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RESOLVING THE INTERNATIONAL DEBT CRISIS

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ABSTRACT

Since August 1982 the international debt crisis has dominated economic policymaking in the developing countries, economic relations between the debtor and creditor countries, the attention of the multilateral institutions in their dealings with the debtor nations, and private sector decisions on lending to the developing countries.

The period since 1982 has seen some progress. Neither the commercial nor central banks have had to deal with formal large-scale debt defaults. Balance sheets of creditor banks have been strengthened. There is an active secondary market in developing country debt, and debt to equity swaps are a reality. For the debtors, real interest rates have fallen between 1982 and 1987. Net exports showed extraordinary growth. Budget deficits have been reduced despite falling incomes. In 1987 commodity prices have begun to recover. The period has seen a shift toward rather than away from democracy.

But five years after it began, the debt crisis is very much alive. None of the major Latin American countries has restored normal access to the international capital markets. At least one major debtor has been in trouble each year.

Three classes of solutions are described and evaluated. Least radical are proposals for procedural reform and changes in the nature of the claims on the existing debt. Some procedural reforms such as multiyear reschedulings and exit vehicles for smaller banks have already begun to be instituted. Others include changes in accounting rules, and U.S. information provision on foreign accounts held in the U.S. Changes in the nature of claims include debt-equity swaps, country funds, interest capitalization, and payment by the debtors in their own currency.

The second type of solution is the creation of a facility, or new institution to deal with the overhang of existing debt. The institution would buy the debt from the banks in exchange for claims on the institution, and in turn collect from the debtor countries. The prices at which debt is purchased, and the amounts to be collected from the debtors are the crucial issues. Finally, there are proposals for debt relief, either in direct negotiation between creditors and debtors and/or in conjunction with the creation of a facility.

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RESOLVING THE INTERNATIONAL DEBT CRISIS

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Since it was first recognized in August 1982, the international debt crisis has dominated economic policymaking in the developing countries, economic relations between the debtor and creditor countries, the attention of the multilateral institutions in their dealings with the debtor nations, and private sector decisions on lending to the developing countries.

Developments since 1980 are summarized in Table 1, which presents data for the Baker fifteen of heavily indebted countries. The

Table 1: ECONOMIC PERFORMANCE, FIFTEEN HEAVILY INDEBTED COUNTRIES.*

	1969-79	1980	1981	1982	1983	1984	1985	1986
Per capita real GDP growth	3.6	2.6	-1.6	-2.7	-5.5	-0.1	0.9	1.4
Current account ($ billion)		-29.5	-50.3	-50.6	-15.2	-0.6	-0.1	-11.8
Interest payments ($ bill)		25.1	37.0	45.5	41.5	46.0	44.0	38.2
Investment/ GDP (%)		24.7	24.5	22.3	18.2	17.4	16.5	16.8

Source: World Economic Outlook, April 1987, Statistical Appendix.
* Countries are: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Ivory Coast, Mexico, Morocco, Nigeria, Peru, Philippines, Uruguay, Venezuela, Yugoslavia.

most significant fact is that the heavily indebted countries suffered reductions in per capita real GDP averaging ten percent over the period

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1981 to 1984, which wiped out most of the gain that had taken place since the mid-seventies[2]. There was an extraordinary turnaround in the current account of the balance of payments which was in balance in 1985 as large trade surpluses were used to pay interest bills of about 5% of GDP. Improvement in the current account was matched by a decline in domestic investment[3] implying a fall in net capital formation to half its previous share of GNP.

Developments on the trade and debt fronts are described in Table 2. Net private capital inflows have virtually disappeared, and even total capital inflows have been much smaller since 1982 than interest payments abroad: The most remarkable feature of the debt strategy

Table 2: TRADE AND DEBT DATA, HEAVILY INDEBTED COUNTRIES.

	1969-79	1980	1981	1982	1983	1984	1985	1986
Total external debt ($ bill)		269.3	330.8	383.1	394.2	410.9	417.2	434.4
Net private borrowing[1] ($ bill)		43.2	57.3	30.7	-2.4	4.2	-2.7	-7.2
Debt/export ratio (%)		167.1	201.4	269.8	289.7	272.1	284.2	337.9
Terms-of-trade change (% p.a.)	4.4	13.4	-2.8	-4.1	-3.5	2.2	-1.9	-16.1
Non-oil commod. prices (% p.a.)	10.0	2.7	-14.1	-8.8	6.3	2.5	-10.8	1.5

Source: World Economic Outlook, April 1987, Statistical Appendix.
[1] Net external borrowing minus long-term borrowing from official creditors and reserve-related liabilities (short-term borrowing from foreign monetary authorities, and use of Fund credit).
[2]There are of course large differences among countries; for instance Argentina's per capita GDP fell almost 20% from 1981 to 1986, and was still 10% below its 1975 level, while Brazil's 1986 per capita GDP was above its 1981 level and 20% above the 1975 level.
[3]Total GDP for the fifteen heavy debtors is in the range $750-1000 billion.

followed since 1982 is that the heavily indebted developing countries have been transferring real resources of close to 5% of their income to the developed creditor countries. A solution of the debt crisis will either reverse the direction of this resource flow or at least significantly reduce it. Despite the virtual cessation of capital inflows, debt burden indicators, such as the debt to export ratio, have not improved[4]: the effects of the increased volume of exports and decreased volume of imports were offset by a worsening of the terms of trade.

The picture for the debtors is not entirely bleak. Real interest rates have fallen between 1982 and 1987. Net exports showed extraordinary growth. Budget deficits have been reduced despite falling incomes. In 1987 commodity prices have begun to recover. The period has seen a shift toward rather than away from democracy.

There has also been very real progress for the creditor banks and for the international financial system. Most important, neither the commercial nor central banks have had to deal with large-scale debt defaults. Balance sheets of creditor banks have been strengthened by additions to capital and loss reserves in the United States and Europe, by the weakening of the dollar for those foreign banks that lent in dollars, and by reductions in foreign exposure. There is an active secondary market in developing country debt, and debt to equity swaps are a reality. The optimist (for example, Feldstein, 1987) can take

[4]The debt to GNP ratio also increased over the period 1982-1986.

solace in the failure of the worst fears of 1982--that there would be a worldwide financial crisis--to eventuate. He can point also to some successes, such as Korea and other southeast Asian countries, and the earlier problem case of Turkey.

But the fact remains that five years after it began, the debt crisis is very much alive. None of the major Latin American countries has restored normal access to the international capital markets. Even a country like Colombia, which has rigorously met its payments, finds it difficult to roll over its debts. At least one major debtor has been in trouble each year. In 1987 it is Brazil, whose moratorium could mark the beginning of a new phase of the crisis.[5]

In its brief life the international debt crisis has generated an impressive variety of proposed initiatives and solutions.[6] Least radical are proposals for procedural reform and changes in the nature of the claims on the existing debt. There have been several suggestions for the creation of a facility, or new institution that would in specified ways deal with the overhang of existing debt. And finally, there are proposals for debt relief. I take up these possibilities in turn in Sections II through IV. Preliminary questions about the nature of the debt problem and solutions to it are discussed in Section I.

