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Do Financial Markets Value Quality of Fiscal Governance?

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Abstract

We examine the link between the quality of fiscal governance and access to market-based external finance. Stronger fiscal governance is associated with improvements in several indicators of market access, including a higher likelihood of issuing sovereign bonds and having a sovereign credit rating, receiving stronger ratings, and obtaining lower spreads. Using the more granular information on quality of fiscal governance from Public Expenditure and Financial Accountability (PEFA) assessments for 89 emerging and developing economies, we find that similar indicators of market access are correlated with sound public financial management practices, especially those that improve budget transparency and reporting, debt management, and fiscal strategy.

JEL Classification Numbers: F34, G15, H63

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1 Introduction

Sovereign bond issuances in emerging and developing markets have increased rapidly since the 2008-09 global financial crisis, with annual issuances of at least $100 billion between 2012 and 2018. Issuances have increased not only in traditional emerging markets, but also among several frontier developing economies which have recently started to tap international capital markets, seeking to diversify their sources of external finance. Over the past decade, about 20 low-income countries have issued external sovereign bonds, including 16 countries in Sub-Saharan Africa, where total issuances reached a record of $17.2 billion in 2018 alone (IMF, 2019b; Coulibaly et al., 2019).

Macroeconomic and global factors, including accommodating monetary policy in advanced economies, have been key drivers of easier access to international capital markets in recent years. However, even if these increases in external debt issuance are driven primarily by global factors, it is important to establish whether there are factors that could help explain and sustain the observed trend in market access, especially since market conditions may eventually reverse.

Governance is one factor that appears to have a less cyclical and more systematic impact on a country's ability to tap capital markets. Governance scores are known to be an important input in the assessment methodologies of credit rating agencies and multilateral lenders such as the IMF and the World Bank, and governance improvements such as central bank independence (Bodea and Hicks, 2018), control of corruption (Panizza, 2017), and rule of law (Biglaiser and Staats, 2012), have been associated with stronger sovereign ratings.[1] In addition, a government's capacity to effectively manage public finances is a key determinant of its fiscal performance and sustainability (e.g., Alesina and Perotti, 1999; Persson and Tabellini, 2004), and countries with strong fiscal governance have been found to be more likely to issue sovereign bonds and at lower spreads (Gelos et al., 2011; Presbitero et al., 2016). This suggests that stronger fiscal governance can lead to persistent improvements in a country's ability to access international capital markets, impact its credit rating, and influence the terms and cost of its external debt.

We start our analysis by using a large panel dataset covering most countries in the world

[1] Many credit agencies include governance measures such as the World Bank's Worlwide Governance Indicators (WGI) in their publicly-available credit rating methodologies.

over the twenty-year period 1996-2016 to document the relation between fiscal governance and different indicators of market access. We find that stronger fiscal governance is associated with improved access to international capital markets, including a higher likelihood of having a sovereign rating and issuing sovereign bonds, better sovereign credit ratings, lower spreads on sovereign bonds, and a higher share of market-based external debt. Next, we leverage the granular detail on fiscal governance available in the Public Expenditure and Financial Accountability (PEFA) assessments for several developing and emerging economies to identify which public financial management practices matter most for improving access to external capital markets. We find that improving practices related to transparency of public finances, debt management, and fiscal strategy are key in obtaining better credit ratings, issuing bonds, and obtaining lower cost of external financing.

The literature on financial market access for emerging and developing countries focuses on three key determinants of external debt issuance.[2] First, macroeconomic fundamentals matter (Gelos et al., 2011). Sovereign issuances are more likely in countries with larger economies, higher per capita GDP, and a lower public debt; and countries with stronger external and fiscal positions, and robust economic growth, tend to obtain better borrowing terms.[3] Second, global financial market conditions are important. Issuances are more likely during periods of higher global liquidity and stronger commodity prices, especially in Sub-Saharan African countries (Presbitero et al., 2016), while the cross-country correlation of spreads increases during high-volatility periods, implying that countries cannot fully decouple from developments in other emerging markets during periods of distress (Csontó, 2014). Third, investors discriminate among issuers according to risk. Issuers with higher (perceived) credit quality are more likely to issue and to obtain lower spreads (Eichengreen and Mody, 1998), while investor risk aversion may explain why first-time issuers face higher spreads than those implied by their credit profiles, even after accounting for poorer secondary market liquidity and lack of capital market track record (Guscina et al., 2014).[4] Our paper contributes to this debate on the link between

[2]Existing research highlights factors explaining the probability that a country issue external debt, the amounts borrowed, and the yields and spreads on these debts in both primary markets (e.g., Kamin and Von Kleist, 1999) and secondary markets (Bellas et al., 2010; Rocha and Moreira, 2010; Baldacci et al., 2011; Siklos, 2011; Comelli, 2012; Kennedy and Palerm, 2014; Csontó, 2014; Guscina et al., 2014). Other papers examine idiosyncratic differences that are region-specific or arise because of first-time bond issuances (Olabisi and Stein, 2015; Gueye and Sy, 2014). These factors can all be interpreted as increasing or mitigating risk and hence impacting the required return of investors.

[3]This result also holds during crises (Comelli, 2012) and periods of higher volatility (Csontó, 2014).

[4]Kennedy and Palerm (2014) argues that virtually all of the run-up in emerging market spreads during the 2008-09 financial crisis was due to a large increase in the measure of risk aversion.

risk and financial market access by exploring how fiscal governance affects countries' ability to access international capital markets.

A related body of research links fiscal transparency with improved credit ratings, lower debt and higher primary balance across developed and developing economies (e.g., Gollwitzer et al., 2010; Hameed, 2005; Alt and Lassen, 2006; Arbatli and Escolano, 2012). These papers develop measures of fiscal transparency based on the IMF Reports on the Observance of Standards and Codes (ROSCs), which were a predecessor effort to the IMF Fiscal Transparency Code and associated Fiscal Transparency Evaluations (IMF, 2012, 2018a).[5] Other papers have established a relationship between fiscal transparency or the use of fiscal accounting gimmicks and sovereign borrowing terms, although mostly focused on advanced economies or large emerging markets (e.g., Glennerster and Shin, 2008; Irwin, 2012; Weber, 2012).[6] To our knowledge, ours is the first paper to explore the granularity of PEFA reports to identify which dimensions of fiscal governance are most closely associated with access to financial markets.[7]

The rest of the paper is structured as follows. Section 2 presents stylized facts on the link between fiscal governance and financial market access, while section 3 reexamines those links using detailed information from PEFA assessments. Section 4 concludes and discusses policy implications.

