SOVEREIGN BORROWING BY DEVELOPING COUNTRIES: WHAT DETERMINES MARKET ACCESS?

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IMF Working Paper

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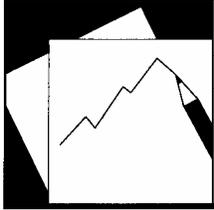
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Abstract

What determines developing countries' access to private credit markets? We examine this question using detailed data on sovereign bond issuances and public syndicated bank loans since 1982. We find that traditional measures of a country's links with the rest of the world (such as trade openness) and traditional liquidity and macroeconomic indicators do not help much in explaining market access. However, a country's vulnerability to shocks as well as the perceived quality of its policies and institutions appear to be important determinants of its government's ability to tap the markets. Larger countries appear to have easier access to credit markets. We are unable to detect a significant punishment of defaulting countries by credit markets.

I. INTRODUCTION

A large and still growing literature on capital flows to emerging markets has developed over the last decade addressing several aspects of these flows, including their determinants, composition, and volatility.[2] However, what has been less studied is why some countries are unable to issue sovereign debt or obtain loans from private banks at all, even during periods of global lending expansions.

In this paper, we examine the ability of developing country governments to borrow from private international credit markets over the different stages of the international credit market cycle. At what development stage can low income countries expect to be able to tap the international capital markets? Which characteristics differentiate those countries that are able to borrow regularly from those that are occasionally or never able to do so? To which extent do government policies matter for capital market access? A systematic empirical analysis of these issues seems to be missing.

We address these questions using data on individual bond issuances by sovereigns and syndicated bank loans that are extended directly to the government or guaranteed by it for the period since the outset of the Latin American debt crisis in 1982 until 2000. This is a period that includes both a subperiod of market stagnation and one of expansion when borrowing was easier (Figure 1). The inclusion of syndicated bank loans is important to capture the dominant form of sovereign lending during the 1980s.

Figure 1. Total Net Private Lending to the Public Sector in Developing Countries

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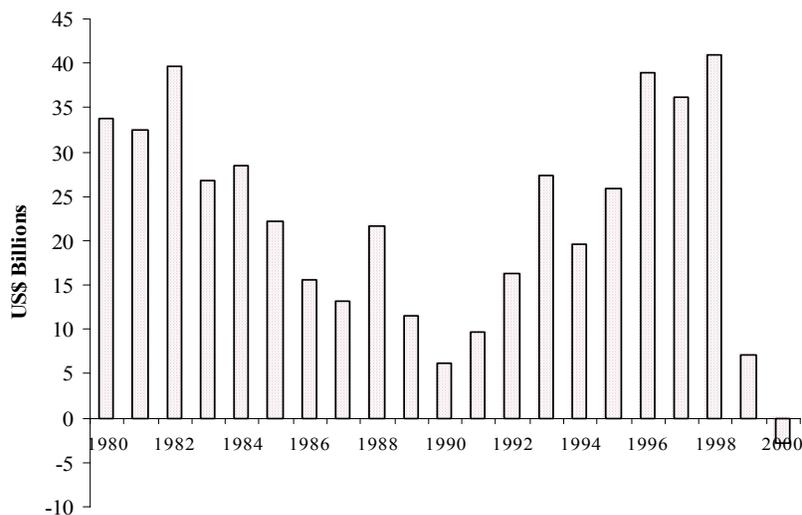
[2] See, for example, Calvo and Reinhart (1993), Fernandez-Arias (1996), Montiel and Reinhart (1999), and Mody and Taylor (2002).

The existing empirical literature on sovereign borrowing has largely focused on explaining volumes and sovereign spreads, often overlooking the problem that many countries might be cut off from credit markets completely, at least temporarily. In the present study, we focus instead on the binary aspect: exclusion from or access to capital markets.

According to standard neoclassical economic theory, capital-scarce countries should be borrowing large amounts to finance domestic investment.[3] We therefore only study developing countries that fall squarely into this category. Nevertheless, identification of supply vs. demand shifts remains an issue inherent to any study of capital flows; here, we will take a series of careful steps to distinguish between actual rationing and voluntary abstention from borrowing.

We advance on the existing literature in several other aspects. (1) By using micro data, we are able to focus specifically on sovereign borrowing. (2) In addition to the factors typically stressed in the literature on sovereign borrowing, we investigate the importance of vulnerability - such as emanating from, for example, a high exposure to terms-of-trade shocks- in determining credit constraints. This is an aspect which is particularly relevant for low income countries; for political or humanitarian reasons, a country may not be in a position to service debt if its income falls below a certain, possibly subsistence, threshold level.[4] (3) In order to measure policies, we go beyond the standard variables using a previously unavailable index of the quality of policies and institutions developed by the World Bank. (4) The list and detail of explanatory variables significantly exceeds those employed so far in related studies.

We find that economies that fail to tap the markets usually have smaller GDP's than those that do access. While this is consistent with the theory on sovereign borrowing (larger countries can borrow more since they have a higher capacity to repay, and can also be subject to larger punishments in case of default), we believe that it also reflects the existence of fixed costs of borrowing through more sophisticated mechanisms such as bonds or syndicated loans. In addition, they tend to suffer from higher political instability, worse perceived policies and institutions, and are more vulnerable to external shocks. Surprisingly, the links of the economy to the world (such as the degree of trade openness or the share of FDI in GDP) stressed in parts of the literature do not seem to affect market access. Similarly, we do not find evidence for the hypothesis that resource-abundant countries can tap credit markets more easily. Finally, we are unable to detect a significant punishment of defaulting countries by credit markets.

II. SOVEREIGN BORROWING: THEORETICAL PREDICTIONS

A. Review

Theory predicts that sovereign governments should borrow to smooth national consumption or to undertake investment projects that they could not finance otherwise. The ability of a sovereign

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[3] See for example Lucas (1990).
[4] Recently, Catão and Sutton (2002) have examined the impact of income volatility on sovereign default probability.

government to borrow on international credit markets depends on its perceived ability to repay and on the incentives it will have to do it.

In recent years, the theoretical literature on sovereign borrowing has dealt mainly with the second of these issues: the country's *willingness to repay*.[5] The question at the heart of the sovereign borrowing literature was why governments have an incentive to repay their debts with foreign creditors within the existing international legal framework. There is no bankruptcy code for sovereign borrowers and lenders cannot take control of a country nor seize a significant amount of its assets in the event of a sovereign default.

Economists have offered two main explanations for why governments may want to repay: reputation (exclusion from future credit) and direct sanctions.[6] The reputation literature, starting with Eaton and Gersowitz (1981), develops the idea that repayment may hold the carrot of a good reputation for the borrower (implying either the ability to borrow again or, alternatively, better future borrowing conditions). However, their argument relies on the crucial assumption that a defaulting government is not only excluded from future credit markets but also from savings opportunities. In a seminal article, Bulow and Rogoff (1989a) show that if this assumption is dropped, the sole threat of exclusion from credit markets will not provide enough incentives to repay. They stress that instead of reputational concerns, it is the threat of direct sanctions (usually trade related) that makes governments repay.[7] Cole and Kehoe (1997), however, argue that sanctions are not necessary because a default may negatively affect the government's reputation in some of its other "trust relationships" (such as those involving defense or labor issues) with the creditor. These reputation spillovers generate a cost of defaulting that could explain why governments repay.

While the abovementioned class of models have concentrated mostly on sovereign governments' *willingness to repay*, lenders will naturally also be concerned about *ability to repay*. Here, both issues of long-term solvency and short-term liquidity have been studied in different strands of the literature.[8] The literature on these topics is too large to be surveyed here. See for, example Detragiache and Spilimbergo (2001) for a model and a discussion of the liquidity crises literature and Cohen (1991) for an analysis of country solvency.

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[5] In practice, there is no clear-cut distinction between a sovereign government's ability and willingness to repay. For example, while a government may in principle repay because a country's net worth is greater than its debt, repayment may not be feasible because it may either imply strong political opposition or severe humanitarian consequences (such as starvation).
[6] Comprehensive reviews of the literature can be found in Eaton and Fernandez (1995) and Obstfeld and Rogoff (1996).
[7] Several papers follow this intuition and make explicit use of direct sanctions to support sovereign borrowing including Bulow and Rogoff (1989b), Cohen (1991), Lane (1999), Gibson and Sundaresan (2002), and Rose (2002). Similarly, in Cohen and Sachs (1986) a fraction of a country's output is put up as collateral (and therefore lost upon default).
[8] Haque, Mark, and Mathieson (2000) distinguish between the "debt-service capacity approach" and the "cost-benefit approach" to examine country creditworthiness.

B. Empirical implications

Turning to empirical implications, the repudiation models that allow for the existence of lending mostly predict credit rationing in the form of a <u>debt ceiling</u>. This upper bound of the debt a country is able to incur depends on the costs it has to pay in the event of a default. These costs are usually related to the <u>links</u> that a country has with the world (including reputation spillovers): trade and financial linkages such as FDI are specific examples. The bigger is a country's <u>output,</u> the larger is the punishment that can be imposed through trade sanctions and collateral seizure.[9] <u>Political instability</u> should also negatively affect the amount a country can borrow. The shorter a government can expect to be in office, the higher are its incentives to take advantage of the immediate benefits of higher loans and to discount any future sanctions heavily.[10] Lastly, <u>global factors,</u> in particular the world interest rate, will affect the cost of servicing the debt stock and the temptation to default. The repudiation literature, as in Eaton and Gersovitz (1981), suggests that <u>income variability</u> should have a positive effect on creditworthiness: countries that are more prone to shock have a higher interest in maintaining access to credit markets and are therefore less likely to default.

