

PRINCETON STUDIES IN INTERNATIONAL FINANCE

No. 47, June 1981

Poor-Country Borrowing
in Private Financial Markets
and the Repudiation Issue

Jonathan Eaton
and
Mark Gersovitz

INTERNATIONAL FINANCE SECTION
DEPARTMENT OF ECONOMICS
PRINCETON UNIVERSITY

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PETER B. KENEN, *Director*
International Finance Section

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I INTRODUCTION

Focus of the Study

Large differences between rich and poor countries in the relative abundance of capital imply large differences between them in the rate of return on capital. Such differences should provide a strong incentive for private agents in the more developed countries to make financial and physical investments in the developing countries that would tend to align quantities of capital relative to other factors and the rates of return.

Despite the theoretical basis for this view, striking differences remain in the availability of capital in different parts of the world. We believe that a major reason for this continued disparity is the fear on the part of lenders that the governments of developing countries will repudiate debt and expropriate physical assets. These threats to foreign investment are a fundamental characteristic of the interdependence between rich and poor countries.

Much concern about the extent of these impediments to resource flows has been expressed in recent discussions of the "recycling" of petrodollars.¹ Large increases in oil prices in 1973 and again in 1979 affected adversely the current-account deficits of the less developed countries (LDCs)—directly, by increasing their oil-import bills, and indirectly, by inducing recessions in industrial countries and a slackened demand for LDC exports. Deposits by OPEC members with major commercial banks increased dramatically at a time when the demand for credit in industrial countries was weak. Although commercial-bank lending to poor countries had begun to expand in the late 1960s and continued to grow throughout the 1970s, the two OPEC price hikes generated considerable discussion about the "capacity" of the private banking system to channel OPEC surpluses to finance LDC deficits. Many commentators and policy makers have expressed concern that commercial banks have "over-extended" themselves in their lending to developing countries, which may be unable or unwilling to fulfill the terms of the loan agreements (see e.g. Rowan, 1976, and Wallich, 1978).

We would like to thank Carlos Diaz-Alejandro for his comments on the manuscript.

¹ Among the recent literature on this topic are the following volumes: Abbott (1979), Angelini *et al.* (1979), Aronson (1977), Donaldson (1979), Franko and Seiber, eds. (1979), Friedman (1977), Goodman, ed. (1978), and Wionczek, ed. (1978 and 1979). Two earlier volumes also deserve mention: Avramovic (1958) and Avramovic and Gulhati (1960).

The voluntary element in nonrepayment is hard to define. Unless debt-service obligations exceed the maximum foreign-exchange revenue the debtor could realize through all conceivable means, nonrepayment constitutes a decision to use resources for domestic purposes rather than repayment. Even in the unlikely event that the world market value of all national resources does not meet obligations, the decision was voluntarily made earlier to borrow an amount that perhaps could not be repaid.

There are various terms to denote deviations from the loan agreement. In our discussion, a *repudiation* of a loan is the explicit refusal by the *borrower* to pay interest and/or principal as originally agreed. A loan is in *default*, however, when a *creditor* declares that the borrower has failed to comply with some stipulation of the loan agreement. Unlike a repudiation, a default may be temporary, both lenders and borrower expecting a return to behavior consistent with the loan agreement. Even though a loan is not legally in default until a creditor has declared it so, we follow common usage in referring to a borrower as "defaulting" on a loan when it fails to honor the agreement. Finally, a *rescheduling* is an explicit agreement between lenders and borrower to modify the schedule for payment of interest or principal.

In Chapter 2, we explain how the possibility of debt repudiation affects the functioning of international financial markets and the development prospects of LDCs.² We conclude that even if repudiation rarely or never occurs, the threat of repudiation may still severely limit capital mobility. To explain the operation of private lending to poor countries, it is necessary to examine factors affecting both the demand for credit by poor countries and the supply of loans by commercial lenders. The supply of funds to poor countries depends implicitly on the sanctions that lenders are able to impose in the event of default and the extent to which a borrower would be punished by such sanctions. The maximum amount that private lenders are willing to lend to one country depends on the ability of lenders to deter default and thus on the effectiveness of sanctions. This credit ceiling constitutes a formal definition of the "capacity" of the international capital markets to finance the current-account deficit of a particular country, a notion that arises frequently in discussions of the recycling of OPEC surpluses but has not been given precise meaning. This possibility of credit rationing has implications for the relationship between the borrowing behavior and the reserve-holding behavior of LDC governments.