[5]However the banks quickly moved to limit the system-wide effects of any unilateral Brazilian decisions by reaching agreements with other major debtors.

[6]Dornbusch (1987), Feldstein et al (1987) and Krugman (1986) present useful surveys of alternative solutions; the classification of debt initiatives used here is taken from Krugman.

I. The Meaning of a Solution.

What would it mean for the debt crisis to be resolved? The simplest criterion is that the debt crisis will finally be over when the debtor countries have normal access to the international capital markets. Of course, normal access is itself difficult to define, both because it is quite normal that not all countries are able to raise funds on the same terms and that some of them may be credit rationed because lenders understand that raising interest rates to compensate for the risk of default may itself increase the probability of default.

More pragmatically, it will be clear that the debt crisis is moving towards a solution if the net outflow of resources from the developing debtor countries is significantly reduced, enabling most of them to run current account deficits. The resource inflows would finance investment to raise the growth rate and over time move living standards closer to those of the developed countries.

The assumption that a solution to the debt crisis would reduce resource flows from the debtors to the creditors is based in part on the view that investment opportunities in the debtor countries justify capital inflows. Although investment opportunities appear to warrant capital inflows in some debtors, such as Brazil, that may not be true of all debtor countries. Then the case for reducing their net resource outflows is fairness or the preservation of democracy or capitalism--and those are obviously both highly important and highly political issues.

Resolution of the debt crisis would enable developing country

policymakers to base policy decisions on longer-term considerations than their effects on the forthcoming debt negotiations, and it would free up for more important purposes policymakers who are now preoccupied with debt negotiations. The private sector would be able to make investment plans with less uncertainty about the long term, in particular the availability of foreign exchange and investment financing.

If the debt crisis were resolved, banks would no longer have to make loans to developing countries merely to preserve their existing investments. The banks would eventually be able to reduce their exposure to the levels they would prefer--and after the experience of the eighties, these might be very low.

Resolution of the debt crisis would likely also see a change in the form of international lending. Both lenders and borrowers can now see that floating rate financing is a risky way for a country to finance its long-term development. Very likely, a resolution of the debt crisis would end with the debtor countries financed through long-term capital--bonds, equity, direct investment, and perhaps some forms of long-term indexed debt--rather than floating rate liabilities whose terms can change overnight.

Resolution of the debt crisis would mean also that the international institutions, the IMF and the World Bank, would be able to get back to their respective goals of promoting international monetary stability and economic development rather than preventing debt default.

Efficient Solutions.

The debt crisis involves at least three parties: the debtor countries, the creditor countries, and the private banks and their stockholders. A more sophisticated view further distinguishes between the governments of debtor and creditor countries and their citizens, between the creditor governments and the international institutions, between workers in the debtor countries and portfolio holders who succeeded in moving their capital abroad, and between financial and manufacturing interests in the developed countries.

A solution to the debt crisis is efficient if it is not possible to make one of the parties better off without making another party worse off. There are many efficient solutions, involving tradeoffs among the interests of the different parties. Although the point is rarely explicitly recognized, there is no blinking the fact that alternative solutions imply different burdens for different groups involved in the crisis. Someone has to pay for past mistakes. It could be the bank stockholders, creditor country citizens, or citizens of debtor countries. Or the burden could be shared.

Up to 1987, most of the burden has been borne by wage earners in the debtor countries. Part has been borne by bank stockholders, who have seen the value of their shares rise less rapidly than the stock market as a whole. Some will be borne by the taxpayers of the creditor countries, as the banks record portfolio losses, lower profits, and lower taxes. The taxpayers of the creditor countries would pay more of the burden if their governments or the international institutions were to provide concessional aid to the debtors. It is of course entirely

possible that a longer view of the interests of the developed countries would see benefits rather than burdens for their citizens in the provision of aid to the debtors--just as it might be possible that the unconditional provision of aid to their governments would make the citizens of debtor countries worse off in the long run.

Although the relative burdens are rarely explicitly discussed, the problem is implicitly recognized by proponents of plans who claim they are in the best interests of everyone concerned. For instance, debtor countries are warned not to take unilateral action because future access to capital markets will be long delayed; or banks are urged to make concessions that will in the end enable them to collect more rather than less interest.

Why have the private markets not reached the optimal solution already? To start with, the underlying transactions were hardly private market loans in the first place. Many of the loans were made to governments, who, the lenders believed, simply would not default. Other loans were taken over from private firms by debtor governments on the view that default by a domestic firm would spill over to the credit terms for the country, or to protect domestic borrowers. Further, creditor governments and central banks were actively encouraging the recycling of petrodollars and, it might be expected, would support the banking system if any difficulties arose as a result of the large-scale foreign lending. Second, governments and governmental organizations--the IMF, the Fed, the U.S. Treasury and other governments--have been heavily involved since the crisis began.[7] Third, there is no single optimal solution. Solutions differ by who bears the burden.

[7]It has been argued, for instance by Lindert and Morton in the present volume, that the debt crisis would have been resolved far more rapidly without the government intervention.

But it is likely that improvements that could have been made by negotiation among the creditors and debtors have already been achieved. What remains to be discussed are changes that would shift the burden among the parties, and improvements that involve externalities, that is actions that benefit more than the individuals making the direct transaction.

It is conventional in discussing the debt problem to focus on the restoration of debtor country growth as the ultimate aim. However, the levels of income and consumption cannot be overlooked. If it can repress living standards enough, a country can probably put itself in a position to begin growing again. Figure 1 illustrates. The country has been growing at a certain rate up to time T, when the debt crisis strikes. The country has been living beyond its means, and has to reduce its living standards. By how much? By servicing the debt in full, it may move onto path A, cutting living standards sharply, suffering low growth for a while as the economy reallocates resources from production for domestic use to production for export and import competition, and then moving ahead. Alternatively the country may, perhaps through a moratorium, pay a lower price in terms of the initial reduction in the standard of living and move onto path B, starting at a higher level of income than on A, and as shown here, growing as fast.