Letting $L_i^{\max}$ denote the debt ceiling for country i at time t, we can summarize the above discussion by writing it as a function of size, income volatility, political stability, the economy's productivity, links to the rest of the world, and global conditions factors[11]:

$$L^{\max} = f(Size, Volatility, Productivity, Pol. Stability, Links\ to\ World, Global\ Conditions) \qquad 1)$$
$$\quad\ \ +\qquad\quad +\qquad\qquad\quad +\qquad\qquad\quad\ +\qquad\qquad\qquad +$$

However, in the context of poor countries, one might expect income variability to have a negative effect on creditworthiness. Borrowers may not be in a position to service debt if a country's income falls below a certain, possibly subsistence, threshold level. For this reason, lenders should not only be concerned about the absolute size of a country's GDP, but also about <u>vulnerability,</u> such as reflected in per-capita income and the variability of income. Countries with small per-capita income are more likely to experience a fall below a critical subsistence threshold. Similarly, countries with higher output volatility are more likely to suffer a drop in income below the minimum level below which a government may face insurmountable obstacles in servicing its debt. To our knowledge, this notion has not been explicitly considered in the context of sovereign borrowing.

The literature addressing solvency and liquidity issues suggests that lenders should be interested in a country's quality of policies and <u>liquidity indicators</u> such as the level of international reserves or the share of short-term debt in total debt.

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[9] See Lane (2000).
[10] See Lane (2000) and Özler and Tabellini (1991).
[11] See Lane (2000) for a similar equation.

Multilateral assistance can overcome liquidity problems and act as a "seal of approval" of sound economic policies. For this reason, we expect that IMF programs should have a positive impact on the ability of sovereigns to access credit markets. This has to be qualified, however, by the fact that many IMF programs, in particular those with a concessional element, impose strict limits on international private borrowing. It is therefore important to differentiate between different types of programs in the analysis.

Lastly, there might be fixed costs for borrowing through syndicated loans or bond issuances. This would be another reason why we might observe smaller countries accessing the markets less frequently.

Variables used

Following this discussion, Table 1 lists the set of variables affecting the probability of market access that we are going to employ.[12] When signing the effect of the respective variable on the probability of market access, the table differentiates between the predictions of the repudiation literature of sovereign borrowing ("willingness to repay") and the predictions of the literature stressing the debt-service capacity ("ability to repay").[13]

We measure size by GDP. We follow common practice in using the ratios of exports to debt service and of external reserves to months of imports as indicators of liquidity.[14] To quantify a country's vulnerability and income volatility, we employ GDP per capita, the share of agriculture in GDP, the standard deviation of GDP growth over ten years, and the standard deviation of terms of trade measured over twenty years. GDP growth is used as a proxy for productivity and solvency. Countries with positive changes in the terms of trade and countries with resource abundance (as measured by the share of mining in GDP or the share of fuel exports) should be seen as more solvent.

To measure the quality of policies, we use the inflation rate, the real exchange rate deviation from its five-year moving average, the fiscal deficit, and a comprehensive, yearly index of the quality of policies and institutions developed by the World Bank. Large conflicts, coups, and wars have detrimental effects on country solvency, and we measure them with a widely used dataset on "State Failures".[15] We capture links to the world through the share of FDI in GDP and trade openness (the sum of exports and imports divided by GDP). We measure political risk with the International Country Risk Guide's (ICRG) Political Risk Index. On defaults, we use data on

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[12] A more detailed description of the variables is given in the Appendix.

[13] See Haque et al.

[14] We considered including the share of short-term debt in total debt as an additional, commonly used measure of liquidity. However, a priori, the effect of a higher share of short-term debt on the probability of access at any given moment is ambiguous: while higher short-term debt increases the likelihood of a liquidity crisis, it also makes it more likely that a country will have to borrow at any given moment in time.

[15] We experimented with various other data sets on conflicts, wars, and coups, without changing the results reported in this paper.

Table 1. Variables Affecting Creditworthiness

Category	Variable	Expected Sign	
		Repudiation literature	Debt service capacity
Size	GDP (bill. US$)	+	+
Liquidity	Exports/Debt Service	+	+
	Reserves/months of imports	Na	+
Volatiliy/ Vulnerability	GDP per capita (US$)	Na	-
	Agriculture/GDP (%)	+	-
	Std. dev. GDP growth (10yrs)	+	-
	Std. dev./ terms of trade (20 yrs)	+	-
Productivity/ Solvency/Quality of Policies	GDP growth (%)	+	+
	Mining/GDP	+	+
	Fuel exports/total exports	+	+
	Export growth	+	+
	Inflation	-	-
	Change in terms of trade	+	+
	Real exchange rate deviation from 5-year average (in %)	-	-
	Fiscal deficit/GDP (%)	Na	+
	Arrears/total debt	Na	-
	World Bank Index of Quality of Policies (CPIA)	+	+
	"State Failures"	Na	-
Links to World	FDI/GDP	+	na
	Openness (Exp+ Imp/GDP)	+	+
Political Risk	ICRG Index of Political Risk	+	+
IMF Programs	SBA, EFF	+	+
	PRGF	-	-
Market Perceptions	Institutional Investor Index	+	+

III. EMPIRICAL STRATEGY

The theoretical literature briefly reviewed above largely makes predictions about the debt *stock* ceiling for countries; we are instead interested in explaining market access, i.e. flows at any given moment.[16] We assume that countries borrow up to their debt ceiling, i.e. the debt ceiling is constantly binding. If the debt ceiling for country i is binding at time t ($L_{i,t}=L_{i,t}^{max}$) we will observe no market access. If the ceiling increases $L_{i,t}^{max} > L_{i,t-1}^{max}$ (because of positive country or world developments) and the country wants to borrow, we will observe the country tapping the market. The identification problem that we have to overcome is that we might observe no access in cases in which the debt ceiling is not binding ($L_{i,t}<L_{i,t}^{max}$), but in which a country does not want to borrow. We will discuss this issue below. First, we define market access empirically.

A. Defining Market Access

We define access as public or publicly guaranteed bond issuances or public or publicly guaranteed borrowing through a private syndicated bank loan. The literature has often focused exclusively on bonds. However, particularly in the 1970's and 1980's, syndicated bank loans were the prominent form of sovereign borrowing by developing countries, so that it would be misleading to omit them in a study that includes that period. Note that syndicated loans are relatively more complex instruments than standard loans or trade credit.[17] Therefore, when a country uses these instruments we can interpret this borrowing as a qualitative jump in their ability to tap the markets.[18]

The data on public sector borrowing from international markets is provided by Capital Data (Bondware and Loanware) and contain information on 2053 individual bond issuances and 5065 commercial bank syndicated loans to 143 developing countries[19]. To check the robustness of our results with respect to our definition of "access", we use aggregate data from the World bank's Global Development Finance database in addition. There, we define market access in period "t" as the existence of positive net total flows in the form of bonds and commercial bank loans to the public sector.[20]

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[16] Lane (2000) focuses on total debt stocks.

[17] Gale (2001) examines the determinants of the choice between international debt instrument by emerging market borrowers.

[18] We would, however, like to avoid to mistakenly take an isolated bond issuance or syndicated loan as a real change in a governments ability to access. We address this issue in robustness checks.

[19] For further details on the data see the Appendix.

[20] A potential problem with our main variable is that observed access may not represent new net borrowing but refinancing. We therefore experimented with a variable that is equal to one only if we observe a bond issuance or syndicated loan *and* there was a net debt increase recorded in that year. All results reported in the following are robust to this alternative definition.

The existing empirical literature on sovereign borrowing has largely concentrated on explaining sovereign spreads or volumes of capital flows, ignoring the factors that allow countries to obtain credit in the first place. Expressed differently, the literature has often overlooked the *censoring problem* induced by credit rationing, examining only the terms for those countries for which we observe access.[21] We approach the question from the opposite angle, focusing only on zeroes and ones.

B. Overcoming the identification problem

In order to distinguish between actual rationing and voluntary abstention from borrowing, we take the following steps.

1.) We exclude industrial countries from our sample. A prima facie case for continuous willingness to borrow exists only in the case of developing countries. Given their need to catch up with the advanced countries, any neoclassical model would predict that these economies should in principle be borrowing vast sums from the rich world.[22]

2.) We also exclude countries classified by the IMF's World Economic Outlook as "creditor countries". These are the oil producing countries Kuwait, Libya, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

3.) Since many communist/socialist countries were ideologically opposed to borrowing internationally from private markets, we include them only after they started to initiate market reforms and became more outward looking, unless we observe them borrowing earlier. A complete list of countries and starting dates of inclusion is given in the Appendix (Table A2).

4.) We exclude cases in which we do not observe private credit market access by sovereigns but in which we observe the private sector of that country borrowing internationally. It is very unlikely that the private sector has access to international credit markets while the sovereign remains credit constrained.

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[21] For example, Cantor and Packer (1996) study the determinants of spreads for sovereign bonds and bonds and syndicated loans respectively during the 1990s. Özler (1993) examines the impact of sovereign borrowers' previous repayment history on bank loans spreads for 26 developing countries between 1968-1981. Edwards (1986) studies bond spreads in 1976-80 and Eichengreen and Portes (1989) examine bonds issued in the 1920s. In a different approach, Lane (2000) studies the determinants of total debt stocks across countries. Some papers, such as Eichengreen and Mody (1998) and Dell'Ariccia, Schnabel, and Zettelmeyer (2002) model the decision of the borrower to issue debt separately in a selection equation. However, the possibility that one does not observe issuance because of strict credit rationing is not taken into account. There is an analogy to the censoring problem in the literature on credit rationing for firms: see Gelos and Werner (2002).
[22] See, for example, Lucas (1990).

5.) We aggregate the borrowing information by year. It is very plausible that a developing country would not want to borrow in a particular month or quarter either because it just has borrowed substantially or because it hopes to obtain better borrowing terms in the near future. However, it is more difficult to explain why a country would not want to borrow at all, neither through bank loans or bond issuances during the course of a whole year.

6.) We examine the possibility that countries substitute between private and official flows (poor countries may want to abstain from private capital markets if they can receive enough official funds at cheaper rates), finding no evidence for such a substitution. We find that, if anything, private and official capital flows seem to complement each other.

7.) We begin our study immediately after the outset of the widespread debt crisis triggered by the Mexican default of 1982. Therefore, we start our analysis just when most developing countries were excluded from credit markets. Those countries that continued to borrow in the early phase of the debt crisis are not very likely to be credit rationed in other periods. We therefore eliminate those countries from the sample in the panel regressions.