Our theoretical framework identifies the country characteristics that determine the size of the credit ceiling. The econometric implementation

² Much of the framework elaborated in Chapter 2 was originally presented in two earlier papers (Eaton and Gersovitz, 1980 and 1981).

of this theory classifies countries according to whether or not they are credit-constrained and provides a test of the predictions of the theory. A feature of our econometric analysis is its ability to make quantitative estimates of financing capacities.

The supply of funds to developing countries depends in part on the cohesion with which private lenders deal with sovereign governments and on the availability of information to market participants. Consideration must therefore be given to the relationship among international organizations (the International Monetary Fund, the World Bank, and the Bank for International Settlements), the monetary and commercial authorities of lender countries, and the private international capital markets. The international organizations play an important role by providing information to market participants and by influencing the behavior of both lenders and borrowers in order to minimize the possibilities of repudiation and default. The first function is especially important in international capital markets. Because these markets are likely to be characterized by credit rationing, interest rates do not fully reflect all the information important to lenders. In particular, an individual lender will need to know the total debt of the potential borrower, regardless of the interest rate offered on a loan. Otherwise, the lender cannot ascertain the strength of the borrower's incentive to violate loan commitments.

In Chapter 3, we examine guidelines for risk analysis by lenders. The financial press frequently refers to the assessment of country (or cross-border) risk and conducts debates over appropriate rules of thumb to assure prudent investment (Sofia, 1979). Using our own theoretical framework and the historical record, we assess the attempts of researchers to develop statistical models to predict defaults on the basis of past experience.

Chapter 4 covers government policy in the rich countries toward risky foreign lending by their citizens. The United States, for instance, has developed legislation providing for automatic retaliation triggered by default or expropriation and various schemes for the insurance of foreign investment by its citizens.

Experience in the Markets

Comprehensive information is not publicly available on the categories of debt owed by individual developing countries in each year during the recent past. Instead, there are several sources of information, each possessing strengths and weaknesses (BIS, 1979).

In its annual publication *World Debt Tables*, the World Bank provides data on the long-term public external debt of most developing countries. This is the debt that is owed to nonresidents, is repayable in

foreign currency, goods, or services, and has an original or extended maturity of over one year. It is an obligation of either a public debtor (national government, political subdivision, or agency) or a private debtor but with repayment guaranteed by a public debtor. The debt is classified by the type of creditor holding it, and several types of official and private creditors are identified. All information is disaggregated into disbursed and undisbursed. Although this reporting system provides no information on short-term debt and little information on private debt not publicly guaranteed, it does provide the most complete information available for the entire 1970s decade.

Using the data provided by the World Bank system, the magnitude of total long-term LDC debt to international financial markets is calculated in Table 1 in both nominal and real terms. (The definition of real debt using the U.S. GNP deflator is most relevant as an index of the real resources potentially at risk of repudiation. It is less relevant as a measure of the debt burden viewed from an LDC perspective.) Not only is the debt large, but it has been growing rapidly. It is clear that recent rates of growth cannot be maintained indefinitely and are probably unsustainable over any very long period.

TABLE 1
TOTAL LONG-TERM DEBT TO PRIVATE CREDITORS, 96 COUNTRIES, 1972-78
(*dollar figures in billions of U.S. dollars*)

Year	Nominal Debt	Growth Rate	Real Debt ^a	Growth Rate
1972	\$ 32.3		\$ 32.3	
1973	42.7	32.0%	40.4	24.9%
1974	57.8	35.4	49.8	23.5
1975	73.4	27.0	57.7	15.8
1976	97.1	32.3	72.5	25.7
1977	126.1	29.9	89.3	23.1
1978	161.4	28.0	106.1	18.9

^a Calculated by using U.S. implicit GNP deflator (1970 = 100). Includes undisbursed debt.