If the growth rates on A and B are the same, and if income on B is higher by more than the interest on the additional debt on that path, the country gains from the moratorium. Corresponding to the lower standard of living on A is a larger transfer of resources to the

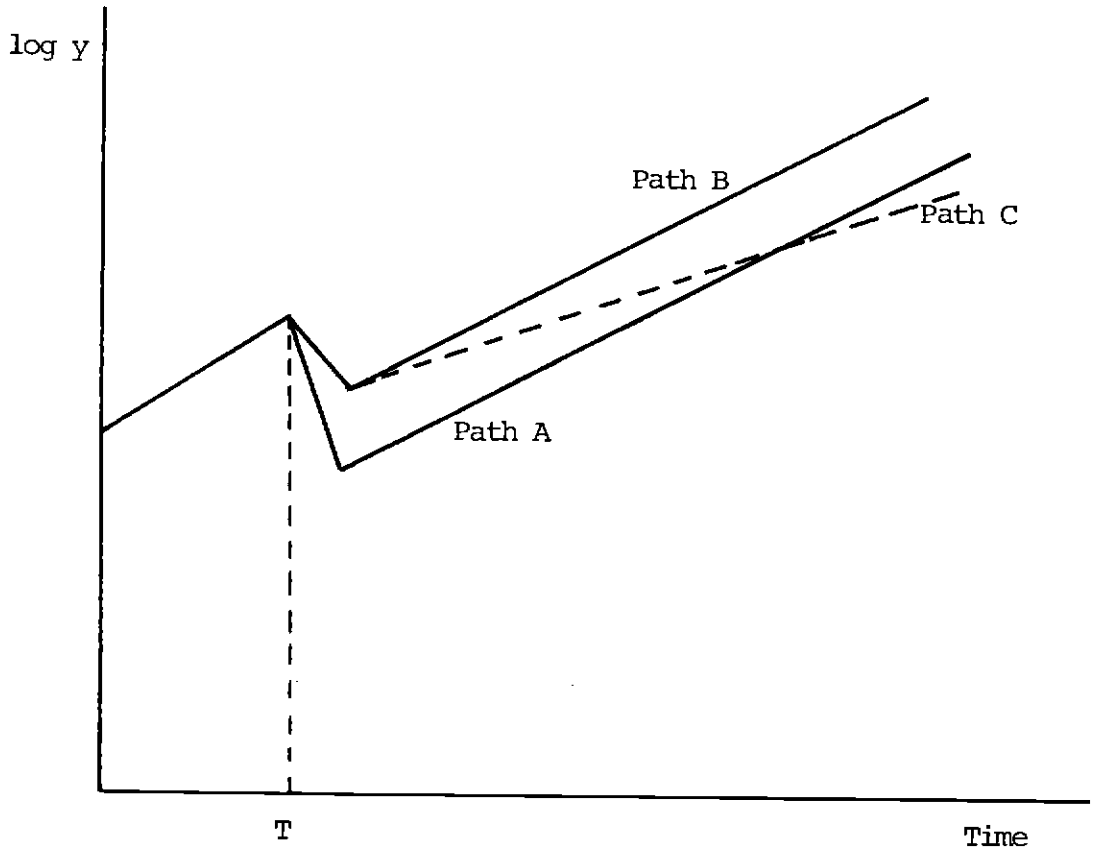

Figure 1.

creditor countries, ultimately to the stock-holders of the creditor banks. The burden of adjustment on path A is greater than that on B, although both eventually lead to a restoration of growth. Eventual return to growth does not imply the success of a debt strategy. Quite possibly there were alternatives that would have resulted in higher levels of income or consumption in the debtor countries throughout.[8] The failure of the fifteen heavily indebted countries to restore consistent growth since 1982 has to be weighed in the balance in evaluating the debt strategy followed so far.

A major issue that has to be discussed in evaluating different debt strategies is whether the growth rate of real GNP for the debtor countries is the same on paths with deeper adjustment such as A, and paths with less adjustment such as B. If a moratorium or any policy other than full debt servicing reduces market access, it could also slow growth. If so, the relevant choice in Figure 1 would not be between A and B, but between A and C, where C's low growth rate results from sanctions, explicit or implicit, that are imposed as a result of the failure to meet debt obligations in full, or by the incomplete adjustment of the economy to its new circumstances.

Before describing and evaluating plans to solve the debt problem, I make several stipulations about the nature of the problem and its solution.

[8]A simple criterion by which to judge alternative strategies from the viewpoint of the debtors is the present discounted value of their consumption.

. First, the debt crisis will have to be resolved in a way that differentiates among countries. Bolivia's problem is different from Brazil's, and both are different from Tanzania's.

. Second, from the viewpoint of the stability of the U.S. banking system, the debt problem is dominated by just a few countries--over half of total U.S. banks' liabilities, and the liabilities of the nine money center banks, are in Mexico, Brazil and Venezuela. The concentration on the Baker fifteen with its heavily Latin American flavor is a result of those countries' debts being predominantly to the private sector. Similarly, the concentration is this paper is on private sector capital flows and debts.

. Third, concentration on the Baker fifteen overlooks the debt and growth problems of sub-Saharan Africa, which will have to be taken into account in any discussion of aid.

. Fourth, just as the debt problem arrived unexpectedly as a result of changes in the international economy, it could quietly go away. Higher prices for commodity exports, and further reductions in real interest rates, would make the entire problem look manageable. It could also intensify quickly if the international trading system seizes up as a result of growing protectionism.

. Fifth, the interested parties, the banks and the debtors, each have little interest in revealing the dimensions of whatever compromises they might ultimately be willing to make.

Finally, there are important political constraints on solutions to the debt problem. There is no well-defined economic sense in which a Brazil, Mexico or Argentina is incapable of servicing and ultimately paying off its debt.[9] In none of these countries is the external debt to GNP ratio much more than 60%. Given long enough, and given a government powerful enough to reduce living standards sufficiently,[10] those countries would be capable of generating the trade surpluses that would enable them to regain normal access to the capital markets. However the new democratic governments in several of the heavily indebted countries are certainly too weak to achieve massive reductions in consumption. The question for both their own governments and the creditor governments is how far it is possible and politically wise to push their citizens to meet debt payments.

[9]See Feldstein (1986) for a detailed scenario.
[10]Of course it becomes harder for the debtors to meet their obligation if the creditor governments close markets to foreigners.

II. Procedural Reform and New Debt Instruments.

Some debt plans would leave the present value of claims on the debtors unchanged while changing their form. Others would reduce the present value of claims on the debtors. Many of the proposals for new debt instruments are intended to maintain the present value of claims on the debtors while making it easier for them to pay, by adapting repayments schedules to the likely patterns of debtor foreign exchange receipts.

In this section I take up both procedural and regulatory reforms that could improve the bargaining process by which debt deals are reached and reduce obstacles to capital inflows to the debtors, and suggestions for new debt instruments. In neither case is the change designed to reduce the value of claims on the debtors.

Procedural Reform.

Several procedural reforms are listed in Table 3. There has already been progress in the implementation of a number of these reforms, including the first. The frequency of complicated debt negotiations has been a significant burden on the economic management teams of debtor nations. Because macroeconomic management skills are in short suppply, reduction of the frequency of such negotatiations would

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Table 3: PROCEDURAL REFORMS.