2 Stylized Facts

2.1 Dataset

Our analysis in this section focuses on 173 countries over the period 1996 to 2016. The dataset includes information on market access indicators, the quality of fiscal governance, and fiscal and macroeconomic variables.

[5]The IMF has also undertaken a renewed engagement on governance issues more broadly, including fiscal governance. See, for example, IMF (2018b) and IMF (2019a).

[6]Glennerster and Shin (2008) exploit random variation in the timing of introduction of improved IMF country reports, ROSC assessments and Special Data Dissemination Standard (SDDS) data releases across countries. They find that an improvement in fiscal transparency linked to these reforms lowered average sovereign bond yields across 23 emerging market economies.

[7]Our analysis is also related to Brown and Sienaert (2019), who find that better economic policies and institutions, as measured by the World Bank's Country Policy and Institutional Assessment (CPIA) scores, are associated with stronger sovereign ratings and lower financing costs. However, we are able to identify specific dimensions of fiscal governance where improvements should be targeted to increase market access.

Market access indicators We focus on a broad set of indicators of access to market-based external finance, including credit ratings and external sovereign bonds. We obtain ratings data from DataStream - Thomson Reuters, focusing on the three main rating agencies: Fitch, Moody's and Standard and Poor's. We convert these ratings into a common numeric scale (see Table B.1 in the appendix) and take the average across agencies when a country is rated by more than one agency. As ratings tend to be strongly correlated across agencies, this averaging has little impact. Similarly, we take the average if there were rating changes during the year.

Information on bond issuances, including option-adjusted spreads, is also taken from DataStream - Thomson Reuters. We identify 51 emerging or developing economies that issued at least one sovereign bond between 1996 and 2016. To ensure that our dataset coverage of sovereign bond issuances in developing countries is comprehensive, we verify our information against the data collected by Presbitero et al. (2016) and different editions of the IMF Sub-Saharan Africa Regional Economic Outlook report.

Quality of fiscal governance In this section, we measure the quality of fiscal governance using the Worldwide Governance Indicators (WGI) developed by Kaufmann et al. (2010). These indicators, which are widely used in the literature, summarize the views on the quality of governance provided by several corporate, citizen and expert survey respondents, and are available for almost all countries on an annual basis starting from 1996.[8] Governance is described using standardized scores across six broad dimensions, with higher values indicating stronger governance.

We focus on the Government Effectiveness indicator as our measure of fiscal governance.[9] This indicator reflects the government's capacity to formulate and implement sound policies and captures *"perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies."*

[8] Arndt and Oman (2006), Knack (2006), Kurtz and Schrank (2007) and Thomas (2010) question the usefulness of the WGI for making comparisons of governance over time and across countries since they are normalized within every year. These authors also call out possible biases in the inputs underlying the aggregate governance indicators, including the lack of independence of some of the assessments. Kaufmann et al. (2010) argue that these concerns are not specific to the WGI and are likely to arise in the context of any effort to measure governance.

[9] The other WGI indicators are voice and accountability; political stability; regulatory quality; rule of law; and control of corruption.

Fiscal and other macroeconomic data Other data used in our analysis are taken from the IMF World Economic Outlook, October 2018 vintage, and the World Development Indicators.

2.2 Descriptive analysis

We begin by examining how fiscal governance is associated with ease of access to international capital markets. The key stylized facts are presented in Figure 1, where binned scatterplots show the correlation between different market access indicators and countries' fiscal governance, as measured by their WGI Government Effectiveness score.[10]

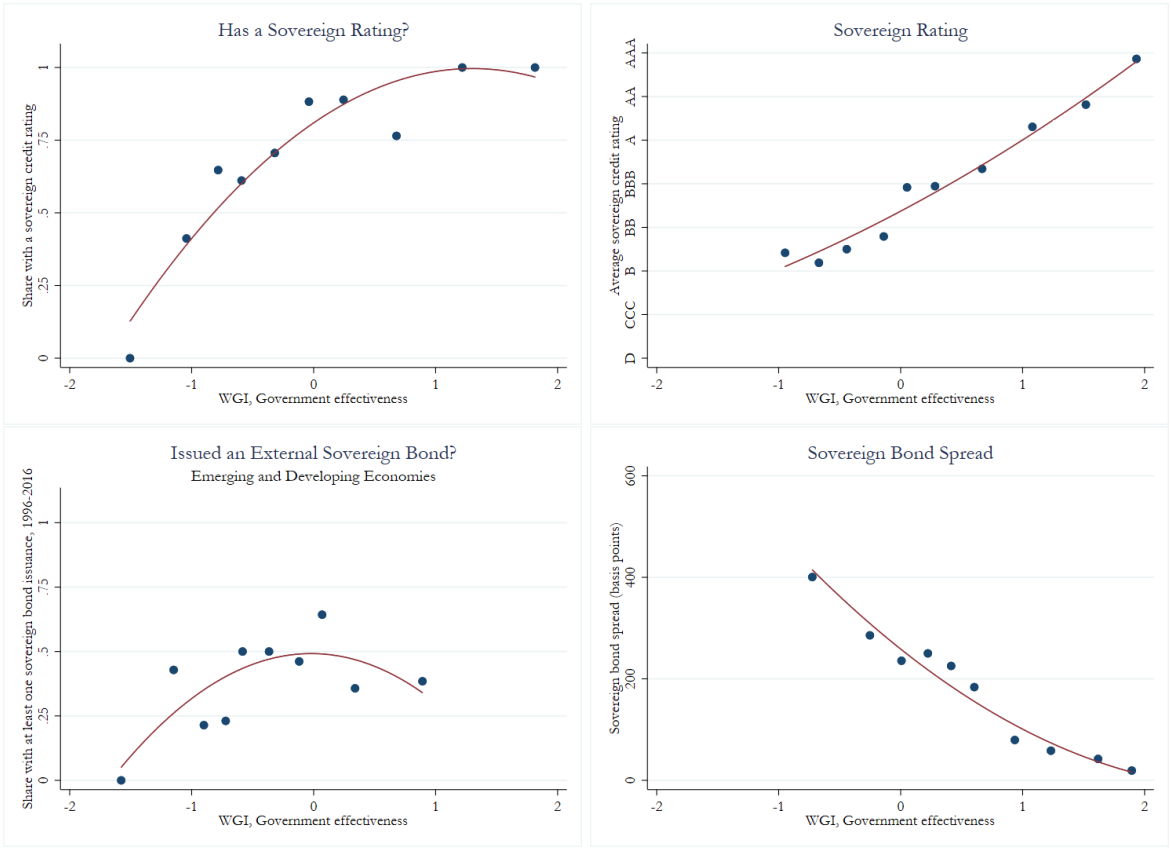
We first look at sovereign credit ratings, which are a prerequisite for governments to access funding from international capital markets. Ratings issued by one of the three major credit agencies —Fitch, Moody's and Standard and Poor's —are a key factor in determining access and cost of capital to debtor governments, as well as investment allocation decisions by international creditors, especially large institutional investors. Although they typically refer to the central government, ratings also impact foreign direct investment and portfolio equity flows, access to credit by subnational governments and private-sector firms in those countries. Even the level and composition of official aid are increasingly dependent on recipient government capacity, for which sovereign ratings can be an important proxy (Bermeo, 2017).

