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METHODOLOGICAL ISSUES IN EVALUATING DEBT-REDUCING DEALS

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Abstract:

A menu-based debt-reducing deal is a concerted agreement between a debtor and its creditors on a set of financial options the creditor banks can freely choose from. The novelty and complexity of the menu-based debt reduction deals make it difficult to see the economic principles that underlay them. This paper explains and analyzes the main elements of a menu –buybacks, debt exchanges and new money, and how they interact in determing the aggregate choice of banks. We also discuss the important effects of the source of funding the debt reduction. The paper emphasizes that the provision of new money in a menu is best seen as a concession by non-exiting creditors in exchange for the value increase of their existing debt on account of the debt reduction. The set of best possible combinations of debt reduction and new liquidity the country can bargain for with its commercial creditors in a Brady deal is identified. We also indicate how a country can best choose between these possible combinations.

I. Introduction

The Brady Initiative has introduced official support for debt reduction. This new phase in the debt strategy requires a new set of tools to analyze debt deals and to study the impact of a deal on the debtor country. Since debt reduction as well as new money instruments are now negotiated simultaneously, the analysis will have to be different from that used in a pure market-based approach.

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This paper discusses first the methodological issues involved in evaluating the different individual components of a debt deal from a debtor's perspective, and shows that the evaluation can be reduced to a tradeoff in two dimensions: debt reduction versus liquidity. We present a simple model to evaluate a debt deal consisting of multiple components, in particular, new money and debt reduction instruments. Following debt reduction, creditors not participating in a debt reduction are made better off since the unit value of the remaining debt increases. Thus, the debtor should be able to use debt reductions as a bargaining chip to extract concessions from these non-participating banks, such as new loans. This leads to the important result that agreements more favorable to the country can be reached when a menu driven deal is negotiated in a concerted environment, even when the choice between the options remains completely voluntary.

The structure of the paper is as follows. Section II presents the building blocks for an analysis of debt deals, discusses some common pitfalls, and introduces the concept of the debt value curve. Section III analyzes the two key instruments of a menu. Section IV puts the different elements of a deal together and derives a debt reduction-liquidity frontier. Section IV applies the methodology to recent Mexico and Philippines debt deals and discusses the impact of new loans by senior lenders, such as the international financial institutions, on debt deals. Section V concludes.

II. Brady Initiative and Building Blocks

We first discuss the main features of the Brady Initiative. The IMF, World Bank and other official creditors have agreed to provide financial support for debt and debt-service reduction for debtor countries that pursue (or adopt) growth- and reform-oriented adjustment programs. Over a three-year period, the IMF and the World Bank expect to provide between $ 20 billion and $ 25 billion. Japan is envisaged to provide about $ 10 billion over the next several years through cofinancing as additional support. Commercial banks will provide new money and support the accelerated reduction of debt and debt service. The debt and debt-service reduction can occur through debt buybacks, exchanges of old debt at a discount for new (partly) collateralized bonds, and exchanges of old debt for new bonds at par value, with reduced interest rates. Creditor governments will continue to reschedule official loans through the Paris Club and maintain export credit cover for countries with sound reform programs.

The novelty and complexity of menu based debt deals makes it difficult to see behind the smoke and mirrors of financial engineering. This paper will simplify the analysis by capturing the essentials behind menu driven deals under the Brady Initiative. The barebones of any menu consist of: a new money option; an enhanced debt and debt service reduction bond to be exchanged for debt; and buybacks. In several recent deal, loans from international financial institutions (IFIs) were used to (partially) finance the debt reduction,

To characterize what type of deal is best for a debtor, a two step procedure is used.

(i) First, we look for the set of (best) feasible deals which offer each creditor a net payoff equal to the status quo in terms of expected net present value. For this, it is necessary to identify the status quo against which the creditors and the country compare any debt deal. This also requires an understanding of how banks evaluate different claims, in particular, new money calls.
(ii) Second, we specify the objective of the country in terms of two parameters: debt reduction –a reduction in the present value of future obligations– and new liquidity used domestically. The choice for the debtor amounts then to the right trade-off between debt reduction and new liquidity among the set of (best) feasible deals.

1. Instruments

Market based debt and debt service reducing transactions can be divided into three broad categories: (i) buybacks; (ii) exchange of foreign debt against another asset –foreign as with exit and par bonds, or domestic as with debt-equity swaps– with different terms (and some enhancements); and (iii) new money calls. We focus in the analysis are two basic options: the buyback and the new money call. The other instruments can to a large extent be mimicked by these two (see Claessens and Diwan (1991)).

In a buyback, a country (Bolivia and Chile are examples) buys back its debt at a discount in exchange for a cash payment. But countries with debt servicing difficulties rarely have much ready cash, and therefore the Brady initiative envisions external support. In case of Bolivia and Chile, threre were exceptional circumstances that facilitated the debt buybacks (the Bolivian operation was financed by aid agencies and Chile had excess reserves because of unanticipated increases in the price of copper).

An exchange of claims involves an exchange of old debt for a debt instrument with lower principal or interest. In order for the exchange to be voluntary, the new instrument must be a more secure asset in the eyes of the creditor. Three factors can make new instrument more secure. First, the banks can collectively agree that exit bonds have seniority over other claims. This has rarely happened, however. Second, the IFIs could guarantee them. Third, the new asset can be backed by collateral for the principal or for interest payments, or it can have special conversion rights. The last method has been used in Brady deals. In addition, the new instrument can be more valuable to the creditors because of certain tax, regulatory and accounting advantages. To purchase the collateral, the country can use it own resources or obtain (part of) the resources from other sources –such as the IMF and the World Bank.

In a debt-equity swap, an investor exchanges a foreign loan for local currency to be used for domestic investments. If the debt retired is public debt, the government effectively prepays debt in domestic currency, sometimes at a discount. When private sector debt is retired (at a discount), the government loses (in terms of cash flow), because, in general, the debt service would have been paid to the central bank by the private borrower in full (for eventual payment by the central bank to external creditors). In privatization, public debt for equity swaps amount to an exchange of liabilities. Here there may be an efficiency gains if foreigners can manage the domestic asset better and because better risk sharing is achieved since equity contracts are indexed with respect to performance.

2. Pitfalls and Fallacies of Market Based Debt Reduction Deals

It is useful to dispel first some common misperceptions and fallacies regarding market based debt deals. We will concentrate on two. A first common fallacy is that voluntary market based mechanisms are always good for all. While it is true that market based mechanisms by definition get around collective action problems, and may therefore be advantageous, they do not necessarily benefit all. A simple example of how a market based mechanism may backfire would be when the country has an investment opportunity which, from creditors' point of view, is very profitable as it yields much more than their cost of funds. Suppose now that the country uses some of its funds to buy back debt instead of investing. The buyback of debt would make all creditors collectively

worse off, since tney need to give up a profitable investment opportunity. The country would also be worse off since it gives up all future output.

