early exit or late entry into the IDS dataset. As the traditional IRT model cannot address the missingness due to membership change,[7] we need to constrain the time period after 1994 to avoid dropping former Soviet republic countries due to their new independence status. Further, we remove countries with entries later than 1994. These countries are Afghanistan, Iraq, Kosovo, Montenegro, Timor-Leste, Suriname, Bosnia and Herzegovina, the Syrian Arab Republic, and Serbia. We also excluded countries that graduated from developing to high-income status during the period, such as Israel, which entered the World Bank's high-income group in 2009. We obtain a dataset covering 113 countries for the period from 1994 to 2022.

Notice that some of the data inputs in the IDS dataset are estimated by World Bank staff rather than from countries' self-reports. While leaving this factor unaddressed may overestimate the transparency level for countries where the World Bank has better information, we decide not to address this factor for two reasons. The first reason is the feasibility. While the IDS data is published with an appendix indicating the specific country-level inputs estimated by the World Bank staff, the identified variables are at a highly aggregated level that will make certain countries' debt reporting mostly missing

[6]This change only affects how the DRS publishes debt statistics and does not affect how states reports their debt information.

[7]In the future, we will use the method by Hollyer et al. (2024), which addresses the sample change in the IRT model estimation.

if we make all the World Bank staff estimates into missing data.[8] The note also fails to provide consistent information about the time frame for certain variables to be estimated, increasing the empirical challenge to identify the World Bank staff estimates. Second, not addressing the World Bank staff estimates allows us to compare debt transparency across countries with the World Bank's information capacity being controlled for. As the data-generating process in Section 4.1 shows, the validation procedure allows the World Bank staff to exert influence on states' reporting when their own information contradicts the information provided by the country. Hence, while other inputs may not come across as World Bank estimates in the IDS data, the validation procedure still allows the World Bank's information capacity to play a role in what information countries provide. Therefore, leaving the World Bank estimates unaddressed allows us to account for the Bank's information collection capacity in generating the transparency index.

4.3 Debt Transparency Index

Our index provides an understanding of the average evolution of debt transparency across countries and over time. Figure 2 shows an improvement in global debt transparency between 1994 and 2022, although we have observed a steady decline since 2005. Figure 3 shows the country average debt transparency in the period 1994-2022, which ranges from –2.12 for Somalia to 2.21 for Brazil. The most transparent countries are found in Latin America, where the Dominican Republic has an average index of 2.17, Colombia (2.13), and Argentina (1.30) are among the top performers. Asia also stands out as a region with high levels of debt transparency, particularly the Philippines (2.19), Pakistan (2.00), India (1.20), and China (0.77).

[8]The specific categories mentioned in the IDS notes are long-term public and publicly guaranteed debt, long-term private non-guaranteed debt, and short-term debt.

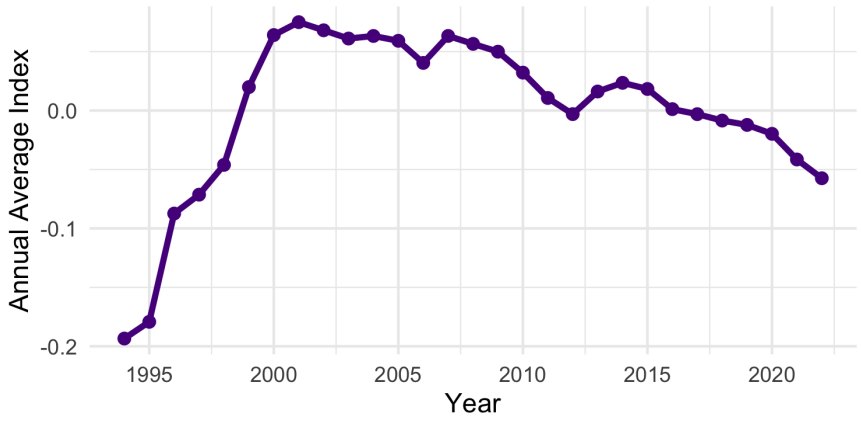


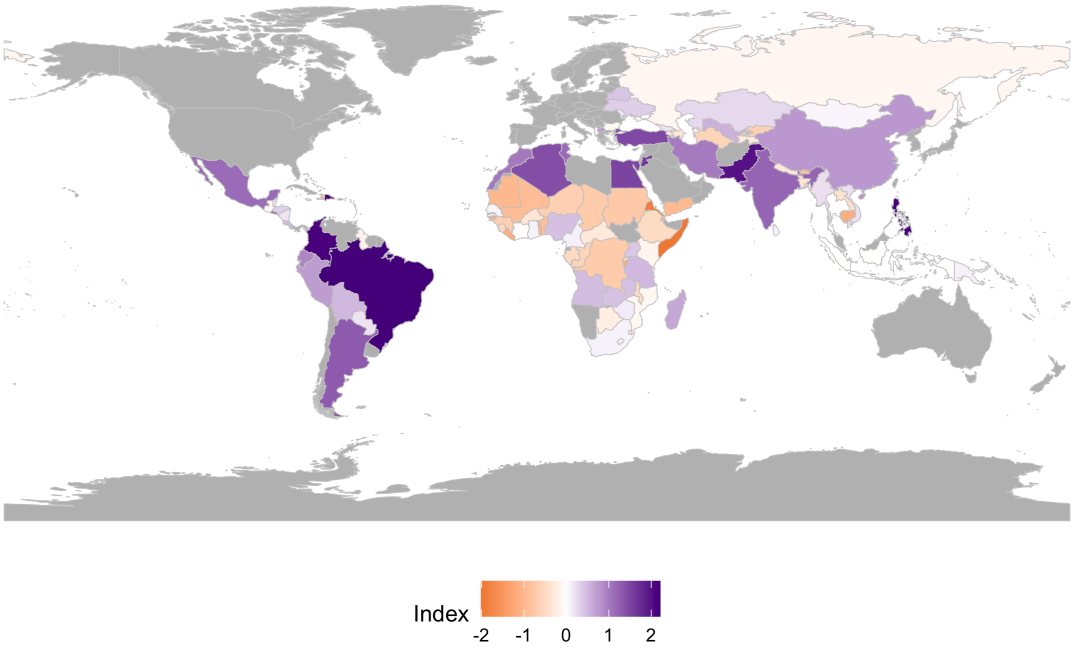
Figure 2. Debt Transparency Index: Trend (1994-2022)

4.4 Validating the Measure

To assess the validity of our Debt Transparency Index, we compare it with a set of existing measures that capture different dimensions of fiscal transparency and governance. The scatterplots in Figure 4 display bivariate associations between our measure and the World Bank's Heat Map Index, the PEFA Index, the Updated HRV Index, and the Open Budget Index. In all cases, the fitted regression lines suggest a positive relationship, indicating that higher scores on established measures of fiscal, public management, and debt transparency are systematically associated with higher levels of debt transparency in our PNDT index.

We first fit the association between our measure and the World Bank's Heat Map index (Rivetti, 2021). As explained earlier, while the country and time coverage of the Heat Map is limited, it offers the closest approximation of our conceptual understanding of debt transparency. For each dimension of the measure,[9] we code the World Bank scoring from 1 (lowest) to 4 (highest). We then compute the average of the scores across dimensions at the country level. The fitted regression line indicates that the Heat Map is positively correlated with our measure.

[9]Dimensions include data accessibility, instrument coverage, sectoral coverage, information on recently contracted loans, periodicity, time range, debt management strategy, annual borrowing plan, and other debt statistics such as contingent liabilities.



Note: Countries in gray color are not in our IRT model estimation.