The top left panel of Figure 1 shows the share of countries with a sovereign rating within each decile of the WGI Government Effectiveness score in 2010. There is a very strong and nonlinear relation between fiscal governance and whether a country had a sovereign rating. We observe that all countries in the lowest decile were unrated, while most countries with above median WGI scores had a sovereign rating. This is consistent with the fact that many developing economies, as well as a few emerging markets, do not have a rating from a major credit agency (Ratha et al., 2011). Some countries are not rated because they do not need to borrow externally, but most unrated countries would benefit from external credit.[11] This result suggests that not having a sovereign credit rating is closely tied to the quality of public administration in those countries, and governance more generally.

[10] Since the inputs to the WGI are sometimes subjective or prone to measurement error, Charron et al. (2010) suggest that countries should be clustered with respect to their relative quality of governance. The binned scatterplots achieve this by computing the average outcome within deciles of the Government Effectiveness score.

[11] Many of these countries may be rated by export credit agencies, insurance agencies, and international banks, but these ratings are often confidential or for internal use only.

FIGURE 1: Government Effectiveness and Market Access



Note: These binned scatterplots display the nonparametric relation between fiscal governance, measured by the WGI Government Effectiveness score (horizontal axes), and different indicators of access to market-based external finance (vertical axes). Fitted quadratic regression lines are shown in red. The top left panel shows whether a country was rated by any of the three major rating agencies in 2010, while the top right panel looks at the average sovereign rating in 2010, for countries that did have a rating (the vertical axis follows the Standard & Poor's rating scale). The bottom left panel examines whether a country issued at least one external sovereign bond between 1996 and 2016, focusing only on developing and emerging economies, while the bottom right panel plots the (option-adjusted) spread for countries that issued sovereign bonds.

The relation between fiscal governance and the sovereign rating itself is plotted in the top right panel of Figure 1, again focusing on 2010 as our baseline year. There is a strong linear relationship between fiscal governance and average sovereign ratings, consistent with governance performance being a very good predictor of a country's credit rating.[12] In particular, rated countries that score above the median in the WGI Government Effectiveness score tend to

[12] Ratha et al. (2011) examine the role of macroeconomic, fiscal and governance variables as predictors of sovereign credit ratings. However, they focus on rule of law, rather than government effectiveness.

have an investment grade rating (BBB- or higher), which is an important regulatory threshold for many institutional investors.

Next, we examine how fiscal governance is associated with governments' ability to obtain external finance by issuing sovereign bonds. The bottom left panel of Figure 1 plots the probability of having issued at least one external sovereign bond since 1996 against the WGI Government Effectiveness score. The sample is restricted to emerging and developing economies, since most advanced economies have developed domestic capital markets, and hence tend to issue sovereign bonds domestically (this restriction explains why there are observations above a score of one). There is a nonlinear relation between fiscal governance and sovereign bond issuance. At first, countries with stronger government performance are substantially more likely to having issued a sovereign bond. However, after a certain point, an improvement in fiscal governance is not associated with a higher probability of issuance. This is driven by countries preferring domestic bond issuances if they achieve higher levels of fiscal governance, and by a clustering of relatively smaller countries with above median WGI scores that typically do not issue external sovereign bonds.

A similar result is present in the bottom right panel of Figure 1, where we look at the relation between option-adjusted sovereign bond spreads and the WGI Government Effectiveness score in the year external bonds were issued. Countries with worse fiscal governance pay much larger spreads on their external bonds. On average, the worst performers can pay spreads of up to 600 basis points, while countries in the top third of the WGI Government Effectiveness index typically face spreads of less than 50 basis points. This is consistent with the evidence above on sovereign credit ratings, which shows that lower-ranked countries are perceived as less creditworthy and riskier.

We reexamine these results for robustness by adding extensive controls. First, we control for country income levels using the log of GDP per capita in constant 2011 PPP dollars, and for country indebtedness using public debt ratios. Income levels influence the quality of public administration directly by impacting governments' ability to maintain an educated workforce and provide adequate working conditions, and indirectly by facilitating a sufficient pool of human capital from which that workforce can be selected. Debt levels are also important determinants of a government's creditworthiness and will influence borrowing costs independently of the quality of the public institutions and practices.

We also add controls for the business cycle (inflation, fiscal deficit, growth and the current

TABLE 1: Government Effectiveness and Financial Market Access

	Rating dummy	Average rating	Bond issuance	Bond spread
Govt Effectiveness	1.66***	1.12***	-0.33	-188.93***
	(0.36)	(0.10)	(0.34)	(61.11)
Govt Effectiveness^2	-0.53**	0.14***	-0.60***	11.59
	(0.22)	(0.05)	(0.21)	(29.65)
Log(GDP p.c.)	1.03***	0.57***	0.83***	1.01
	(0.29)	(0.08)	(0.26)	(34.00)
Public Debt/GDP	-0.01	-0.01***	0.02**	1.28***
	(0.01)	(0.00)	(0.01)	(0.41)
Year FE	Yes	Yes	No	Yes
Adjusted R^2	0.50	0.86	0.15	0.52
N	2,800	1,901	165	533

Note: All regressions control for log GDP per capita in constant 2011 PPP dollars and the ratio of public debt to GDP (shown in the table), as well as log population, GDP growth, inflation, current account balance, overall fiscal deficit, and whether a country is a primary commodities exporter. In the first and third columns the regression fit statistic is the pseudo-R^2. * 0.10, ** 0.05, *** 0.01.