Change	Initiating agency.
1. Multiyear rescheduling.	Banks and debtors.

2. Reduced size of banking syndicates and exit option for small banks.	Banks and debtors.
3. Change accounting rules to allow partial writedowns and their gradual amortization.	Bank examiners and accounting standards.
4. U.S. information provision on foreign accounts.	Bank regulators and IRS.
5. U.S. taxation of foreign accounts.	Congress.

help improve the overall quality of macroeconomic management. Although the creditor banks value the short leash that more frequent negotiations provide, they can retain some of that control by using IMF Article IV consultations as a framework of evaluation of the country's economic progress and as a condition for further disbursement of funds. Multiyear restructurings of the debt are becoming routine, for example for Mexico, Argentina and the Philippines, and there appears to be no objection in principle to such agreements on the part of the banks.

The size of the banking syndicates involved in the debt negotiations and the need for hundreds of banks to agree to packages that have already been negotiated are obstacles both to efficient negotiation and to the rapid mobilization of capital after an agreement

has been reached. After the September 1986 Mexican agreement it took nearly six months for all 500 banks to sign on. The desire of many of the small banks to leave the international debt business is well known. The exit vehicle may be either the interbank secondary markets or as in the 1987 Argentinian restructuring, special provisions to enable the small banks to leave the syndicates. For instance, it should be in the interests of both the large creditor banks and the debtor countries to agree to allow banks that collectively hold the last 3-5% of the debt to leave the syndicate. This could be achieved by the debtor selling them exit bonds that pay interest at a rate below the market rate, with an economic present value above the secondary market price of the country's debt but a face value equal to that of the original debt. Alternatively they might be allowed to leave the syndicate if they sell their claims in the secondary market.[11] In order to provide an exit vehicle for the smaller banks, it would also be necessary for the larger banks and the debtors to agree that sales of securities or purchases of long-term bonds of the debtors free the bank from the obligation to participate in future funding.

Two aspects of the accounting and tax treatment of sales of debt at less than face value have to be distinguished. First, it is unclear whether a bank selling part of its claims on a given country for less than book value has to write down its remaining claims to the same extent. That is a problem for those banks wishing to sell off part of their debts but not all, and presumably is not the main concern of the

[11]Obviously this would apply only to banks holding the last 3-5% of the country's debt as of a given exit date.

smaller banks that wish to leave the international debt business. Second, any bank taking a loss in a given period has to record that as a loss in current revenue and cannot amortize it over time.

To start with the second problem: it is not obvious that the value of a firm's stock is increased by amortizing a recognized loss over a prolonged period. Certainly markets responded well to the creation of large loss reserves by the leading banks in May and June of 1987, apparently placing a positive value on the explicit recognition of the possible loss. If nonetheless banks were convinced that amortization was preferable to a larger one-time loss, they could be allowed to write off the losses over a period of several years rather than immediately.

Uncertainty arises over the accounting treatment of debt whose market value is below face value when some of that debt is sold. One view is that banks have to write down the value of all the remaining debt of that type on their balance sheets. That would seem to be the rationale for banks' attempts to swap debt among themselves rather than buy and sell in the secondary market. However, some bankers believe that it is not necessary to write down all the debt of a given country if some of that debt is sold in the market--so long as a good case can be made that the bank is likely to collect on the remaining debt.[12] Certainly the creation of loss reserves against developing country debt has not forced the banks to carry the corresponding debt on their balance sheets at its market value.

[12]This was the position taken by a panel of the American Institute of CPA's in 1985 (See "The Outlook" column, Wall Street Journal, October 26 1986).

The basic source of the accounting difficulties, if they exist, stems from the fact that debt is carried at more than market value in the first place. If for some reason it is appropriate to carry that debt at market value so long as it has not been sold, then the regulators should not have any difficulty allowing those parts of the debt that have not been sold to continue to be carried on the same basis as before.

Although some capital flight can be regarded as a natural attempt by portfolio-holders in developing countries to diversify internationally, much of it is a form of tax evasion. Procedural reforms 4 and 5 would help the debtors deal with the tax-evasion aspects of capital flight. U.S. and foreign developed country banks that hold the accounts of citizens of other countries could be required to inform the tax authorities of those countries of the existence of the accounts. It is probably at present difficult to trace the home country of some depositors, but it should not be difficult to find a method of requiring those opening new accounts to give some proof of country of residence. This provision would have to be agreed with other countries, and thus would take time to implement.

The United States could more easily impose a uniform tax on all interest on bank accounts, and indeed on other income generated from securities holdings, that are not those of United States taxpayers. Once again the effectiveness of such measures would depend on cooperation in introducing similar measures in other countries. By taxing the accounts itself, the U.S. government would be reducing the

attraction of capital flight. An alternative would be for the taxes to be imposed by the country from which the capital fled, for which purpose the provision of better information about foreign-held bank accounts would assist the tax authorities in the debtor countries. Here too an international agreement would be needed if countries were not to compete for foreign capital by favorable tax treatment, as they do at present.

Changing the Nature of Claims.

Many of the suggestions for dealing with the debt crisis involve changes in the nature of the claims on the debtors. The driving force behind these suggestions is the conclusion that the structure of the debt in 1982 was partly responsible for the debt crisis. With virtually all payment flows linked to short term interest rates abroad, the debtors were vulnerable to a rise in real interest rates in the

Table 4: CHANGING THE NATURE OF CLAIMS.

Change	Initiating Agency.
1. Development of secondary and insurance markets.	Creditor financial institutions and official institutions
2. Indexed loans	Debtors and banks
3. Contingent lending obligations	Debtors, banks and offical lenders.
4. Longer maturity debts.	Debtors and banks
5. Debt-equity swaps	Debtors and banks
6. Servicing of debt in local currency.	Debtors and banks
7. Return of flight capital	Creditor and debtor governments, and banks.
8. Country funds.	Debtors and creditor financial intermediaries
9. Debt subordination.	Debtors, existing and new lenders.
10. Interest capitalization.	Debtors and banks, plus creditor governments.

developed countries, and had no protection against changes in the terms of trade. These suggestions are probably motivated also by the view that eventually the structure of debtor country liabilities should correspond more closely to the structure of underlying assets, and should have more long-term fixed interest debt, more equity, more direct investment, and less floating rate debt.[13] These arrangements would

[13]Lessard and Williamson (1985) provide a very useful review of alternative proposals for changing the form of finance of the debtor countries. See also World Development Report, 1985, and World Economic Outlook, April 1986.

provide for more risk-sharing between lenders and borrowers than floating rate debt was expected to produce.[14]

The term securitization is often used to describe a process in which existing debt is taken off the books of the banks and turned into securities, for instance through sale in the secondary market. The same term can be used to describe potential changes in future private sector financing of economic development, with the maturity and nature of the securities reflecting the underlying investments.