Figure 3. Debt Transparency Index: Country Average (1994-2022)

We further validate our measure against the PEFA framework. We replicate the public debt transparency measure (PDT) used by Cormier (2023), drawing on three PEFA indicators: the quality of debt reporting (PI-17.i), the scope and frequency of debt sustainability analyses and forward-looking debt strategies (PI-12.ii), and the quality of financial contracting and guarantee-issuance systems (PI-17.iii). The data covers the period from 2005-2011 and 109 unique countries. Three countries have been assessed three times over the period, 20 countries 3 times, 39 countries 2 times, and 47 countries one time. To operationalize the PEFA indicators, we follow Cormier (2023) and recode the ordinal letter grades outlined in the 2011 PEFA Performance Measurement Framework Methodology (PEFA, 2011) into a numerical scale. Specifically, we assign a value of 4 to "A," 3 to "B," 2 to "C," and 1 to both "D" and "D*," reflecting that both categories denote performance below the basic level. Scores marked as "NR" (not rated) or "NA" (not applicable) are coded as missing. This procedure transforms the original PEFA letter assessments into a

continuous measure that can be summed across indicators to produce an index of PDT. Our PNDT measure remains robust with a positive correlation with the PDT.

We also assess the validity of our debt transparency measure against the Updated HRV Transparency Index (hereafter, HRV2) (Hollyer et al., 2024). The HRV2 Index expands the coverage of the measure developed by Hollyer, Rosendorff and Vreeland (2014), spanning 149 countries from 1993 to 2015. While debt transparency conceptually differs from economic transparency, we believe that countries that disclose more information on their economic policies may also exhibit stronger reporting on their sovereign obligations. Our index exhibits a strong alignment with HRV2, where the scatterplot reveals a clear upward trend and a relatively tight distribution of observations around the fitted line.

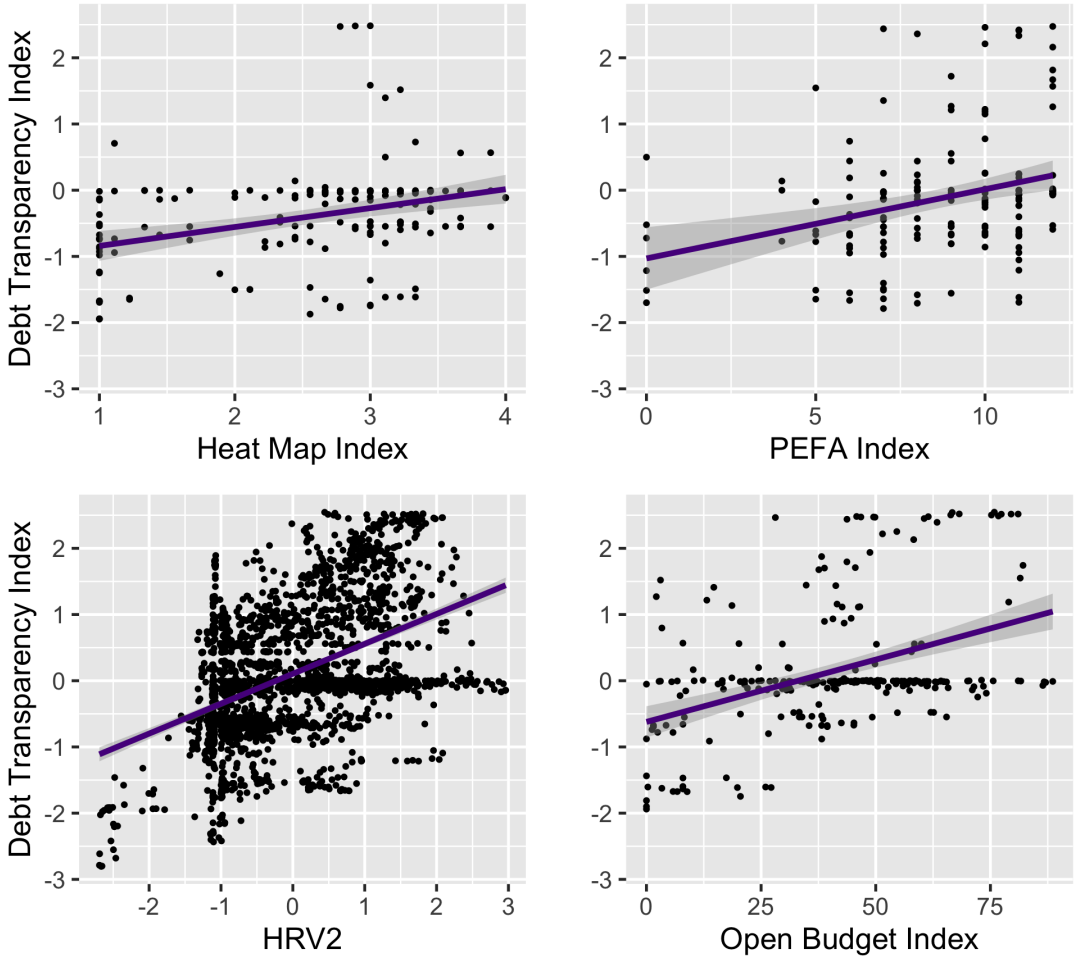


Figure 4. Debt Transparency Index and Other Measures of Transparency

Finally, we consider the relationship between the PNDT index and the OBI (International Budget Partnership, 2023). The surveys conducted by the International Budget Partnership evaluate countries' budget accountability against three dimensions: public access to budget information, opportunities for public participation in the budget process, and the effectiveness of formal oversight institutions, including the legislature and national audit institutions. Four survey rounds are available—2017, 2019, 2021, and 2023. Across the four waves, 125 different countries have been surveyed, though not all countries are included in each wave: the 2017 round features 115 countries, the 2019 round 117, the 2021 round 120, and the 2023 round is the most exhaustive, with 125 countries. The OBI furnishes an aggregate index ranging from 0 to 100. Here again, the relationship between the PNDT and the OBI is more pronounced: governments that perform better in budget transparency are more likely to be transparent in reporting debt data.

