Sovereign borrowing by developing countries: What determines market access?

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ABSTRACT

What determines the ability of governments from developing countries to access international credit markets? We examine this question using detailed data on sovereign bond issuances and public syndicated bank loans between 1980 and 2000. A key finding of this paper is that the probability of market access is not influenced by a country's frequency of defaults, and that a default, if resolved quickly, does not reduce significantly the probability of tapping the markets. We also find that trade openness, a standard measure of a country's links with the rest of the world, and traditional liquidity and macroeconomic indicators do not help much in explaining market access. However, a country's vulnerability to shocks and the perceived quality of economic policies and institutions appear to influence the government's ability to tap the markets. We also document that the average exclusion from international credit markets following a default declined from four years in the 1980s to two years in the 1990s.

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1. Introduction

A vast and still-growing literature on capital flows to developing countries has addressed their determinants, composition, and volatility.[1] However, what puts countries on the global map of international capital markets in the first place or, if they lose market access, what factors helped reverse the event, have seldom been studied.

In this paper, we examine factors associated with the ability of governments from developing countries to access international credit markets. We cover the period 1980–2000 as it includes both a sub-period of market stagnation and one of expansion when borrowing was easier.

The value added to the literature is three-fold. First, this paper fills a gap by examining the factors that determine whether a sovereign is able to borrow or not in international credit markets. The empirical literature on sovereign borrowing has largely concentrated on explaining volumes and terms for those countries for which we observe access, often overlooking the problem that many countries might be cut off from credit markets completely, at least temporarily.[2] We focus instead on this censoring problem induced by strict credit rationing.[3]

Second, to our knowledge, it is the first attempt in the literature on sovereign debt to document the duration of the exclusion from credit markets triggered by a default. We also examine the effect on market access of the frequency of sovereign defaults and their duration.

Third, we assemble a disaggregated dataset on lending to sovereigns with detailed sovereign default data. For comprehensiveness, individual country data on bonds and bank loans are combined—most of the literature has focused on bonds or bank loans but not both. An additional innovation has been to include private sector loans that are guaranteed by the government. To identify the characteristics that differentiate countries that are able to borrow regularly from those that are only occasionally or never able to do so, we explore a large set of variables, including some typically not stressed in the literature, such as vulnerability to large terms of trade shocks.[4]

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

[2] Edwards (1986), Eichengreen and Portes (1989), Cantor and Packer (1996) and Dooley et al. (1996) study the determinants of spreads for sovereign bonds. Özler (1993) examines the impact of sovereign borrowers' previous repayment history on bank loans spreads for 26 developing countries between 1968 and 1981. Using a different approach, Lane (2000) looks at the determinants of total debt stocks across countries. Eichengreen and Mody (1998) and Dell'Ariccia et al. (2002) model the decision of the borrower to issue debt separately in a selection equation.
   [3] There is an analogy to the censoring problem in the literature on credit rationing for firms: see Gelos and Werner (2002).
   [4] Catão and Sutton (2002) have examined the impact of income volatility on sovereign default probability.

Any study of the ability of countries to borrow based on observed flows faces the issue of identifying supply versus demand shifts, a notoriously difficult feat. We attempt to address this task by taking a series of sequential steps aimed at distinguishing between actual rationing by creditors and voluntary abstention of borrowers. We acknowledge that this as a modest first step in overcoming this problem, and focus more on descriptive statistics and on documenting correlations.

We find, as expected, that governments of larger and richer countries access the markets more frequently. Countries that do not access the markets usually suffer from worse economic policies and institutions, and are more vulnerable to external shocks. However, there is little evidence that trade openness, a standard measure of a country's links with the rest of the world, and traditional macroeconomic indicators matter.

We also analyze the relationship between defaults and market access. While being in default usually prevents a country from accessing the markets during those years, the probability of market access is not influenced by a country's frequency of defaults. We also find that a recent default, if resolved quickly, does not reduce significantly the probability of tapping the markets. We document that the average length of the period from default till re-access to international credit markets was four and a half years for the whole sample period. However, we find that it fell substantially in the 1990s. While governments that had defaulted on their debt in the 1980s were unable to access the market for four years on average, during the 1990s the average was two years.

The paper is organized as follows. Section 2 discusses the data and the empirical strategy. Section 3 presents the results of the cross-sectional and panel data analysis. Section 4 concludes.

2. Empirical strategy and data

2.1. Market access

This paper studies factors associated with the ability of governments from developing countries to access international credit markets. To measure market access, we use a unique micro dataset on international bond issuances and borrowing through private syndicated loans from non-domestic banks provided by Capital Data Bondware and Loanware. The dataset contains information on 2053 individual bond issuances and 5065 commercial bank syndicated loans to national governments (or with government guarantee) from 150 developing countries between 1980 and 2000.[5] This is a period that includes both a sub-period of market stagnation and one of expansion when borrowing was easier (Fig. 1).