Secondary and insurance markets: It is often suggested that the development of secondary markets would help solve the debt crisis. Secondary markets have already developed to some extent, though trading in those markets is thin. Citibank's intention to use the secondary markets more intensively, announced in May 1987 in conjunction with the increase in its loss reserves, could increase the depth of those markets. Regulatory restrictions discouraging partial sales by the banks, or at least uncertainties about accounting and regulatory treatment of the sales, would have to be removed for these markets to develop.

The secondary market does little to solve the debt crisis other than to enable the banks--if they were to sell their claims--to reduce their vulnerability to default in particular countries. Banks have also engaged in debt swaps to strengthen their balance sheets, sometimes in conjunction with debt-equity swaps. The secondary market could eventually become the locus in which an international facility deals

[14] In the event, though, creditors have to some extent shared in the losses that higher interest rates imposed on borrowers.

with the debt. And, if the market became deeper, prices in it could serve as the basis for debt renegotiation.

Private insurance of the debt is not in principle different from the provision of a secondary market, except that it would enable banks tied into the debt to reduce their vulnerability to default.[15] Insurance rates could be deduced from the discounts on debt in the secondary market, and would be extremely high for many countries. The public sector in the form of the Fed has implicitly been providing insurance to the banking system since the start of the debt crisis, but because it is not obligated to come to the rescue of any particular bank, private insurance if it were available would remove uncertainty for creditor banks. Because the debt crisis and discounts on debt are so deep, it is difficult to see private insurance markets becoming large, or contributing significantly to a solution of the current debt crisis. But the emergence of such markets could facilitate future debt flows to developing countries.

There have also been proposals for public sector provision of insurance in the form of a MIGA (multilateral investment guarantee authority) perhaps spearheaded by the World Bank.[16] Such an authority could help mobilize new private capital, perhaps at lower cost than through private insurance because the World Bank and other multilateral agencies have developed expertise in evaluating loans to developing countries. The MIGA need not necessarily subsidize the insurance rates;

[15]In this paragraph I discuss insurance of existing debt obligations.
[16]National export credit agencies perform some of the same functions. The World Bank has provided some investment guarantees in co-financing of projects with commercial lenders.

if it were to do so, the organizing agency would have to decide if that was the most productive use of its subsidies rather than, for instance, providing them in the form of lower cost loans to the borrowers. The provision of 100% insurance by MIGA would create the type of moral hazard problem of inadequate monitoring of loans by lenders that contributed to the creation of the current debt crisis; MIGA would therefore probably insist on significant levels of co-insurance with the lenders.

Indexed loans: Any loan that ties payments from debtors to creditors to some objective criterion is an indexed loan. There are different motivations for such instruments. A proposal that countries should pay real interest on their debts, which would mean say 2-3% real, could imply a cash flow that starts out small and ends with a balloon payment at maturity when the inflation adjustment component is added to principal. But indexation of interest could also imply that the interest due in a given year is 2-3% plus that year's rate of inflation. The proposal to fix the real interest rate on the international debt was made with the aim of reducing short-term resource flows from the debtor countries, both by reducing the real rate below the extremely high levels implicit in then nominal rates, and in delaying some repayments until maturity. A reduction in the real rate would of course reduce the resource transfer from the developing countries. But given the possibility of supply shocks, debtors with real obligations could find themselves having to make high real transfers precisely when world trade and their export earnings are depressed. Of course, if the country is

the beneficiary of the supply shock--for instance the oil exporters during the first and second oil shocks--then the indexation helps it match its payments stream to its ability to pay. Similarly, if high inflation is caused by expansionary demand policies in the developed countries that raise commodity prices, indexation would create a closer match between the countries' liabilities and its ability to pay.

Exchange participation notes suggested by Bailey (1983) tie payments to export earnings.[17] In a crude way Peru has instituted such notes by paying interest only up to a certain percentage of its export earnings. However creditors have not relinquished their unmet claims on Peru, whereas agreed upon exchange earnings indexation could simply define the claim as a certain share of export earnings. In well-operating markets such claims could be priced and traded, and there is no difficulty in principle in envisaging their introduction.

Two objections to the indexation of interest payments to export earnings have emerged. First, if interest payments are indexed to export earnings--for instance that a country pays 20% of its foreign exchange earnings in interest--then that is like a tax on exports earnings, which discourages the country from exporting. Rather, it is argued, index the payments to a larger total, such as GNP, which would permit a lower "tax" rate and therefore a smaller disincentive effect. While the tax argument is correct (though its quantitative significance remains uncertain), it is not decisive: first, a country with export earnings has the foreign exchange to make payments to foreign creditors,

[17]Lessard and Williamson (1985) analyze this and related proposals which they call "quasi-equity" investments.

whereas a country whose GNP is growing while its exports are not may not; second, the indexation of interest payments provides an incentive for the creditor governments not to restrict imports from the debtors, for in so doing they reduce the interest earned by their own banks.

The second objection to indexation of interest is that the bank regulators would have great difficulty handling the valuation of these quasit-equity claims and might forbid the banks from holding them. Other financial intermediaries, such as pension funds, might be willing to hold exchange participation notes. Further, debtor countries could attempt to sell such instruments as bonds. Oil-price indexed bonds have already been sold by both Mexico and a private company[18] and are an obvious indexed instrument that the oil exporters would presumably be willing to supply and for which a hedging demand in the developed countries is likely to exist.

It is sometimes suggested that the debtors would be unhappy to allow the payments on indexed notes or bonds to rise very high in the event the country suffers a bout of good luck. There is again no problem in principle for the capital markets to price indexed instruments with ceilings on payments. Of course the sellers of the bond pay a price for imposing the ceiling, but it may be a price they are willing to pay.

Direct swaps of debt for claims on commodities which the recipient exports are another form of indexed instrument. By tieing the

[18]Both Mexico and Petro-Lewis suffered subsequent reverses, and the Mexican oil bonds are not regarded as a success; Petro-Lewis's problems appear unrelated to the issue of indexed bonds.

payoff of loans to a specific amount of the country's production, such agreements reduce the transfer problem.[19]

Contingent lending obligations: Contingent lending obligations are another variant of this type of proposal. Examples are the IMF's Compensatory Financing Facility and the 1986 agreement that Mexico will receive additional loans if oil prices fall. In all cases of contingent financing and interest payments the benefit for the recipient country is the assurance that it will automatically rather than after protracted negotiation receive financing in the event of need; the problem for the lender is the fear that good money may be thrown after bad. That can to some extent be compensated for by a higher interest rate, but higher interest rates increase the probability of default, which is the cause of rationing in credit markets.