8.) In a first characterization of the data, we group countries according to their frequency of borrowing into three main groups. By forming these three groups on the basis of their borrowing record over a long time period, this comparison largely overcomes the problems associated with identifying nonborrowers as credit constrained.

9.) In our panel estimations, we control for time-varying aggregate factors such as world interest rates.

An alternative strategy would have been to try to estimate demand and supply curves separately, as done, among others, in Hajvassiliou (1987), Mody and Taylor (2002), or Kahras and Shihido (1991). We did not pursue this avenue. There are many methodological problems associated with such techniques, and no convincing solution has yet been proposed. For example, some models of credit rationing, such as the one in Stiglitz and Weiss (1981) do imply backward-looking supply curves, an issue which is typically ignored in the linear specifications used in the literature. In this light, for the present purpose we feel more confident with the strategy described here than with an econometric techniques that involves considerable model and specification uncertainties.

Figure 2 shows the dates of market access according to our definition, excluding the cases described in 1)-4) of the preceding section.

C. Estimation techniques

We first focus on cross-sectional differences. We divide our sample into three different groups according to their success in accessing the international credit during 1984-1998: countries that never had access during the period, (ii) countries that gain or regain access in the period but do not access the market all the time, and (iii) countries that nearly always had access during the period, borrowing frequently. We then examine whether there are significant

differences in identifiable country characteristics across these three groups. In an extension, we attempt to explain the number of times that countries tapped the markets over the entire sample period by observable country characteristics.

We then complement this analysis by a panel approach, where we control for time-varying factors and unobservable country characteristics and ask whether variations in country characteristics over time, in particular policies, help explain access.

IV. RESULTS

A. Cross-sectional comparisons

We first divide our sample of 143 developing countries in three different groups according to their success in accessing the international credit markets in the last two decades:

- **No access**: Strikingly, the group of countries that according to our definition never accessed international credit markets (*no access*) in the sample period is very large, with 51 countries, or more than a third of the total sample.
- **Occasional access**: Countries that gain or regain access in the period but do not manage to access the market all the time. Specifically, we included countries with less than 14 years of access (out of 18). Most countries (78) fall into this intermediate group.
- **Consistent access**: Countries that accessed during most years (at least 14 out of 18 years). Only 12 countries fall into this category.

Next, we compare the characteristics of the countries in the three groups to assess whether there are any discernible country characteristics that help to explain their differential ability to access the markets (Appendix, Table A3).[23] To test formally whether the explanatory variables are different across groups of countries, we carry out tests for the equality of means and medians and compute group pairwise non parametric Kruskal-Wallis tests on the equality of distributions for each of the explanatory variables (Appendix, Table A4).[24]

The formal comparisons show the following:

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[23] Since our premise is that access (which represents a flow) is the result of changes in the binding maximum credit ceiling for a country, they should strictly speaking be related to *changes* in the fundamentals. This presupposes, however, that we can precisely match each theoretical concept to an observable variable, which is not the case. In other words, some of our empirical variables could both be seen as proxying for levels as well as differences in the theoretical fundamentals. Therefore, in the following, we will –whenever relevant - discuss both the effects of levels and differences of the explanatory variables on access.

[24] As a comparison of means only may be misleading in the presence of large outliers.

- **Size.** The three groups clearly differ in the size of their economies. This is the only variable that is consistently significantly different in all comparisons (Figure 2).

- **Debt/Liquidity.** The stock of debt at the outset of the debt crisis is only significantly different between those countries that consistently accessed and those that never did (surprisingly it is higher for those that never did). There are no consistent differences in reserves coverage or in the ratio of exports to debt service. On arrears, there is only a significant difference between the "consistent access" (which had no arrears), and the other groups.

- **Vulnerability.** The results on differences in GDP per capita are not clear cut. However, the "always access" group has significantly lower GDP agriculture shares and output volatility than the other two groups. The volatility of terms-of-trade does not increase with market access frequency.[25]

- **Productivity/Solvency/Quality of policies.** Macroeconomic indicators such as GDP growth, inflation, and fiscal deficits are not consistently different across the three main groups. However, the CPIA index of macroeconomic policies and institutional quality is positively related to capital access. The results on resource abundance are mixed. Financial market development, as measured by the monetization of the economy, is not associated with more market access. The incidence of "state failures" is not significantly different across groups.

- **Links.** FDI investment does not appear to capture any links to the rest of the world that are relevant for market access (Figure 4). The evidence on trade openness contradicts theoretical predictions: the countries with consistent market access are the most closed.

- **Political risk.** While this variable is available for only a subset of countries, the comparison indicates that political risk index is significantly different between the "consistent access" and the other groups, with higher political risk associated with less access.

- **IMF programs.** Countries with no capital access are less likely to have an SBA-supported IMF program than countries with occasional or consistent access. Countries with no capital access do not have EFF programs; countries with no or little market access are more likely to have a PRGF. The latter is not surprising given that PRGF-type programs are not only limited to low-income countries with debt sustainability problems but also impose strict limits on external borrowing from the private sector.

- **Market perceptions.** Institutional Investor Ratings differ significantly across groups (Figure 3), with higher ratings being associated with higher access frequency.

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[25] The share of agriculture in GDP was found to be a statistically significant determinant of debt reschedulings in Berg and Sachs (1988).

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Figure 2. Access Frequency and Economic Size (GDP in US$)
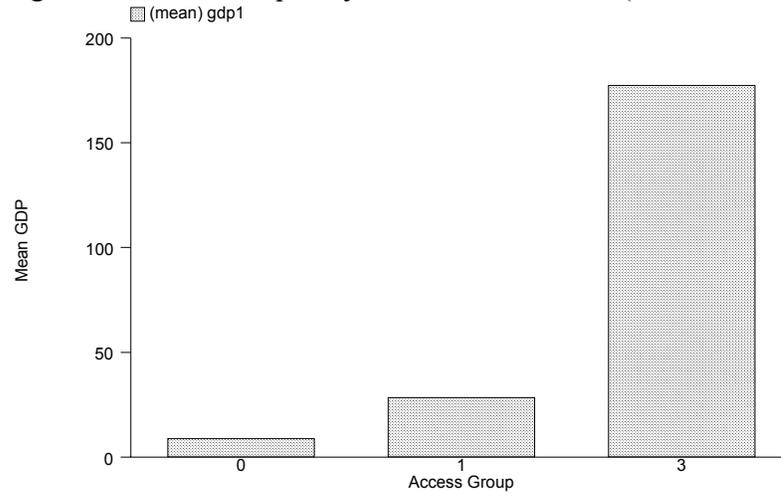
Figure 3. Access Frequency and Institutional Investor Rating
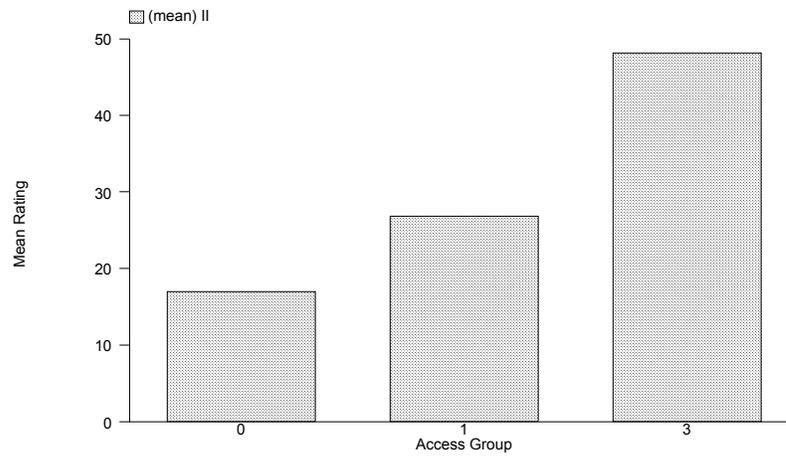
Figure 4. Access Frequency and FDI as a fraction of GDP
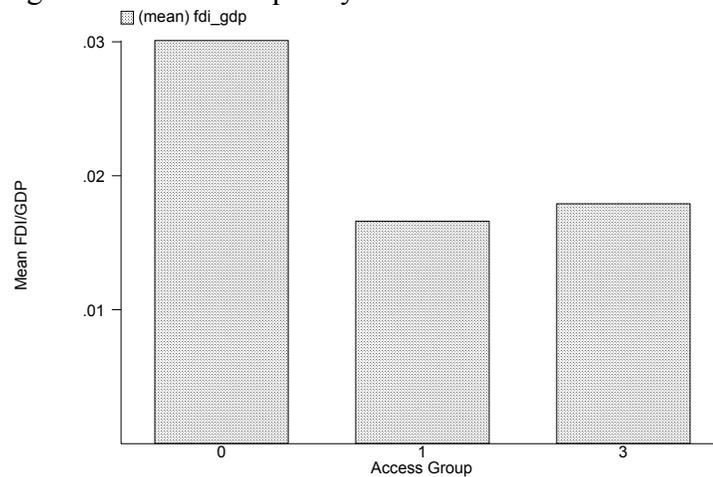
Most of these results are confirmed by simple Tobit regressions explaining access frequency across countries (Appendix, Table A5). The statistically significant variables were GDP, the share of agriculture in GDP, IMF programs (PRGF's with a negative sign), the ICRG Political Risk index, the CPIA policy quality index, the Institutional Investor rating, and the Transition and Africa dummies.

In Tobit estimations with more regressors, economic size, vulnerability, the quality of policies, and market perceptions continue to be significant (Table 2). We include GDP in all specifications and add successively those variables that had entered significantly in the simple specifications In Table A5. Size (measured by GDP) is significant at all conventional confidence levels in all specifications. Neither the transition nor the African dummy are consistently significant once additional control variables are included. Our measure of vulnerability, the share of agriculture in GDP, enters significantly negatively at the five or ten percent level in all but the last specification. The presence of IMF SBA and EFF programs has a significant positive effect on the frequency of access in all regressions except in specification (6). The quality of institutions and policy, as measured by the World Bank's CPIA index, enters significantly in all three specifications in which it is included.[26]

As for market perceptions, these can be suspected to be at least partly determined by similar variables as those included in the regression. Therefore, in order to separate the effects of those other variables from the unmeasured additional effect of market perceptions, we follow Eichengreen and Mody (1998) and Garibaldi, Mora, Sahay, and Zettelmeyer (2001) in including in the specification only the residual of a regression of market perceptions on the other variables in the regression.[27] The coefficient on market perceptions is significant and strongly improves the fit of the regression.[28]

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[26] None of the variables except for debt entered significantly in differences.