Such an action would clearly not serve the interest of any party. Under a concerted agreement this is unlikely to happen, since all creditors decide collectively on the desirability of a buyback. However, under a market-based schemes each creditor decides individually on its preferred action. Each creditors will realize that, even if she does not participate in the buyback, other creditors may well do so and the investment project may therefore be effectively canceled. Consequently, each creditor will have an incentive to participate in a buyback and the investment project will effectively be canceled. The market-based outcome will thus lead to a worse, Pareto-inferior outcome than a concerted agreement.

The second fallacy of voluntary debt reductions is that the mere existence of a discount on the secondary market is a sufficient condition for buybacks which are profitable for a debtor. This view can only be correct if the secondary market price does not represent the expected repayment stream per unit of debt. The reluctance on the part of creditor governments and of commercial banks themselves to commit large sums of money to buy back debt under the Brady plan, even though secondary market prices are significantly below par, indicates, however, that a discount is not a sufficient condition for profitable buybacks. In the absence of a clear indication of either an upward or downward bias in secondary market prices, we conjecture that they represent a fair estimate of the expected average value per unit debt, in which case buybacks are not necessarily beneficial for the debtor.

3. Status-Quo and the Diverse Interests of Banks

Even though a menu approach allows for differences among banks, the determination of the elements of a menu, their relative pricing, and the sources of the funds used to finance debt reduction remain matters that can divide banks. Divergence –between banks that want to exit and that want to stick to the new money approach– imposes restrictions, since under the syndicated loan agreements each bank is in a position to veto contract changes. Each bank must therefore perceive that it is equally well off compared to the situation with no deal, call it the status-quo. Other parties involved, the IFIs and the debtor country, must also perceive that the new deal offers then at least as much as the status-quo[1]. The constraints that follow from this are:

* No individual bank should perceive that it loses compared to its status-quo. Otherwise, the bank could veto the deal. This implies. (i) Exiting banks must receive at least –in present value equivalents– the value of their claims in the status-quo; and (ii) Remaining banks providing new money payoffs must receive a payoff no lower than the status-quo. The gains from the increase in secondary market price (the result of the debt reduction) must exceed (or be equal to) the capital loss implied by the provision of new money.

* The IFIs must accept to fund (parts of) the debt reduction.

These constraints are not easily satisfied. Conflicts of interests are likely to arise between exiting and remaining banks. Take the case where debt reduction in financed by resources that were available for debt service. A bank will benefit by exiting if the price at which it sells its calims is higher than the perceived value of staying in. However, if debt is reduced the benefits of staying in –and the price at which a bank will want to exit– will be higher due to improved creditworthiness. But the higher the exit price, the less debt reduction there will be, and the less attractive the deal will be for the remaining banks. Thus, banks that exit must do so at a price which is considered a bargain by the remaining banks[2].

Alternatively, consider the case where the funds for debt reduction would otherwise not have been available, e.g. foregone domestic absorption or the new external sources of the IFIs. In this case banks con exit at prices above their status-quo price while still allowing for gains for the remaining banks. But in this case, part of the benefits of debt reduction has leaked to the remaining lenders through the increase in the unit value of remaining debt. The debtor and the IFIs might refuse to participate in such a deal. In such cases a mechanism is needed that allows the debtor country to internalize most (or all) of the gains which are due to the reduction in debt while at the same time making no commercial bank worse off.

4. The Debt Value Function

The analysis of debt deals requires a further understanding of how the secondary market evaluates devoloping country debt. Conceptual models as well as empirical observations support the view –holding everything else constant– that the market value of debt falls short of its face value at an increasing rate as indebtedness increases. This implies a decrease in the unit price of debt as indebtedness increases.

Several empirical studies have measured the relationship between prices and face value of debt by estimating price equations (Claessens (1990), Purcell and Orlanski (1988), Sachs and Huizinga (1987), and Vatnick (1988)). Some of these papers use regressions of the log of price on the log of debt and other conditioning variables in the form:

$$\ln(p_{it}) = \alpha - \beta \ln(D)_{it} + \gamma Y_{it} + \epsilon_{it} \qquad (1)$$

where p_{it} is the secondary market price, D_{it} is the total debt stock and Y_{it} is a set of other regressors (such as measures of exports, arrears and rescheduling), all for the i^{th} country in year t. The value of debt is given by $V = p^*D = cD^{1-\beta}$, where c is a constant related to α and Y in (1). The coefficient β provides the elasticity of price with respect to the nominal value of debt. Typically, estimates of β are in the range $\cdot 3 < \beta < \cdot 7$.

The specification in (1) is problematic because it forces the elasticity to be the same at all levels of D. A better functional form for estimation is the logistic form:

$$\ln(p_{it}/1-p_{it}) = \alpha - \beta \ln(D)_{it} + \gamma Y_{it} + \epsilon_{it}, \qquad (2)$$

with the elasticity of price not restricted to be the same across countries.

Assuming that random noise separates the market price of two countries with an equal debt burden, (2) can be interpreted as an estimate of the average debt value curve across developing countries. The elasticity of price with respect to debt is now a function of D and given by: $[c\beta]/[1 + cD^{\beta}]$, where c is a constant related to α. Cohen (1990) obtains an estimate for β of 1.2 for a set of 16 highly indebted countries. Recent work by Claessens, Diwan, Froot and Krugman (1991, CDFK) finds $\beta = 1.41$ (and $\alpha = 7.88$) for a set of 35 countries.

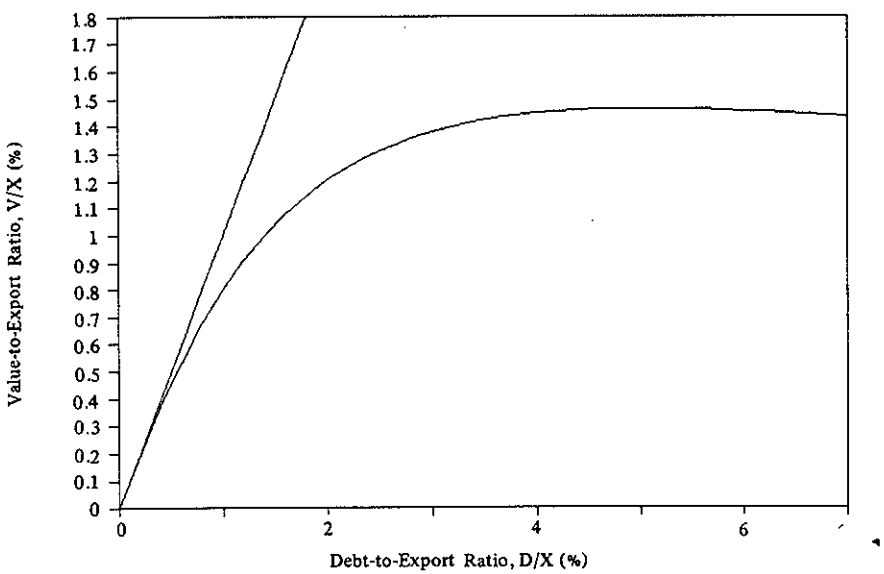
The price equation used in our analysis is:

$$\text{CDFK:} \quad \ln [p/(1 - p)] = 7.88 - 1.41*\ln(D/X) \qquad (3)$$

where X stands for exports (Data set; cross section with 35 countries)[3].