account balance) and for country size (the log of resident population). Because of large fixed costs in accessing international capital markets, bigger countries might have easier access simply because they usually borrow larger amounts or have more ability to pay the fixed costs of obtaining a rating and issuing sovereign bonds. Finally, we use an indicator of whether countries are primary commodity exporters to account for economic structure, and year fixed effects to control for global factors such as US and Euro monetary policy, world growth and international commodity prices (except when examining the link with bond issuance, since that regression uses only cross-sectional variation).[13]

The results, illustrated in Table 1, show that adding controls does not change the message of Figure 1. In the first and third columns, the dependent variable is a binary indicator, so we estimate logistic regressions, while the remaining columns are estimated by OLS. [14] Since the figures suggested a nonlinear relation between financial market access and fiscal governance, the main regressor is a second-degree polynomial in the WGI Government Effectiveness score. The coefficients on the WGI Government Effectiveness score always have the expected sign,

[13]The impact of fiscal governance on market access may be different in countries with large fiscal deficits or public debt. For example, a large fiscal deficit may be less of a concern in a country with a strong record of fiscal transparency. To account for these nonlinearities, we also considered controlling for interactions between fiscal governance and fiscal deficits and debt ratios. The results are similar, and are available upon request.

[14]Since the regression of average ratings on the WGI score is conditional on having a credit rating, we have also considered two-step estimators as in Heckman (1979), which considers the possible selection bias of excluding unrated countries. The results are similar and are available upon request.

and are economically and statistically significant, even with extensive controls. For countries in the lowest quartile of the WGI Government Effectiveness score, a one-standard deviation improvement is associated with a 30 percent higher probability of having a sovereign credit rating, and with an average rating improvement of 1.3 notches for countries that are rated. Similarly, it is linked with a 20 percent higher likelihood of having issued at least one (external) sovereign bond since 1996, and with an average decline in sovereign bond spreads of almost 190 basis points.

3 Analysis using PEFA assessments

3.1 PEFA assessments

The WGI scores we use in the previous section are composite measures constructed from a wide range of individual indicators. The Government Effectiveness indicator, for example, is calculated as a weighted average of individual assessments from up to 16 different sources (Kaufmann et al., 2010). These composite measures allow us to perform broad cross-country comparisons, which show that fiscal governance is a key determinant of access to financial markets. However, they are less suitable for identifying specific strengths and weaknesses in fiscal governance, and concrete reforms that countries should undertake. To formulate more specific policy recommendations, it is necessary to use more detailed data that can identify the relevant constraints on fiscal governance in particular country circumstances.

To examine the relationship between fiscal governance and access to financial markets in a more granular and policy-focused manner, we utilize data from the Public Expenditure and Financial Accountability (PEFA) program. Started in 2001, the PEFA framework seeks to harmonize the assessment of public financial management (PFM) across countries. The program has become the standard methodology to assess PFM performance, with more than 600 completed diagnostic reports in over 150 countries as of end-2018.[15] We hypothesize that strength of fiscal governance is highly correlated with PEFA assessment scores and that the risk assessment (and pricing) by markets captured in the market access-governance index nexus can be mapped into a market access-PEFA nexus.[16]

[15] `https://pefa.org/`

[16] As Figure A.2 in the appendix shows, PEFA scores are strongly correlated with the WGI Government Effectiveness score.

The PEFA framework includes 31 indicators that measure different aspects of PFM performance, and that are scored between D (the lowest score) and A (the highest score).[17] These indicators are themselves organized into seven groups that correspond to the key elements of a PFM system, including:

(i) **Budget reliability**, measuring whether budgets are feasible and implemented as intended;

(ii) **Transparency of public finances**, determining if information is comprehensive, consistent, and accessible to users;

(iii) **Management of assets and liabilities**, which includes questions about how assets and liabilities are recorded, how fiscal risks are identified, and whether public investments provide value for money;

(iv) **Fiscal strategy and budgeting**, analyzing whether the budget is consistent with the government's stated fiscal policies and if the authorities are capable of producing adequate macroeconomic and fiscal projections;

(v) **Predictability and control in budget execution**, monitoring whether the budget is implemented effectively, using proper audit and internal control processes, such that budget resources are obtained and used as intended.

(vi) **Accounting and reporting**, focusing on whether accurate records are maintained and published in a timely manner;

(vii) **External scrutiny and audit**, checking if public finances are independently reviewed, and if external recommendations for improvement are followed-up by the executive.

We focus on these seven dimensions of PFM performance to identify concrete areas of assessment that are risk mitigating and therefore can improve market access.

[17] See PEFA (2016). This format reflects the 2016 PEFA framework. The previous 2005 and 2011 PEFA frameworks had slightly different questions and structure, which we map into the 2016 framework to ensure consistent scores across assessments.

3.2 Empirical specification

We analyze data from 173 publicly-available PEFA reports for 89 emerging and developing economies between 2005 and 2016, focusing on how countries score across the seven indicators above. We estimate the following specification using a panel of emerging and developing countries over the period 2005 to 2016:

$$Y_{i,t} = \alpha + \sum_{j \in \{A,B,C\}} \beta_j^k \text{PEFA}_{j,i,t}^k + \gamma' X_{i,t} + \varepsilon_{i,t} \tag{1}$$

where $Y_{i,t}$ is an indicator of market access, $\text{PEFA}_{j,i,t}^k$ is the score on one of the main seven dimensions of the PEFA assessment, and $X_{i,t}$ is a vector of control variables, which includes the log of GDP per capita in constant PPP terms, the ratio of public sector debt to GDP, the overall fiscal deficit, the current account balance, inflation, real GDP growth, log population and an indicator for whether a country is a primary commodities exporter. As in the earlier section, for binary dependent variables, such as a dummy for whether a country has a sovereign rating or has issued sovereign bonds, we estimate logistic regressions; otherwise the regressions are estimated using pooled OLS. Robust standard errors are clustered by country.

3.3 Results

Sovereign credit ratings. As in the previous section, we start by analyzing the relationship between the quality of government, now measured by PEFA scores, and sovereign credit ratings.

Table 2 examines the link between PEFA scores and the probability of having a sovereign credit rating in the year the PEFA assessment was conducted. In general, we find that higher scores across any of the seven dimensions are associated with a greater probability of having a sovereign credit rating by one of the three main rating agencies.