4.5 Item Difficulty and Discrimination

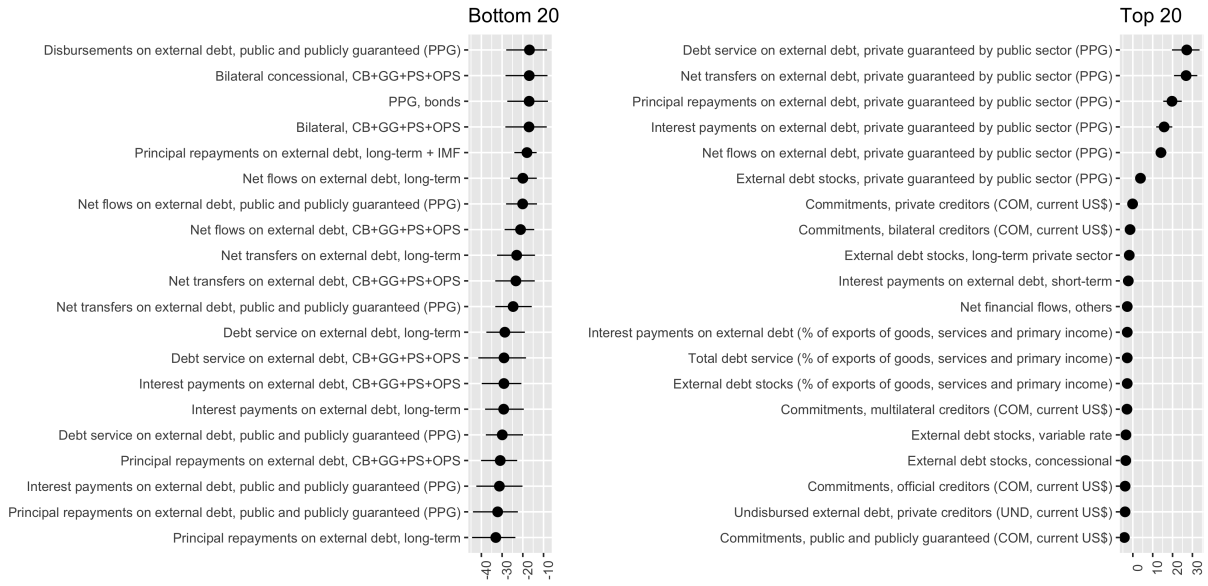


Figure 5. Item Difficulty: Top and Bottom 20

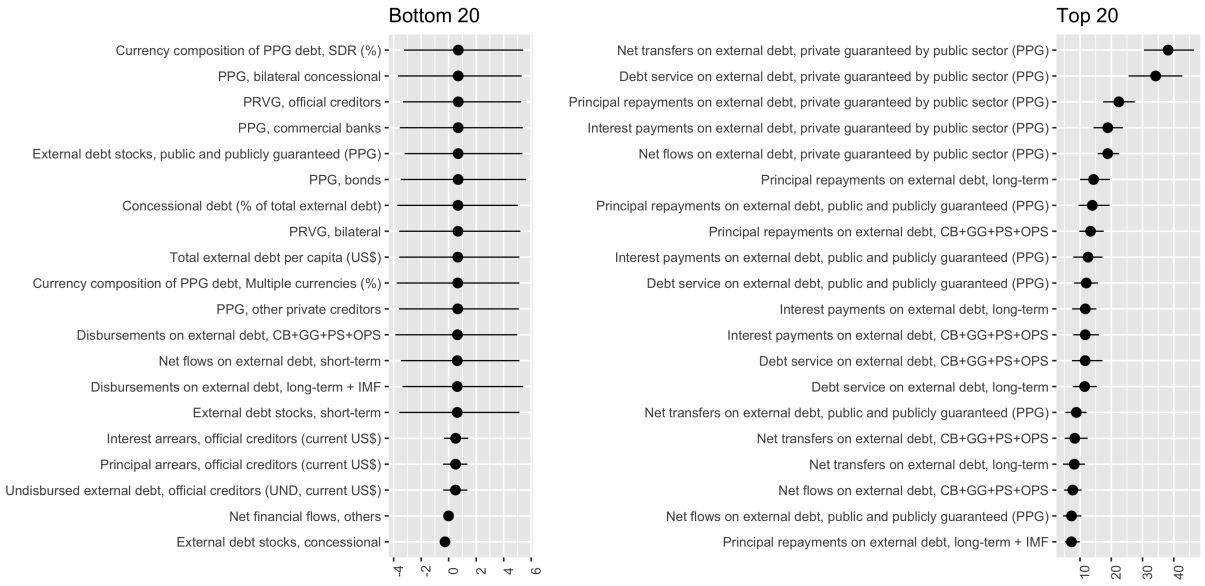


Figure 6. Item Discrimination: Top and Bottom 20

Figures 5 and 6 plot the estimates of the difficulty and discrimination parameters, respectively, along with their 95% highest posterior density intervals, for the 20 most and 20 least difficult and discriminative items. Item difficulty captures the overall difficulty of reporting for all countries. More difficult items are those that are missing more often by more countries, suggesting that they are systematically less likely to be measured, and hence generate less of a penalty in the transparency score when absent. However, if a low-difficulty item is absent for a country-year, this suggests intentional withholding or very low capacity, and a greater penalty is applied when generating the PNDT score for that country-year. Variables related to private debt guaranteed by the public sector are ranked high on this dimension, while variables related to overall external debt and public and publicly guaranteed debt are the least difficult to report.

The discrimination parameter reflects how strongly an item separates transparent from opaque countries. For highly discriminative items, transparent countries are much more likely to report than opaque countries, whereas this contrast is muted for low-discrimination items. Consequently, outcomes on high-discrimination items carry greater

weight in the calculation of the transparency score. Private debt guaranteed by public sectors and variables related to debt services, such as interest payments and principal repayments, are the most informative items of countries' transparency levels, while variables related to overall external debt are among the least discriminative items. Considering that debt service is critical in the evaluation of debt sustainability, providing such politically sensitive information (Carnegie and Carson, 2020) can distinguish the transparent from the opaque reporters.

To systemically examine the relationship between the creditor and borrower identity and item difficulty and discrimination, we manually coded the creditor and borrower identity with the rule that the variable description needs to exclusively identify one identity over the reference group. For example, we can code multilateral net financial flows as 1 for the multilateral creditor variable and bilateral net financial flows as 0, but we cannot code other net financial flows because there is no clear indication of the creditor identity. This coding rule allows us to identify differences in item difficulty and discrimination across creditor and borrower identities.

Table 1. Determinants of Item Difficulty and Discrimination

	Dependent variable:					
	Difficulty			Discrimination		
	(1)	(2)	(3)	(4)	(5)	(6)
Creditor: Multilateral	−0.007			−0.008		
	(0.204)			(0.063)		
Creditor: Private		−0.094			0.066	
		(0.152)			(0.041)	
Borrower: Private			1.392***			0.754*
			(0.318)			(0.395)
Observations	35	51	49	35	51	49
R^2	0.00004	0.008	0.289	0.001	0.050	0.072
Adjusted R^2	−0.030	−0.013	0.274	−0.030	0.031	0.052
Note:						*p<0.1; **p<0.05; ***p<0.01
						Standard error in parentheses.

Table 1 presents the result of these analyses. We do not find a significant difference between variables related to multilateral versus bilateral creditors. Compared to official

creditors, variables related to private creditors are less difficult to report and are more discriminative. Although these relationships are not statistically significant, the slightly higher discriminative ability in debt statistics related to private creditors supports the expectation that governments turn to private borrowing when in need of fiscal opacity (Mosley and Rosendorff, 2023). Consistent with Figures 5 and 6, variables related to private borrowers present significantly greater difficulty and discrimination as opposed to official borrowers.

5 Determinants of Debt Transparency

What shapes debt transparency? We examine three categories of factors that may be related to debt transparency: economic and financial factors, domestic politics, and international politics. Table 2 shows the results.

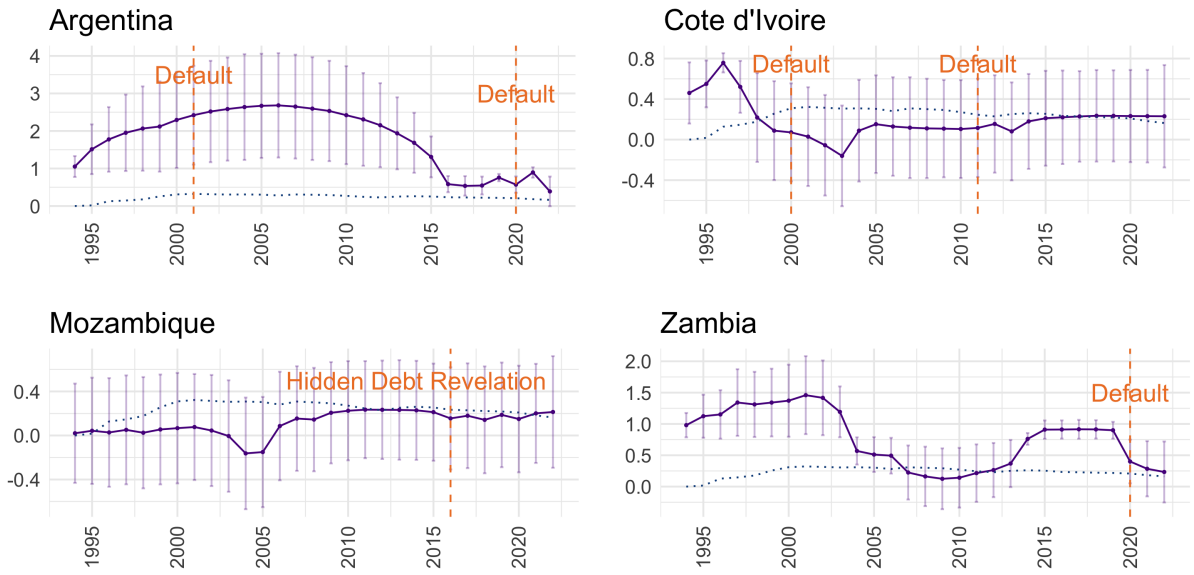
In terms of economic factors, we control for GDP per capita and total population in all specifications. We do not find a significant relationship between economic development or population size and debt transparency. Countries with an open economy tend to be sensitive to market reactions and, therefore, have incentives to provide better information on their economic and financial standing to convince investors of a stable business environment. In Columns (1) and (2), we examine the role of financial openness and trade openness, measured by Chinn-Ito financial openness (Chinn and Ito, 2008) and total trade volume, respectively. We find that financial openness has a statistically significant and positive correlation with debt transparency, while trade openness is positively correlated with debt transparency, but the relationship is not statistically significant.

