The Debt Overhang of Developing Countries

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1. Introduction

Carlos F. Diaz-Alejandro excelled at the writing of economic history, and nowhere were his findings more fascinating or pertinent than his descriptions of the Latin American economies in the 1930s. As Diaz-Alejandro stressed, the 1930s were years of great economic crisis, but also of great vitality and change. The Latin American debt crisis of that era ushered in a period of heterodox policies and, after the initial jolt of the Great Depression, surprisingly strong economic growth in most of the hemisphere. Until his untimely death, Diaz-Alejandro remained perplexed by the largely unsuccessful response of the Latin American countries to the debt crisis of the 1980s, in comparison to their successful adjustment in the 1930s.

This paper does not attempt a historical analysis of the difference performance in the two eras, but it does suggest one of the factors that may explain partly the contrast. In the 1930s, most all of the Latin American countries met the debt crisis with a unilateral moratorium on debt repayments, and these moratoria were only resolved after the Second World War. In the 1980s, almost all of the debtor countries have continued to service their debts, under rules of the game written and directed by the creditor governments. This continued debt servicing has helped the world to avert an international banking crisis, a prospect that was widely feared in the early 1980s. On the other hand, the debt strategy has not yet generated an economic recovery in the debtor economies, as was forecasted by the IMF and the creditor governments when the crisis began in 1982. The declining per capita income levels of the largest Latin American debtor countries are shown in table 5.1: we see that per capita income declined in all of the countries during the whole period 1981-5 and was continuing to fall in most of the countries last year. Brazil is the only case of a country that suffered a debt crisis being able to recover with significant growth rates.

Of course some of the continuing low growth must be attributed to policy mistakes in the debtor countries, and some must be attributed to the continuing decline in the terms of trade of most of the debtor countries. However, these countries have enjoyed some unexpectedly favorable developments as well (e.g. the fall in world interest rates in the past two years) and it is not clear whether on balance the world economic environment has been more or less harsh than the 'optimists' predicted in 1982. It is the theme of this paper that another reason for the absence of recovery in the debtor countries lies in the way that the debt crisis has been managed by the creditor governments and by the international organizations. The strategy rests by relying exclusively on debt rescheduling and new lending to get the debtor countries out of the crisis, rather than on a selective use of debt forgiveness.

Before explaining the case for partial debt forgiveness, it is important to stress that the debt issue should continue to be handled on a case-by-case basis. The debtor countries differ in important ways, in the reasons for their indebtedness, in their resiliency in the face of external shocks, and in their capacity to grow with high levels of debt. Certainly, there is no reason to consider writing off the debt of the Korean economy, nor would the Koreans choose to risk their international reputation by seeking debt forgiveness. Similarly, Brazil has demonstrated over the past decade the capacity to maintain high growth in the presence of high levels of indebtedness. The theme of this paper therefore is not directed at these countries, but rather at the ones that continue to stagnate under the burden of the foreign debt.

The most heavily indebted sovereign governments are like insolvent corporations, with their creditors being the international banks, multinational firms, the multilateral organizations, foreign governments, and the various domestic claimants on the budget. In the domestic context, insolvent...
firms can rely on the bankruptcy code, which tries to bring order among a firm's creditors, so that their individual actions do not undermine the efficient use of the firm's assets. For example, the creditors are (generally) enjoined from liquidating a firm by their individual actions if the firm is worth more as a going enterprise than in liquidation. In the international arena, however, a bankruptcy code for sovereign borrowers does not exist, and many debtor countries are being 'liquidated' via capital flight, low domestic investment, and squabbling among the creditors.

Of course, as in a bankruptcy proceeding, there has been significant cooperation among some of the creditors of the debtor countries. The commercial banks have held together to the extent of making several 'nonspecial' loans to the debtor countries, usually under the auspices of IMF programs. Lipson (1985) offers a convincing and interesting account of this cooperative behavior. Looking back on four years of experience, however, we can see that the extent of cooperation has not been enough, and perhaps inherently so. Despite the policy of concerted lending by the banks, banking exposure in Latin America is falling overall, not rising. Many banks and other creditors are able to opt out of the agreements, or are able to decrease exposures in the private sectors of the countries at the same time that their exposures to governments continue to build. Furthermore, many claimants on the debtor economies, including the multinational corporations, foreign suppliers, and domestic capitalists, are not even at the bargaining table, and thus have opted unilaterally to reduce their exposures.

The main result of the remaining noncooperative behavior in the system is the utter collapse of investment in the region, and the flight of much of the foreign capital that is in fact pumped in. The fall in investment rates in Latin America is the remarkable and disturbing backdrop of the rest of the paper. The drop in investment is illustrated in figure 5.1, which shows the rates of fixed capital formation during 1982–4 relative to 1980–1.

This paper sketches the case for a debt strategy that utilizes debt forgiveness in addition to debt rescheduling. It is necessarily schematic; as it does not go into detail for any particular country. Nor does it present a specific 'plan' for the debt. The purpose is rather to start a conceptual analysis of the issue of debt forgiveness, which to my knowledge has not yet been done. The paper is divided as follows. In section 2, we discuss the current strategy of debt management in very general terms, arguing that a strategy of debt forgiveness is not unthinkable, and would not do great damage to the international financial system. In section 3, the analytical case for debt forgiveness of highly burdened debtors is presented. In section 4, some examples of previous sovereign defaults are explored to see what lessons they have for current debt management, and some preliminary ideas are put forward for new approaches to managing the debt crisis.

2. The Present Strategy for Management of the Debt Crisis

It would take us far afield to examine why the Latin American economies have chosen to maintain debt repayments in the 1980s, even in the depths of economic depression, when these same countries chose to suspend debt repayments in the 1930s (though see Díaz-Alejandro 1984 and Fishlow 1985 for some interesting observations). I am confident that historical analysis would show that the room for unilateral action was much greater in the 1930s than it was in the 1980s. In the earlier episode, the world was without a clear 'hegemonic power,' to use Kindleberger's term, so that the policing of international agreements was lax. The industrial economies were in the midst of their own profound economic crisis, which left the creditor governments without the resources or ability to defend the interests of their citizens who held the bonds of the developing countries. Only in some special cases
did major creditor nations have such close and deep historical ties with debtor countries that they chose to wield their power to enforce debt repayments. But when they did so, as in the case of Britain vis-à-vis Argentina and Australia, the creditor government generally prevailed. In most cases, however, creditor government pressure was not applied.