Longer debt maturities: Moving on to item 4 in Table 4, debt maturities are already quite long, from six to as much as twenty years, in many debt agreements. The long maturities protect the borrowers from having to roll over the debt frequently, but because the loans are at floating rates still leave them vulnerable to interest rate shocks. From the viewpoint of the banks, the lengthening of maturities is a lengthening of the rein on which the debtor countries are held--as indeed are other proposals in Table 4 including indexed instruments--and therefore comes at a price.

[19] In conversation Pentti Kouri has argued that the fact that Finnish reparations to the Soviet Union after World War II were specified in physical terms made the transfer of resources less burdensome than it would otherwise have been.

Debt-equity swaps: Debt-equity swaps are the central element of most market-oriented debt restructurings, and they have also been implemented, for example in Mexico, Chile and Argentina. The essential transaction is simply that a debt claim on a country is swapped by that country's central bank for local currency claims that should be invested in local firms.

If the domestic equity markets were working well, if there were no constraints on purchases of foreign exchange or domestic assets, and if there were no subsidies involved, such transactions would not attract any attention. But they do. The greatest attraction for the creditors is that debt-equity swaps often carry an implicit subsidy of the equity investment. Swaps may involve the purchase of debt in the secondary market at a discount, and redemption at face value. With secondary market discounts that even for the major debtors may be as high as 50%, the subsidy element can be very large.

However there is no inherent reason the debtor country has to subsidize the transaction to the extent set by the New York market price of the debt. If it wants to subsidize the transaction, it can do so by setting a price at which debt can be redeemed prematurely, at a level between the New York price and face value. Another approach has been used by Chile, which auctions off the right to exchange dollar debt for peso assets.

Obviously debt-equity swaps replace interest payments by dividend payments, and are not a source of new money for the debtor country. In addition, they may merely be subsidies for investment flows

Flight capital: The return of flight capital is another item that has received considerable attention. Here the amounts involved may be large, of the order of half the Argentinian and Mexican debts. Some debt-equity swaps probably represent the return of flight capital. Provided the subsidy element is kept small, this may be a useful vehicle for the return of flight capital. Similarly any measures the regulatory authorities in the developed countries are willing to take to enable countries to trace this capital would help the debtor governments tax it, and perhaps help bring it home.

The main advantage of flight capital over alternative sources of funding that might be available at lower rates is that it prevents the sale of the national patrimony to foreigners. (Meltzer, 1983) Flight capital might also be a preferable source of financing of domestic business because the local owners of flight capital have more specialized knowledge of local markets.

However it would be difficult to place flight capital as the centerpiece of any debt strategy. If it would come back for reasonable interest rates and small subsidization of debt-equity deals, it would not need any special attention. It is quite likely though that especially high rates of return would be needed, because the owners of flight capital would fear the imposition of ex post sanctions of some type.[21]

[21] The government of Turkey obtains funds from expatriate workers by borrowing in Germany at 3% above the Eurodollar rate. (See Rodrik (1987) for details). Presumably debtor countries could set up similar schemes in foreign countries for capital held there. It might however be difficult for the government to justify paying higher interest to citizens who had invested abroad than to those who had kept their funds at home.

Flight capital left some countries, such as Argentina, completely legally. It left others that had exchange controls illegally. The possibility exists of providing an amnesty for the return of flight capital to those countries it left illegally, though here as with other aspects of the debt crisis, the fear of setting precedents would affect policy decisions.

Mutual funds: Mutual fund investment in developing countries, the "Country X Fund" is a potential source of equity capital that would succeed in attracting some new capital, and help in the aim of changing the form of foreign investment in the debtor countries. The amounts involved here are however likely to be small initially. Such mutual funds would do more to encourage future capital flows to the developing countries than to deal with the existing debt problem.

Debt subordination: Another suggestion to encourage new capital inflows is that existing debt claims be subordinated so that new lenders go to the front of the repayment line. Subordination is presumably ruled out without the permission of the existing lenders. If it were likely that substantial new capital could be tapped through subordination, the existing lenders could see an increase in the probability of their being repaid, and might be willing to agree. However with no obvious sources of new capital available, they are unlikely to do so.

Interest capitalization: The last item in Table 4, interest capitalization, could change resource transfers to the debtors quite radically and rapidly. Capitalization simply limits the amount of interest that has to be paid in any one year, perhaps to a given nominal

interest rate on the debt, or to a given percentage of GNP, a given percentage of export earnings, or by some formula related to commodity prices. Whatever the criterion for the amount to be transferred in the given year, the remainder is capitalized and automatically added to the debt, to be paid off over a specified horizon.

Interest capitalization has the attraction of dealing very directly with the problem that current transfers from the debtors are so large as to inhibit growth. The obvious fear from the viewpoint of the creditors is that the process is unstable, that the amounts capitalized will grow too fast for the country ever to be able to pay all the interest without further capitalization. Whether that is a realistic fear depends entirely on the growth prospects of the country and the exact formula used for capitalization. But if every reasonable capitalization formula results in debt instability, then there is presumably no chance that current claims on the country can be collected in full. That is, interest capitalization is a simple substitute for rescheduling when the problem is liquidity, but not when it is solvency.

Table 5 presents calculations of the hypothetical path of the indebtedness of the fifteen heavily indebted countries under the assumption that interest capping began with the onset of the debt crisis in 1982 and continued to 1987. According to the real interest rate formula, the hypothetical payment from debtors to creditors each year was 3% plus the rate of inflation of the U.S. GNP deflator. According to the share of exports formula, the debtors made interest payments of 25% of their exports.[22] In each case it is assumed that the interest

[22]The 3% real interest rate and the 25% share of interest earnings were chosen to ensure that the hypothetical debt in 1987 was similar to the actual debt in 1987.

rate at which interest is accumulated is the average actual interest rate paid on the debt in that year. It is further assumed that the only capital inflows to the fifteen heavily indebted countries resulted from interest capping.

Table 5: RESULTS OF HYPOTHETICAL INTEREST CAPITALIZATION.

Formula	Outstanding Debt ($ bill)					
	1982	1983	1984	1985	1986	1987
Actual	383.1	394.2	410.9	417.2	434.2	464.9
3% real interest	383.1	392.6	409.8	427.3	443.9	451.5
25% of exports	383.1	400.7	414.4	429.6	443.8	457.4

Source: Underlying data are from World Economic Outlook, April 1987, Statistical Appendix.

The calculations in Table 5 show that interest capping based on a 3% real interest rate would have produced a very similar pattern of capital inflows to the actual pattern--but it would have been produced automatically without the constant negotiation that has marked the period since 1982. The main difference between the first two rows of the table occurs in 1985, when capital inflows would have been substantially larger with a 3% interest rate cap, and in 1987 (for which the "actual" is in any event hypothetical) when the inflow would have been reduced. Interest capping under a formula that fixed actual payments at 25% of exports would have produced a larger inflow of capital in 1983 at the start of the crisis.