SOURCES: World Bank, *World Debt Tables*, Washington, 1979, p. 46; U.S. Dept. of Commerce, *Statistical Yearbook of the United States*, Washington, 1978, and *Survey of Current Business*, Washington, 1979.

The growth of debt would not be surprising or worrisome if it were primarily due to an increase in the number of participants in the market. In that case, growth would be mostly at the extensive margin. The distribution of debt among poor countries would become increasingly uniform, because countries with low levels of debt at the beginning of the period would have the fastest-growing debts. Furthermore, as more and more countries caught up to the higher debt levels of the earlier bor-

rowers, growth in total debt would automatically taper off. But this has not been the pattern. The borrowers of importance in the early 1970s continue to be the most important borrowers, and the distribution of debt has not become more uniform. In fact, it has become slightly less uniform according to Gini coefficients comparing distributions of debt to distributions of GNP. The coefficient of 0.448 in 1976 rose to 0.494 in 1978.³ LDC borrowing is actually the story of a few middle-income developing countries.

Table 2 records the distribution of debt across countries in 1978. While many developing countries are sizable borrowers, the concentration of debt is pronounced. Two countries (Brazil and Mexico) have together

TABLE 2

TOTAL DISBURSED AND UNDISBURSED DEBT TO PRIVATE CREDITORS, 1978
(in millions of U.S. dollars)

<i>Africa South of Sahara</i>		<i>East Asia and Pacific</i>	
Cameroon	\$ 688.4	Indonesia	\$ 5,844.0
Gabon	957.8	S. Korea	9,935.4
Ivory Coast	3,011.3	Malaysia	2,224.9
Nigeria	1,817.1	Philippines	3,233.3
Sudan	1,095.5	Singapore	809.6
Zaire	1,755.7	Taiwan	2,327.4
Zambia	706.8	Thailand	858.4
Other	3,033.8	Other	262.9
	<u>\$13,066.4</u>		<u>\$25,495.9</u>
<i>Latin America and Caribbean</i>		<i>North Africa and Middle East</i>	
Argentina	\$ 5,528.5	Algeria	\$15,693.3
Bolivia	963.1	Egypt	1,764.2
Brazil	22,003.3	Iran	8,764.1
Chile	3,444.1	Iraq	584.3
Colombia	1,006.6	Morocco	3,354.7
Costa Rica	638.9	Tunisia	1,071.3
Ecuador	1,365.2	Other	1,062.1
Mexico	21,675.9		<u>\$32,294.0</u>
Panama	1,604.4		
Peru	3,859.8		
Uruguay	731.8		
Venezuela	6,800.3		
Other	2,260.9		
	<u>\$71,882.5</u>		
		<i>South Asia</i>	
		Aggregate	\$1,285.5
		Total	\$144,024.3

SOURCE: World Bank, *World Debt Tables*, Washington, 1979, pp. 46-47.

³ The 89 countries covered by the coefficients were the ones for which the World Bank's *World Debt Tables* (1979, pp. 46-47) and *World Bank Atlas* (1975 and 1979) provided data on long-term debt to private creditors (including undisbursed) and total GNP in U.S. dollars for both 1972 and 1978. Countries were ordered by the ratio of debt to GNP to form the Lorenz curve, and the percentage of the 89 countries' total debt accounted for by any subgroup of countries was plotted against the corresponding percentage of the 89 countries' total GNP.

borrowed slightly in excess of a quarter of the total. Five other countries (Algeria, Indonesia, Iran, South Korea, and Venezuela) account for another third of the total.