### 2.1 The Current Rules of the Game

In the past five years, the United States and the international organizations, mainly the IMF, have worked closely together to enforce the financial agreements with the debtor countries, and to maintain the ongoing operation of the international financial system. Certainly one of the main interests of the creditors in managing this crisis has been to protect the capital structure of the international banks, who own the bulk of the claims on the debtor countries. In the 1930s, a debt moratorium simply meant that bondholders suffered a capital loss; in the 1980s, the fear is that a moratorium could lead to the failure of some large banks, with unpredictable consequences on the international economy.

The basic strategy of the IMF and the creditor governments since 1982, therefore, has been to ensure that the commercial banks receive their interest payments on time. The US has supported this outcome through a variety of carrots and sticks aimed at the debtor countries. Most importantly, the IMF has signed agreements with the debtor countries only on the condition that the countries have a satisfactory arrangement with the commercial banks for continued debt servicing. This imposes enormous pressure on the countries to maintain debt servicing, since an agreement with the IMF has been the virtual sine qua non for triggering all of the other forms of official creditor assistance, including Paris Club reschedulings and loans from the World Bank and multilateral development banks.

No matter how deep has been the economic crisis in a debtor country, the US has never accepted the need for debt forgiveness. This has been true in Africa as well as Latin America. If necessary, the United States has been willing to engineer official credits for a debtor government in order to tide it over a debt payment to the commercial banks, but it has not yet contemplated allowing a country to skip a debt payment, or even to negotiate a debt payment below market cost. Thus, in recent months, the US Treasury has been organizing a credit line to Mexico of $1.6 billion for the purpose of allowing the Mexican government to make its commercial bank interest payments at the end of 1986. Moreover, the $12 billion loan package to Mexico now under discussion includes enough new official money to pay for most of Mexico’s interest payments due to the bank for the next 18 months.

In general, the commercial banks have enjoyed a large resource transfer in their direction in recent years, while official creditors have been making a significant transfer to developing countries. If the official creditors are not ‘bailing out’ the banks, they are at least greatly facilitating the payment of interest to the banks. Some data on net resource transfers are shown in table

### Table 5.2 Net resource transfers to major borrowing LDCs ($ billion)

<table>
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<tr>
<td><strong>Private creditors</strong></td>
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<tr>
<td>Net debt flows</td>
<td>19.4</td>
<td>18.8</td>
<td>15.3</td>
<td>11.0</td>
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<tr>
<td>Interest payments</td>
<td>14.6</td>
<td>17.8</td>
<td>17.1</td>
<td>21.0</td>
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<tr>
<td>Net resource transfer</td>
<td>4.8</td>
<td>1.0</td>
<td>-1.8</td>
<td>-10.0</td>
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<tr>
<td><strong>Official creditors</strong></td>
<td></td>
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<tr>
<td>Net debt flows</td>
<td>9.3</td>
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<tr>
<td>Interest payments</td>
<td>3.6</td>
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<tr>
<td>Net resource transfer</td>
<td>5.7</td>
<td>5.4</td>
<td>1.5</td>
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5.2. The net transfer of resources to the debtor country is defined as the receipt of new loans, net of payments of principal and interest. A negative net transfer signifies that real resources are being transferred away from the debtor to the creditors. Note that the net transfer will be negative even if the creditors are increasing their exposure to the debtor country as long as the increase in loan exposure is smaller than interest payments made in the period.

As can be seen from the data in table 5.2, large positive net transfers of resources from the private creditors (mainly banks) came to a quick halt during 1982, and the transfers were negative during 1983 and significantly negative during 1984. At the same time, resource transfers from the official creditors continued to be positive during 1981–4. Unfortunately, comprehensive data are not yet available for 1985, but it seems on the basis of partial data that the trend of negative transfers from the banks and positive transfers from the official creditors continued. I report data in table 5.2 indicating that in 1985 the US commercial banks actually reduced in absolute terms the levels of their loan exposure to the major Latin American debtors, while of course they continued to receive large interest payments.

In sum, the banks have been able to maintain their interest income because the creditor governments have defended their claims. Where necessary, the official creditors have even committed public monies to ensure that the debtor countries punctually service the interest on their commercial bank debts. Of course, the creditor governments have also leaned on the commercial banks to accept half a loaf: the major banks have been required to join in concerted lending to the debtor countries as the price for receiving full interest payments. The bank regulators in the US have underwritten this agreement by allowing the banks to carry most of their loan exposure vis-à-vis the debtor countries at par, and to declare their interest receipts from the debtor countries as income, even though part of the interest receipts are received only as the result of new lending.
2.2 Sanctity of Contracts

The creditor governments have stressed that the punctual servicing of bank debt is crucial to preserve the 'sanctity of contract.' Simply put, the debtor countries voluntarily undertook the debt, and so should repay it. The simplest retort to this view is that the banks also voluntarily loaned the money, and at interest rate premia that compensated them for commercial risk. It therefore seems to be stretching the case to insist on full servicing of the commercial bank debt when that is possible only with official credits to help make the payments. A more satisfactory answer is that the 'sanctity of contract' argument can be overdone. Legal systems generally provide for the discharge (i.e. forgiveness) from contractual obligations under extenuating circumstances. The same principles should apply internationally, as several historical examples make clear.

Under common law and under the US Uniform Commercial Code, contracts may be discharged if performance of the contract would lead to a 'commercial impracticability.' Generally, this means that a contract will not be enforced if, after the signing of a contract, intervening events have rendered the contract highly uneconomical and if the following additional conditions hold: (a) the event could not have been reasonably foreseen by either party; (b) the costs of performing the contract have become 'extreme and unreasonable'; and (c) the party seeking discharge must have created the situation leading to the impracticability of performance.

The basic motivation of the doctrine of 'commercial impracticability' is that it is highly expensive for the parties to a contract to prepare contractual agreements that cover all possible contingencies, even those of low probability. Instead of forcing contract writers to bear the high costs of specifying all contingencies, the law provides for the discharge of contracts if certain well-circumscribed and low-probability events make fulfillment of the contract too expensive to one of the parties. As Posner and Rosenfield (1977) note, 'the purpose of an economically based discharge doctrine is to supply those contractual terms that the parties would have adopted if they had negotiated expressly over them.'