The debt value function associated with the CDFK price equation is drawn in figure 1, with the market value V on the vertical axis and the size of the nominal debt D on the horizontal axis (both axis are scaled by the value of exports). The value of debt is a concave function of outstanding debt. For a given change in nominal claims, the associated change in the value of debt is always smaller (as long as we are on the upward sloping side of the debt value curve).

FIGURE 1
DEBT VALUE CURVE



Application to Hypothetical Country

The secondary market price for an individual country will, apart from the level of debt relative to exports, be driven by many country specific factors. To apply the concept of a debt value curve to a specific country a price equation including more country specific variables would need to be estimated. The price equation listed above would likely not be sufficient. However, for analytical and illustrative purposes the estimated price equation can suffice as it captures the essential notion that the debt-value curve is concave. Other, more country specific debt value curves will also have this property.

We will now apply the estimated equation (3) to a hypothetical country and predict the market price for different debt levels, conditional on a set of expectations. For our hypothetical country we assume that exports are $ 30 billion. Table 1 provides some prices for different debt levels and uses alternative price equations. As one can observe, prices predicted under the alternative equations are close.

TABLE 1

PREDICTED PRICES
(CENTS PER $ 1 OF FACE VALUE)

($ billion)	D = 80	D = 90	D = 100	D = 110	D = 120
CDFK	50.1	46.0	42.3	39.0	36.2
Cohen	48.8	44.5	40.7	37.4	34.4
Salomon	40.6	38.8	37.4	36.1	35.0

References: Claessens, Diwan, Froot and Krugman (CDFK, 1991), Cohen (1990), Purcell and Orlaski (1988). The equations also require assumptions on: GNP growth (2 percent); reserves ($ 10 billion) and GNP ($ 300 billion).

III. Debt Reduction: The Advantages of the Menu Approach over Market Buybacks

We analyze in this section the elements of any menu: buybacks and new money calls.

1. Buybacks

Debt buybacks reduce outstanding debt, which raises the secondary market price. In a rational market, the buyback will not occur at the (ex-ante) lower price but at the higher ex-post price (assuming that the buyback is publicly announced rather than done secretly). Remaining debt claims are also revaluated upwads. This implies that the market value of debt ΔV will be reduced by less than the expenditure $p\Delta D$ the country makes.

To see that, it is useful to decompose the effect of a debt reduction on the total value of debt in its basic components. A small debt reduction, $\Delta^- D$, affects the value of debt value with two opposing forces:

$$\Delta V = p*\Delta^- D + D*\Delta^+ p \qquad (4)$$

* a direct effect: V decreases by $p*\Delta^- D$
* a price effect : V increases by $D*\Delta^+ p$

Empirical studies show that the first effect dominates when the debt-export ratio is not too high, i.e. $dV/dD > 0$, but reverses somewhere around a debt-export ratio of 450 percent[4].

The source of the funds used for the buyback also matter. When those funds are borrowed (say from the IFIs), debt increases, which tends to depress p and increase the amount of debt reduction that can be achieved for a given expenditure. But net debt reduction will be smaller than when those funds come from domestic sources[5].

To illustrate, consider buybacks by our hypothetical country involving $ 2, $ 5 and $ 10 billion of cash, with the funds coming either from domestic sources or from a loan.

The results of simultions using the CDFK price equation are reported in table 2. In all cases, the buybacks lead to higher ex-post debt prices compared to the ex-ante price of 42.3. The larger the buyback, the larger the increase in price. The rise is also more when the funds come from domestic sources. For example, a $ 2 billion ($ 5 billion) expense increases the debt price to 43.9 (46.3) when the buyback is funded domestically, while it leads to a price of 43.2 (44.5) when the buyback is funded externally.

Since the buyback must occur at the ex-post price, a larger amount of debt can be retired for a given expense when the buy-back is externally funded as the price is relatively lower. A $ 2 billion ($ 5 billion) expense retires $ 4.56 ($ 10.08) billion with domestic financing, and $ 4.63 ($ 11.23) billion with external financing. However, the net debt reduction is of course larger when the funds come from domestic sources.

Average and Marginal Price of a Buyback

Due to the rise in price, buybacks provide all banks with a gain compared to their status-quo. The total gain is the difference between the ex-post and the ex-ante price, Δp, times de total (pre-buyback) debt, i.e. $D^*\Delta p$. The gain increases the larger the buyback and is larger if the buyback is funded domestically. Table 2 shows that the total gain for the banks (the expression $D^*\Delta p$) ranges from $ 1.1 billion for an externally funded $ 2 billion buyback, to $ 7.8 billion for a $ 10 billion internally funded buyback. As debt is reduced the chances of future repayment increase, which, however, is not rewarded by the remaining banks since the transaction is done on a market basis[6].

It is important to note that all banks gain under a market based debt reduction –those that exit as well as those that remain– since a bank only exits voluntarily if it receives the post-deal (ex-post) price. Thus, compared to the ex-ante status-quo, the debtor implicitly makes two transfers: the exiting banks get $\Delta p^*\Delta D$ more than in the status-quo ante; and the remaining banks get a capital appreciation of $\Delta p^*(D-\Delta D)$.

The wealth transfer to all creditors involved in a buyback can be described in terms of the discrepancy between the marginal cost and the marginal benefit of debt reduction[7].

TABLE 2

COST AND BENEFIT OF BUYBACKS
($ BILLIONS)

Cash used	2		5		10	
Source	Dom.	Loan	Dom.	Loan	Dom.	loan
ΔD	4.56	4.63	10.8	11.23	20.0	21.49
p (cents)	43.9	43.2	46.3	44.50	50.1	46.50
ΔnetD	4.56	2.63	10.8	6.23	20.0	11.49
ΔV	0.39	1.09	1.03	2.78	2.2	5.76
$D^*\Delta p$	1.6	1.10	4.00	2.30	7.8	4.30

Notes: ΔD is the amount of debt retired; ΔnetD is net change in debt face value; ΔV is the change in the market value of the debt. Buybacks take place at the ex-post price p. Computations based on an initial debt of $ 100 billion and exports of $ 30 billion.