The assumption in Table 5 is that exports and the interest rate at which interest is accumulated would have been the same under interest capping as actually occurred. It might be pointed out that with a 25% "tax" on earnings, exports would have been lower. That is possible, but note that actual interest is merely deferred by the capping, not forgiven. It is also possible that the dynamics of negotiation and thus the interest rate at which interest would have accrued would have been different under interest capping. However there is no presumption as to the direction of that effect.

The calculations presented in Table 5 may thus be taken as indicative of the pattern that would have been seen under interest capping. The most interesting result in the table is that capping at a 3% real interest rate would have had only a small effect on the pattern of debt accumulation, and is thus a less radical proposal than it sounds.

Interest capitalization has received more support in Europe than in the U.S. Capitalization maintains the banks' claims on the debtors, producing the prospect of eventual repayment, and would thus be preferred by the lenders to interest forgiveness. However it may suffer from accounting difficulties in the United States, with the issue being whether the debt has to be treated as non-performing when capitalization is triggered. Here U.S. regulators would have to change rules if capitalization were to become a practical option.

It has also been argued that capitalization is an unstable process because once introduced, it leads inevitably to the demand for more: if the first agreement is to capitalize 40% of interest, won't the debtor demand 60% next time, and so on. It is hard to see why the normal bargaining process is more unstable in this direction than in any other. Besides, agreements will almost certainly include an extra charge for the use of the capitalization feature.

As with the other types of change in the form of claims on the debtor countries, interest capitalization may be useful for some countries, in this case those clearly in temporary difficulties. The alternative of a rescheduling suffers the need to engage in a more complicated negotiation, which may bog down over the desire of the smaller banks to escape. But the reschedulings achieve some of the goals of interest capitalization in reducing immediate outward resource transfers from the debtors by providing a grace period before principal repayment is to resume.

Most of the proposals discussed in this section are for changes in the form of the debt, that--except to some extent in the discussion of debt-equity swaps--do not reduce the present value of debtor country obligations. Alternative proposals do typically include elements of debt relief.

III. New Institutions.

The overhang of the existing debt is the main obstacle to a renewal of resource inflows to the heavily indebted developing countries. Very early in the debt crisis both Kenen (1983) and Rohatyn (1983) proposed the formation of an international institution to buy

debt at a price below the face value and provide relief to the debtor countries. Similar proposals have been made later, most recently in the 1987 U.S. trade bill.

Kenen's 1983 proposal was for the governments of the creditor nations to set up an International Debt Discount Corporation (IDDC) to which they would contribute capital. The IDDC would issue long-term bonds to the banks in exchange for their developing country debts, at a discount. In 1983 Kenen suggested 90 cents on the dollar. It would in turn collect from the debtor countries, using some of the 10 cents to provide debt relief. If the IDDC misjudged and was unable to collect, the creditor governments would bear the losses.

The plan is elegantly simple in replacing developing country debt in banks' balance sheets with the liabilities of the IDDC, in effect requiring the banks to lend to the IDDC. Kenen proposed that the banks not be allowed to choose which debt they would sell, and that the debtor countries would have to agree that the IDDC was the successor debt holder. The IDDC could lengthen the maturity of the debt. He proposed only a modest discount, of about 10%, on the debt; given the persistence of high interest rates and low commodity prices since 1983, and the large discounts in the secondary market, he would presumably currently suggest a larger discount.

Rohatyn suggested the setting up of an institution that would obtain resources by borrowing in the market, and from the creditor governments. It would then buy debt from the banks, at a discount, and pass the discount on to the debtor nations. He envisaged sufficient

discounts to bring debt service burdens down to 25-30% of exports; they are currently 50% for the heavily indebted countries.

Weinert (1986-87) proposes that the World Bank and/or developed country governments buy the debt from the banks in exchange for low-interest loans. Suppose that the debt relief is organized through an IDDC. The IDDC passes the same low interest rate on to the debtors. The interest rate is calculated so that the market value of IDDC bonds exchanged for a given country's debt is equal to the secondary market value of that country's debts. But because the face value is the same as that on the debts bought from the banks, the banks can in effect amortize their capital loss through lower profits over the life of the bonds.

Weinert assumes the operation can be carried out without government funds. Some source of capital, presumably governmental, would be needed in any case. Whether the governments retrieve their capital depends on whether the debtors succeed in paying off their reduced obligations. Possibly the creditor governments or the World Bank might decide that aid could be injected to reduce the burden of the debt on the debtors even beyond that implied by the purchase of the debt at secondary market prices.

There are several questions about IDDC type schemes. First, why would the banks agree, and would they all have to agree? At the right price, the banks collectively might agree to a scheme of this sort on the grounds that it transforms uncertain debt into more certain or perhaps even government guaranteed debt.

The key operational issues in the setting up of an IDDC are the prices at which the IDDC buys debt from the banks, and the amount of relief it provides to the debtors. Unless the debt were auctioned off, it would be difficult to come up with the right price. Once the IDDC became a serious possibility, the secondary market price would reflect expectations about IDDC operations, and would not necessarily serve as an accurate indicator of value. But even though there appears at present to be little prospect of such an institution, the secondary market is thin and prices in it cannot be used as good indicators of the market value that would exist if the regulatory environment made it possible for the large banks to use that market freely.

How much debt would be offered by the banks? If the IDDC offered a high enough interest rate it would get all the banks to participate. At a sufficiently low interest rate no banks would take part. The IDDC could not force the banks to accept the offer unless perhaps it reached an agreement with the banking syndicate for each country. Unless there is some contribution of public money, the plan gets stuck if the banks will not buy debt at an interest rate that looks reasonable for the given country, or some other means is found of ensuring bank participation

Any IDDC type scheme creates a freerider problem. If the IDDC buys up much of the developing country debt and makes some form of debt relief possible, then the credit standing of the debtors improves. Those creditors who stayed out of the IDDC agreement have a capital gain. For that reason an IDDC would have to find some means of ensuring almost complete participation by the creditors.