A recent example where this doctrine was invoked is the case of Westinghouse, which contracted in the 1970s to provide processed uranium to several power companies at a fixed price (see Joskow 1977 for a full discussion of the background of this case, and the applicability of the 'commercial impracticability' doctrine). After the contracts were signed, the spot market price of uranium tripled, and Westinghouse unilaterally announced that it would not honor its supply contracts, for to do so would cost the company several billion dollars. In fact, Westinghouse's plea of 'commercial impracticability' was not fully supported by the trial judge in the law suits brought by the nuclear power companies against Westinghouse, but crucially, the judge refused to enforce 'strict performance' of the contracts (i.e. requiring Westinghouse to deliver the uranium at the contract price). Rather, the judge pressed Westinghouse and the power companies to split the difference in out of court settlements. In the end, it appears that Westinghouse saved several billion dollars by seeking discharge from its contractual obligations.

While no legal analysis can be made here to demonstrate the applicability of the commercial impracticability doctrine to the case of developing country debt, the broad relevance is easily established. When the debt contracts with the banks were undertaken in the 1970s, real interest rates were low, and the terms of trade for the debtor countries were high. In the 1980s, real interest rates reached historically unprecedented peaks for the postwar period, while the terms of trade reached unprecedented lows. Diaz-Alejandro (1983) showed convincingly that the accumulation of Brazilian debt up until 1981 made good sense from an ex ante point of view. It was the unforeseen, and essentially unforeseeable shifts in the world macroeconomy that ultimately undermined Brazil's strategy of debt accumulation.

The 1920s and 1930s provide several clear illustrations of the risks that arise when creditor governments do not release fragile countries from their international obligations. Most economic historians would agree that the failure of the US to release its First World War allies from their war debts during the 1920s and early 1930s was a major destabilizing factor in the world economy, and a profound policy mistake. President Calvin Coolidge's incomprehension of the need to relieve the United States allies of their debts was immortalized in his famous remark on the debt, 'But they hired the money, didn't they?' In the event, the United States kept pressing for full servicing of the debts, even into the depths of the Great Depression. Hoover's pressure on the French to make payments in 1932, after a year's moratorium on servicing, led to the fall of the Herriot government. By 1933, payments of inter-allied war debts finally ceased, but only after the world economy and the US allies had suffered greatly.

The defaults by Latin American countries in the 1930s and 1940s on their international obligations are still more relevant to our discussion, and will be considered in greater detail later. Sufficient to note here that observers as astute as Henry Wallich (1943) had little doubt in the 1940s that the overhang of Latin American debt should be relieved through debt forgiveness. Rather than arguing that debt forgiveness would debilitate the private capital markets, Wallich argued the opposite, that 'a satisfactory settlement of the defaults would greatly improve the prospects of private foreign lending after the war.' He applauded the fact that the US government did not apply pressures to get full servicing of the debt, and noted, as an example, that 'apparently no attempt has been made [by the US government] to tie up the liberal [official] loans which began to be made in 1940 with demands for resumption of service to the defaulted bonds.'

As is well known, Argentina is the rare case in Latin America of a country that did not default on its loans in the 1930s. British political influence was able to keep the Argentine government on track in servicing its foreign debt, and was also able to impose on the country an onerous set of trade concessions in the notorious Roca-Runciman Treaty of 1933. Argentina did
not exactly benefit from its continued debt servicing. As Mallon and Sourrouille (1975, p. 7) point out, the external economic pressures and related events, were at the same time symptoms and additional causes of xenophobic antagonisms toward the very visible control that foreigners held over vital segments of the national economy. These antagonisms, they note, were crucial in the subsequent rise of Peron.

Certainly the most disastrous case of creditors failing to forgive a debt is that of the German reparations payments after the First World War. As is well known, German payments of reparations in the 1920s were largely financed by the back-to-back Dawes Loan and Young Loan. When foreign credit to Germany dried up in 1929, the German government resolved to continue paying its debts through intense deflation. As Kindleberger puts it:

Deflation produced by the cutoff in American lending was enhanced by the brutal policies, beginning in March 1930, of Heinrich Brüning, German Prime Minister, who was determined to show the Allies that it was impossible for Germany to pay, even if it had to destroy the economy and the political system to do so.

He succeeded, as we know too well.

For good or bad, repudiations of international economic agreements are much more common than is widely believed, though usually the repudiation is by powerful creditor countries rather than weak debtor countries. Perhaps the most notorious violation of an international economic agreement in the postwar years was the 1971 repudiation by the United States of its obligation to maintain the parity value of the dollar under the International Monetary Fund Articles of Agreement. Under that agreement, the United States was obligated to maintain a fixed parity of the dollar, within a 10 percent range, either by converting dollars into gold or by some other mechanism. In fact, when balance of payments pressures became too severe, the US unilaterally abandoned this obligation. President Nixon unilaterally suspended gold convertibility and devalued the exchange rate by 15 percent. This action substantially and unilaterally reduced the real value of foreign claims on the United States, in contravention of treaty obligations.

Other cases of unilateral repudiation of international obligations abound. After signing long-term price agreements for natural gas sales to Europe, the Netherlands unilaterally abrogated those accords and demanded (and achieved) higher prices after the OPEC price increases in 1973-4. Similarly, Australia unilaterally abrogated long-term coal contracts with Japan after the rise in world oil prices. Most recently, members of the International Tin Agreement, comprised of both producer and consumer nations (including most European countries), have repudiated their debts to various private financial firms. From the early 1980s, the International Tin Council supported the price of tin by buying extensive stocks, and financed the purchases with loans from private financial institutions, collateralized with the tin stocks. When credit lines dried up, the Tin Council ceased purchasing tin.

The price of tin plummeted, and the Tin Council defaulted on its credit lines. Several lawsuits are now pending.