[27] For a study of the determinants of such ratings, see Haque, Mark, and Mathieson (2000). We cover the main variables identified in that study in our estimations.

[28] From Table 2, a direct comparison of pseudo R^2's is not possible given that the sample sizes differ across estimations. We therefore also estimated specification (5) without the market perceptions variable, obtaining a pseudo R^2 of 0.56 as opposed to 0.80 when including it.

Table 2. Determinants of Access Frequency (Tobit)
(Dependent variable: number of years during which capital market were accessed during 1980-2000)

	Variable	1	2	3	4	5	6
Size	GDP (billions US$)	**0.002**	**0.002**	**0.002**	**0.002**	**0.001**	**0.001**
		(5.14)	**(5.56)**	**(5.03)**	**(4.82)**	**(4.90)**	**(4.17)**
Transition Economies	Transition	0.236	0.240	0.237	0.158	0.097	-0.016
		(1.35)	(1.49)	(1.53)	(1.12)	(0.80)	(-0.11)
Africa	Sub-Saharan Africa Dummy	**-0.162**	-0.90	-0.061	-0.039	-0.099	**-0.140**
		(-2.53)	(-1.05)	(-0.72)	(-0.50)	(-1.51)	**(-2.11)**
Vulnerability	Share of agriculture in GDP	-	**-0.011**	**-0.008**	-0.005	**-0.005**	-0.004
			(-4.03)	**(-2.88)**	(-1.81)	**(-1.97)**	(-1.30)
IMF	SBA	-	-	0.91	0.879	0.434	0.224
				(3.12)	(3.20)	(1.96)	(1.02)
	EFF	-	-	1.93	1.895	0.885	0.882
				(1.95)	(2.11)	(1.30)	(1.35)
	PRGF	-	-	-0.58	-0.934	-0.858	**-1.204**
				(-0.85)	(-1.48)	(-1.54)	**(-2.15)**
Productivity/ Quality of Policies	CPIA	-	-	-	0.175	0.205	0.177
					(3.56)	(4.80)	(3.28)
Market Perceptions	Institutional Investor Index*	-	-	-	-	0.022	0.023
						(5.93)	(5.30)
Political Risk	ICRG Index	-	-	-	-	-	0.003
							(0.79)
	No. of obs.	139	135	135	130	90	81
	Pseudo R^2	0.18	0.29	0.36	0.44	0.80	0.91

Note: T-statistics are given in parentheses. *Residual of a first-stage regression of the Institutional Investor Index on the other explanatory variables in the regression.

B. Panel regressions

The previous sections highlighted the key dimensions by which frequent and infrequent accessors differ. However, these exercises do not allow us to control for time-varying factors, such as worldwide economic conditions. Moreover, they do not give us much information about what changes within countries allow countries to access the markets after periods of exclusion. More generally, simple cross-sectional comparisons are subject to various inference problems; for example, one needs to assume that any omitted country characteristics are uncorrelated with the errors.

Here, we carry out panel data estimations which should help shed further light on our questions. We experiment with pooled, random effects, and fixed effects models. Each of these techniques has its advantages and drawbacks. Pooled estimation does not allow to control for unobserved country effects. The fixed effects logit model (following Chamberlain, 1980) has the disadvantage that only countries for which we observe a switch in our dependent variable can be included in the estimation. This would discard all information contained in the sizeable group of countries that never accessed the capital market. Moreover, in fixed effects estimations one

cannot assess the impact of any non-time-varying country characteristics. By contrast, a random-effects logit model would use information from all countries in the sample.[29]

In the following, we will therefore center our discussion around the random-effects model. Wherever the results differ substantially, however, we will also refer to the other estimations, whose results are provided in the Appendix. We add time effects to all estimations to control for global conditions. In all these three estimations, we include only countries that did not access the markets in the two years following the outset of the debt crisis, 1983 or 1984. The argument here is that those countries that continued to access international credit markets after the outset of the debt crisis are unlikely to be financially constrained. Except for GDP, the African and Transition dummies, and State Failures (variables which can be considered as exogenous to market access in a given year), we use lagged values of the explanatory variables to overcome endogeneity problems.

We first run simple random-effect logit regressions with time dummies and including one extra variable at a time in addition to GDP (Appendix, Table A5). Size, vulnerability (as measured by the share of agriculture in GDP), IMF program dummies, the quality of policies, and market perceptions enter significantly in addition to the African and transition dummies. None of the liquidity variables turns out to be significant. Regarding solvency/productivity variables, neither export growth, GDP growth, natural resource indicators, or terms-of-trade changes affect the probability of market access. The same is true for inflation and the deviation of the real exchange rate from its five-year average and for the links-to-the-world indicators.[30] Surprisingly, we do not find evidence that a default in the previous year affects market access – the coefficient on the default variable is negative but not statistically significant at conventional confidence levels. When including differenced values of the variables, only the change in inflation and changes in the Institutional Investor index enter significantly.

In estimations with more explanatory variables, size, and vulnerability remain consistently significant as predictors of market access. From each category of variables, we focus again on those that were individually significant at the five percent level in simple regressions with two explanatory variables in Table A5. Table 3a presents the results for 8 different regressions with those variables. Size, as measured by GDP, is significant at the five percent confidence level in all regressions. Except for specification (8), this is also true for the transition country dummy. Similarly, when included, our vulnerability measure (the share of agriculture in GDP) has a negative, statistically significant effect on market access. Interestingly, including the vulnerability proxy also renders the Africa dummy statistically insignificant.

The quality of policies and institutions also clearly matter. While the coefficient on inflation is not consistently significant, our broader policy measure, the CPIA index, is. Since the

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[29] See McKenzie (2002) for a discussion of these issues in an econometric analysis of country creditworthiness.

[30] The irrelevance of trade openness is in line with Grigorian (2003) who examines first bond issuances.

CPIA index may be partly a function of the inflation, we include the residual from a regression of the CPIA index on the log of inflation in the regression.[31]

Market perceptions (as reflected in the Institutional Investor ratings) seem to play a crucial rule; for IMF programs, the evidence is more ambiguous. The coefficient on SBA's is not significant, once the quality of policies (as measured by the CPIA) is controlled for. However, this needs to be qualified by noting that perceptions of policy and institutional quality are themselves likely to be influenced by the adoption of an IMF program. In fact, when including only the residual of the CPIA index from a regression of the index on the IMF program dummies, the coefficient on SBA programs remains significant at the five percent level and that on EFF programs at the ten percent confidence level. We cannot reach a definitive conclusion, however, since the causality could also go the other way (i.e. from policies to Fund programs). The negative effect of PRGF programs remains even after controlling for vulnerability. Market perceptions continue to matter, measuring something above and beyond the other factors included.[32] When adding our political risk measure to specification (7), it does not enter significantly. When running the regressions with differences in explanatory variables, changes in inflation and investor perceptions remained significant determinants of market access (Table 3b), and the associated coefficients were somewhat higher.

How good is the fit of these regressions? In order to evaluate the goodness-of-fit of our estimations, we computed the number of times the models correctly predict zeroes and ones. We use the overall in-sample probability of access of 0.176 as the cut-off point: if the model predicts a probability above 0.176, we interpret it as predicting a "1" (market access). As can be seen in Table 3a and 3b, with this cut-off probability, the Type I error (failure to predict access) is large initially and then drops considerably when adding explanatory variables. For example, specification (7) correctly predicts market access in 75 percent of the cases. The Type II error (failure to predict no market access) is quite small across specifications 1-5, but rises in specification 8. The fit is somewhat worse for regressions in differences (Table 3b).

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[31] The quantitative effects of changes in policies are hard to evaluate in such a model. However, the size of the effect are nonnegligible. An from mean CPIA index levels by one standard deviation, evaluated at mean values, would lead to an increase in the predicted probability of access by about 9 percent.
[32] Again, as in the previous section, we include the residual of the Institutional Investor rating on the other explanatory variables of the specification in the regression.

Table 3a. Determinants of Access: Random-Effect Logit Model with Time Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GDP	0.012 (3.09)***	0.020 (4.02)***	0.020 (3.77)***	0.018 (3.15)***	0.019 (2.52)**	0.056 (4.28)***	0.041 (3.52)***	0.029 (2.32)**
Trans. Dummy	2.552 (6.34)***	2.477 (5.37)***	2.277 (4.25)***	1.900 (3.73)***	2.370 (3.70)***	2.514 (3.50)***	3.067 (3.06)***	1.918 (1.69)*
Africa Dummy	-0.776 (2.02)**	0.377 (0.82)	0.479 (0.90)	-0.101 (.)	-0.052 (0.09)	0.556 (1.04)	0.751 (1.03)	-0.586 (0.72)
Agric./GDP		-0.084 (5.88)***	-0.072 (4.89)***	-0.071 (3.86)***	-0.067 (4.18)***	-0.068 (3.23)***	-0.064 (2.76)***	-0.067 (2.21)**
IMF: SBA			0.837 (2.84)***	0.855 (2.61)***	1.082 (3.46)***	0.610 (1.67)*	0.055 (0.12)	0.308 (0.62)
IMF: EFF			2.130 (3.23)***	2.145 (3.18)***	2.121 (3.04)***	1.018 (1.27)	1.693 (1.42)	2.034 (1.39)
IMF: PRGF			-0.451 (1.13)	-0.466 (1.15)	-0.462 (1.11)	-0.747 (1.70)*	-2.041 (3.25)***	-1.863 (2.95)***
State Failure				-0.171 (0.41)	0.272 (.)	0.351 (0.79)	0.575 (1.07)	1.883 (2.25)**
Ln(Inflation)					-0.176 (1.94)*	-0.132 (1.11)	-0.424 (2.78)***	-0.406 (2.44)**
CPIA Index#						0.765 (2.54)**	1.464 (4.13)***	1.388 (3.06)***
Inst. Inv. Score##							0.149 (4.27)***	0.121 (3.10)***
ICRG Pol. Risk								0.067 (1.62)
Observations	1409	1311	1311	1311	1215	1039	590	468
No. of countries	105	104	104	104	104	100	60	52
No. of access in subsample	267	262	262	262	248	207	186	165
O/w predicted	127	143	152	158	144	133	140	130
Type I error (%)	52.4	45.4	42.0	39.7	41.9	35.7	24.7	21.2
No. of zeroes in subsample	1142	1049	1049	1049	967	832	404	303
O/w predicted	996	940	963	949	876	761	355	250
Type II error (%)	12.8	10.3	8.1	9.5	9.4	8.5	12.1	17.5

Notes: Dependent variable is equal to one if the country issued a sovereign or publicly guaranteed bond or received a public or publicly guaranteed syndicated loan. Years of Brady deals were excluded. The regressions include time dummies (not shown). #Residual of a regression of the CPIA index of ln(Inflation). ##Residual of a regression of the Institutional Investor Index on the other variables included in the regression. All explanatory variables except for transition and Africa dummies are lagged one year.