Two results are worth emphasizing. First, all countries that achieved an A score in the asset and debt management, fiscal strategy and fiscal reporting categories had a sovereign credit rating. Hence, an A score in any of those categories was a perfect predictor of having a sovereign rating.[18] This implies that a strong assessment in these categories are informative

[18] No countries in our sample achieved an A score in the budget execution and external audit categories, so those coefficients could not be estimated and were dropped from the analysis.

TABLE 2: PEFA and Probability of Having a Sovereign Rating

	Budget credibility	Transparency of public finances	Asset & debt management	Fiscal strategy	Budget execution	Accounting & reporting	External audit
D → A	1.68*	19.34***	†	†		†	
	(0.91)	(1.39)					
D → B	1.06	18.67***	0.66	2.27**	1.59	1.05	0.38
	(0.66)	(1.35)	(0.91)	(1.00)	(1.01)	(0.87)	(0.79)
D → C	-0.08	17.71***	-0.32	0.89	0.45	0.13	0.43
	(0.90)	(1.21)	(0.82)	(0.95)	(0.80)	(0.67)	(0.69)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R^2	0.48	0.51	0.46	0.49	0.47	0.45	0.45
N	173	173	157	172	173	170	173

Note: All regressions control for log GDP per capita in constant 2011 PPP dollars, public debt ratios, log population, growth, inflation, current account balance, overall fiscal deficit and whether a country is a primary commodities exporter. The cells identified with † are those where all countries with an A score had a sovereign rating. In addition, no country in our sample achieved an A score in the "Budget execution" and "External audit" categories. * 0.10, ** 0.05, *** 0.01.

TABLE 3: PEFA and Average Sovereign Rating

	Budget credibility	Transparency of public finances	Asset & debt management	Fiscal strategy	Budget execution	Accounting & reporting	External audit
D → A	0.24	0.16	0.65**	0.65***		0.95*	
	(0.30)	(0.23)	(0.28)	(0.19)		(0.50)	
D → B	0.25	0.05	0.32	1.20***	0.39	0.14	0.23
	(0.18)	(0.16)	(0.26)	(0.19)	(0.30)	(0.22)	(0.24)
D → C	0.24		0.32	1.02***	0.12	0.05	0.01
	(0.21)		(0.23)	(0.16)	(0.27)	(0.20)	(0.14)
Pseudo R^2	0.56	0.56	0.58	0.62	0.58	0.58	0.57
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	102	102	102	102	102	102	102

Note: All regressions control for log GDP per capita in constant 2011 PPP dollars, public debt ratios, log population, growth, inflation, current account balance, overall fiscal deficit and whether a country is a primary commodities exporter. There are no "A" scores in the categories of "Budget execution" and "External audit" in our sample. In addition, there are no countries with a sovereign rating that achieved a "Budget transparency" score lower than "B". * 0.10, ** 0.05, *** 0.01.

TABLE 4: PEFA and Probability of Issuing a Sovereign Bond

	Budget credibility	Transparency of public finances	Asset & debt management	Fiscal strategy	Budget execution	Accounting & reporting	External audit
D → A	1.79**	15.20***	-0.36	†		-0.70	
	(0.88)	(1.11)	(1.06)			(1.63)	
D → B	1.22*	14.49***	0.35	-1.40	0.69	0.90	0.59
	(0.66)	(0.86)	(0.83)	(0.88)	(0.80)	(0.78)	(0.74)
D → C	0.50	15.00***	0.21	-1.02	0.66	0.54	0.35
	(0.65)	(0.77)	(0.79)	(0.82)	(0.63)	(0.67)	(0.42)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R^2	0.24	0.24	0.22	0.23	0.22	0.23	0.22
N	173	173	173	172	173	173	173

Note: All regressions control for log GDP per capita in constant 2011 PPP dollars, public debt ratios, log population, growth, inflation, current account balance, overall fiscal deficit and whether a country is a primary commodities exporter. There is a single country that achieved an "A" score in the Fiscal Strategy category, so it is not possible to estimate that effect. In addition, there are no "A" scores in the categories of "Budget execution" and "External audit" in our sample. * 0.10, ** 0.05, *** 0.01.

on quality of governance and increase the likelihood of a credit rating. Second, apart from these cases where there was perfect predictability, the category with the largest quantitative impact on the probability of having a sovereign rating was transparency of public finances (second column). This indicator — which measures whether information on public finances is provided in an accurate, comprehensive, and timely fashion — can be viewed as enhancing market information discovery on riskiness of the sovereign. It includes sub-indicators that assess whether the government budget classification conforms to international standards and budget information is comprehensive; government financial reports show all budgetary and extra-budgetary revenue and expenditure; transfers to other levels of government are reported accurately and in a timely manner; public service delivery performance indicators are available and acted upon; and the public has timely access to comprehensive information on public finances (PEFA, 2016). Data on public finances is a key input in the formulation and revision of sovereign credit ratings, and so it is not surprising that regular access to reliable data is strongly associated with a higher likelihood of obtaining a credit rating.

We explore the relation between the quality of PFM practices and the average sovereign rating in the year of a PEFA assessment in Table 3.[19] Similar to before, higher PEFA scores

[19] As in the previous section, the impact on the average credit rating is estimated conditional on having a

TABLE 5: PEFA and Sovereign Bond Spread

	Budget credibility	Transparency of public finances	Asset & debt management	Fiscal strategy	Budget execution	Accounting & reporting	External audit
C → A	-25.74	-176.89***	-127.11***			-166.07***	
	(68.01)	(55.18)	(47.06)			(27.49)	
C → B	-27.43	-101.93**	-98.11**	-88.37**	-65.71*	-33.90	-43.35
	(38.75)	(40.07)	(38.34)	(35.62)	(36.30)	(37.31)	(45.14)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0.01	0.15	0.13	0.09	0.04	0.03	0.01
N	64	64	64	64	64	64	64

Note: The dependent variable is the average sovereign bond spread by country at bond issuance, net of year fixed effects. There are no "A" scores in the categories of "Budget execution" and "External audit" in our sample. * 0.10, ** 0.05, *** 0.01.

are associated with a stronger sovereign credit rating, although specific categories such as fiscal strategy stand out. The fiscal strategy indicator measures the government's ability to produce accurate medium-term macroeconomic and fiscal forecasts, and implement budgets that are consistent with those projections. Countries with stronger capacity to develop and implement their medium-term fiscal strategies are associated with higher sovereign ratings, with an improvement from a D score to at least a C score being associated with an improvement of just over one notch (this would be the equivalent of achieving a BB rating if the baseline rating is BB-). Improvements in accounting and reporting and asset and debt management performance are likewise associated with economically and statistically large improvements in sovereign ratings, especially when countries achieve an upper score of A.