The examples of contract discharge and of unilateral contract repudiations are not arguments per se in favor of forgiving some of the developing country debt payments, but they do show that the 'unthinkable' of violating international contracts is not so unthinkable after all. The ultimate arguments for partial debt forgiveness should be based primarily on the equity and increased economic efficiency that would result from a partial discharge of the debtor countries' obligations. The demonstration of the efficiency gains is the task of the next section.

3. When Governments are Insolvent

The theme of this section is that debt rescheduling is an inadequate response to situations in which debts will eventually have to be forgiven. For many countries, the external obligations are so vast that the countries and their creditors both believe that eventually some of the debt will have to be forgiven. Under the current rules of the game, however, the need for eventual debt forgiveness is hidden by the process of debt rescheduling and new official credits. This is 'window dressing,' as many bankers acknowledge, but it is viewed as harmless. If the debts are to be written down, why not postpone that event as long as possible?

3.1 Analogy to Bankruptcy Law

The fundamental reason for bankruptcy law is that there are indeed costs to postponing the inevitable. Assuming that a firm or individual is insolvent, it is best to handle that fact expeditiously, in a collective proceeding of the creditors that involves some discharge of the debtor's obligations. Otherwise, three kinds of costs are likely to arise. First, the creditors will engage in a costly 'grab race,' in which they battle each other for the limited spoils of the debtor. Second, new creditors will withhold loans from the firm (or individual), for fear of getting entangled in the overhang of debt. Thus, good investment opportunities are likely to be passed up. Third, the debtor will face the wrong incentives on investment decisions. The firm or individual will pass up good investment opportunities (when judged by the market cost of capital) and will choose overly risky investment projects.

In a recent study of the US bankruptcy code, Jackson (1986) outlines many of the costs that are likely to arise in a grab race between the creditors.

First, if individual creditors attempt to pursue separate remedies to collect their claims, they are likely to force the piecemeal liquidation of the firm, even if the firm is worth more as a going concern. Secured creditors will cash in on their collateral regardless of the value of the collateral to future operations of the firm. Creditors will spend inordinate resources to beat out
of the other creditors, in legal costs, monitoring the debtor, and so forth, thus
expending resources that from the collective point of view of the creditors
are not productive. Since there will be uncertainty among the creditors as to
which creditors will win the race of debt collection, the expected utility of
risk-averse creditors will decline. Compulsory and collective bankruptcy
proceedings are necessary to avoid these costs.

Next, consider the problems that arise if the firm (or country) has new
investment opportunities that are worthwhile when evaluated at the market
cost of capital. Such projects can, in principle, be financed in three ways: by
a new capital infusion from the existing creditors, by new capital from new
creditors, or by self-financing by the equity holders of the firm (or country).
With a large overhang of debt, each of these ways is likely to be problemat-
ic. Existing creditors will not put in new capital unless it is part of a
collective arrangement. Because of the likely asymmetry in the position of
the various existing creditors, and the problem of holdouts in a collective
agreement, it is generally very difficult to arrive at a consensual agreement
other than through a compulsory proceeding. The problem of arriving at an
agreement is made considerably more complicated by the fact that the
existing equity holders (or the government of a debtor country) are likely to
face inappropriate incentives for managing the new capital.

The incentive problems are twofold. First, if the firm is insolvent, it is the
creditor and not the equity holders (who are the firm's residual claimants)
who stand to gain from the returns to a new investment. Indeed, the
shareholders can benefit only if an investment has a very high rate of return
that re-establishes the firm's solvency. Thus, the shareholders will prefer
highly risky investments that offer at least a small chance of a very large
payoff. By undertaking a risky investment, the shareholders gain a small chance at re-establishing the value of their claims, while they impose a high expected cost on the creditors, who will suffer in the likely event that the
risky investment fails. For these reasons, it is unlikely that existing creditors
will be willing to make new loans to an insolvent debtor, unless the creditors
are able to achieve some management control over the choice of investment
projects.

A new creditor is even less likely to offer a new loan than are the existing
creditors, unless the new creditor can obtain some form of security for the
loan, or unless the new creditor is inherently in a privileged class (e.g., a
multilateral lending institution such as the IMF or World Bank). Without
security, the new lender will get tangled up in the collection difficulties of
the old debt. And in any event, potential new creditors understand that insol-
vent debtors are unlikely to have the incentive to manage the new funds with
care.

The provision of security (e.g., collateral) for a new loan is itself extremely
problematic. If a new loan is collateralized, but the money is used for
'consumption' purposes (e.g., a dividend distribution) or for a substandard
investment, then the new loan will be repaid at the expense of the old
creditors. In essence, the equity holders will gain by pocketing some of the
new loan (in the form of dividends or increased managerial slack), while the
original creditors will suffer a reduction in the value of their claims. Existing
creditors will be very chary of allowing new secured creditors to enter the
scene, even to finance ostensibly favorable investments. For this reason,
corporate bank creditors generally favor the borrowing limits that the IMF
imposes on overextended debtors. And in the context of bankruptcy, the
pre-existing creditors generally take control of the firm's management
before they permit the entry of new creditors.

Most of the inefficiencies of a debt overhang can be relieved by partial
debt forgiveness. Importantly, since debt forgiveness overcomes economic
inefficiencies that hamper the growth of the debtor, it is not surprising that
debt forgiveness can be designed in such a way as to improve the position of
both the creditors and the debtors. In the context of developing country
debt, partial debt forgiveness can be the spur to growth in an overextended
debtor country and can actually increase the eventual payments received by
the creditors.

A Formal Model

The proposition that collective debt relief can help both the debtor country
and the creditors can be illustrated in a simple two-period model. We will assume
that the behavior of the debtor country is determined by a social
planner, maximizing a two-period objective function for the country:

\[
U = U(C_1) + \beta U(C_2)
\]  

(1)

To begin the discussion, let us start with the 'end game,' in the second
period, in which claims against the debtor are being collected. Suppose that
in total, the creditors are owed a sum \( T \), which is to be divided among \( n \)
creditors, where \( n \) is large. The debtor can voluntarily make a payment \( S \), or
can be forced to make a payment \( P \) through collection actions undertaken
by the creditors. These actions could include lawsuits that tie up the
property of the debtor government, lobbying actions to get embargoes and
penalties imposed on the defaulting country, actions to hinder international
commerce, etc. These collection actions are generally inefficient, in that
they tend to impose costs on the debtor that are much greater than the net
resources actually collected by the creditors.