To reduce the face value of debt by a marginal $ 1 costs the country the unit price of debt, p. The benefit to the country is the marginal reduction in expected future repayments, the slope of the debt value curve, dV/dD. Since the value curve is concave, the marginal cost p will be higher than the marginal benefit dD/dV. This implies that the creditors will gain through the increase in price. This will always be the case for a market based buyback because no bank would voluntarily trade an average claim for the marginal value of debt.

There are mechanisms that allow for smaller benefits to the banks –and thus for larger gains (or smaller losses) for the country. A non-market based deal where a buyback is combined with concessions from the creditors –in particular, the provision of new money– could be acceptable to both the creditors and the debtor. If the creditors group as a whole would receive the marginal reduction in market value (ΔV) for a reduction in debt (ΔD), then their payoff would remain the same as in the status-quo, and the debtor would internalize more of the benefits of the buyback. Other sharing mechanisms between banks and the debtor are also possible where the banks are left better off than in the status-quo[8].

Senior Exit and Collateralized Bonds

Buybacks are not the debt reduction instrument most often used. Especially, under the Brady plan, debt exchanges are the most commonly used instrument for debt and debt service reduction. Under a debt exchange the country issues and sells a new set of securities called exit bond, in return for outstanding bank debt: a debt exchange. The critical feature of the exit bond is that it is collateralized: an asset is pledged against a specific payment of the bond. It can be shown that these debt exchanges are in effect nothing else than combinations of a buyback with a rescheduling of claims (see Claessens and Diwan (1991)). Debt exchanges that are partially collateralized (principal or interest or both) can always be decomposed into a buyback and an uncollateralized debt exchange. It can be shown that, as a first approximation, all collateralization schemes are equivalent and lead to the same amount (net present value) of debt reduction as a buyback with an equivalent amount of resources. What matters to the creditors is the total current value of the collateral, not how the collateral is allocated across principal or interest payment and not how it is spread out over time[9]. Since debt exchanges are thus equivalent to debt buybacks, we will continue our discussion of a menu of options in terms of the two instruments: debt buybacks and new money.

2. New Money Calls

The concavity of the debt value function explains why concerted lending is "involuntary": a $ 1 in new loans involves an immediate capital loss which is equal to the discount. The gains associated with involuntary lending come from the preclusion of a unilateral default and accrue to the outstanding debt. It is in the collective interest of the creditors to continue lending to preserve the value of outstanding claims. However, individually seen, no bank has an incentive to lend in order to avoid default as the benefits would be shared among all current claimholders. New money would thus not be forthcoming voluntarily.

When debt is reduced by a subset of banks, remaining banks will gain from the debt reduction of exiting banks since the ex-post price rises[10]. The remaining banks experience a capital gain equal to Δp. When remaining banks provide new money (in

the amount N or n percent of their existing exposure), they will not lose compared to the status-quo if the inmediate capital loss involved with the extra new money loans they provide, $(1 - p)*N$, is not larger than the capital gain, Δp, on their existing exposure. As an illustration, consider the situation where the ex-ante price $q = 40$. Assume furthermore that all debt reduction occurs through a buyback, and that the remaining banks hold $ 30 billion in claims. Assume that the ex-post price rises to 45 cents, a 5 cents gain compared to the status-quo. Remaining banks will then be willing to provide $ 2.7 billion in extra new money and still be equally well off as in the status-quo since the debt reduction increases the value of their existing claims. The capital gain on the existing claims (5* $ 30 billion) will offset exactly the capital loss on the new claims ((100 – 45) * $ 2.7 billion).

3. The Menu Approach to Debt Reduction

The menu approach used in recent debt deals (Mexico 1989, Philippines 1989, Costa Rica 1989, Venezuela 1990, Uruguay 1991) combines not only different options –new money and different forms of debt reduction– but also coordination among creditors with voluntarism. The composition of the menu and the pricing of the options remains a exercise between a consortium of creditor banks and the debtor country. However, with the menu in place, each bank is free to choose the option that fits its own financial, regulatory and tax situation best. Its decision is then to a large extent influenced by the structure of its balance sheet and the regulatory system within which it operates.

The menu approach differs from the market based approach in one essential feature: creditores have to pick at least one option and they cannot stand on the side-line (free-ride). One can show that when all creditors are similar a menu can replicate concerted debt forgiveness (see Diwan and Kletzer (1990)). The importance of a menu approach is that it provides banks with options leading to more efficient burden-sharing. Only when a concerted deal offers banks options can it do as well as a menu (see Diwan and Spiegel (1990)).

These considerations shed new light on the present debt strategy. The Brady initiative reduces the tensions within the creditor group by providing options which fit the specific needs of banks. By negotiating on a menu ex ante and allowing banks to choose ex post, a better burden sharing between the IFIs and the commercial banks can be achieved without unsurmountable coordination problems, and the debtor country can get a better overall deal. However, this depends on the differences among creditor banks, something we will explore in section V. In the next section we will demostrate how a menu can be used to construct the best debt and debt service reduction deal.

IV. Characterizing the Best Debt and Debt Service Reduction Deals

We will consider here the case where the IFIs make available to the country some loans that have to be used for debt and debt service reductions. The country subsequently negotiates with its creditors over different debt and debt and service reduction options and amounts of new money. This section presents a simple methodology to determine the set of new liquidity and debt reduction combinations which leave the creditor banks indifferent to the status-quo. These combinations represent the "best" the country can hope to get out of its bargaining with the creditors. We then discuss how the debtor

country might be able to determine the combination of new liquidity and debt reduction that maximizes its own welfare.

Debt reduction raises the value of remaining debt and provide the remaining creditors with a gain. One way to avoid this is to ask the remaining creditors to give some concessions to offset their gains from the increase in the price of debt. Necessary to make this feasible –without using coercion– is that free-riding is precluded: either a bank participates in debt reduction (buyback) or it provides a "concession". The concession usually takes the form of new money. As show above, new money can be a form of a tax on the gain the remaining creditors make on their existing exposure. New money has two additional effects: it lowers the ex-post price –because indebtedness increases– and it increases the resources available for debt reduction. It will thus lead to an increase in the amount of debt reduction. However, the extra new money can be used not only for debt buybacks, but also for domestic needs (consumption or investment)[11]. The more new money is used for liquidity purposes the less debt reduction will result.

The main lessons of the above arguments are: (i) the benefit of debt buybacks funded by the IFIs goes in large part to the initial creditors when they have a voluntary choice between exiting and doing nothing; but (ii) by presenting the banks with a different alternative –to provide a given amount of new money– the country can get a better deal; and (iii) there is a tradeoff between the amount of money held for domestic absorption and the amount of debt reduction achieved. We first concentrate on (ii) and (iii), and consider the mechanics of the menu approach and formalize the new money tax concept.