Sovereign bonds Table 4 shows results on how PEFA scores are associated with having issued at least one sovereign bond since 1996. Consistent with the results in Table 2, higher transparency of public finances had the largest quantitative impact on the likelihood of bond issuance, in line with expectations given that obtaining a sovereign credit rating from the main rating agencies is a prerequisite to issuing bonds in international capital markets. In addition, an improvement in budget credibility, which measures how revenue and expenditures match budget projections, is associated with a higher likelihood of issuing an external sovereign bond.

credit rating. Results from a two-step estimator that controls for possible selection bias of excluding unrated countries are qualitatively similar, and available upon request.

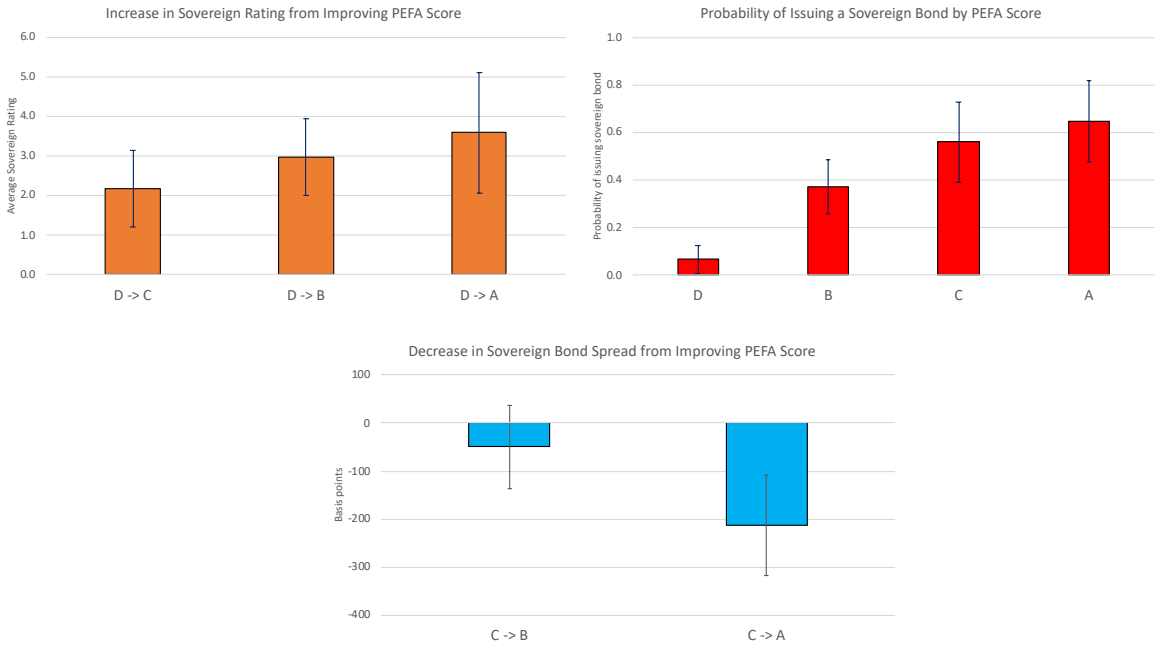
Finally, Table 5 examines how PEFA scores are correlated with sovereign bond spreads. We focus on the average bond spread at issuance in each country, calculated as the average bond spread across all sovereign bonds issued by that country. We control for time-varying global factors - such as US or Euro monetary policy and international commodity prices - by first regressing bond spreads on year fixed effects, and then averaging the residual bond spread across issuances. Since there are almost no countries with D scores that have issued sovereign bonds, we look instead at the impact of moving from a C score (as the baseline) to a higher score of B or A across each of the seven main dimensions of the PEFA assessment.

In general, we find that higher scores are associated with lower sovereign bond spreads across all seven dimensions. However, the impact on bond spreads appears to be larger and statistically significant especially for improvements in transparency of public finances, asset and liability management, and budget accounting and reporting categories. These effects are also economically significant in magnitude. For example, moving from a C score to an A score in the budget accounting and reporting dimension is associated with a 166 basis point reduction in sovereign bond spread. The same improvement in the transparency of public finances category is associated with a similar size spread reduction.

Impact of broad-based improvements Lastly, we estimate the impact of a general improvement in public financial management on market access. This experiment is equivalent to a simultaneous improvement across all seven dimensions of the PEFA assessment — that is, starting from the lowest baseline score of D, we estimate the impact of improving the score across all dimensions. These impacts are shown in Figure 2.

The top left panel shows the impact of an across-the-board improvement on sovereign credit ratings, among countries that are rated. The average impact of moving from a score of D to a C score is an increase of two rating notches (e.g., for a country with a baseline rating of BB- this would mean an improvement to BB+). A score of at least B on all seven dimensions is associated with an additional notch, and an A score would suggest an improvement of almost another notch still. These improvements are economically significant, and for many countries in our sample would mean going from speculative to investment grade, which would imply greater access to external funding and lower borrowing costs. Moreover, the estimates are obtained while controlling for a country's GDP per capita, public debt ratio and current macroeconomic and fiscal position, so are not simply capturing differences in income levels or debt sustainability.

FIGURE 2: PEFA Score and Market Access



Note: These panels examine the impact of improving PEFA scores on indicators of market access. The estimates in the top panels consider an improvement in scores from "D" to at least "C", "B" or "A" across all 7 PEFA dimensions. The bottom panel looks at improvements from a baseline score of "C", since almost no countries with a "D" score have issued bonds in our sample during 1996-2016.

The top right panel examines instead the probability of issuing a sovereign bond conditional on the PEFA assessment scores. For governments with an overall D score across all seven dimensions, the probability of issuing a sovereign bond is very low and not statistically different from zero. However, the probability of bond issuance increases monotonically with the PEFA score, with countries with an overall score of C having a 40 percent probability of having issued at least one sovereign bond during the period between 1996 and 2016, with that probability rising to about 65 percent for the top performers with an overall score of A.

Finally, the bottom panel looks at sovereign bond spreads. Here again the quality of the public administration plays an important role, with an improvement from a C to an A score being associated with a 200 basis point reduction in option-adjusted bond spreads, which is statistically and economically significant.