Table 2. Determinants of Debt Transparency

	Transparency Index (1994-2022)													
	Economic and Financial Factors						Domestic Politics				International Politics			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
GDP per capita	0.145*	0.067	0.216**	0.210**	0.206**	0.166*	0.034	0.034	−0.060	−0.072	−0.097	−0.063	−0.086	0.007
	(0.086)	(0.099)	(0.088)	(0.088)	(0.087)	(0.086)	(0.105)	(0.105)	(0.114)	(0.114)	(0.112)	(0.117)	(0.113)	(0.100)
Total Population	−0.014	0.112	−0.113	−0.115	−0.121	−0.346	−0.008	−0.010	−0.210	−0.120	−0.293	−0.314	−0.205	0.320
	(0.304)	(0.372)	(0.286)	(0.286)	(0.288)	(0.311)	(0.407)	(0.407)	(0.496)	(0.504)	(0.501)	(0.532)	(0.499)	(0.435)
Chinn-Ito Financial Openness	0.118***						0.121***	0.121***	0.105***	0.105***	0.106***	0.118***	0.102***	0.119***
	(0.038)						(0.036)	(0.036)	(0.037)	(0.036)	(0.037)	(0.040)	(0.036)	(0.033)
Total Trade		0.085					0.038	0.038	0.140	0.136	0.147*	0.138	0.129	0.036
		(0.091)					(0.087)	(0.087)	(0.085)	(0.085)	(0.083)	(0.086)	(0.084)	(0.084)
Any Credit Rating			−0.046				−0.089	−0.089	−0.145*	−0.151*	−0.151*	−0.158*	−0.142	−0.079
			(0.081)				(0.083)	(0.083)	(0.086)	(0.086)	(0.085)	(0.087)	(0.086)	(0.080)
New Bond Issuance				−0.006			0.037	0.037	0.097	0.096	0.099*	0.100*	0.095	0.035
				(0.060)			(0.047)	(0.047)	(0.059)	(0.058)	(0.059)	(0.058)	(0.060)	(0.047)
Post Initial Eurobond Issuance					0.114		0.026	0.026	−0.010	0.010	−0.006	−0.015	0.011	0.081
					(0.175)		(0.185)	(0.185)	(0.189)	(0.190)	(0.186)	(0.182)	(0.189)	(0.181)
Any Financial Crisis						−0.093*	−0.061	−0.062	−0.117**	−0.126**	−0.103*	−0.119**	−0.118**	−0.058
						(0.048)	(0.055)	(0.055)	(0.057)	(0.055)	(0.055)	(0.058)	(0.055)	(0.054)
Democracy (BMR)							0.032	0.036	−0.042	−0.057	−0.054	−0.051	−0.027	0.036
							(0.071)	(0.071)	(0.076)	(0.070)	(0.073)	(0.075)	(0.078)	(0.065)
Year of Election in Democracy								−0.020		−0.013	−0.009	−0.013	−0.020	−0.019
								(0.018)		(0.019)	(0.020)	(0.020)	(0.020)	(0.017)
HRV Transparency									−0.006	−0.007	−0.012	−0.007	−0.006	
									(0.032)	(0.032)	(0.031)	(0.033)	(0.032)	
Ideal Point Distance from USA										0.138				
										(0.119)				
Inter-State War											−0.037			
											(0.028)			
Civil War											−0.062*			
											(0.035)			
Technical Cooperation												0.043		
												(0.064)		
IMF Program Participation													−0.108**	
													(0.054)	
HIPC: Ongoing														−0.390***
														(0.114)
HIPC: Post Completion														−0.415**
														(0.176)
State FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	3,168	2,543	3,267	3,267	3,267	2,931	2,241	2,241	1,688	1,676	1,688	1,666	1,688	2,241
R^2	0.780	0.793	0.777	0.777	0.777	0.794	0.817	0.817	0.831	0.833	0.833	0.831	0.832	0.822
Adjusted R^2	0.770	0.781	0.766	0.766	0.767	0.784	0.805	0.805	0.817	0.820	0.819	0.818	0.819	0.810

Note: *p<0.1; **p<0.05; ***p<0.01
Standard error clustered at the country level in parentheses.

We examine countries' financial market engagement in Columns (3) to (6). Access to the international debt market can increase debt transparency due to data disclosure requirements and investor relations practices (Rivetti, 2022). We examine three factors related to debt market access: credit ratings, bond issuance, and Eurobond issuance. Opposite to the findings by Rivetti (2022), we find that countries with credit ratings seem to have lower debt transparency. We also find some positive correlation between new bond issuance and debt transparency, while the initial Eurobond issuance does not have a significant effect on debt transparency.



Note: The dotted line corresponds to the annual average of the transparency index across all countries in the sample.

Figure 7. Country-Specific Trend: Financial Crises

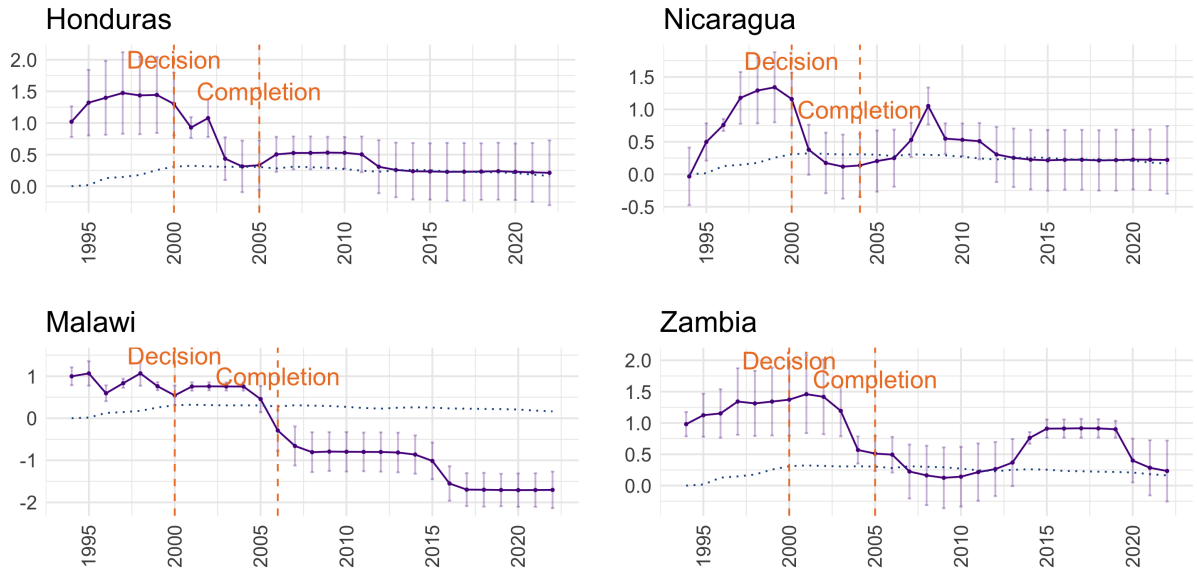
Lastly, economic crises also shape debt transparency. Horn et al. (2024) find that hidden debt tends to accumulate during good times and be revealed during bad times, while our analyses suggest the opposite: financial crises (Nguyen, Castro and Wood, 2022) are correlated with more opaqueness in debt reporting, as is shown in Column (6). Looking further into country-specific trends in Argentina, Côte d'Ivoire, Mozambique, and Zambia in Figure 7, we find some downward trend of debt transparency during

episodes of default. This could be due to both a lack of capacity in the debt management office (DMO) and a political will to conceal sensitive information during times when economic performance is particularly salient.