Consider a simplified version of the menu approach for the case where all banks are similar. Following Diwan and Kletzer (1990), we can show that all creditor banks retain the same payoff, irrespective of the size of the new money call. In effect, the payoff of each bank will be equal to the agreed exit price irrespective of whether it exits or relends and the gains from debt reduction do not accrue to any creditor bank. This is because there will be an arbitrage condition between the menu's options. The size of the new money call is however important as it determines the extent of debt reduction achievable with a particular menu and its cost.

Consider a simple menu with two options: exit at a price p or reschedule existing claims and face a new money call of n percent. Each bank compares the two options and chooses the most valuable one. Relending n percent implies a capital loss of $n(1 - p_1)$, where p_1 is the ex-post price. However, to the extent that deal increases the ex-post price above the exit price p, rescheduled debt increases in value, implying a capital gain of $(p_1 - p)$. All together then, the new money option is valued at:

$$[(p_1 - p) - n(1 - p_1)]. \tag{5}$$

Exit offers a sure payoff of p. Given a menu (p, n), which option is more valuable? In equilibrium, both options must be equally valuable. This implies that the value of the new money option (5), must be equal to p and the ex-post debt price p_1 must therefore be equal to:

$$p_1 = (p + n)/(1 + n). \tag{6}$$

To find the equilibrium, we need to use the relationship between debt prices and debt stocks derived above. In equilibrium, the extent of debt reduction will afect the ex-post price p_1. If too many banks are expected to exit, the stock of debt would be greatly reduced and p_1 will be high. The relending option would then appear more

desirable than the exit option. Similarly, if too many banks relend, p_1 would be too low, making exit at p more attractive. The equilibrium amount of debt reduction will thus correspond to the amount of remaining debt that leads to p_1 given by the arbitrage condition (6).

The equilibrium will indicate that p_1 is higher than p. That p_1 is higher than p, whereas in a market-based transaction they are equal, should not lead to confusion. This is a direct implication of the concerted part of the menu where must choose between the offered options and cannot free-ride. Just before the deal is completed, the price of a unit of debt, say q, will exactly equal the exit price p. If it is lower, it would be profitable to buy debt at q, exit at p and make a sure profit. If q were larger than p, all debt would be sold. The price jump from q (or p) to p_1 is now due to the fact that creditors that do no exit must provide new loans, the capital gains tax. When the deal is completed, the implicit tax disappears.

The above logic can be used to evaluate the impact of n and p on the total amount of debt reduction and on the cost of the deal, where the cost is defined as the amount of funds needed for buybacks (and/or collateralization) minus the amount of new money the commercial banks. Diwan and Kletzer (1990) show that given a price p, an increase in n increases the equilibrium amount of debt reduction as well as the cost of debt of the deal. The logic is as follows. Fix the exit price at p. Now, the new money option become less desirable as n is increased. As a result, p_1 must increase more to make two options equivalent. This is achieved through more debt reduction. The debtor country always gains by negotiating an exit price as low as possible, but it should then increase the new money call sufficiently to elicit as much debt reduction as is desires.

Putting these considerations together allows us to derive a debt reduction-liquidity trade-off which is represented in Figure 2 and in Table 3. The concave line in Figure 2 is the set of debt reduction-liquidity that leaves remaining creditors indifferent. The following additional notation is used: C is the cash from official lenders to be used for

FIGURE 2

DEBT REDUCTION / LIQUIDITY TRADEOFF

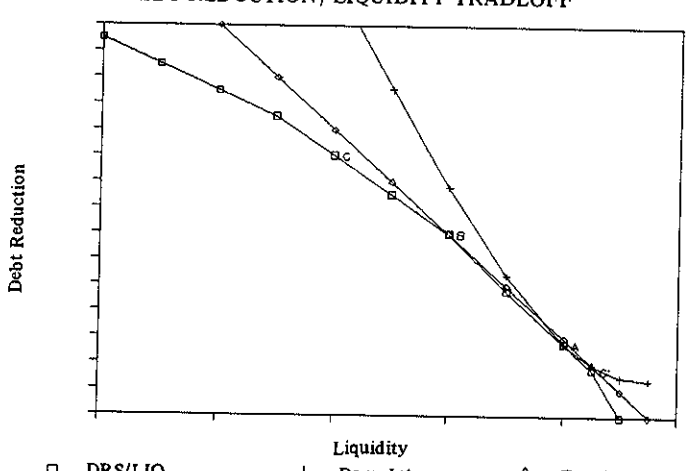


TABLE 3

THE DEBT REDUCTION-LIQUIDITY FRONTIER
($ BILLION, UNLESS OTHERWISE INDICATED)

L	0	1	2	3	4	4.6
N	2.6	2.3	1.8	1.2	0.5	0.0
n(%)	10.4	8.0	5.7	3.5	1.3	0
p(%)	47.7	46.6	45.4	44.5	43.0	42.3
ΔD	25.0	21.8	18.5	14.7	10.7	8.0
ΔnetD	14.5	11.6	8.7	5.5	2.1	0

Notes: $\alpha = 0.5$, C = $ 8 billion, q = 42.3; other variables are in table 1.

buybacks; and L is the liquidity used for domestic purposes; α is the share of debt that is subject to debt reduction or a new money call; and C + N − L is the amount used for buybacks.

In Figure 2 as well as in Table 3, the best attainable combinations of net debt reduction, ΔnetD, and liquidity retained, L, are plotted. Each combination of ΔnetD and L obeys the following four constraints:

$$N^*(1 - p_1) = (\alpha D - \Delta D) * (p_1 - q) \quad (7)$$

$$\ln[p_1 / (1 - p_1)] = 7.88 - 1.41 * \ln[(D - \Delta D + C + N)/X] \quad (8)$$

$$\Delta D = (C + N - L)/q \quad (9)$$

$$\Delta netD = \Delta D - C - N \quad (10)$$

where ΔD is the gross commercial bank debt reduction. Equation (7) states that the new money (remaining) banks must be indifferent between providing new money and the status-quo, with the capital gain on their existing exposure exactly offsetting the loss arising from providing the new money valued at the new debt price. Equation (8) defines the new debt price as a function of outstanding debt. Equation (9) defines the gross debt reduction and equation (10) the net debt reduction.

These equations can be solved for the unknowns, p_1, the amount of new money N, and the gross and net debt reduction, as a function of the amount of new liquidity L and the exogenous variables q, C and D. The larger the fraction of new money that is applied to buybacks (the smaller L), the larger the amount of new money that remaining banks are willing to provided. This is because larger net debt reduction increases the ex-post debt price.