Suppose that the debt is so high that it exceeds the maximum amount of
the cost that can be imposed on the debtor by the collection actions of the
creditors. In that case, it will pay for the debtor to partially default. It is also
likely that it will be in the individual interest of each of the creditors to
pursue collection actions, especially if the other creditors do so as well, in
order that each creditor protect his share of the repayments. Even if the
debtor makes a voluntary partial payment of the debt, this is unlikely to
deter the collection actions of the individual creditors unless a common
agreement can be reached among the creditors to stop the collection actions.
In the resulting noncooperative equilibrium (not explicitly shown here) the
creditors as a whole would undertake excessive collection actions, say with
total cost \( C \), and would receive gross benefits \( B \) for their efforts. The costs to the debtor would be \( P \). Presumably, these values would have the following relative magnitude: \( C < B < P < D \).

Now, if a collective settlement can be reached instead, it is clear that both the creditors and the debtor will be better off. The creditors should agree to stop all collection actions in return for a partial payment of the debt \( S \), such that \( B - C < S < P \). The exact amount \( S \) that is agreed to will of course depend on the relative bargaining power of the creditors and the debtor, which in turn will depend on the nature of the collection actions. Lipson (1985) points out that syndicated loan agreements are now written to facilitate this kind of collective agreement. For example, some loan agreements require that the syndicate must vote by a two-thirds majority (with bank votes weighted by loan exposure) before the syndicate declares a default and opens the way for collection actions.

In what follows, I assume that a voluntary agreement to forgive part of the debt is indeed reached in the end game, and that the bargaining power of the debtor and creditors is such that the debtor always agrees to service the debt in an amount at most equal to a fraction \( z \) of the second-period gross domestic product, \( Q_2 \). If the debt due is less than \( z Q_2 \), then the debt is fully repaid. If the debt due exceeds \( z Q_2 \), then \( z Q_2 \) is paid. In this notation, if \( T \) is the total amount of debt legally due, and \( S \) is the amount actually paid, I assume:

\[
S = T \quad \text{for } T \leq z Q_2 \\
S = z Q_2 \quad \text{for } T > z Q_2
\]

Finally, I assume that the repayment \( S \) is divided among the various creditors in proportion to their loan exposure (i.e. their share of the total principal due).

Now let us turn to the behavior of the creditors and debtor before the end game. To study this behavior in the simplest possible way, we assume a two-period set-up, in which the debtor enters the first period with an amount of debt due in the second period equal to \( D \) (there is no debt due in the first period). The holders of this claim \( D \) will be termed the 'original creditors,' to distinguish them from new creditors who may make one-period loans between the first and the second periods. The original creditors may decide, in the first period, to forgive some of the debt due in the second period. If they do so, they collectively set a new level of debt due \( R \), which is less than \( D \).

The economy's production technology is given simply as:

\[
\begin{align*}
Q_1 &= F(K_1) \\
Q_2 &= F(K_2) \\
K_2 &= K_1 + I_1
\end{align*}
\]

with the usual assumptions that \( F > 0, F' < 0 \).

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The country may be able to attract new one-period loans in period 1. The principal due on such loans will be denoted \( D_1 \). Such loans will be forthcoming from new creditors only if they will be repaid fully, with world interest rate \( r \), in the second period (in other words, with total payment \( (1 + r)D_1 \)). Since the total debt \( T \) due in the second period will be \( D_1(1 + r) \) plus the amount \( R \) due from the original creditors, we can use equation (1) to see that the lending from the new creditors will be limited by the following condition:

\[
D_1(1 + r) < z Q_2 - R
\]

As long as equation (4) holds, then the new creditors will be fully repaid. Note that in order to implement equation (4), the lenders must calculate \( Q_2 \), which equals \( F(K_2) \). The safe lending limit thus depends on the amount of investment that the debtor government will undertake in the first period. In particular, to implement condition (3), the new lenders must derive the debtor's investment function \( I = I_1(D_1, R) \), and then rewrite (4) as (4'):

\[
D_1(1 + r) < z Q_2 [K_1 + I_1(D_1, R)] - R
\]

Implicitly, equation (4') defines a lending limit for \( D_1 \) in terms of the overhang of long-term debt \( R \). Equation (4') can be solved to yield a simple credit-rationing rule of the form:

\[
D_1 \leq h(R)
\]

It is easy to show that there exists an \( R^* \), such that for \( R > R^* \), \( D_1 = 0 \). For \( R \) strictly greater than \( R^* \), the country will not fully service its original debt, and so cannot find new lenders.

The original creditors, with claim \( D_1 \), have a single choice in the first period: whether to forgive part of the debt that will come due in the second period. If they jointly agree to do so, they change \( D_1 \) to some amount \( R < D_1 \). If they take no action, then the debt due in period 2 remains \( D_1 \). The goal of the creditors is to maximize their ultimate repayment, which is given by \( S - (1 + r)D_1 \). Remember that \( S \) denotes the debtor's full repayment in period 2, of which \( (1 + r)D_1 \) goes to the first-period lenders. The creditors' problem can be stated as follows:

\[
\max S - (1 + r)D_1 \quad \text{subject to } R < D
\]

We shall see that the original creditors indeed sometimes have the incentive to forgive part of the debt even before it comes due in the second period.

The debtor has the choice of investment, consumption, and perhaps new borrowing, in the first period. The balance of payments constraint is simply:

\[
D_1 = I_1 + C_1 - Q_1
\]

Once the level of second-period debt \( R \) is selected by the original creditors, the debtor maximizes utility in equation (1) subject to equations (2), (3), (5), and (7).
We will now focus on the case in which the original debt \( D \) exceeds \( R^* \). Assume first that the creditors do not forgive any of this debt. In this case, there will be no loans forthcoming in period 1, and part of the debt \( D \) will be defaulted in period 2. To choose the optimal level of investment \( I \), and the amount of debt repayment, the debtor solves the following two-period problem:

\[
\max U(C1) + bU(C2) \quad (8)
\]

such that \( C1 = F(K1) - I1 \)

\( C2 = F(K1 + I1) - S \)

Note that since \( S = zQ2 \), we can also write \( C2 = (1 - z)F(K1 + I1) \). The interior solution is obtained where:

\[
U'(C1) = (1 - z)F'(K1 + I1)bU'(C2) \quad (9)
\]

Note that total debt repayments equal \( zF(K1 + I1) \), which by assumption, are less than \( D \). The actual level of debt repayments are denoted as \( S' \).