For domestic politics, we investigate the role of regime type, electoral cycle, and economic transparency in Columns (7)-(9). One conventional wisdom about sovereign debt is that democracies tend to receive more favorable borrowing terms (Beaulieu, Cox and Saiegh, 2012; Schultz and Weingast, 2003), in part because of their greater transparency (Copelovitch, Gandrud and Hallerberg, 2018). While democracies do tend to be more transparent in providing economic data (Hollyer, Rosendorff and Vreeland, 2011), our analyses fail to confirm the same pattern for debt transparency. Instead, our results present a consistently negative yet insignificant correlation between democracy and debt transparency, which aligns with others who challenge the "democratic advantage" argument (Cormier, 2023; DiGiuseppe and Shea, 2015; Saiegh, 2005). A further investigation of the elections in democracy in Column (8) shows that election years are correlated with lower debt transparency. Column (9) reveals that economic transparency (Hollyer, Rosendorff and Vreeland, 2014) is negatively correlated with debt transparency.

We further investigate international political factors in Columns (10) to (14). Geopolitical alignment affects various outcomes in international politics, ranging from membership in international institutions (Voeten, 2021; Davis, 2023) to loans from the IMF (Dreher et al., 2022) and the World Bank (Clark and Dolan, 2020), which further shape countries' compliance with information sharing (Ge, 2025). Hence, we expect countries politically aligned with the US (Bailey, Strezhnev and Voeten, 2017) to be more transparent in their debt reporting. Yet, as Column (10) shows, we do not find geopolitical alignment to have a strong correlation with debt transparency. Instead, countries misaligned with the US tend to be more transparent. In Column (11), we examine the role of wars. During wars, countries are not only more constrained by their capacity for reporting, but also need more financial resources to sponsor the war (Zielinski, 2016). Both factors can lead to

more opaque reporting of debt. As expected, both interstate war and civil war reduce debt transparency.



Note: The dotted line corresponds to the annual average of the transparency index across all countries in the sample.

Figure 8. Country-Specific Trend: HIPC Program

Numerous international initiatives seek to provide incentives and capacity assistance to improve debt transparency. For example, IMF programs require regular debt reporting from participating countries, and the HIPC Initiative requires countries to fulfill certain macroeconomic and structural reforms to be qualified for debt relief. In addition, technical assistance to enhance data collection capacity can also enhance transparency in reporting. Based on our analyses in Columns (12) and (13), we do not find strong effects of technical assistance in improving debt transparency, but being under an IMF program seems to be negatively correlated with debt transparency. As is shown in Column (10), we find that countries tend to have lower debt transparency once they obtain the HIPC status, and this effect persists after the completion of the HIPC program. This result could be driven by states' efforts to improve their debt reporting to obtain the HIPC status. Figure 8 shows the country-specific debt transparency over time related to their HIPC program status. We

can see a decreasing trend in the transparency index once a country passes the decision point. These results suggest that while the debt relief provided by HIPC programs can incentivize better debt reporting, the effect may not be persistent.

6 Domestic Politics of Debt Transparency

While existing efforts to improve debt transparency have focused primarily on capacity building (IMF-WBG, 2018; Saavedra, Francisco and Rivetti, 2024), the development of transparency norms through national legal reforms (International Monetary Fund, 2024), and the design of incentive structures (Rivetti, 2021, p.32), one relatively overlooked aspect in policy discussions is the role of domestic politics.

In this section, we look into the role of electoral cycles. As governments tend to spend more (Cheng, 2025) and are more sensitive to market reactions to sovereign bonds before elections (Ballard-Rosa, Mosley and Wellhausen, 2021), information about sovereign borrowing can be used by opposition parties and civil society actors to influence the electoral prospects of the incumbent government, which, as a result, becomes more incentivized to conceal.

In Table 3, we investigate whether elections are correlated with lower debt transparency. We obtain the election data from Higashijima et al. (2025).[10] Column (1) uses the full sample, while Column (2) uses only autocratic countries, defined by Boix, Miller and Rosato (2013), and Columns (3) to (7) use only democratic countries as the sample. In these specifications, we control for GDP per capita, total population, polyarchy (Coppedge et al., 2023), financial openness (Chinn and Ito, 2008), total trade, IMF program participation, whether rated by any credit rating agencies, the ideal point distance from the US, whether there is any financial crisis, and HIPC program participation.

As information dissemination about public debt has a greater impact on incumbent

[10]We replicate the results with an alternative election data set by Hyde and Marinov (2012) in Table A3 and Table A4. The results hold.

Table 3. Debt Transparency and Election

	Transparency Index (1994-2022)						
	Full	Autocracy	Democracy				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Election Year	0.005	−0.0003	−0.018				
	(0.012)	(0.018)	(0.016)				
Legislative Election				−0.027**			
				(0.013)			
Legislative Election (Regular)					−0.050**		
					(0.022)		
Legislative Election (Irregular)					0.068		
					(0.044)		
Presidential Election						−0.049***	
						(0.017)	
Presidential Election (Regular)							−0.049**
							(0.020)
Presidential Election (Irregular)							0.020
							(0.074)
Control	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y
Observations	2,068	1,024	1,044	1,044	1,044	1,044	1,044
R^2	0.817	0.828	0.835	0.835	0.836	0.835	0.835
Adjusted R^2	0.803	0.806	0.818	0.818	0.818	0.818	0.818

Note: *p<0.1; **p<0.05; ***p<0.01
Standard error clustered at the country level in parentheses.

leaders' political survival in democracies than in autocracies, as shown in Columns (1) to (3), we observe a stronger negative correlation between election and debt transparency in democracies than in autocracies, confirming the presence of leaders' electoral incentives to conceal debt information.

Is reduced debt transparency due to the incumbent government's deliberate attempt to conceal? Could it also be a result of reduced bureaucratic capacity for information collection and sharing during elections? To disentangle these two channels, we investigate the election type and the electoral schedule in Columns (4) to (7) in Table 3. If the concealment is deliberate, we expect to see reduced transparency only for scheduled elections and not for irregular elections. As expected, we find that the negative association between elections and debt transparency is mainly driven by regular elections, revealing the anticipated efforts to withhold debt-related information. We also find that presidential elections seem to present a similar effect on debt transparency as legislative elections do.

In Table 4, we further separate the sample into presidential and non-presidential

democracies, using the definition by Cruz, Keefer and Scartascini (2021). As the incumbent government has greater leverage over the bureaucracy in presidential democracies than in non-presidential ones, we expect to see a stronger negative association between election and debt transparency in presidential democracies. In addition, when looking into different types of elections, the incumbent government should have greater motivation and capacity to influence the debt management office (DMO) during presidential elections than during legislative elections. Columns (1) and (4) of Table 4 show that both legislative and presidential elections in the presidential democracy are correlated with lower debt transparency, and this relationship is mainly driven by elections on schedule (Columns (2) and (5)). When further breaking down irregular elections into early and delayed elections, we do not find early or delayed elections to have a strong negative association with debt transparency. Reduced transparency is only relevant for scheduled elections. Lastly, our results suggest that legislative elections are similarly negatively correlated with debt transparency as presidential elections are, which is contradictory to our theoretical expectation.

To further investigate the underlying driving force, we collapse legislative elections into those co-occurring with presidential elections and the independent ones. As Column (7) shows, the negative relationship is driven by the co-occurring ones, confirming our theoretical expectations. Finally, we replicate the same tests for non-presidential democracies in Columns (8)-(14), and we do not find a similar pattern. Election cycles in non-presidential democracies do not influence debt transparency. These results reveal that concealment of debt information is only feasible when there are deliberative incentives for opacity and when domestic political institutions permit. Overall, the patterns in Table 3 and 4 confirm that incumbents may have deliberately made debt information more opaque during election seasons.