Table 3b. Determinants of Access: Random-Effect Logit Model with Time Effects, using Differences of Explanatory Variables

	(1)	(2)
Transition Dummy	2.758	3.056
	(4.50)***	(2.67)***
Africa Dummy	-0.557	-1.016
	(1.08)	(1.43)
IMF: SBA	0.872	0.325
	(2.61)***	(0.73)
IMF: EFF	1.924	2.074
	(2.41)**	(1.67)*
IMF: PRGF	-0.569	-1.343
	(1.20)	(2.46)**
State Failure	-0.807	-0.926
	(.)	(2.01)**
ΔInflation#	-0.225	-0.229
	(2.07)**	(1.68)*
ΔInst. Investor Score ##		0.325
		(4.20)***
Observations	1191	651
No. of countries	104	62
No. of access in subsample	238	210
O/w predictred	107	145
Type I error (%)	55.0	30.1
No. of zeroes in subsample	953	441
O/w predicted	859	324
Type I error (%)	9.9	26.5

Notes: Dependent variable is equal to one if the country issued a sovereign or publicly guaranteed bond or received a public or publicly guaranteed syndicated loan. Years of Brady deals were excluded. The regressions include time dummies (not shown). #Residual of a regression of the CPIA index of ln(Inflation). ##Residual of a regression of the Institutional Investor Index on the other variables included in the regression. All explanatory variables except for transition and Africa dummies are lagged one year.

Table 4 sheds more light on the question of how long it takes countries to regain market access after defaults. The median number of years it takes countries to tap the markets after default has fallen from six years in the 1980's to zero in the 1990's (for more details, see Table A10). The decade of the eighties was of course marked by the debt crisis, an effect captured by our time dummies in the regressions. These statistics, together with the results from our panel estimations seem to contradict a common perception that defaults result in very prolonged loss of market access; they are, however, in line with the results of various studies examining the historical evidence on the costs of default.[33]

Table 4. Default and Resumption of Access

		Years until resumption	Gross private capital flows (% of GDP) in 2 years prior to default	Gross private capital flows (% of GDP) in 2 years after default
1980's	Mean	5.4	7.9	6.9
	Median	4.0	5.7	6.0
1990's	Mean	0.9	8.8	10.1
	Median	0.0	6.5	10.7

Note: Covers 1980-1999, including only countries that regained access during that period. Access is defined as issuance of public or publicly guaranteed bond or syndicated loan. (Source: Bondware, Loanware).Year of default is defined as year in which the sovereign defaulted on foreign-currency debt according to Standard & Poor's (Source: Beers and Bhatia, 1999). Source for gross private capital flows: WDI. Data starts in 1980; for default years 1981, the data shown are numbers for 1980 instead of two-year averages. Number of defaults in 1980's: 49. Number of defaults in 1990's: 12.

Robustness

Substitution of private and official flows

Do governments substitute private with official capital flows? Substitution between official and private capital flows may represent a potential problem for our approach, particularly for poor countries. During periods in which unusually large official sector financing is available, sovereigns may purposely abstain from tapping private capital markets, and the corresponding zero in our binary variable would not reflect a binding credit constraint. In order to investigate this possibility, we computed the mean of official finance flows as percentage of GDP over time. We then asked whether during (or immediately following) periods of higher-than-average official flows, our access variable is more likely to show a zero. This is not the case. On the contrary, it is more likely to observe a zero, when official flows are below normal (Table 4). A different way of looking at this issue is regressing the volume of private capital

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[33] See, for example, Eichengreen (1989), Lindert and Morton (1989), or Jorgensen and Sachs (1989). For an examination of how a country's default history matters for its crisis vulnerability, see Reinhart, Rogoff, and Savastano (2003).

flows on official flows (as shares of GDP). Such a regression with fixed country effects and time effects produces a *positive* and statistically significant coefficient on the official financing variable (t-statistic= 3.07), indicating that, if anything, there is *complementarity* between official and private flows.

Table 5. Relation between official flows and probability of observing no access

	# of zeroes
Official flows > country average	677
Official flows < country average	862
Lagged official flows < country average	743
Lagged official flows < country average	796

Similarly, when including the lagged deviation of net official flows from the country mean in a random-effect logit regression similar to those in Table A3, the coefficient is insignificant, while it is positive and significant (t-statistic =2.07) if the variable is included contemporaneously.

Fixed effects

The main results remain unaltered when using fixed instead of random effects (Appendix, Table A7). The importance of policies increases somewhat; the inflation variable is now significant in all cases where it is included and has larger coefficients. Similarly, the effect of the CPIA index remains largely unchanged. Country size (GDP) and the vulnerability measure (share of agriculture in GDP) loose statistical significance once we control for policies; this is not unexpected, since the fixed effects should absorb most of the country characteristics that changes slowly over time. The results for IMF programs are unchanged.

The fact that the significance of GDP disappears with fixed effects (together with the lack of significance of GDP growth in the earlier regressions) points to the notion that country size matters because there are fixed costs associated with borrowing in the form of sovereign bond issuance or syndicated loans. If there were no fixed costs, *increases* in GDP should be associated with increased access to borrowing; however, we should not observe small countries borrowing less frequently than large ones. The latter can only be explained with some form of indivisibility or fixed cost.

State dependence

There are two reasons why a country that has had market access yesterday may be more likely to gain market access today. First, countries might differ in certain characteristics that persist over time. Alternatively, it is possible that gaining market access at some point per se fundamentally changes the likelihood of the country to tap the markets again. This is sometimes referred to as the difference between "spurious" and "true" state dependence (Heckman, 1981).

Testing for the difference between spurious and true state dependence is not trivial in the presence of heterogeneity. Chamberlain (1978) suggested a simple test of the null of no state dependence by testing whether the including lagged independent variables without including lagged dependent variables significantly changes the probability of the event. (see also Hsiao, 1986, and McKenzie, 2002). We carried out this test, and the results varied somewhat depending on the exact specification. For this reason, we also present the results of estimations that allow for state dependence by including a lagged dependent variable (Table A8).

While in these estimations, the coefficient on the lagged dependent variable is always significant, the other main results are not changed. The main difference is that inflation looses its statistical significance in three out of four cases. Market perceptions also become somewhat less important. The predictive power of the regression improves somewhat through the inclusion of the lagged dependent variable: for example, in specification (6), the Type I error falls from 35.7 percent to 27.5 percent. However, the Type II error increases from 8.5 percent to 9.5 percent.

Aggregating over two years

While it is unlikely that a developing country would want to voluntarily abstain from any form of sovereign borrowing over the course of a full year, such an abstention is even less likely over a two-year period. We therefore also run regressions aggregating the data over two years (Appendix, Table A9). The results are very similar. The only relevant difference is that coefficient on inflation is not significant I specifications (7) and (8), as it was in Table 3.

C. Conclusions

Our analysis revealed eight regularities that are robust to estimation techniques:

1) Governments of larger countries are more likely to gain access to international credit markets in the form of syndicated loans or bonds. This seems to reflect mainly the presence of fixed costs associated with this form of borrowing.

2) The perceived quality of policies and institutions matters substantially. In addition, there is an additional element of "market perceptions" which extends beyond simple measurable country characteristics.

3) Countries that are more vulnerable to shocks are less likely to tap international credit markets.

4) Standard liquidity indicators such as reserve coverage do no help in predicting market access; the same is true for most standard indicators of macroeconomic policies.

5) Contrary to predictions from the theory of sovereign borrowing, a country's links with the rest of the world (such as FDI or trade openness) do not increase market access.

6) Once the perceived quality of policies is controlled for, we do not find an catalytic effect of IMF SBA or EFF programs. This has to be qualified by the fact that the perception of policies themselves are likely to be affected by the presence of an IMF program. By contrast, PRGF programs negatively affect the probability of market access.

7) The probability of market access is not significantly influenced by a default in the previous year. In the 1990's, countries that defaulted did not experience an interruption in their market access.

8) Once we control for country vulnerability, there is no evidence for an adverse "Africa" effect on market access.

The results give mixed messages to policymakers in developing countries: while good policies clearly improve chances of accessing the markets, small countries are at a structural disadvantage in the use of more sophisticated debt instruments, restricting their flexibility.

Further work should examine these results in more detail, complementing our cross-country approach with case studies. Finally, we should end with a reminder that our work is entirely positive, not normative. In other words, we do not discuss the broader question whether it is per se desirable for developing countries to substantially increase sovereign borrowing.[34]

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[34] Reinhart, Rogoff, and Savastano (2003) show that many developing countries experience extreme duress at debt levels that would seem manageable by advanced country standards.

APPENDIX I

GDP

For GDP in current US dollars, as for all other macroeconomic variables, we use data from the World Bank's World Development Indicators database (WDI). We complete the WDI series, when possible[35] with data from the IMF's World Economic Outlook (WEO) database and data from IMF country desks.