Our focus on external sovereign bond spreads is motivated by the recent increase in bond issuances in emerging markets and frontier economies, and also because this information is

easily available and comparable across countries. However, syndicated external loans and foreign participation in domestic bond markets are also key sources of foreign financing in many countries. While data on borrowing terms for these instruments is not readily available, information on the level of market-based external debt (which includes external sovereign bonds and loans) is available from the World Bank's International Debt Statistics database. Figure (A.3) in the Appendix shows that the share of market-based external debt increases with fiscal governance performance, which suggests the positive impact of fiscal governance improvements on sovereign bond spreads could extend to other sources of financing.

4 Conclusion

In this paper, we examine how fiscal governance affects governments' ability to tap international capital markets. We find that countries with stronger fiscal governance typically enjoy improved market access, including a higher likelihood of having a sovereign credit rating and issuing sovereign bonds, stronger credit ratings, and lower spreads on their sovereign bonds.

We use detailed information from Public Expenditure and Financial Accountability (PEFA) assessments in developing and emerging economies to identify which public financial management practices matter most for improving market access. We find that improving practices related to transparency of public finances, fiscal reporting, debt management and fiscal strategy are key in improving credit ratings, issuing bonds, and obtaining lower cost of external financing.

The exigency of tapping financial markets for financing development suggests the need for a renewed focus on improving fiscal governance and public financial management. While vested interests and the short-term costs of reform often hinder impetus to improve fiscal governance, our results suggest that these reforms deliver significant and persistent benefits. Concentrating on improving assessments in areas with the highest value-added could be a useful paradigm for framing the targeting or sequencing of PFM reforms. In addition, these large potential gains justify a clear role for multilateral institutions, including the IMF, to foster fiscal governance improvements through capacity building, technical assistance and, where relevant, program design.

We see several interesting avenues for future research. First, it would be useful to examine the impact of fiscal governance on other sources of financing that have also grown more relevant

in recent years, such as external loans and foreign participation in domestic bond markets. Second, future work could examine if strong fiscal governance helps retain market access and achieve better macroeconomic outcomes during crisis periods.