Table 4. Debt Transparency and Electoral Cycle Across Political Systems

	Transparency Index (1994-2022)													
	Presidential Democracy								Non-Presidential Democracy					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Legislative Election	−0.039**							0.011						
	(0.017)							(0.020)						
Legislative Election (Regular)		−0.073***	−0.072***						0.059	0.058				
		(0.022)	(0.022)						(0.045)	(0.046)				
Legislative Election (Irregular)		0.137							−0.008					
		(0.084)							(0.047)					
Legislative Election (Early)			0.236**							−0.022				
			(0.094)							(0.035)				
Legislative Election (Delayed)			−0.087							0.044				
			(0.130)							(0.208)				
Presidential Election				−0.053***							0.042			
				(0.018)							(0.072)			
Presidential Election (Regular)					−0.054**	−0.054**						0.023	0.023	
					(0.022)	(0.022)						(0.080)	(0.080)	
Presidential Election (Irregular)					0.025							0.287*		
					(0.075)							(0.155)		
Presidential Election (Early)						0.033							0.287*	
						(0.103)							(0.155)	
Presidential Election (Delayed)						0.008								
						(0.187)							(0.000)	
Legislative Election (Concurrent Pres.)							−0.068***							−0.283
							(0.015)							(0.192)
Legislative Election (No Concurrent Pres.)							0.020							0.026
							(0.044)							(0.027)
Control	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	672	672	672	672	672	672	672	354	354	354	354	354	354	354
R^2	0.850	0.851	0.852	0.851	0.851	0.851	0.851	0.828	0.828	0.828	0.828	0.828	0.828	0.829
Adjusted R^2	0.830	0.831	0.831	0.830	0.830	0.829	0.830	0.794	0.794	0.793	0.794	0.794	0.794	0.795

Note: *p<0.1; **p<0.05; ***p<0.01
Standard error clustered at the country level in parentheses.

Table 5. Timing of Debt Concealment

	Transparency Index (1994-2022)							
	Presidential Democracy							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
3 Years Before the Presidential Election	−0.013							
	(0.027)							
2 Years Before the Presidential Election		−0.029*						
		(0.016)						
1 Years Before the Presidential Election			−0.033					
			(0.026)					
The Year of the Presidential Election				−0.053***		−0.047**		
				(0.018)		(0.019)		
1 Years After the Presidential Election					0.036*	0.024		
					(0.020)	(0.020)		
2 Years After the Presidential Election							0.011	
							(0.015)	
3 Years After the Presidential Election								−0.012
								(0.015)
Control	Y	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Observations	672	672	672	672	672	672	672	672
R^2	0.850	0.850	0.850	0.851	0.850	0.851	0.850	0.850
Adjusted R^2	0.830	0.830	0.830	0.830	0.830	0.830	0.830	0.830

Note: *p<0.1; **p<0.05; ***p<0.01
Standard error clustered at the country level in parentheses.

Finally, we examine the timing of sovereign-debt concealment. Table 5 uses the years before and after the presidential election as the independent variables—suggesting that the other years are the reference group—and examines when the concealment happens in the electoral cycle. We can see that reduced debt transparency is strongest during the election year and does not appear earlier or persist afterward. Since the IDS data is published one year after the calendar year—for example, the 2023 vintage of the IDS data is published in December 2024—the result in Column (4) implies that the concealment may not happen at the reporting stage, which usually takes place within 30 days of the close of the quarter for new loan commitments and by March 31 of the following year for existing loans and private non-guaranteed loans (Development Data Group, 2000). If anything, there seems to be an increased level of debt transparency if the reporting stage co-occurs with elections, as Column (5) shows. However, the significance fades away once controlling for the election year (Column (6)). Hence, the reduced transparency only during the election year implies that the concealment may happen when elections co-

occur with the data collection stage. Political leaders may undermine the data collection at the DMO during election years to prevent opposition groups from using the sovereign borrowing to undermine the incumbent's electoral prospects. This result is consistent with Cheng (2025), who finds that African countries are more likely to turn to private creditors—a more opaque form of borrowing—close to elections.

These results highlight the crucial role of domestic politics in shaping debt transparency. Although the technical capacity for data collection is essential for effective debt reporting (UNCTAD, 2025), political will may ultimately be the most decisive factor in determining whether a state and its government are transparent about their debt.

7 Conclusion

We describe and present the new Princeton-NYU Debt Transparency Index (PNDT), which reflects annual transparency in reporting sovereign debt statistics for 113 countries from 1994 to 2022. Our approach leverages the missing data in the World Bank's Debtor Reporting System and provides a method that monitors changes over time and differences across countries in a standardized way, consistently applied, and independent of political or bureaucratic influence.

We then use this new measure to consider the correlates of debt transparency. Financial openness, as well as economic crises, help to explain levels of debt transparency. International conflict and participation in debt relief initiatives (HIPC) are also important determinants of a country's debt transparency.

We also explore the relationship between domestic politics and the PNDT index. We find evidence that, in election years, debt transparency is lower, suggesting that leaders have electoral incentives to obfuscate their borrowing behavior. These declines occur only for fixed-date elections, which is consistent with governments anticipating elections and altering their reporting. We also note that the decline in debt transparency during

elections is more pronounced in presidential democracies than in non-presidential ones, perhaps reflecting the role played by specific domestic institutions in facilitating opacity. The results are consistent with our expectations that debt transparency is not merely a matter of technical capacity but is also a political choice made by elected officials.

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Appendix

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A Additional Results from the IRT Model

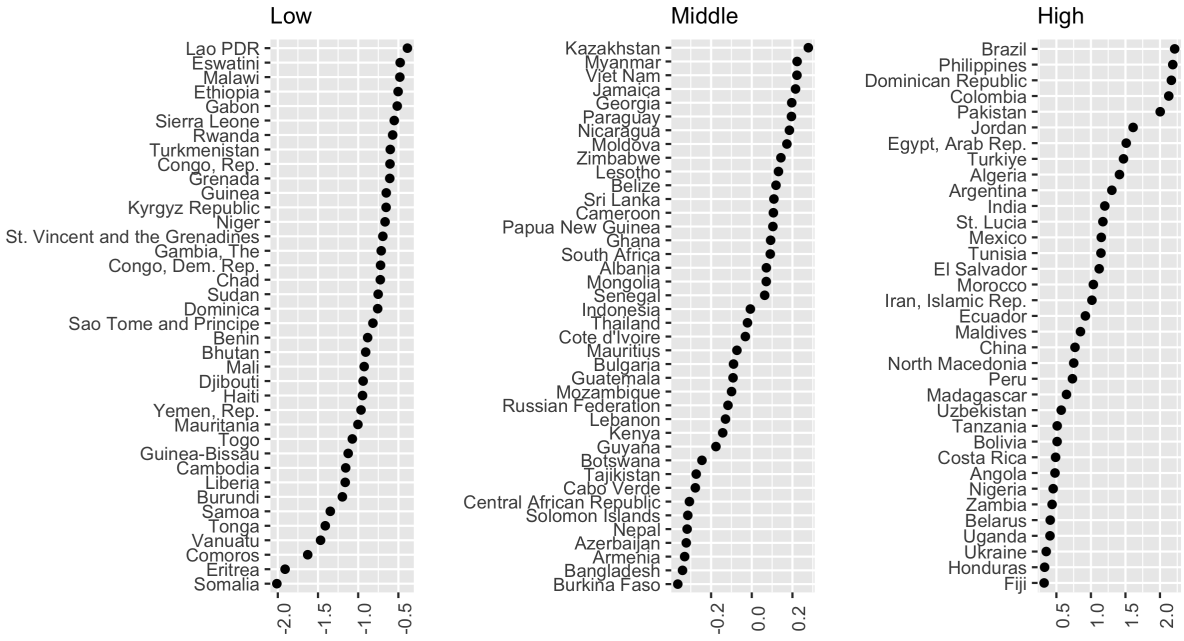

Figure A1. Debt Transparency Index: Country Average Ranking (1994-2022)