Productivity/Solvency

To capture the macroeconomic situation, we include GDP growth and inflation. We account for the existence of natural resources such as mines and fuel reserves by looking at mining and quarries and as well as the share of fuel production in exports. In order to further measure the quality of government policies and institutions, we use yearly data from the World Bank's Country Policy and Institutional Assessment database (CPIA). The index summarizes assessments on twenty scores in the areas of economic management, structural policies, policies for social inclusion, and public sector management and institutions. To capture the size of the financial sector, we use the ratio of M2 to GDP. Wars and civil conflicts obviously adversely affect a country's productivity, and we construct a war dummy variable based on data from the KOSIMO (2003) website to account for conflicts; since there are many cases of minor conflicts, we only set this dummy variable equal to one if the conflict produced at least 1,000 casualties. We also use the data set on "State Failures" from the State Failure Task Force (http://www.cidcm.umd.edu/inscr/stfail/): we construct a dummy which equals one in the case of civil wars, major regime transitions, breakdowns of social order, or major ethnic conflicts. Other variables that we use to measuring the solvency of a country are (in addition to total debt) interest payments, international reserves in months of imports, and the ratio of debt service to exports.

Political Stability

In order to measure political instability, we use the International Country Risk Guide's index of political risk.

Links to the world

The ratio of FDI to GDP, similarly as a the traditional measure of trade openness (the sum of exports and imports divided by GDP) are intended to capture the potential cost of sanctions or reputation spillovers.

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[35] We checked the consistency of the series from the different sources, combining the series only when they were consistent.

GDP volatility and vulnerability to shocks

To measure a country's vulnerability to shocks, we include the share of agriculture in GDP, the standard deviation of GDP growth (measured as a 10-year moving average), GDP per capita, and the standard deviation of the terms-of-trade (20-year moving average). Good terms-of-trade data are hard to come by. Here, we use a comprehensive, high-quality database compiled by Cashin and Pattillo (2000), which is largely based on World Bank data.

Existing debt stock and default

We use data on the total existing debt stock from the World Bank's Global Development Finance Database (GDF). We define default as an event in which there was a default by sovereigns on foreign-currency non-official bond or bank debt, as defined by Standard & Poor's and reported in Beers and Bhatia (1999). Standard & Poor's consider as a default any missed payment or a renegotiation with a reduction in the net preset value of the debt.

World factors

We control for the global environment using time effects in the estimation. Alternatively, we explicitly include the 6 months LIBOR in real terms, the average GDP growth rate for the G7 countries and total flows of bonds and bank loans to the public sector of developing countries.

IMF programs

IMF programs should be expected to have a catalytic effect for capital flows.[36] We differentiate between three types of programs: Stand-By Arrangements (SBAs), Extended Fund Facilities (EFFs), and Poverty Reduction and Growth Facilities (PRGFs). SBA's are usually one to two-year programs. EFFs are economic programs that generally run for three years and are aimed at overcoming balance of payments difficulties resulting from macroeconomic and structural problems. PRGFs were originally established as the Enhanced Structural Adjustment Facility (ESAF) in 1987, enlarged and extended in 1994, and further strengthened in 1999 to make poverty reduction a key and more explicit element. The purpose of the facility is to support programs to strengthen balance of payments positions, and to foster durable growth, leading to poverty reduction. Eighty low-income countries are currently PRGF-eligible. Loans are disbursed under three-year arrangements. Conditions are concessional. PRGF-supported programs contain strict limits on private capital borrowing. We experiment both with dummies that are equal to one throughout the duration of the program and dummies that are set to one only at the beginning year of the program.

Transition economies

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[36] See Mody and Saravia (2003) for a careful examination of this issue.

To account for the fact that the newly opened former communist economies had specific characteristics that differentiated them from other economies, we create a dummy variable which is equal to one for transition economies after their opening up or newly found independence.

Market perceptions

To measure market perceptions, we use the annual average of the biannual country rating published Institutional Investor. These ratings are based on assessments obtained from the staffs of about 100 large commercial banks. Ratings are given on a range from zero to 100, where 100 represents the smallest probability of default.

Table A1. Date of Inclusion of (Formerly) Communist/Socialist Countries

Country	Date of Inclusion in Sample
Albania	1990
Armenia	1991
Azerbaijan	1991
Belarus	1991
Bosnia and Herzegovina	1992
Bulgaria	1985
Burkina Faso	1991
Cape Verde	1991
China	1982
Congo	1989
Croatia	1991
Czech Republic	1993
Egypt	1980
Eritrea	1992
Estonia	1991
Georgia	1991
Guinea-Bissau	1985
Guyana	1992
Hungary	1980
Kazakhstan	1991
Kyrgyz Republic	1991
Lao PDR	1992
Latvia	1991
Lithuania	1991
Macedonia, FYR	1992
Madagascar	1993
Mali	1992
Moldova	1991
Mongolia	1990
Poland	1980
Romania	1980
Russian Federation	1991
Rwanda	1989
Seychelles	1992
Slovak Republic	1993
Slovenia	1991
Somalia	1990
Syria	1983
Tajiskistan	1991
Togo	1990
Turkmenistan	1991
Ukraine	1991
Uzbekistan	1991
Vietnam	1986
Zambia	1990

Table A2. Market access by country

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
China																					
Colombia																					
Hungary																					
India																					
Korea, Rep.																					
Malaysia																					
Thailand																					
Brazil																					
Indonesia																					
South Africa																					
Turkey																					
Mexico																					
Argentina																					
Bahrain																					
Cyprus																					
Pakistan																					
Trinidad and Tobago																					
Venezuela, RB																					
Philippines																					
Chile																					
Morocco																					
Tunisia																					
Algeria																					
Jordan																					
Poland																					
Sri Lanka																					
Angola																					
Israel																					
Papua New Guinea																					
Romania																					
Bulgaria																					
Uruguay																					
Egypt, Arab Rep.																					
Former U.S.S.R.																					
Ghana																					
Vietnam																					
Cote d'Ivoire																					
Czech Republic																					
Peru																					
Russian Federation																					
Slovak Republic																					
Slovenia																					
Estonia																					
Jamaica																					
Kenya																					
Lebanon																					
Lithuania																					
Croatia																					
El Salvador																					

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Iraq				■	■	■	■		■	■	■										
Kazakhstan													■		■	■	■			■	■
Latvia														■	■	■	■	■	■		
Mauritius				■		■				■	■				■						■
Costa Rica	■													■				■	■	■	
Ecuador	■							■					■			■		■			
Iran, Islamic Rep.												■	■			■		■			■
Nigeria	■	■	■	■	■					■											
Yugoslavia, Fed. Rep.	■	■	■	■					■	■											
Bangladesh		■	■	■					■		■										
Cameroon		■	■						■		■						■				
Congo, Dem. Rep.									■	■		■				■					■
Guatemala		■														■		■			
Seychelles		■			■													■			■
Ukraine														■				■	■		
Uzbekistan															■	■				■	
Zambia												■	■					■			
Zimbabwe	■												■							■	
Gabon				■		■			■												
Macedonia, FYR																	■	■	■		
Paraguay			■	■												■					
Tanzania	■								■					■							
Fiji							■			■											
Guinea-Bissau					■							■									
Kyrgyz Republic														■		■					
Lesotho												■						■			
Mada-gascar	■								■												
Moldova																	■				
Niger	■		■																		
Turkmenistan																■			■		
Yemen, Rep.							■							■							
Benin								■													
Chad		■																			
Congo, Rep.															■						
Dominican Republic		■																			
Guam								■													
Guinea				■																	
Honduras															■						
Mozambique														■							
Rwanda									■												
Senegal																		■			
Somalia										■											
Sudan													■								
Suriname								■													
Syrian Arab Republic			■																		
Tajikistan																			■		
Afghanistan																					
Albania																					

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Antigua and Barbuda																					
Armenia																					
Azerbaijan																					
Belarus																					
Belize																					
Bhutan																					
Bolivia																					
Bosnia and Herzegovina																					
Botswana																					
Brunei																					
Burkina Faso																					
Burundi																					
Cambodia																					
Cape Verde																					
Central African Republic																					
Djibouti																					
Equatorial Guinea																					
Eritrea																					
Gambia, The																					
Georgia																					
Grenada																					
Guyana																					
Haiti																					
Kiribati																					
Korea, Dem. Rep.																					
Lao PDR																					
Liberia																					
Libya																					
Malawi																					
Mali																					
Mauritania																					
Mongolia																					
Myanmar																					
Namibia																					
Nepal																					
New Caledonia																					
Nicaragua																					
Samoa																					
Sierra Leone																					
St. Kitts and Nevis																					
St. Lucia																					
Swaziland																					
Togo																					
Tonga																					
Uganda																					
Vanuatu																					