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A Other Figures

FIGURE A.1: PEFA assessment main categories

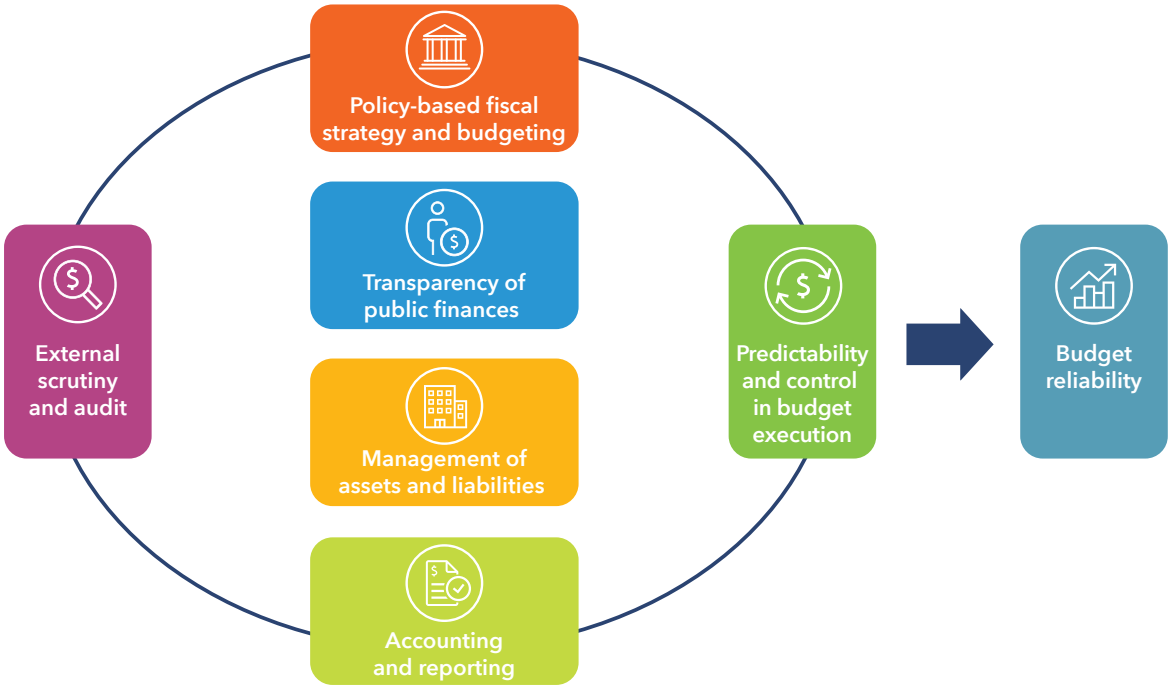


FIGURE A.2: PEFA and WGI score

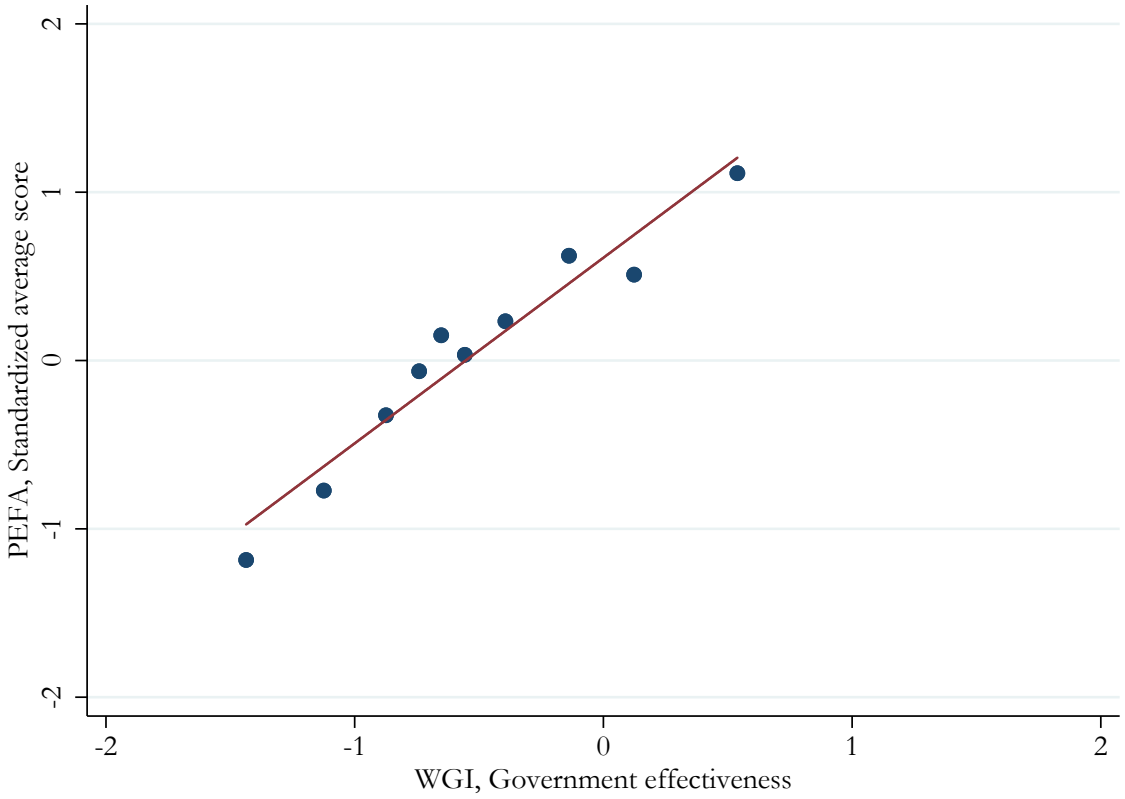
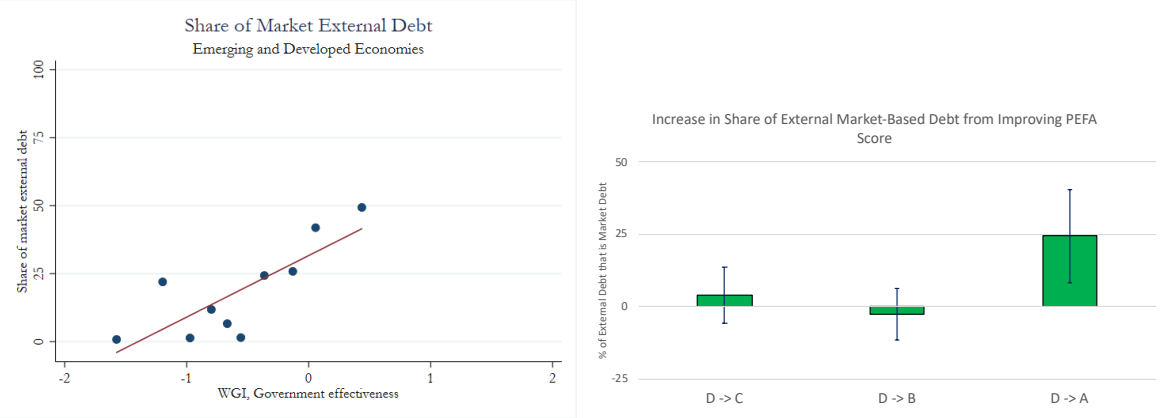


FIGURE A.3: Government Effectiveness and Share of External Public Debt that is Market-Based



Note: The left panel examines the relation between the share of public external debt that was market-based in 2010 (e.g., sovereign bond issuances or syndicated loans) and the WGI Government Effectiveness score. The right panel shows the impact of PEFA score improvements on the same indicator. In both cases, the sample is restricted to emerging and developing economies.

B Other Tables

TABLE B.1: Conversion of Sovereign Credit Ratings to Numerical Scale

Moody's	**S&P**	**Fitch**	**Numerical Scale**
Aaa	AAA	AAA	8
Aa1	AA+	AA+	7
Aa2	AA	AA	
Aa3	AA−	AA−	
A1	A+	A+	6
A2	A	A	
A3	A−	A−	
Baa1	BBB+	BBB+	5
Baa2	BBB	BBB	
Baa3	BBB−	BBB−	
Ba1	BB+	BB+	4
Ba2	BB	BB	
Ba3	BB−	BB−	
B1	B+	B+	3
B2	B	B	
B3	B−	B−	
Caa1	CCC+	C	2
Caa2	CCC		
Caa3	CCC−		
Ca	CC		
	C		
C	D	DDD	1
		DD	
		D	

TABLE B.2: Summary Statistics

	Mean	Std. Dev.	10%	25%	50%	75%	90%	Obs
Macroeconomic								
Population (millions)	40.28	142.93	0.75	3.15	9.08	28.16	72.72	2,800
GDP p.c. (2011 constant PPP)	17,445	19,721	1,558	3,314	10,187	25,623	42,932	2,800
GDP growth (%)	4.12	4.91	-0.13	2.00	4.01	6.24	8.45	2,800
Inflation (%)	6.38	15.34	0.44	1.80	3.92	7.82	12.70	2,800
Current Account Balance (% GDP)	-2.11	10.71	-12.31	-7.07	-2.53	2.32	8.65	2,800
Fiscal								
Overall Fiscal Balance (% GDP)	-1.80	6.24	-7.01	-4.39	-2.37	0.02	3.36	2,800
Public Debt (% GDP)	54.32	42.81	15.44	28.14	43.95	68.52	101.07	2,800
Market Access Indicators								
Has Sovereign Rating (0-1)	0.68	0.47	0	0	1	1	1	2,800
Sovereign Rating	4.99	1.77	3.00	3.17	5.00	6.11	8.00	1,901
Issued Sovereign Bond (0-1)	0.42	0.49	0	0	0	1	1	2,800
Sovereign Bond Spreads	170.19	195.91	13.90	38.70	110.90	268.70	381.00	533
WGI								
Government Effectiveness	0.01	0.99	-1.17	-0.74	-0.17	0.71	1.59	2,800
PEFA								
Budget Credibility	2.51	0.79	2	2	2	3	3	173
Transparency	2.40	0.65	2	2	2	3	3	173
Asset and Debt Management	2.55	0.81	2	2	3	3	4	173
Fiscal Strategy	2.61	0.67	2	2	3	3	3	173
Budget Execution	2.92	0.61	2	3	3	3	4	173
Accounting and Reporting	2.85	0.73	2	2	3	3	4	173
External Audit	3.27	0.68	2	3	3	4	4	173

Note: GDP per capita is expressed in 2011 PPP dollars. Sovereign ratings are converted to a numerical scale from 1 to 8, as shown in Table B.1. The sovereign bond issuance dummy takes value one if the country issued at least one external sovereign bond between 1996 and 2016. PEFA scores are converted to a numerical scale from 1 to 4, where 1 is the lowest "D" score, and 4 is the highest "A" score.