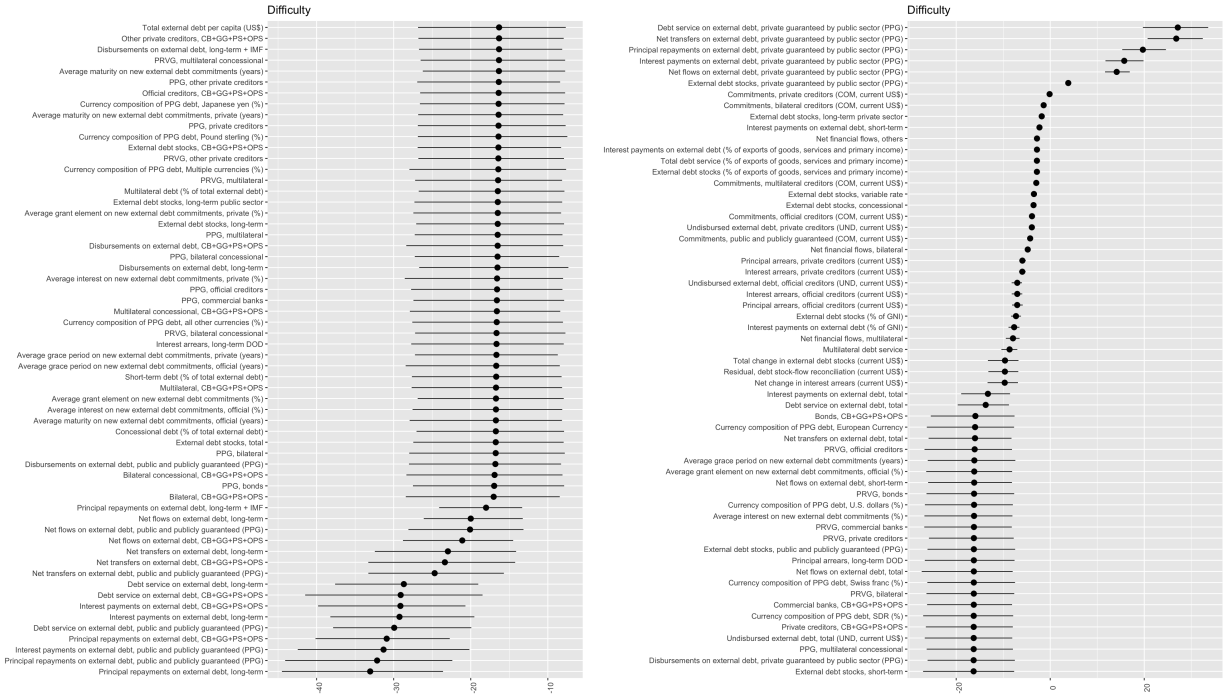

Figure A2. Item Difficulty

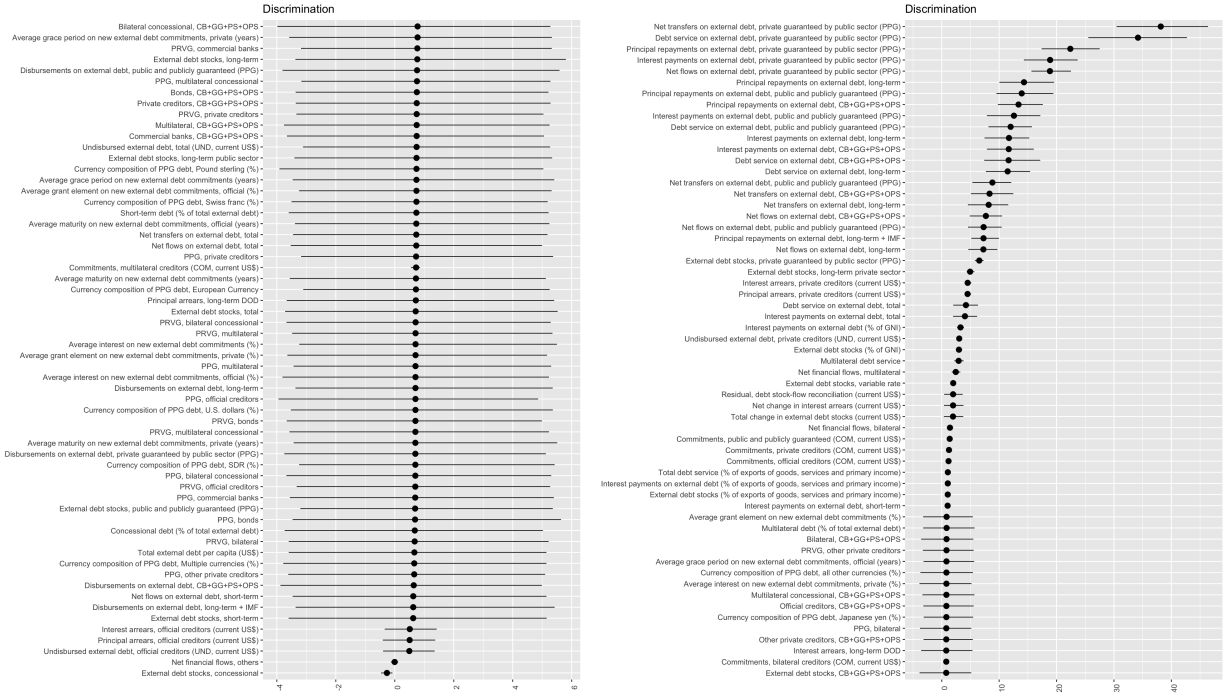

Figure A3. Item Discrimination

B Figures and Tables

Table A1. Overview of Debt Dimensions

Debt Dimension	**Description**
Debt Instrument Characteristics	Terms of new debt: grace period, grant element, interest rate, and maturity (split by official/private creditors).
Creditor Type and Concessionality	Who provides the debt: bilateral, multilateral, and private creditors; further disaggregated into concessional or non-concessional lending.
Debtor Sector	Which domestic sector owes the debt: Central Bank, General Government, Other Public Sector, or Private Sector (publicly guaranteed or non-guaranteed).
Type of Financial Flow	Nature of the financial activity: commitments, disbursements, principal and interest payments, net flows, and net transfers.
Debt Stocks and Sustainability Metrics	Measures of the debt burden: debt stock levels and ratios (to GNI, exports), and composition by maturity, concessionality, or interest type.
Debt Relief and Restructuring	Adjustments to debt: forgiveness, buybacks, rescheduling, and accumulation of arrears (on interest or principal).
IMF-Specific Activities	Country engagement with the IMF: use of credit, charges, purchases, repurchases, and SDR allocations.