The key point can now be demonstrated. Suppose that the original creditors forgive part of the debt, so that the remaining debt is reduced to a level that will indeed be repaid. We can show with a partial writedown that the creditors can receive as much in actual repayments while the debtor is left better off. Alternatively, a new debt level can be selected that leaves both the creditors and the debtor better off. To show this, suppose that the debt is written down to \( S' \) itself (that is, to the amount actually repaid in the previous problem). Then the debtor would face a maximization problem as in equation (8), but with \( S' \) replacing \( S \). Actual repayments would no longer be fixed as a fraction \( zQ2 \), since the debt would now be low enough to be fully repaid. Thus, the first-order condition in equation (9) would become:

\[
U'(C1) = F'(K1 + I1)bU'(C2) \quad (10)
\]

Comparing equations (10) and (9), it is easy to show that investment will be higher in (10), since the equations differ only by the presence of \( z \) in (9). Since \( I1 \) is higher, \( Q2 \) is higher as well in the case with the debt writedown, though the actual repayment to the creditors is the same in both cases: \( S' \). It is simple to show that by writing down the original \( D \) to a level slightly above \( S' \), both the creditors and the debtor are left better off.

What is happening here? When a debt overhang exists, the debt acts like a distortionary tax, with a corresponding deadweight burden. Since the debtor pays a fraction of income \( z \) to its creditors, any increase in output is taxed at the marginal rate \( z \) when viewed from the debtor's perspective. Given this tax rate, the levels of output and investment are chosen according to equation (8). Now, by writing down the debt to a level that will actually be paid, the debt becomes a lump-sum burden, rather than a marginal tax. It thus becomes profitable to invest more.

4. Insolvent Governments: The Practice

The theoretical analysis suggests that if countries are likely to default on their external debt, there are good reasons to forgive that debt now rather than later. In this section, I discuss some of the empirical evidence suggesting that for many countries, eventual default seems a good prediction. Furthermore, many of the risks of postponing debt forgiveness are evident in these countries: investment is very low, banks are reducing rather than increasing their exposures, and domestic capital is leaving the country via capital flight.

4.1 Market Evidence on Debtor Country Prospects

The most direct evidence on eventual prospects for the external debt is the market value of the debt itself. The market value of claims on the developing countries can be inferred from at least three sources: Most directly, an active secondary market in bank claims on the debtor countries has arisen in the past year, and by most accounts, there is a substantial amount of business now taking place in this market. The second source of information is from trading in the bonds of these countries. During the 1970s, the largest debtor countries were able to float bonds in both the European and US bond markets. Daily market quotations are available on these bonds. Third, it is possible to infer the market valuation of the bank claims by examining the overall stock market valuation of the commercial banks, as a function of the amount of their exposure in the developing countries. Assuming that the debt of the developing countries is priced by the market at a discount, we should expect to see that heavily exposed banks sell at a discount relative to lightly exposed banks.

All three sources of information point in the same direction: that the market places a varying, but reasonably high, probability of partial default
on the debts of the major debtor countries. In November 1985, The Economist (16 November 1985) reported the following price ranges of bank debt in the secondary market:

- Brazil 75-83 per cent of par value
- Mexico 78-82 per cent of par value
- Peru 32-6 per cent of par value

More recently, Euromoney (August 1986) presented the following data:

- Brazil 76 per cent
- Mexico 56 per cent
- Ecuador 65 per cent
- Argentina 66 per cent

The most hopelessly indebted country in Latin America, Bolivia, has been quoted during May–July 1980 at an amazing price of 6–11 per cent of par value.

Discounts of approximately this magnitude have also been found in studies of bonds and bank stock valuations. Steven Kyle made a detailed study of the prices of foreign bonds of Brazil, Argentina, and Mexico, and showed discounts of a similar magnitude. In a joint study with Kyle of bank stock prices I demonstrated that as of mid-1983, the commercial bank stocks were discounted by about 20 cents per dollar of exposure in Argentina, Brazil, and Mexico, the only countries for which detailed exposure data are available.

The worry over eventual default is also showing up increasing in the behavior of bank regulators in several countries. According to a recent study by the Peat Marwick accounting firm, reported in the Financial Times (24 June 1986), eight creditor countries have introduced guidelines for provisioning for sovereign debt. The countries have all required that loss reserves be set aside in varying percentages for several debtor countries, with the extent of provisioning depending on the perceived riskiness of the debtor. Current provisioning regulations are as shown in table 5.3. Unfortunately, precise information on the required provisioning for each debtor country is not publicly available.

Note that these regulatory rules, while helpful from the point of view of banking supervision, tend to further shift the most highly indebted countries off the possibility of any new credit. In the United States, for example, under the so-called ATRR provisions (allocated transfer risk reserve), when a country is assigned the classification of ‘value impaired,’ and the banks are required to provision for a proportion of their exposure, any new loans by US banks must immediately be provisioned in the same proportion. This rule effectively blocks new lending (except short-term trade credits) by American banks to the countries on the ATRR list, which as of the beginning of 1986 included Bolivia, Nicaragua, Peru, Poland, Sudan, and Zaire.

<table>
<thead>
<tr>
<th>Creditor country</th>
<th>Range for loan loss provisioning (% of exposure that must be provisioned)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>10-15</td>
</tr>
<tr>
<td>Japan</td>
<td>1-5</td>
</tr>
<tr>
<td>Netherlands</td>
<td>5-100</td>
</tr>
<tr>
<td>Spain</td>
<td>1-5-100</td>
</tr>
<tr>
<td>Sweden</td>
<td>30-100</td>
</tr>
<tr>
<td>Switzerland</td>
<td>10-50</td>
</tr>
<tr>
<td>United States</td>
<td>15-80</td>
</tr>
</tbody>
</table>

Only a detailed country-by-country study will provide enough evidence on the need for explicit debt forgiveness. As I noted at the outset, the countries of Latin America differ greatly in their capacity to handle the external debt. Nonetheless, some rough indicators suggest that the discounting of the bank debts and the tightening of the banking regulations are having the effect that we might expect: new bank lending in Latin America is falling significantly, as is foreign direct investment, with the result that overall investment levels remain remarkably depressed. Latin American residents are following the international commercial banks in exporting capital at a rapid rate. Some recent data on these variables are included in table 5.4. Unfortunately, the data on foreign direct investment for Latin America stop in 1983, but a sharp slowdown in this form of capital inflow is evident from the data in table 5.5.