Table A3. Means and Medians

		No access			Occasional access			Consistent access		
	Variable	*N*	**Mean**	**Median**	*N*	**Mean**	**Median**	*N*	**Mean**	**Median**
Size	GDP (bill. US$)	*49*	8.9	1.4	*78*	27.0	8.4	*11*	204.3	131.5
Debt/Liquidity	Total Debt 1981/GDP (%)	*32*	47	33	*49*	48	41	*10*	26	26
	Exports/Debt Service	*44*	56.4	16.1	*71*	112.8	7.3	*12*	6.02	3.9
	Reserves/months of Imports	*46*	3.4	2.6	*74*	3.0	2.7	*12*	4.0	3.7
Volatiliy/ Vulnerability	GDP per capita (US$)	*49*	1665	729	*77*	1874	1268	*11*	2099	2327
	Agriculture/GDP (%)	*49*	29	29	*74*	21	18	*12*	15	15
	Std. dev. GDP growth (10yrs)	*51*	6.0	4.8	*77*	5.7	5.1	*12*	3.4	3.5
	Std. dev. Terms of Trade (20 yrs)	*26*	98.4	110.7	*51*	91.9	109.0	*9*	66.3	89.2
Productivity/ Solvency	GDP growth (%)	*49*	3.3	3.1	*77*	1.9	2.3	*11*	4.5	4.5
	Mining/GDP	*29*	0.06	0.01	*59*	0.06	0.03	*12*	0.05	0.04
	Fuel exports/Total exports	*36*	3.2	0.1	*68*	7.0	1.6	*11*	3.4	1.4
	Export growth (%)	*52*	9.0	6.0	*76*	7.0	7.0	*12*	10.0	10.0
	Inflation (%)	*49*	121.4	9.8	*77*	115.9	21.3	*12*	68.1	12.8
	Fiscal deficit/GDP (%)	*22*	3	3	*45*	4	3	*10*	3	3
	Arrears/Tot. Debt	*44*	0.03	0.01	*72*	0.04	0.02	*12*	0.00	0.00
	CPIA	*49*	2.79	2.91	*73*	2.97	2.96	*12*	3.80	3.70
	"State Failures"	*52*	0.15	0.00	*80*	0.22	0.00	*12*	0.35	0.03
Links to World	FDI/GDP	*45*	0.03	0.01	*74*	0.02	0.01	*11*	0.01	0.01
	Openness (Exp+ Imp/GDP)	*49*	0.84	0.82	*77*	0.73	0.69	*11*	0.55	0.43
Political Risk	ICRG Index of Political Risk	*25*	53.5	52.7	*67*	56.7	58.0	*12*	63.0	64.4
Market Perceptions	Institutional Investor Rating	*23*	16.3	16.6	*66*	26.8	26.6	*11*	48.2	47.4
IMF	SBA (% of yrs)	*51*	0.06	0.06	*80*	0.13	0.11	*12*	0.11	0.08
	EFF (% of yrs)	*51*	0.00	0.00	*80*	0.02	0.00	*12*	0.03	0.00
	PRGF (% of yrs)	*51*	0.05	0.00	*80*	0.03	0.00	*12*	0.00	0.00

Table A4. Tests of Equality of Means, Medians, and Population Distributions Across Groups

		Mean (Welch test)			Median			K-test		
		0-1	1-3	0-3	0-1	1-3	0-3	0-1	1-3	0.3
Size	GDP (billions US$)	**	**	**	**	**	**	**	**	**
Debt/ Liquidity	Total Debt 1981/GDP		**	**		**	**		**	**
	Exports/Debt Service		**	**	**		**	**	**	**
	Reserves/months of Imports		*			*		**	**	**
Vulnerability	GDP per capita (US$)				**	*	*	**		**
	Agriculture/GDP (%)	**	**	**	**		**	**		**
	SD GDP growth		**	**		**	**	*	**	**
	SD TOT		**	**		*	**		**	**
Productivity/ Solvency/Quality of Policies	GDP growth (%)	*	**		*	**		*	**	
	Mining/GDP									
	Fuel exports/GDP	**	*		**		**	**		**
	Export growth		**						*	
	Inflation (%)				**			**		
	Fiscal deficit/GDP									
	Arrears/total debt		**	**		**	**		**	**
	CPIA		**	**		**	**		**	**
	"State Failures"									
Links	FDI/GDP			*						
	Openness (Exp.+ Imp./GDP)	*		**	*	*	*		**	**
Political Risk	ICRG Political Risk Index		**	**					*	**
Market Perceptions	Institutional Investor Rating	**	**	**	**	**	**	**	**	**
IMF	SBA	**		*	**		**	**		*
	EFF	**		**	**		**	**		**
	PRGF		**	**		**	**		**	**

Group 0 = No access, Group 1 = Occasional access, Group 3 = Consistent access
** different at 5% significance level, * different at 10% significance level

Table A5. Determinants of access frequency (Tobit)
(Dependent variable: number of years during which capital market were accessed during 1984-2000)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Size	GDP	0.003	0.003	0.003	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003
		(5.77)**	(6.43)**	(5.88)**	(5.35)**	(5.67)**	(5.37)**	(5.09)**	(5.70)**	(6.10)**	(5.80)**	(5.68)**
	Total Debt 1981	-0.039										
		(0.29)										
	Exports/Debt Service		0.000									
			(0.94)									
	Export Growth											-0.674
												(1.40)
	Fuel Exports/Total Exports										0.003	
											(1.11)	
	mining_gdp									0.388		
										(0.82)		
	gdpgrowth								-0.014			
									(1.23)			
Vulnerability	totstdev20							-0.002				
								(1.38)				
	stddevgrowth10						-0.01					
							(1.18)					
	wdiagric_gdp					-0.01						
						(4.83)**						
	Gdppc1				0.000							
					(1.70)							
Liquidity	resmonthimpo			0.01								
				(0.53)								
	Observations	91	125	130	139	135	138	84	139	99	117	137

Absolute value of t statistics in parentheses
* significant at 5%; ** significant at 1%

Table A5. Determinants of access frequency (Tobit) (cont'd)

		(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Size	GDP	0.003 (5.82)**	0.003 (4.70)**	0.003 (6.34)**	0.002 (5.83)**	0.002 (5.31)**	0.003 (5.98)**	0.003 (5.45)**	0.002 (4.42)**	0.002 (5.67)**	0.002 (4.79)**	0.002 (4.94)**	0.003 (5.70)**	0.002 (5.03)**	0.001 (2.88)**
	Ln (inflation)	0.047 (1.34)													
	Deficit/GDP		0.700 (0.51)												
Market Perceptions	Institutional Investor														0.022 (10.21)**
	Africa Dummy													-0.261 (3.11)**	
	Transition Dummy												0.384 (2.24)*		
IMF	PRGF											-2.051 (2.95)**			
	EFF										3.997 (3.66)**				
	SBA									1.174 (3.48)**					
	ICRGPol. Risk								0.013 (3.69)**						
	Openness							0.061 (0.51)							
	FDI/GDP						-0.672 (0.57)								
	State Failure					0.201 (1.64)									
	CPIA				0.244 (4.54)**										
	Arrears/Debt			-1.228 (1.87)											
	Observations	138	78	126	131	139	131	138	103	139	139	139	139	139	97

Table A6. Determinants of Access: Random-Effect Logit Model with Time Effects

Category	Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Size	GDP	0.016 (5.57)**	0.014 (2.67)**	0.020 (4.29)**	0.017 (5.54)**	0.066 (7.74)**	0.051 (6.69)**	0.033 (5.58)**	0.016 (5.34)**	0.070 (8.81)**	0.066 (6.64)**	0.084 (5.57)**	0.073 (5.80)**	0.072 (6.21)**	0.073 (6.72)**	0.075 (5.86)**	0.015 (4.92)**	0.016 (5.61)**
Solvency / Quality of policies	Default																	-0.900 (-1.36)
	State Failure																-1.386 (3.90)**	
	CPIA Index															1.862 (2.20)*		
	ΔCPIA Index														0.025 (0.08)			
	Fiscal balance/GDP													-6.852 (1.82)				
	ΔFiscal balance/GDP												-4.841 (-1.31)					
	Fuel exp./Total exp.											-0.015 (1.56)						
	Change in TOT										-1.116 (0.79)							
	REER deviation									-0.179 (0.32)								
	GDP growth								0.012 (0.86)									
	ln(Inflation)							-0.28 (-3.36)**										
	Δln(inflation)						-0.257 (-2.38)											
Vulnerability	Mining/GDP					3.060 (1.38)												
	10-yr. st. dev GDP growth				0.010 (0.23)													
	Share of agr. In GDP			-0.081 (5.35)**														
	GDP per cap.		0.000 (0.65)															
	No. of obs.	1428	1413	1330	1314	971	1186	1377	1401	1218	835	574		478	1146	1094	1428	1428
	No. of countries	105	105	104	105	65	103	104	105	94	57	79		50	100	101	105	105

Absolute value of z statistics in parentheses. * significant at 5%; ** significant at 1%

Table A6 (cont'd). Determinants of Access: Random-Effect Logit Model with Time Effects

		(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
Size	GDP	0.084 (7.21)**	0.083 (7.11)**	0.034 (6.12)**	0.034 (6.00)**	0.087 (8.63)**	0.016 (5.41)**	0.018 (.)	0.016 (5.76)**	0.020 (.)	0.015 (5.17)**	0.016 (.)	0.012 (3.69)**
Openness	FDI/GDP					0.540 (0.24)							
	(Imp+Exp)/GDP						-0.048 (0.12)						
Market Perceptions	Instit. Inv. Index												0.215 (8.64)**
	ΔInst. Inv. Index											0.343 (5.13**)	
IMF	PRGF										-1.043 (3.07)**		
	SBA									0.901 (3.35)**			
	EFF								2.092 (3.22)**				
Political Risk	ICRG Pol.Risk							0.107 (5.54)**					
Liquidity	Reserves/mths. of imp.	-0.070 (0.13)											
	ΔReserves/mths. of imp.		0.027 (0.23)										
	Exports/debt serv.			0.000 (0.13)									
	ΔExports/debt serv.				-0.001 (-1.43)								
	Observations	1155	1116	1224	1195	1095	1394	749	1428	1428	1428	745	768
	Number of countries	98	97	96	95	98	105	70	105	105	105	63	63

Absolute value of z statistics in parentheses * significant at 5%; ** significant at 1%

Table A7. Determinants of Access: Fixed-Effect Logit Model with Time Effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GDP	0.008	0.007	0.008	0.007	0.004	0.035	0.054	0.053
	(1.14)	(0.99)	(1.08)	(0.98)	(0.52)	(1.41)	(1.76)*	(1.57)
Transition Dum.	2.396	1.801	1.291	1.211	36.817	40.089	38.883	33.403
	(1.88)*	(1.25)	(0.88)	(0.82)	(0.00)	(0.00)	(0.00)	(0.00)
Agriculture/GDP		-0.084	-0.077	-0.073	-0.049	-0.015	-0.047	-0.024
		(3.22)***	(2.85)***	(2.63)***	(1.68)*	(0.42)	(1.05)	(0.45)
SBA			0.568	0.554	0.719	0.393	-0.081	0.244
			(1.80)*	(1.75)*	(2.16)**	(1.01)	(0.16)	(0.45)
EFF			1.815	1.767	1.420	0.501	1.135	31.489
			(2.54)**	(2.47)**	(1.91)*	(0.54)	(0.78)	(0.00)
PRGF			-0.612	-0.623	-0.675	-0.724	-2.110	-2.276
			(1.45)	(1.48)	(1.51)	(1.51)	(2.76)***	(2.78)***
State Failures				-0.325	-0.091	0.012	0.521	1.570
				(0.68)	(0.18)	(0.02)	(0.71)	(1.68)*
Ln(Inflation)					-0.303	-0.413	-0.599	-0.680
					(2.85)***	(2.75)***	(2.92)***	(2.84)***
CPIA						0.694	1.552	1.815
						(2.03)**	(2.95)***	(3.06)***
Institutional Inv.							0.151	0.174
							(2.87)***	(2.99)***
ICRG Pol. Risk								0.055
								(1.18)
# of obs.	679	624	624	624	563	446	313	277
# of countries	51	48	48	48	45	39	27	24