The country can choose from the menu of possible deals the one which fits best its preferences over debt reduction and new liquidity for domestic uses. This problem is illustrated in Figure 2. Anything inside the debt-liquidity frontier is possible from the creditors' point of view since it will leave them at least as well off as under the status-quo. The debtor would seek to negotiate for pairs on the frontier, since more liquidity as well as more debt reduction is desirable. But which point of the frontier is best? We

suggest here three considerations (in practice country specific techniques should be used):

a) the interest rate on external debt;
b) the domestic costs of capital; and
c) incentive versus liquidity effects;

One approach is to consider the world interest rate as the correct price to convert L and ΔnetD into foreign currency cashflow equivalents. A dollar of debt reduction is then equivalent to r dollars of liquidity (or of debt service reduction) where r is the foreign interest rate. This conversion is plotted in the figure by the downward sloping line with slope r which is tangent to the frontier at A. A would then be considered the best choice[12].

It is however more likely that the domestic cost of capital reflects the scarcity of resources in the country and the opportunity costs of investments. The domestic costs may be higher than the external interest rate r (and possibly linked to it through arbitrage relationships). This tradeoff is depicted in the form of the line with slope i which is tangent to the frontier at b, implying more liquidity and less debt reduction at the optimum than predicted by the first approach.

But in general, the tradeoff in the country of liquidity versus debt reduction is not necessarily reflected correctly by the domestic interest rate structure. This can especially be true for a high debt country for which debt reduction has extra value beyond that reflected in the domestic interest structure because of the removal of the disincentive effects associated with a debt overhang. This will lead to a more complex tradeoff between debt reduction and liquidity (see further Claessens and Diwan (1990) and Borensztein (1990)). In such cases a third line might be appropriate and points C or C' could then result, which can be either to the left or the right of A and B.

Note that this methodology differs from the approach of others who have postulated an arbitrage relationship between r and i through the secondary market discount, i.e., implicitly the tradeoff between L and ΔnetD is assumed to be the secondary market price. Here we depicted the set of possible combinations of L and ΔnetD by explicitly considering the value functions of creditors. This makes the curve non-linear[13].

A complete analysis for a specific country will require an intertemporal model of the response of investment, growth and repayment to different combinations of new liquidity and debt reduction, where the repayment behavior is consistent with the creditors' evaluation of debt –and thus with the new liquidity versus debt reduction tradeoff specified. Some cross-country regression have been run, and some empirical models for specific countries have been estimated[14].

We now examine how the analysis is affected by the two important dimensions of the deal: the share of total debt that is restructured (the "base"); and, most importantly, the perceived status-quo payoff of the banks.

The base represents the amount of total debt that will be converted into elements of the menu. In the early stages of the bargaining process, the two sides agree on the types of debt that are eligible. In general, multilateral, bilateral and short term debt is excluded. But not all the medium and long term private debt is necessarily eligible, principally because of free rider problems. For example, bearer bonds holders cannot be coerced into participating. The base will therefore have to be determined in accordance with available mechanims (legal constraints) to deal with free riding.

The interest of the country is to have a base as large as possible, essentially because this allows it to minimize the value improvement that it cannot internalize, i.e., against which it does not get any offsetting concessions. Here α is used to denote the share of total debt which will have to choose between the elements of the menu (αD is the base,

previously α was set to one). The base left over a debt reduction for providing new money will thus be $\alpha D - (C + N - L)/q$. The smaller α, the larger the share of creditors that can free ride on the benefits of debt reduction, and the smaller the net debt reduction that can be achieved.

Table 4 shows how the debt reduction-liquidity tradeoff varies with the size of the base. The larger α, the larger the amount of new money that can be extracted from non-exiting banks, and the larger the net amounts of debt reductions that can be achieved. As a result, the ex-post debt price will be higher the larger α is.

The effect of the status-quo price is the following. The higher the status-quo price q (the reservation payoff that the banks must receive), the less net debt reduction a certain amount of resources can accomplish. The lower q, the better the combination of debt reduction-liquidity the country can get. Table 5 shows some sensitivity scenarios with respect to the status-quo price q: the amount of new money the banks are willing to provide under the debt deal decreases dramatically with small increases in q.

TABLE 4

EFFECT OF THE BASE
($ BILLION)

α	.3	.4	.5	.6	.7	.8
N	.6	1.2	1.8	2.6	3.6	4.9
n	4.6	5.1	5.7	6.5	7.6	9.1
p	44.8	45.1	45.4	45.8	46.4	47.1
ΔD	15.7	17.0	18.5	20.3	22.7	25.8
ΔnetD	7.1	7.8	8.7	9.7	11.1	12.9

Notes: L = 2, C = $ 8 billion, q = 42.3; other variables as in table 1.

TABLE 5

THE EFFECT OF ALTERNATIVE STATUS QUO
($ BILLION)

q	40.0	41.0	42.3	44.0
N	3.4	2.8	1.8	0.3
n (percent)	12.7	9.6	5.7	0.8
p (cents)	46.8	46.2	45.4	44.4
ΔD	23.4	21.4	18.5	14.3
ΔnetD	12.1	10.1	8.7	6.0

Notes: α = .5, L = 2, C = $ 8 billion; other variables as in table 1.

V. Recent Debt Reduction Deals and Seniority

We analyze now, using the framework developed above, three debt reduction deals: the 1987 Mexico market debt swap (a buyback); the 1989 Mexico menu; and the 1989 Philippines menu (the deals are described in detail in Annex 1).

Table 6 summarizes the salient features of the three deals. The important finding is that the net buybacks price –the net costs of the deal after subtracting new money contributions as a percentage of the present value of debt and debt service reducción (DDSR)– is quite different in case of the 1989 Mexico and Philippines agreements from the gross buyback price, but is the same in the 1987 Mexico market deal. The gross buyback price is 38 cents in case of the 1989 Mexico menu deal (derived by calculating the buyback component of the par or discount bond, see further Diwan and Kletzer (1990)), while the net buyback price is only 34 cents. Similarly for the Philippines, the difference between the gross and net buybacks is 26 cents (50 cents minus 24 cents). In the 1987 market-based Mexico deal net and gross prices are both 50 cents and equal to the ex-post price. These difference in gross and net prices and the difference in ex-ante and ex-post prices show the value of the menu approach. It also shows that a menu leads to lower costs for the country as new money banks are taxed for the ex-post value increases (from 40 to 46 cents in case of Mexico and from 50 to 54 cents in case of the Philippines) by a new money call

Note also that the buyback price p may differ from the ex-ante price q (either the observed price before the Brady plan was announced or the price estimated on the basis of the debt value curve). These differences reflect in part the degree to which the debtor and the creditors shared the gain from the (announced) debt reduction deal.