Past experience with international lending, especially to nonindustrial countries, indicates that widespread default by sovereign governments is not at all an impossibility.⁴ Prior to 1929, Madden and Nadler (1929) could argue that most defaults were caused by wars, revolutions, and other political upheavals; severe economic depressions caused by such factors as crop failures or shortfalls in mineral production rarely led to default. This view, however, was clearly disproved by the events of the Great Depression, when most governments of poor countries defaulted on their international debts. Table 3 gives the default status of the American-held portions of Latin-American dollar loans as of 1935. Actually, there was some resumption in payments on these loans, so that the amounts reported in Table 3 do not represent outright repudiations.⁵

TABLE 3
DEFAULTS ON THE AMERICAN PORTION OF LATIN-AMERICAN
DOLLAR LOANS, DEC. 31, 1935
(dollar figures in millions of U.S. dollars)

Country	Amount Outstanding Dec. 31, 1935	In Default as to Interest	Percentage in Default
Argentina	\$ 334	\$ 79	24%
Brazil	310	289	93
Chile	236	236	100
Colombia	144	144	100
Cuba	115	72	63
Mexico	139	139	100
Peru	74	74	100
All other	171	140	82
Total	\$1,523	\$1,173	77

SOURCE: Lewis (1938, p. 414).

Between the 1930s and the 1970s there was not much borrowing by LDC governments from private lenders. Lending to these governments was by developed-country governments and multilateral agencies. Some

⁴ Important sources on the last great episode of lending to poor countries (in the 1920s and 1930s) are the annual reports of the Council of the Corporation of Foreign Bondholders in London, the annual reports of the Foreign Bondholders Protective Council in New York, the occasional bulletins of New York University's Institute of International Finance, Lewis (1938 and 1948), Madden and Nadler (1929), Madden *et al.* (1937), Mintz (1951), Patterson (1928), and Winkler (1933).

⁵ The history of these loans is documented in the various bulletins of the Institute of International Finance of New York University.

borrowers have defaulted on portions of their debts to these official lenders, and the subsequent debt rescheduling and renegotiations are documented by Bittermann (1973). The only recent defaults on private loans involved Zaire, which was settled fairly easily (Greayer and Moore, 1976); North Korea, which, unresolved to the satisfaction of lenders, has resulted in that country's inability to borrow; and Iran, which is unresolved at this time. Against this background, we turn in the next chapter to factors deterring defaults and to ways in which these disincentives can break down.

2 PRIVATE LENDING WITH POTENTIAL DEFAULT: AN ANALYTIC FRAMEWORK

The Demand for Credit

We begin by analyzing the determinants of a country's demand for credit. In the next section we examine the supply of credit, focusing in particular on the sanctions that lenders might impose on defaulters and the implications for the organization of the market.

On the assumption of eventual repayment, a number of motives for borrowing can be ascribed to individuals and to countries. One purpose of borrowing is to divorce the level of consumption from the level of income at any moment, holding the level of savings constant. Countries will be most motivated to borrow when current income is low relative to expected future income. Thus a country anticipating a high rate of growth in income over a long period in the future is not likely to want to wait to increase its consumption. Instead of letting consumption grow at the same high rate as income, this type of country would rather consume relatively more in the present and less in the future by borrowing now and repaying later. Even a country without good long-term growth prospects is likely to use borrowing to smooth consumption if its income is highly variable. In this case, the country will want to borrow in periods when income is below average and to repay in periods when income is above average. In all these situations, borrowing is motivated by the strong human desire to isolate the level of consumption from intertemporal differences in the level of income. (Of course, the total discounted value of income must still constrain the total discounted value of consumption.) This reason for borrowing can be called the *consumption motive*.

In describing the consumption motive, we ignored the way in which income is generated. If income is produced by using the services of physical capital, then differences between the marginal product of the domestic endowment of capital and the rate of interest in world markets provides a second incentive for borrowing. In these circumstances, increasing the capital stock through borrowing will increase income above the interest charges incurred on the debt. The increased income could be consumed or saved, depending on the considerations mentioned above in connection with the consumption motive. Those countries with the lowest initial endowment of capital will be the largest debtors. This reason for being in debt can be termed the *production or investment motive*.