Table A2. Variables removed from the IDS

No.	Code	Description
Variables Unrelated to Debt		
1	BN.CAB.XOKA.CD	Current account balance (current US$)
2	BM.GSR.TOTL.CD	Payments for goods, services & income (current US$)
3	BX.GRS.TOTL.CD	Exports of goods, services & income (current US$)
4	BX.GRT.EXTA.CD.DT	Grants, excluding technical cooperation (BoP, current US$)
5	BX.GRT.TECH.CD.DT	Technical cooperation grants (BoP, current US$)
6	BX.KLT.DINV.CD.DT	Foreign direct investment, net inflows (BoP, current US$)
7	BX.KLT.DREM.CD.DT	Personal remittances received (BoP, current US$)
8	BX.PEF.TOTL.CD.DT	Portfolio equity inflows (BoP, current US$)
9	BX.TRF.PWKR.CD.DT	Personal remittances paid (BoP, current US$)
10	FI.RES.TOTL.CD	Total reserves (includes gold, current US$)
11	FI.RES.TOTL.DT.ZS	Total reserves (% of total external debt)
12	FI.RES.TOTL.MO	Total reserves in months of imports
13	NY.GNP.MKTP.CD	GNI (current US$)
14	SP.POP.TOTL	Population, total
Debt-Related Variables		
15	DT.AMF.DIMF.CD	IMF repurchases (AMT, current US$)
16	DT.AMT.MIBR.CD	Public and publicly guaranteed, IBRD (AMT, current US$)
17	DT.AMT.MIDA.CD	Public and publicly guaranteed, IDA (AMT, current US$)
18	DT.AMT.DPNG.CD	Private nonguaranteed (AMT, current US$)
19	DT.AMT.PNGC.CD	Private guaranteed (AMT, current US$)
20	DT.AMT.PNGB.CD	Public nonguaranteed (AMT, current US$)
21	DT.AXF.DPPG.CD	Principal forgiven (current US$)
22	DT.AXR.DPPG.CD	Principal rescheduled (current US$)
23	DT.AXR.OFFT.CD	Principal rescheduled, official (current US$)
24	DT.AXR.PRVT.CD	Principal rescheduled, private (current US$)
25	DT.COM.MIBR.CD	Commitments, IBRD (current US$)
26	DT.COM.MIDA.CD	Commitments, IDA (current US$)
27	DT.DIS.DIMF.CD	IMF purchases (DIS, current US$)
28	DT.DIS.IDAG.CD	IDA grants (current US$)
29	DT.DIS.MIBR.CD	Public and publicly guaranteed, IBRD (DIS, current US$)
30	DT.DIS.MIDA.CD	Public and publicly guaranteed, IDA (DIS, current US$)
31	DT.DIS.DPNG.CD	Private nonguaranteed (DIS, current US$)
32	DT.DIS.PNGC.CD	Private guaranteed (DIS, current US$)
33	DT.DIS.PNGB.CD	Public nonguaranteed (DIS, current US$)
34	DT.DFR.DPPG.CD	Debt forgiveness or reduction (current US$)
35	DT.DOD.DIMF.CD	Use of IMF credit & SDR allocations (current US$)
36	DT.DOD.DIMF.US.CD	Use of IMF credit (current US$)
37	DT.DOD.DPNG.CD	Private nonguaranteed (DOD, current US$)
38	DT.DOD.MIBR.CD	Public and publicly guaranteed, IBRD (DOD, current US$)
39	DT.DOD.MIDA.CD	Public and publicly guaranteed, IDA (DOD, current US$)
40	DT.DOD.MDRI.CD	Debt forgiveness grants (current US$)
41	DT.DOD.PNGC.CD	Private guaranteed (DOD, current US$)
42	DT.DOD.PNGB.CD	Public nonguaranteed (DOD, current US$)
43	DT.DOD.PVLX.CD	Present value of external debt (current US$)
44	DT.DOD.PVLX.EX.ZS	Present value of debt (% of exports)
45	DT.DOD.PVLX.GN.ZS	Present value of debt (% of GNI)
46	DT.DOD.DSDR.CD	IMF SDR allocations (current US$)
47	DT.DSB.DPPG.CD	Debt buyback (current US$)
48	DT.DSF.DPPG.CD	Debt stock reduction (current US$)
49	DT.DXR.DPPG.CD	Debt stock rescheduled (current US$)
50	DT.INT.DIMF.CD	IMF credit & SDR charges (current US$)
51	DT.INT.MIBR.CD	PPG, IBRD (INT, current US$)
52	DT.INT.MIDA.CD	PPG, IDA (INT, current US$)
53	DT.INT.DPNG.CD	Private nonguaranteed (INT, current US$)
54	DT.INT.PNGC.CD	Private guaranteed (INT, current US$)
55	DT.INT.PNGB.CD	Public nonguaranteed (INT, current US$)
56	DT.IXF.DPPG.CD	Interest forgiven (current US$)
57	DT.IXR.DPPG.CD	Interest rescheduled (capitalized, current US$)
58	DT.IXR.OFFT.CD	Interest rescheduled, official (current US$)
59	DT.IXR.PRVT.CD	Interest rescheduled, private (current US$)
60	DT.NFL.DPNG.CD	Private nonguaranteed (NFL, current US$)
61	DT.NFL.IMFC.CD	Net financial flows, IMF concessional (current US$)
62	DT.NFL.IMFN.CD	Net financial flows, IMF nonconcessional (current US$)
63	DT.NFL.MIBR.CD	Net financial flows, IBRD (current US$)
64	DT.NFL.MIDA.CD	Net financial flows, IDA (current US$)
65	DT.NFL.NEBR.CD	Net financial flows, EBRD private nonguaranteed (current US$)
66	DT.NFL.NIFC.CD	Net financial flows, IFC private nonguaranteed (current US$)
67	DT.NFL.RDBC.CD	Net financial flows, RDB concessional (current US$)
68	DT.NFL.RDBN.CD	Net financial flows, RDB nonconcessional (current US$)
69	DT.NFL.PNGC.CD	Private guaranteed (NFL, current US$)
70	DT.NFL.PNGB.CD	Public nonguaranteed (NFL, current US$)
71	DT.NTR.DPNG.CD	Private nonguaranteed (NTR, current US$)
72	DT.NTR.MIBR.CD	Public and publicly guaranteed, IBRD (NTR, current US$)
73	DT.NTR.MIDA.CD	Public and publicly guaranteed, IDA (NTR, current US$)
74	DT.NTR.PNGC.CD	Private guaranteed (NTR, current US$)
75	DT.NTR.PNGB.CD	Public nonguaranteed (NTR, current US$)
76	DT.TDS.DIMF.CD	IMF repurchases & charges (TDS, current US$)
77	DT.TDS.MIBR.CD	Public and publicly guaranteed, IBRD (TDS, current US$)
78	DT.TDS.MIDA.CD	Public and publicly guaranteed, IDA (TDS, current US$)
79	DT.TDS.DPNG.CD	Private nonguaranteed (TDS, current US$)
80	DT.TDS.PNGC.CD	Private guaranteed (TDS, current US$)
81	DT.TDS.PNGB.CD	Public nonguaranteed (TDS, current US$)
82	DT.TXR.DPPG.CD	Total amount of debt rescheduled (current US$)

Table A3. Debt Transparency and Election (NELDA)

	Transparency Index (1994-2022)						
	Full	Autocracy	Democracy				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Election Year	0.0002	0.014	−0.028*				
	(0.013)	(0.019)	(0.015)				
Legislative Election				−0.023*			
				(0.013)			
Legislative Election (Regular)					−0.037**		
					(0.016)		
Legislative Election (Irregular)					0.019		
					(0.039)		
Presidential Election						−0.055***	
						(0.019)	
Presidential Election (Regular)							−0.043**
							(0.020)
Presidential Election (Irregular)							−0.070
							(0.055)
Control	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y
Observations	2,068	1,024	1,044	1,044	1,044	1,044	1,044
R^2	0.817	0.828	0.835	0.835	0.835	0.835	0.835
Adjusted R^2	0.803	0.807	0.818	0.818	0.818	0.818	0.818

Note: *p<0.1; **p<0.05; ***p<0.01
Standard error clustered at the country level in parentheses.

Table A4. Debt Transparency and Electoral Cycle Across Political Systems (NELDA)

	Transparency Index (1994-2022)									
	Presidential Democracy					Non-Presidential Democracy				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Legislative Election	−0.033*					−0.0002				
	(0.017)					(0.014)				
Legislative Election (Regular)		−0.053***					0.004			
		(0.017)					(0.030)			
Legislative Election (Irregular)		0.083					−0.008			
		(0.079)					(0.036)			
Presidential Election			−0.055***					0.047		
			(0.019)					(0.072)		
Presidential Election (Regular)				−0.041*					0.040	
				(0.022)					(0.034)	
Presidential Election (Irregular)				−0.079					0.062	
				(0.059)					(0.181)	
Legislative Election (Concurrent Pres.)					−0.057***					−0.288
					(0.019)					(0.196)
Legislative Election (No Concurrent Pres.)					0.017					0.012
					(0.043)					(0.019)
Control	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	672	672	672	672	672	354	354	354	354	354
R^2	0.850	0.851	0.851	0.851	0.851	0.828	0.828	0.828	0.828	0.829
Adjusted R^2	0.830	0.830	0.830	0.830	0.830	0.794	0.793	0.794	0.793	0.795

Note: *p<0.1; **p<0.05; ***p<0.01
Standard error clustered at the country level in parentheses.