According to a study by Keefe, Bruyette & Woods, Inc. (1985), the banks are also changing the nature of their exposure in Latin America, by shifting their portfolios away from the private sector and toward government-guaranteed debt. What is happening, it appears, is that the banks are being required, in concerted lending exercises, to increase their loans to Latin American governments, but they are compensating for this increased risk by sharply withdrawing credits to private-sector firms. In this way, the heralded return of the Latin American economies to private market investment is being frustrated. In total, bank exposure to ‘non-guaranteed, non-bank’ borrowers (basically the non-bank private sector) in the Latin American countries dropped from approximately $22.5 billion in June 1982 to $15.4 billion in September 1984. Data depicting the overall shift in exposure toward the public sector are shown in table 5.6.

4.2 Impact of Debt Forgiveness on the Commercial Banks

With the regulators bearing down on the risky portfolios of the international banks, and with the stock market and secondary markets already valuing the LDC claims at far less than par, we have a somewhat perplexing situation. The debt overhang has already been discounted by the markets, but none of the debt has been forgiven. Since the markets have already written off some
Table 5.4 Variables affecting investment levels in Latin America

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>0.1</td>
<td>1</td>
</tr>
<tr>
<td>Brazil</td>
<td>-0.3</td>
<td>-3</td>
</tr>
<tr>
<td>Mexico</td>
<td>-1.7</td>
<td>-17</td>
</tr>
<tr>
<td>Venezuela</td>
<td>-3.9</td>
<td>-6</td>
</tr>
<tr>
<td>10 Latin debtors</td>
<td>-7.5</td>
<td>-30</td>
</tr>
</tbody>
</table>

Sources: US bank exposure from Statistical Release of the Financial Institutions Examination Council, 15 October 1984 and 15 April 1986; capital flight estimates from Morgan Guaranty World Financial Markets, March 1986. The 10 Latin American countries are: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, Uruguay, and Venezuela.

Table 5.5 Capital inflow to Latin America, 1980–3

<table>
<thead>
<tr>
<th>Year</th>
<th>Net inflow</th>
<th>Direct investment ($billion)</th>
<th>Profits remittances</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>5.5</td>
<td>-4.0</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>1981</td>
<td>7.2</td>
<td>-4.9</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>1982</td>
<td>5.7</td>
<td>-4.9</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>1983</td>
<td>3.1</td>
<td>-3.2</td>
<td>-1.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.6 US bank cross-border exposure to major Latin debtors: per cent of exposure owed by the public sector ($billion)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>31.1</td>
<td>38.7</td>
<td>49.5</td>
</tr>
<tr>
<td>Brazil</td>
<td>29.1</td>
<td>37.5</td>
<td>47.0</td>
</tr>
<tr>
<td>Chile</td>
<td>18.2</td>
<td>20.6</td>
<td>37.9</td>
</tr>
<tr>
<td>Mexico</td>
<td>35.2</td>
<td>39.1</td>
<td>50.3</td>
</tr>
<tr>
<td>Venezuela</td>
<td>42.4</td>
<td>46.6</td>
<td>49.0</td>
</tr>
</tbody>
</table>


of the LDC debt, it is likely that a good part of the debt of many countries could be forgiven without further affecting the market valuation of the banks. In fact, according to the main theoretical result of the last section, explicit forgiveness could actually raise the bank’s valuation, by increasing the expected value of eventual repayments by the debtor countries.

Since 1982, there has also been a significant rise in the money-center banks’ capital-to-asset ratios and a drop in the share of bank assets in the developing countries. The result is a significant drop in the ratio of developing country debt exposure to primary bank capital, meaning that a reduction in bank values via a debt writeoff could now be more easily accommodated than just a few years ago. Consider, as an illustration, the drop in exposure to Mexico of some of the leading banks, as shown in table 5.7.

We see from table 5.7 that average exposure to Mexico of the leading money-center banks has declined from 49 per cent of capital in 1982 to only 30 per cent of capital in 1986. The final column shows the percentage drop of pretax earnings that these banks would suffer if Mexico were to pay no interest at all in 1986. Such a drop would cause an earnings drop of less than 20 per cent for all banks except for BankAmerica, whose earnings are suffering in 1986 because of other balance sheet losses.

Consider the Baker Plan proposal for bank lending in the context of debt forgiveness. The Baker Plan calls for bank lending to the largest 15 debtor countries to rise by $20 billion over three years. Suppose that instead of new lending, the $20 billion were to be granted in the form of debt forgiveness. Since the $20 billion represents an annual increase in exposure of about 2.2 per cent, or 6.6 per cent over three years, and since the exposure to capital ratio is on the order of 1.0, granting the entire Baker Plan money in the form of forgiveness would represent only about 6.6 per cent of bank capital. The evidence cited before suggested that this amount of capital has already been discounted by the markets.