TABLE 6

Country	Mexico	Mexico	Philippines
Date	1987	1989	1989
Program	Buyback	Menu	Menu
Present Value of Debt Reduction	$ 1,108 mill.	$ 18.6 bill.	$ 1.3 bill.
Ex-Ante Price	$ 0.47	$ 0.40	$ 0.50
Buyback price	$ 0.50	$ 0.38	$ 0.50
Ex-Post Price	$ 0.50	$ 0.46	$ 0.54
Gross cost of deal	$ 555 mill.	$ 7 bill.	$ 650 mill.
Face value of new money (PV)	0	$ 1.3 bill.	$ 750 mill.
Total new money tax	0	$ 730 mill.	$ 336 mill.
Net cost of deal	$ 555 mill.	$ 6.3 bill.	$ 314 mill.
Net buyback price	$ 0.50	$ 0.34	$ 0.24

Seniority Issues

In the general analysis and in the analysis of the debt deals we did not look at the seniority structure of claims, but considered all debt to be of the same class. But, often debtors insist that are funded by new loans which are senior. When the share of senior loans is thus increased, the analysis can be misleading since changes in the degree of seniority will impact on the amount of debt reduction that can be achieved and on the net change in the value of claims of each seniority class[15].

The debt value function that has been used (equation 3) did not account for differences in seniority between commercial bank debt and other debt and was estimated using the secondary market price for commercial bank debt as the average price for all

debt. If commercial banks are the most junior creditors, however, the secondary market price would not reflect the average price for all debt, but the price of the debt that is serviced after all other creditors are serviced. The secondary market price would then be below the average price for all debt. A debt value function which accounts for this seniority structure can be estimated (see CDFK (1991). The result is as follows:

$$\ln[p/(1-p)] = 7{,}438 - 1{,}2134*\ln(D/X) \qquad (11)$$

The estimated coefficient for the slope is lower than with the no-seniority curve (1,234 compared to 1.44), a reflection of the fact that the debt value curve flattens out less rapidly when the debt-to-export ratio increases. Using our previous example (total debt $ 100 billion and exports $ 30 billion) and assuming that debt senior to commercial bank claims is $ 50 billion, we calculate the average price of debt as 59.6 cents, the price of senior debt as 77.4 cents and the price of commercial bank debt p as 41.8 cents. This calculation shows that the price of all debt is above that what would have been predicted on the basis of the no-seniority curve (59.6 versus 42.3), while the price commercial bank debt is lower. For all other parameters, prices for total debt will be consistently above the prices predicted on the basis of the no-seniority curve.

The seniority curve can also be used if there exist multiple seniority classes to evaluate the value of debt in each class. For instance, using the same example, we can calculate that the price of the $ 20 billion of most senior claims is close to par: 91.2 cents. The price of the next most senior $ 10 billion of claims will then be 76.8 cents, which is derived as the total value of the $ 30 billion in claims ($ 30 billion * 86.4 cents) minus the value of the most senior $ 20 billion in claims ($ 20 billion * 91.2 cents) divided by the face value of $ 10 billion. Keeping total debt fixed, the larger the share of senior debt, the lower the price for the commercial bank claims.

The seniority curve can also be used to calculate the costs and benefits of buybacks done at the ex-post price for commercial bank debt and accounting for the seniority structure. The main difference with seniority (of IFIs' claims) compared to the no-seniority case is that the ex-post price does not increase as much when a senior loan is used to buy back debt. It is even possible that the price for commercial bank claims will fall as a result of more senior debt, even if total debt is reduced. The net debt reduction when domestic resources are used will be larger than with no-seniority as the price of commercial bank debt rises less.

Differences Among Banks

Let us also examine the differences among banks that give rise to the benefits of a menu in detail (see also Williamson (1988), Demirguc-Kunt and Diwan, (1990) and Bouchet and Hay, 1989). Small banks may want to withdraw from the international lending given the high fixed costs of operation. Regulatory and accounting practices in the United States further encourage creditors with relatively small exposure to participate in debt reduction. Accounting and regulatory practices can oblige a bank that sells part of its loans to a given country to mark down its whole portfolio of loans to the country. For U.S. banks with relatively large exposure this would mean wiping out a large portion of reserves. But, regulatory, tax and accounting treatment of international debt in the various OECD countries differ and may thus favor options differently. In addition, Williamson (1988) argues that differences in valuation between "pessimistic" and "optimistic" banks can make debt reduction schemes Pareto improving. In his framework,

pessimists sell at a price above their own valuation and thus gain. Optimists and the country are glad to see the debt reduced at a price both consider a bargain.

Another difference can arise due to implicit and explicit deposit insurance provided by creditor governments. Banks can increase their stock market value by taking on more risk by choosing certain options. The menu can now create "value" through more options and new instruments. For example, a bank that wants to exit but cannot afford the regulatory cost of a full exit, may prefer a par-bond that allows it to spread the regulatory costs of exit over thirty years.

In a recent empirical study, Demirguc-Kunt and Diwan (1990) analyzed the determinants of the decision of banks to exit in the Brazil 1988 debt restructuring agreement. They found that financial strength, exposure to the debtor country, size, extent of business interest in the debtor economy, and nationality of individual banks were indeed helpful in predicting banks' choices. Together, these variables explained over 80 percent of banks' choices. Strong banks and highly exposed banks tended to choose exit options, while weaker and less exposed institutions preferred relending options.

These differences and the mechanics of debt reduction have several important implications. First, market-based debt reductions are more costly than concerted menu debt reductions. Second, the exit price depends on the strength of the banking industry and is thus affected by changes in the world economy. Third, regulators can affect the cost of debt reduction by altering the regulatory framework within which banks operate. Fourth, debt reductions are beneficial to the deposit insurance agencies of creditor nations.

VI. Conclusions

This paper has presented a simple methodology for identifying the set of best debt deals a country can bargain for with its creditors when debt reduction is included in the set of options. The challenge will now be to identify the deal which is best for the country given its liquidity versus debt reduction preferences while at the same time being acceptable to its creditors. This will require a general equilibrium macroeconomic model which might provide the necessary framework for analyzing a country's investment, growth and repayments behavior in a situation of a foreign credit constraint and a debt overhang.

Notes:

[1] Expectations of future deals will of course also matter. We assume that the deals being analyzed are the only ones expected for the foreseeable future, or that they represent the sum of the future deals that are expected to take place.

[2] This can be the case when some banks are more pessimistic than others about the future prospects of the country; when selling their claims, some banks enjoy larger tax advantages than others; and when some banks' costs of monitoring their portfolios are too high given their small exposure. Note that, while the existence of a secondary market for developing country debt allows individual banks to avoid participating in the deal, they will only be able to do as at terms that are consistent with the deal since they must sell their exposures to other creditors, who will have to participate.