Sudden changes in the level of absorption (consumption plus invest-

ment) can be very costly, and the ability to slow down the adjustment of this variable will make it much less painful. For instance, the large and unexpected increase in oil prices sharply lowered the incomes of many LDC oil importers. A rapid cutback in investment might have led to the abandonment of many almost completed projects. Borrowing eased considerably the transition to a lower level of investment. We term this reason the *adjustment motive*.

Debt can also provide a means of undertaking transactions. Traditionally, in both the domestic and international economies, the media of exchange have been assets of transactors, usually either commodities like gold or liabilities of governments or banks (and, in the case of Special Drawing Rights, of the International Monetary Fund). As the use of credit cards in the domestic economy has shown, however, transactions can be performed efficiently by using media of exchange that are individual liabilities. Thus individuals might want to borrow to economize on transactions costs (e.g. use a credit card) even if they had no desire to increase current consumption at the expense of future consumption. In the international economy, suppliers' credits are a medium of exchange of this type. This reason for borrowing can be called the *transactions motive*.

Finally, countries are often large debtors and hold large reserves at the same time. Saxe (1978, p. 34) and others argue that much of the borrowing in 1976 and 1977 was for the purpose of accumulating reserves. If a country borrows to finance its reserve holding, its gross foreign indebtedness can rise without the development of a current-account deficit. Several reasons for such borrowing can be adduced.

International borrowing often requires large costs to obtain information and negotiate contracts. These costs may not vary markedly in absolute terms with the size of the loan. Thus a country that expects a cyclical pattern of income but wishes a smooth path of consumption or that wants to ease the adjustment of absorption to a permanently lower level of income may borrow a large amount and hold the funds in reserves. The reserves can then be drawn down slowly. In this way, the high costs of frequent borrowing are avoided.

Developing countries may fear that conditions for borrowing in the future will be less advantageous than at present. In this case, too, it is prudent to borrow now and hold reserves. It should be noted that current practice for many loans, especially syndicated Eurocredits, is to specify interest payments as a markup over the short-term London interbank rate (LIBOR). With this type of floating-rate loan, early borrowing cannot protect against future rises in the base rate. It can, however, protect against the possibility of future increases in the markup or de-

creases in the availability of credit if the country is potentially credit-constrained. Reasons for credit ceilings in international lending are discussed next.

The Supply of Credit

A central issue in identifying the determinants of the supply of credit to developing countries is an understanding of the borrower's incentives to repay. There is an important distinction between the bankruptcy of an individual economic agent in a national economy and default by a government. In the case of an individual agent, bankruptcy usually reflects negative net worth. Bankruptcy laws define an institutional framework establishing this condition, and creditors are compensated to the extent that assets allow. Domestic bankruptcy laws prevent an agent from shedding liabilities while maintaining full control of assets. The situation is quite different in international lending, where creditors do not enjoy institutional protection to the same degree, if at all, and debtors may therefore be able to repudiate their obligations without losing control of their assets.

In this section, we consider how various sanctions can deter defaults and enable lenders to extend credit to developing countries, and how a breakdown of these sanctions can result in default. After a brief review of the limited legal and political mechanisms for obtaining repayment, we focus on the costs to a borrower of being excluded from future borrowing. Characteristics of the borrower indicating the potential harmfulness of an embargo must be considered by lenders. Thus these characteristics affect the supply of credit as well as the demand.

Legal recourse against a defaulting government is extremely limited. The creditor can contemplate a suit in the courts of the borrowing country, but these courts may not entertain such a suit. Even if the suit is successful, collection still poses a formidable problem.

It is also very difficult to obtain redress in the courts of the lender's country. They will often decide not to hear this type of case, choosing to uphold the doctrine of sovereign immunity. Their position may be based on the notion of the mutual equality and independence of states,¹ or they may feel that this type of case undermines relations between states.¹ Even in the case of a favorable judgment, it is difficult to solve the collection problem, since there must be sufficient assets at hand to seize. Experience with Iran during the last quarter of 1979 indicates, however, that banks may successfully impound balances held abroad by

¹ Many of the legal issues are discussed by Lillich (1965, esp. Chap. 1) and by Delupis (1973).