We define market access as public or publicly guaranteed international bond issuances or borrowing through a private syndicated bank loan occurring in a year in which the country's indebtedness increases.[6] This definition aims to exclude cases where a sovereign's borrowing capacity falls but the country is still able to roll over part of its debt, which implies that the government is, in net terms, repaying and not borrowing. In order to check whether the country's indebtedness actually increases when we observe a bond issuance or bank loan in the micro data, we use data on debt stocks from the World Bank's Global Development Finance database.

Although the literature has often focused exclusively on bonds, it is important to include syndicated bank loans in the analysis too, as we do, since they were the prominent form of sovereign borrowing by developing countries during the first half of the period considered here.[7]

Fig. 1. Total flows of net private lending to public sector in developing countries. Source: Global Development Finance, World Bank.

2.2. Factors affecting market access

We consider the following factors influencing a country's ability and willingness to pay—and therefore its ability to access credit markets[8]:

- *The size of a country* can affect its ability to borrow. For example, the potential punishment that can be imposed through sanctions and collateral seizure is larger for larger countries. In addition, there might be fixed costs for borrowing through syndicated loans or bond issuances, which could force smaller countries to access the markets less frequently. We use population as a measure of size.

- *Income volatility and vulnerability to shocks* may affect market access through different channels. For countries more prone to shocks, the exclusion from credit markets becomes more costly—knowing this, lenders may be willing to lend more to them. On the other hand, high income variability may negatively affect creditworthiness. We capture income volatility by the standard deviation of GDP growth over ten years and the standard deviation of terms of trade measured over twenty years. Vulnerability is proxied by per capita income and the share of agriculture in GDP.[9]

- *A country's economic links with the rest of the world* can affect the cost of default and, therefore, its ability to borrow. This aspect is captured by the share of FDI in GDP and measures of trade openness.[10]

- *Political instability* may adversely affect the investment climate, a government's revenues and, therefore, its ability to repay. We measure political risk by the International Country Risk Guide's (ICRG) Political Risk Index.

- *The quality of government policies and institutions* can influence a country's creditworthiness by affecting, among other things, economic growth. To capture this, we use an annual index of Country Policy and

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[5] The database does not include borrowing by publicly owned companies and by municipal or state authorities unless this borrowing is explicitly guaranteed by the federal government.

[6] As a robustness check we also aggregate our data on borrowing over 2-year periods. The results do not change.

[7] Note that for lack of available data we are not including less complex instruments with usually smaller average amounts per loan such as standard (non-syndicated) bank loans or trade credit.
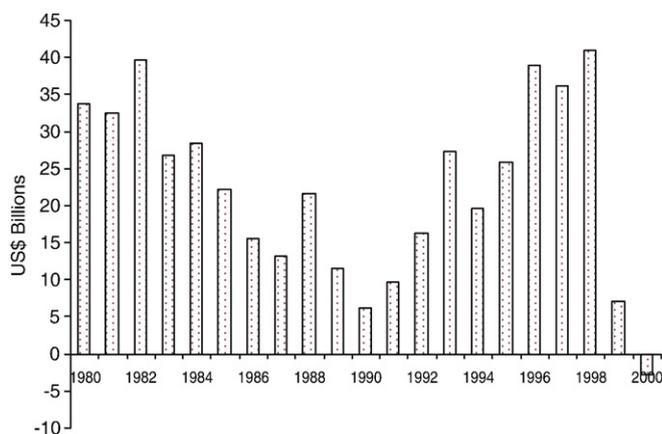
[8] See Cohen (1991), Goldfajn and Guardia (2003) or Garcia and Rigobon (2004) for some examples of analysis of government debt sustainability. See Detragiache and Spilimbergo (2001) for a model and a discussion of the liquidity crises literature. A comprehensive review of the early work on the "willingness" literature can be found in Eaton and Fernández (1995). Some more recent work has been undertaken by Cole and Kehoe (1997), Kletzer and Wright (2000), Wright (2002), Amador (2003) or Sandleris (2008). See Lambertini (2003) for a model in which defaults may arise either due to lack of willingness to repay or as a result of a liquidity crisis.

[9] The share of agriculture in GDP was a statistically significant determinant of debt reschedulings in Berg and Sachs (1988). For papers examining the relationship between output volatility and default, see Atkeson (1991) and Lambertini (2003). Our results are robust to choosing the same number of years for measuring income and terms of trade volatility.

[10] We use the ratio of exports plus imports to GDP to measure trade openness. We also check the robustness of our results using a qualitatively different type of measure, namely Frankel and Romer's (1999) measure of trade openness.