Absolute value of z statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A8. Determinants of Access: Random-Effects Logit Model with Time Effects and Lagged Dependent Variable

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Access (t-1)	1.104	0.986	0.891	0.883	0.850	1.172	2.121	1.584
	(4.06)***	(3.45)***	(2.96)***	(2.93)***	(2.72)***	(3.32)***	(4.08)***	(3.51)***
GDP	0.017	0.055	0.048	0.048	0.051	0.045	0.031	0.024
	(5.07)***	(5.49)***	(5.12)***	(5.39)***	(5.76)***	(4.21)***	(2.31)**	(2.29)**
Transind	2.656	2.134	1.968	1.965	2.466	1.880	1.601	1.304
	(5.49)***	(3.62)***	(3.32)***	(3.33)***	(3.45)***	(3.04)***	(1.52)	(1.28)
Africa Dum.	-0.313	0.477	0.652	0.679	0.671	0.421	0.309	-0.419
	(0.77)	(1.03)	(1.30)	(1.35)	(1.26)	(0.82)	(0.25)	(0.56)
Agric./GDP		-0.055	-0.053	-0.054	-0.052	-0.046	-0.042	-0.049
		(3.89)***	(3.46)***	(3.47)***	(3.20)***	(2.73)***	(1.92)*	(1.84)*
SBA			0.784	0.769	0.959	0.581	0.203	0.457
			(2.58)***	(2.52)**	(2.94)***	(1.67)*	(0.41)	(0.95)
EFF			1.533	1.511	1.524	0.719	1.458	1.656
			(2.16)**	(2.12)**	(2.10)**	(0.98)	(1.32)	(1.26)
PRGF			-0.483	-0.509	-0.531	-0.743	-1.621	-1.583
			(1.22)	(1.27)	(1.26)	(1.77)*	(2.34)**	(2.61)***
State Failure				-0.174	0.035	0.361	0.547	1.365
				(0.46)	(0.09)	(0.82)	(0.74)	(1.87)*
Ln(Inflation)					-0.140	-0.018	-0.231	-0.321
					(1.49)	(0.16)	(0.91)	(1.92)*
CPIA						0.760	1.196	1.271
						(2.97)***	(2.74)***	(3.03)***
Inst. Investor							0.119	0.102
							(1.63)	(2.57)**
ICRG Risk								0.040
								(1.17)
# of Obs.	1375	1282	1282	1282	1191	1029	588	467
# of countries	104	103	103	103	103	99	60	52
# of access in subsample	267	262	262	262	248	207	185	165
o/w predicted	150	177	177	174	169	150	154	141
Type I error (%)	43.8	32.4	32.4	33.6	31.9	27.5	16.8	14.5
# of zeroes in subsample	1142	1049	1049	1049	967	832	403	302
o/w predicted	987	936	944	947	867	753	304	242
Type II error (%)	13.6	10.8	10.0	9.7	10.3	9.5	24.6	19.9

Absolute value of z statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A9. Determinants of Access: Random-Effects Logit Model with Time Effects, Data Aggregated over Two Years

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GDP	0.008	0.015	0.042	0.036	0.030	0.088	0.063	0.066
	(2.39)**	(2.21)**	(1.61)	(1.37)	(1.12)	(4.56)***	(2.90)***	(2.53)**
Transition	3.919	3.200	97.652	98.724	71.072	2.075	2.226	1.401
	(5.03)***	(4.88)***	(0.00)	(0.00)	(0.00)	(2.72)***	(1.95)*	(1.01)
Agric//GDP		-0.098	-0.073	-0.065	-0.058	-0.047	-0.055	-0.038
		(4.63)***	(2.00)**	(1.74)*	(1.53)	(2.31)**	(1.80)*	(1.14)
SBA			1.165	1.111	1.139	1.211	0.827	0.364
			(2.38)**	(2.25)**	(2.25)**	(2.50)**	(1.28)	(0.50)
EFF			0.770	0.625	0.293	0.438	1.107	0.397
			(0.79)	(0.62)	(0.28)	(0.43)	(0.79)	(0.20)
PRGF			-1.085	-1.124	-1.256	-0.985	-2.297	-2.722
			(1.76)*	(1.83)*	(1.99)**	(1.65)*	(2.62)***	(2.55)**
State Failure				-0.832	-0.756	0.087	1.092	2.421
				(1.34)	(1.20)	(0.15)	(1.49)	(2.42)**
Ln(Inf)					-0.236	0.071	-0.270	-0.240
					(1.51)	(0.49)	(1.42)	(1.08)
CPIA						0.668	1.821	1.627
						(2.12)**	(3.47)***	(2.48)**
Inst. Inv.							0.138	0.180
							(2.83)***	(2.59)***
ICRG Pol. Risk								0.106
								(2.15)**
Observations	779	720	324	324	307	596	332	252
Number of countries	105	104	44	44	42	100	60	51

Absolute value of z statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Table A10. Default and Resumption of Access: 1980's

Year of default	Year of resumption	Country	Years until resumption	Private gross capital flows as % of GDP in two years prior to default	Private gross capital flows as % of GDP in two years after resumption
1980	1991	Iran, Islamic Rep.	11	...	...
1980	1980	Peru	0	...	1.3
1980	1992	Zimbabwe	12	...	2.0
1981	1994	Costa Rica	13	19.3	8.0
1981	1994	Honduras	13	9.7	4.7
1981	1983	Jamaica	2	8.0	8.8
1981	1988	Madagascar	7	0.2	1.7
1981	1982	Poland	1	...	...
1981	1985	Romania	14	...	...
1981	1996	Senegal	15	5.0	5.9
1982	1986	Argentina	4	19.9	1.8
1982	1987	Ecuador	5	6.4	3.6
1982	1982	Malawi	0	4.1	
1982	1985	Mexico	3	8.5	10.6
1982	1989	Nigeria	7	1.7	7.9
1982	1982	Turkey	0	2.0	1.4
1983	1983	Brazil	0	4.5	4.3
1983	1990	Chile	7	14.5	12.8
1983	1994	Congo, Rep.	11	31.8	14.2
1983	1992	Cote d'Ivoire	9	4.2	5.9
1983	1991	Guinea-Bissau	8	17.6	21.1
1983	1985	Morocco	2	3.6	4.1
1983	1993	Mozambique	9	11.5	1.6
1983	1983	Niger	0	8.4	
1983	1993	Peru	9	3.7	8.7
1983	1988	Philippines	5	5.7	5.7
1983	1992	Uruguay	9	9.9	7.2
1983	1987	Venezuela, RB	12	8.7	8.4
1983	1991	Zambia	8	12.9	...
1984	1988	Egypt, Arab Rep.	4	4.3	7.6
1984	1994	Tanzania	10	...	1.3
1985	1985	Angola	0	...	3.9
1985	1988	Cameroon	3	14.3	11.8
1985	1988	South Africa	3	2.1	3.0
1985	1990	Vietnam	5	...	...
1985	1986	Yemen, Rep.	1	...	...
1986	1988	Gabon	2	15.1	13.4
1986	1995	Guatemala	9	4.7	8.4
1986	1988	Morocco	2	3.2	4.0
1986	1995	Paraguay	9	7.3	8.6
1986	1990	Romania	4	...	3.5
1987	1990	Ghana	3	2.0	2.0
1987	1988	Iraq	1	...	...
1987	1991	Jamaica	4	6.7	12.8
1988	1988	Malawi	0	1.6	
1988	1992	Trinidad and Tobago	4	5.7	12.6
1989	1989	Argentina	0	2.6	11.2
1989	1993	Jordan	4	5.3	12.0
1989	1989	South Africa	0	2.9	2.7
		Mean:	**5.4**	**7.9**	**6.9**
		Median:	**4.0**	**5.7**	**5.9**

Table A10 (cont'd). Default and Resumption of Access: 1990's

Year of default	Year of resumpti on	Country	Years until resumptio n	Private gross capital flows as % of GDP in two years prior to default	Private gross capital flows as % of GDP in two years after resumption
1991	1991	Algeria	0	2.2	3.2
1991	1992	Ethiopia	1	2.0	4.3
1991	1992	Russian Federation	1	...	...
1992	1995	Croatia	3	...	17.9
1992	1996	Macedonia, FYR	4	...	11.9
1992	1992	Philippines	0	5.6	10.7
1992	1993	Slovenia	1	...	7.6
1993	1993	South Africa	0	5.9	5.3
1995	1995	Venezuela, RB	0	14.3	10.7
1998	1998	Indonesia	0	6.5	9.3
1998	1998	Moldova	0	19.2	
1998	1998	Ukraine	0	8.4	13.3
		Mean:	**0.9**	**8.8**	**10.1**
		Median:	**0.0**	**6.5**	**10.7**

Note: Covers 1980-1999, including only countries that regained access during that period. (Three countries had access during the year of default or in the two preceding years and never resumed access: Dominican Republic (1982), Guinea (1986), and Niger (1983).) Access is defined as issuance of public or publicly guaranteed bond or syndicated loan. (Source: Bondware, Loanware).Year of default is defined as year in which the sovereign defaulted on foreign-currency debt according to Standard & Poor's (Source: Beers and Bhatia, 1999). Source for gross private capital flows: WDI. For default years 1981, the data shown are numbers for 1980 instead of two-year averages. Number of defaults in 1980's: 49. Number of defaults in 1990's: 12.

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