If it does not use secondary market prices, how would the IDDC proceed? It would have to calculate for each country the interest rate it regards as right for that country, and then offer to exchange debt at that interest rate with the banks. There is no ready objective basis for calculating how much each country can afford to pay, or should pay. This will be an issue in all debt relief schemes, and will have to be settled on the basis of some combination of the country's per capita income level and the losses it has suffered in the debt crisis.[23]

Recently the Japanese commercial banks have, with government blessing, set up an intermediary to buy their holdings of developing country debt. The Japanese banks derive tax benefits from the sale of their assets at a discount. The U.S. tax laws appear not to afford the same advantages to U.S. banks taking discounts. The Japanese intermediary does not of course plan to forgive any of the developing country debt. But it does provide a precedent for half of the transaction an IDDC would undertake

The IDDC notion is at the least interesting; if it could be carried off with relatively small injections of public money it would also be important. The key questions about each such plan are how large a writedown the banks take, whether they would be willing, or could be made willing, to do so, and how much relief is provided to the debtors. If there is to be an overall solution to the debt problem it will almost

[23]Sachs (1986) suggests per capita income declines since the start of the debt crisis as the basis for relief. This could give large amounts of relief to the relatively rich borrowers. Since the provision of debt relief through public funds is in part a result of a sense of fairness, it is likely that relief would be based on the level of per capita income as well as (perhaps) debt-related indicators.

certainly involve an IDDC type institution. But since the procedures it sets up for pricing debt will determine the burdens borne by both banks and debtors, and the possible extent of creditor nation government support, its operating rules and management are bound to be the subject of protracted negotiations. It might be possible in such a negotiation to separate technical discussions on the terms and methods of buying debt from aid discussions that determine the concessions that are given to each country.

One way to move ahead systematically on the debt issue is for the creditor and debtor countries to agree to exploratory talks on the setting up of such an institution.

IV. Debt Relief.

Debt relief could be given in the context of an IDDC. The case for relief is that debtor countries will be unable to grow unless they can increase imports, that no solution currently in sight permits them to do that without reducing income levels to politically unacceptable levels, and that ultimately they will in any case not pay most of their debts. If debt relief were not necessary, the creditor banks and debtors would already have got together on a plan, such as interest capitalization, that permits the resumption of growth while promising that the debt will eventually be paid off.

The case against debt relief is that of precedent, and the view that contracts that were voluntarily entered into should not be abrogated. The question of the precedent that would be set by giving

debt relief is not simple. As Lindert and Morton (1987) point out, defaults have occurred quite regularly in the past, but that precedent has not made any of the major debtors default this time. Further, debt contracts involve both creditors and debtors, and the use of political authority to enforce the debts sets a precedent for creditors, whose incentives to exercise appropriate caution in lending are reduced.

Relief can come through direct negotiations between the creditor banks and each debtor country, or with the intervention of the international institutions and/or creditor governments. Or it may be imposed unilaterally by some of the debtor governments, either in the form of a moratorium which does not repudiate the debt, or in the form of unilateral action that leaves them to deal with the legal consequences of their actions. Or it could come in some combination of the above.

Negotiations between debtors and their creditor banks would not be direct unless the creditor governments and international institutions kept out. A negotiation in which a creditor government warns the debtor that any failure to pay 100% of the debt will affect political and aid relations is multilateral, not direct. In any direct negotiation the debtor nonetheless would have to weigh the legal and other consequences of not paying in full (Kaletsky, 1985). If it can meaningfully threaten that, it should be able to reach an agreement that provides some relief.

Presumably the largest debtors, such as Brazil and Mexico, would have the negotiating power to reach an actual agreement on relief. The smaller debtors are in a weaker position with regard to reaching an

agreement, although the case of Peru suggests the smaller countries may find it easier to set unilateral terms on which there is no formal agreement with the creditors. The most likely scenario in which smaller countries obtain agreed-upon relief in direct negotiations is that they reach agreements patterned on those of the larger debtors. Indeed, one of the fears of the creditor banks is that any concessions extended to one country will have automatically to be extended to others.

It might be possible for the major debtors to settle their own debt problems in direct negotiations. As in any real world bargaining situation, the outcome would be determined by the threats that each side could realistically make (Bulow and Shoven, 1986). Since neither debtors nor creditors can be sure of the consequences of default, the results of such bargaining are difficult to foresee. So long as the creditor countries permitted these negotiations to proceed without interference, and at critical stages were willing to help--for instance by changing banking regulations--agreement is quite possible. The agreement would likely be conditional on the country's economic policies, and could involve the international institutions in monitoring roles.

However the free rider problem among creditor banks is not trivial. If an overall agreement is reached in which creditor banks make concessions that help restore the debtor's growth, individual banks have the incentive to stay out to try to collect 100% of their debt. In the United States at least it appears to be extremely difficult to

prevent this type of action, even by law, since the rights of the banks may be constitutionally protected.

Proposals to require relief, for instance by interest rate capping, or by debt forgiveness imposed by law, would likely also run into legal obstacles in the United States if not elsewhere. It might be possible to make relief more attractive to the creditors by providing further aid for the debtors, most likely in an IDDC context.

V. Scenarios.

Three basic scenarios can be seen. The first is an evolution of the muddling through strategy that has been followed to date. The basic element in the strategy is the negotiation of agreements from time to time between each country and its private creditors, with interest rates being set on a floating rate basis at some markup over LIBOR. The evolution would take place as new assets (such as oil-price indexed bonds, and exit bonds) were introduced, as banks swapped claims with each other and with the debtors (debt-equity swaps for example), and as the margins and fees on the existing debt change through negotiation. This is the very much the mixture as before.

Its benefits were noted in the introduction: there has not been a world financial crisis, the banks have had time to improve their balance sheets, real interest rates have fallen, and possibly the world economic situation will become more favorable for the debtors. The difficulties with this strategy were also noted in the introduction: growth has been slow or negative in the debtor countries and the crisis

shows no signs of disappearing. If anything, debt negotiations appear to have become more rather than less difficult since 1982.

The second scenario would see a series of direct agreements between each debtor and its creditors, involving relief and substantial lengthening of the debt. The negotiations for such agreements would be protracted and possibly crisis-laden, and would likely involve the international institutions in monitoring roles. The benefit of such a solution is that it is a longer-term solution, which enables debtors to concentrate on domestic economic management, and gives creditors an opportunity to put their balance sheets in order. The chances of reaching such agreements may well have been enhanced by the creation of loss reserves by the creditor banks.

The third possibility is the setting up of a large international organization, the IDDC, to attempt to dispose of the debt problem. This too has the benefits of settling the crisis and enabling economic management teams to concentrate on policies for growth. It would also provide a longer-term solution for the banks. Such a scheme would likely require a net contribution of resources from creditor governments or the international institutions, and the political difficulties of reaching agreed upon formulae for debt relief would be formidable.

Of course, the scenarios are not mutually exclusive. The second and third possibilities could be combined, with the debt crisis eventally being resolved through a mixture of direct agreements between creditors and detbors with extra relief being provided for the most impoverished countries though an IDDC or the existing international

institutions. Elements of the first scenario would be seen in the evolution of international lending in the direction of more equity-like claims. In all cases the solutions would involve agreed upon policy reforms in the debtor countries to attempt to ensure that the debt problem does not soon recur.

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