Table 5.7 Debt exposure to Mexico (as a percentage of capital) of some of the leading banks

<table>
<thead>
<tr>
<th>Bank</th>
<th>Exposure as % of capital 1982</th>
<th>Loss of earnings from nonaccrual interest in 1986 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturers Hanover</td>
<td>59</td>
<td>36</td>
</tr>
<tr>
<td>Bankers Trust</td>
<td>48</td>
<td>39</td>
</tr>
<tr>
<td>Chemical NY Corp</td>
<td>62</td>
<td>86</td>
</tr>
<tr>
<td>First Chicago</td>
<td>52</td>
<td>31</td>
</tr>
<tr>
<td>BankAmerica</td>
<td>48</td>
<td>37</td>
</tr>
<tr>
<td>Wells Fargo</td>
<td>45</td>
<td>24</td>
</tr>
<tr>
<td>Chase Manhattan</td>
<td>46</td>
<td>28</td>
</tr>
<tr>
<td>Mellon Bank</td>
<td>34</td>
<td>26</td>
</tr>
<tr>
<td>J. P. Morgan</td>
<td>33</td>
<td>19</td>
</tr>
<tr>
<td>Citicorp</td>
<td>59</td>
<td>25</td>
</tr>
<tr>
<td>Average</td>
<td>49</td>
<td>30</td>
</tr>
</tbody>
</table>

4.3 Moving Toward a System of Debt Forgiveness

For many debtor countries, the current set of institutional arrangements are adequate. The problem lies with the subset of countries, mostly in Latin America and Africa, that are currently retrogressing under the weight of the debt burden. Up until now, the current approach has held forth few safety valves. To the extent that a country (e.g. Peru) has gotten deeper and deeper into trouble, it has not found as easing of credit terms, but the reverse. The debt overhang tends to intensify, bank regulators redline the country, and the commercial banks do their best to reduce exposure, especially on debt owed by the private sector. Only recently have some new approaches, based on repurchases of debt, started to appear. I will describe these new directions below.

The experience of the 1930s and 1940s is instructive in thinking about a shift in strategy to include partial debt forgiveness. After the collapse of commodities prices in the early 1930s, most of the Latin American debtor countries suspended debt servicing on foreign bonds that they had floated in the US and the UK during the 1920s. The debt servicing moratorium was unilateral, with little negotiation between creditors and debtors until after the Second World War. In the late 1940s, the debtor countries came up with revised debt servicing plans so that they could qualify for the loans of the newly created World Bank, which was requiring from each country an agreement between the government and its creditors as a precondition for disbursements. The World Bank did not, however, take a hard line in the type of agreements that could be reached.

The terms of the agreement were generally very favorable. The unpaid interest during the period of default was generally summed without capitalization, and added to the total stock of principal due. Thus, a $100 coupon due in 1932 and unpaid for the next fifteen years, was charged to the country at $100, rather than at $100 compounded at market interest rates. The resulting 'total debt due' was then refinanced with a new bond issue, usually at maturities of 30 to 50 years, at very low interest rates. In reality, the debt burden was reduced below even this low amount. One reason is that the debtor countries secretly entered the bond market in a big way in the late 1930s and early 1940s, in order to buy back their debt at prices of 10 to 15 cents on the dollar. A second crucial reason for the reduction of the debt burden was the rise in commodities prices during the Second World War.

In a forthcoming study, Jorgensen and I have calculated the extent of forgiveness implicit in the sequence of debt moratorium, buyback of debt, and eventual renegotiation of the bond contracts. We have calculated the net present value of the money raised by dollar-denominated external government bond of several economies, and the net present value of repayments. These income and repayment streams are discounted to the year 1922, using the annual yield of US treasury bills. The ratio of repayments to debt floations can exceed 1.0 if the debt is mostly repaid, and at coupon rates in excess of the T-bill rate. The ratio will be less than 1.0 if the

Table 5.8 Ratio of net present value (NPV) of repayments to NPV of government bond floations for five Latin American economies

<table>
<thead>
<tr>
<th>Country</th>
<th>Ratio of NPV of repayments to NPV of government bond floations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>1.47</td>
</tr>
<tr>
<td>Bolivia</td>
<td>0.65</td>
</tr>
<tr>
<td>Chile</td>
<td>0.74</td>
</tr>
<tr>
<td>Colombia</td>
<td>1.99</td>
</tr>
<tr>
<td>Peru</td>
<td>0.62</td>
</tr>
</tbody>
</table>

risk premium on the coupon rates was insufficient to compensate for the nonpayments of interest and principal and for the buybacks at discounted prices. The preliminary results for five economies are shown in Table 5.8. Note that Bolivia, Chile, and Peru achieved effective forgiveness in the range of 30 per cent. Argentina, on the contrary, both serviced the debt and paid high-risk premia at the same time.

The predominance of bond debt after the Second World War, rather than bank debt, provided a safety valve that does not now exist. Because of the extensive secondary-hand market in bonds, the debtor governments were able to buy back their own obligations, albeit discretely. Of course the low market quotations proved that the countries were not creditworthy, so that they could not borrow much again until the debt situation was resolved, but at least they could steadily reduce the outstanding burden without enormous public fanfare.

The current situation has so far produced no equivalent safety valve. The second-hand market was thin until recently, though it seems that increasing sales are now taking place. From a legal point of view, the market has had limited utility for the debtor countries, since most syndicated loan agreements enjoy the countries from direct buybacks of their own debt. Moreover, the banks have been reluctant to sell their syndicated loans for cash, since bank regulators have suggested that if a market discount is firmly established for a country's debt, they might require the banks to write down the book value of their remaining exposure in the country. The main implication of this accounting rule is that the banks have used the secondary market much more for swaps than for direct sales of their claims.

A recent innovation that is still a small part of the market is the so-called 'capitalization' of bank debt. The process, which has been used by Mexico, Chile, and some other debtor countries, works as follows. An international firm, with a subsidiary in the debtor country, buys the bank debt at a discount in the secondary market. It then delivers the debt to the central bank of the debtor country, at a somewhat higher price, payable in domestic currency and usable only for an increase in foreign direct investment in the country. Nissan, for example, recently purchased several million dollars of Mexican debt at 55 per cent of par, and sold the debt to the Bank of Mexico.
for 70 per cent. The proceeds, in Mexican pesos, were used for the recapitalization of the Nissan subsidiary in Mexico. Mexico achieved a buyback of debt at a discount (70 per cent), and Nissan obtained an effective subsidization on new investment in the country.

The thrust of this paper is that developments such as this should be fostered by the official creditors and the multilateral agencies. The World Bank and InterAmerican Development Bank should use their resources, for example, to lend the debtor countries money to buy back their debt. This would provide a cheap way to reduce exposure of the debtor countries, while at the same time providing a major stimulus to private-sector investment. There are several legal and regulatory problems that will have to be overcome in order to expand this kind of activity, but overcoming such impediments should be a major policy goal (see Buchheit 1986 for a discussion of the legal and regulatory aspects of debt capitalization schemes).

REFERENCES


Euromoney 1986: The debt swappers, 67-75.