[3] Other equations which have been used and which lead to similar results are: Cohen (1990): $\ln [p/1 - p] = 2.152 - 1.509 * \ln(D/X) - 0.048 * X \text{ growth} - 0.583 * \text{Dummy}$ (87.12) Data set: pooled equation, annual 1986 and 1987 for 17 highly indebted countries.
Purcell and Orlanski (1988): $\ln(p) = 3.57 - 0.34 * \ln NDX + 0.23 * \ln PCI + 0.78 * RP + 0.47 * SI + 0.16 * DE$, where PCI is per capita income, NDX is debt net of reserves over exports, RP = 0 if debt has been rescheduled, SI = 1 if interest payments are up to date, DE = 1 if a debt to equity program is in place.
Data set: 1987-Q3 to 1988-Q1, pooled quarterly for 17 highly indebted countries.

[4] Note that when dV/dD, it is in the collective interests of the creditors to unilaterally write-off some of the debt as the debtor is then on the back side of its "debt Laffer curve". However, in this paper, we do not consider this case, focusing instead on the more realistic case $dV/dD > 0$.

[5] Although, one should also check the effect of the reduction in domestic speding on creditworthiness, which can affect the debt value curve and debt prices. For example, if the funds used are taken away from domestic investment, debt prices can fall and the debt value curve may shift down. See Claessens and Diwan (1990) for a complete analysis.

[6] This does not say that any improvement in creditworthiness is too costly to achieve. But it implies that buybacks involve a concession by the debtor when compared to the initial status quo. Simultaneous concessions by creditors can make up for this. See Section IV below.

[7] See Bulow and Rogoff (1989) for the original argument.

[8] In our model these other sharing mechanism can best be interpreted as adjusting the price q above the status-quo price. For a full discussion of possible sharing mechanisms see Claessens and Diwan (1990).

[9] In addition, it can be that the new securities are accepted by the market as "senior" to original bank debt, i.e. the exit bonds will be paid before the remaining claimants. Through such a senior debt swap the country could reduce its expected debt repayment, even without using any current resources. However, such a scheme would expropriate the remaining creditors, since they have effectively become junior. Because syndication loan agreements explicitly include negative pledge clauses that prohibit the sale of more senior claims, and unanimous (or near unanimous) waivers are necessary to make new bonds more senior, creditors will not give any waivers of clauses if the swap is expected to hurt them. This is confirmed by an analysis of the Mexico-Morgan debt swap of 1988 (see Claessens and Diwan (1991)). In the swap, no seniority was created and since Mexico used a cash collateral, the deal was not much different from a simple debt buyback. The lessons of the Mexican-Morgan swap is that it is difficult to establish seniority beyond that implied by the security of a collateral and that the collateral value will lead to the same amount of debt reduction as a buyback. These lessons are also confirmed by the Brady deals to date.

[10] Note that any (small) bank that wants to undo its participation in the deal by selling in the secondary market, will only be able to do so at the ex-ante price and will thus not benefit from the ex-post price rise.

[11] When this amount is large, an attempt should be made to integrate in the analysis the effect of the increase in domestic investment on creditworthiness and, thus, on the debt price.

[12] Note in a certainty model, where the price is the value of repayments discounted at the contractual interest rate per unit of debt, the debt reduction-liquidity tradeoff would be a straight line with a slope equal to the contractual interest rate. Because the debt value function is concave, the tradeoff becomes concave also.

[13] Using equations (7) and (8) it can be shown that $dL/dnet\Delta D$ is not constant.

[14] On Brazil see Schmidt-Hebbel (1989), on Argentina see Morisset (1990), and on the Philippines see Borensztein (1990).

[15] In addition, the debt value curve can move up or down as a result of the debt deal. We do not attempt to address this question here but refer to the country specific models developed.

[16] Using the interest rate at that time, the value of the collateral was equal to 21.7 percent of the face value of the debt. The present value of the contractual interest obligations was 94.32 percent. Since other, non-collateralized Mexican debt was selling for 50 percent, the expected present value of interest payments was 43.65 cents (50 * 94.32). The total value was thus 21.7 + 43.65 is 65.35 percent, implying that $ 1.31 of old debt would be exchanged for $ 1 of bonds (an exchange ratio of 1.31). A price above 65.35 percent would have indicated that the market accepted some of Mexico promises for seniority. Of course, if the new bonds were considered fully senior, they would have sold for a price of almost one dollar. In exchange for the $ 3,665 billion in face value of debt which offer price exceeded Mexico's minimum acceptable price, $ 2.557 billion of the new bonds were issued, backed by $ 555 million in collateral. Taking

account of the fact that the interest rate on the new bonds exceeded by a small margin that on the exchanged bank debt, the transaction turned out to have reduced the present value of Mexican obligations by almost the same amount as would have been achieved by a straight buyback using an amount of reserves equal to the collateral cost.

[17] Both bonds would not be subject to the sharing clauses which are standard in most syndicated loan agreements. In addition, both bonds would include a recapture clause which stipulates that, in case the oil-price increased by a certain percentage in the years 1997 and beyond, that the creditors would share in the increased revenue stream. The agreement further specified a certain number of relending options, in which banks would be allowed to relend, up to a certain maximum fraction, their claims to Mexican public compants, and a debt-for-equity swap program.

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ANNEX 1: RECENT DEBT REDUCTION DEALS

The 1987 Mexico Swap

In December 1987, Mexico invited its commercial bank creditors to exchange outstanding commercial bank claims for new bonds which had a 20-year maturity, with the principal, but not the interest, collateralized by U.S. Treasury obligations purchased by Mexico using its own foreign exchange reserves. The secondary market price was roughly 50 cents. Mexican officials suggested that the new bonds would be given a de-facto seniority. From the auction it became clear that the swap was considered by the bidders as a collection of two transactions described above: a (self-financed) buyback of principal plus a debt swap of interest payments. It turned out that the interest payments were not evaluated differently from regular Mexican risks and were discounted at the same rate implicit in the secondary market price[16]. Evidently, the Mexicans failed to establish seniority for the new bonds, and their debt swap degenerated therefore into a domestically financed buyback with the amount of resources equal to the value of the collateral.

1989 Mexico Agreement

Mexico and the steering committee of its creditor banks reached an agreement on July 23 on a debt restructuring package. The package covered about $ 48.9 billion in medium-term and long-term debt. It offered commercial banks a menu of three options:
(i) a discount bond: a 30 year bond with a discounted principal of 65 percent of the face value of existing debt and an interest rate of LIBOR plus 13/16 percent;
(ii) a par bond: a bond with no discount but a low interest rate of 6.25 percent fixed for the lifetime of the bond; and
(iii) a new money commitment: 7 percent of principal balance at the conclusion of the agreement and 6 percent in 1990, 1991 and 1992, at an interest rate of LIBOR plus 13/16 percent.