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# International Economic Conditions, Trade Policies, Exchange Rates, and Balance of Payments and Their Influence on LDC Growth

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**Abstract:** When the present value of the assets held by creditors in a firm is not fully recoverable within a reasonable time period, the firm is termed insolvent. Taking net foreign exchange earnings as receipts and debt service payments as expenditures, this measure of solvency may be applied to the analysis of the creditworthiness of major debtor countries, with the modification that, for a country to be deemed solvent, a principal rescheduling-cum-interest deferral scheme must not result (5 years later) in a significantly higher probability of having to reschedule. Empirical analysis of several major debtor countries using this methodology leads to the conclusion that interest payments from some countries will not be recoverable (under any feasible scheme to retain the present value of the debt) without persistent recession. Instead, the prospect for these countries is likely to be a pattern of chronic inability to meet debt service obligations and of stagnating or falling gross domestic product.

## Factors Underlying Country Debt Crises

The external financial difficulties that major debtor countries are now experiencing are fundamentally different. Some of the differences derive from differences between countries in their management of fiscal and monetary policies. Overvalued exchange rates and massive capital flight appear to have precipitated crises in Argentina and Mexico, for example. A radical policy shift to trade libertarianism and an overvalued exchange rate combined to precipitate the crisis in Chile. Experimentation with state and quasi-state investment enterprises and a willingness to monetize the resulting budget deficits precipitated Brazil's crises.

Likewise, the effects of external shocks on the economies of the debtor countries have varied according to the structure of their economies. Oil exporters such as Mexico and Venezuela clearly benefited from the real oil price increases of 1974 and 1979 in terms of enhanced ability to secure increases in credit with trade surpluses. Oil importers such as Brazil borrowed nominally to adjust their economies by investing in oil-conserving and export-enhancing enterprises and were encouraged to do so by multilateral agencies that adopted the benign label of "petrodollar recycling" to describe this phenomenon. Problems arose later when real oil price decreases simultaneously endangered extant loans to such countries as Mexico while reducing the pool of Eurodollars available for "recycling" to countries such as Brazil.

The oil wealth itself may have been a mixed blessing in allowing the continuation of economic policies that retarded the export competitiveness of other commodities. For example, Venezuela's wage and price structure has thus protected national industries from import competition while fostering lack of competitiveness in non-oil exports. The danger in this strategy of borrowing secured by a single export commodity is that, if the price of that commodity falls, the country's ability to generate foreign exchange from the export of other commodities is severely weakened.

The effect of increases in the real interest rate clearly has been to deepen the overall burden of debtor countries, but the degree and manner of this effect has varied widely between countries. Excluding OPEC countries, 45 percent of LDC debt is tied to variable interest rates, which fluctuate daily. The degree to which loans were undertaken at fixed interest rates and/or on concessional terms has tended to determine each country's insulation from interest rate shocks. Korea is an example of a country that contracted a relatively high proportion of its debt on concessional terms. Partly as a result, Korea has fared well in comparison with other major debtors in the international debt crisis, so far avoiding direct IMF intervention and conditionality.<sup>2</sup>

Countries have also tended to vary considerably in the ratio of their net indebtedness to total indebtedness, implying differences in the underlying vulnerability of their economies to interest rate shocks. Take, for example, the Argentina case, where Dornbusch (1984) has shown that the combination of foreign exchange reserves build-up and capital flight accounted for 87 percent of total capital inflows between 1978 and 1982. Since official reserves wound up substantially depleted by the end of 1982, we can infer that most of this 87 percent was indeed due to private capital flight. Increases in the world interest rate thus probably imply increases in returns on foreign assets held by those Argentines responsible for that capital flight. The problem in this case is one of recoverability from Argentina's citizens of returns on assets held overseas. This may be no trivial matter, nevertheless, owing to the difficulty of changing the underlying structure of Argentina's economy (and political system) sufficiently to attract those returns home again.

Other underlying structural considerations have contributed to the varying ability of major debtors to adapt to the deep recessions of 1980-83 and continue to have deleterious impacts on some countries' ability to rebound from the international debt crisis. Half the export earnings of oil-importing LDCs have been required to meet debt service payments for the past several years. The ability of debtor countries to cope with recession in industrial countries and, equally important, quickly to capture growing export market shares in those countries during economic rebounds depends fundamentally on the underlying economic structure of each country. A country that has depended largely on exports of primary resources (as opposed to manufactures), that has concentrated inflexibly on the export of only one or two goods, or that traditionally exports goods that are severely restricted by industrial countries' import protection will probably find recovery from its debt crisis much more difficult.

Similarly, the extent to which curtailment of foreign capital inflows can be balanced by investment from domestic saving varies considerably among debtor countries. Korea (again the model country in this respect) was able to sustain a rate of domestic saving of 18-25 percent during 1973-83, far in excess of the saving rates of Latin American borrowers over the same period. Saving rates are another area in which differences in the underlying structures of LDC economies have contributed to wide variations in the ability of each debtor country to weather the international debt crisis. Economists know little about the differences in economic and political structures that give rise to disparate rates of domestic saving. Structural characteristics, including domestic credit market infrastructure and regulation, credit rationing or interest rate subsidization, land tenure arrangements and their effect on the incentive to save, and government-sponsored versus privately-generated investment promise to be of critical importance to each country's ability to mobilize domestic saving in an era of diminished capital flows.

Inefficient investment of the proceeds from past external borrowing has left some debtors with large external debts unsecured by the infrastructure capacity—particularly export capacity—to support the ensuing debt service obligations. Policies that have allowed rapid accumulation of debt in order to finance imports of consumer goods or that have imposed pervasive and cumbersome nonprice mechanisms affecting investment allocation have produced this result. The debt load itself is in this sense a structural characteristic, representing the culmination of all past decisions concerning the investment of external capital.

What emerges from the discussions of the factors underlying country debt crises is not only that they are fundamentally different but also that the differences stem in part from underlying structural characteristics. This conclusion results from the fact that the discussion of financial difficulties has included not only an analysis of current balance of payments accounting but in addition an analysis of the ability of each debtor in the longer run to revive economic growth while continuing to maintain its external creditworthiness. That debtors' ability to revive their economies depends in no small part upon their regaining access to foreign capital inflows from private sources is implicitly assumed. Demonstrated long-term creditworthiness is taken to be a prerequisite to any such voluntary resumption of bank lending. But this cannot be accomplished without opening Pandora's box: the country-by-country analysis of external solvency.

### **The Problem of Country Solvency**

The question of whether the debt servicing problems evident today across a broad spectrum of developing countries are due to illiquidity or insolvency has never been dealt with adequately by international economists. They have been unable satisfactorily to define what is meant by illiquidity and insolvency. A formal definition of insolvency of an economic entity is that the present value of its receipts less expenditures over some finite time horizon is negative, implying that creditors' assets in that entity are not fully recoverable. Taking net foreign exchange earnings as receipts and debt service payments as expenditures, the crucial question is whether the present value of the debt can be maintained without persistent recession and without significant deterioration of the country's creditworthiness.<sup>3</sup> If not, the assets held in that country by creditors overseas would probably not be fully recoverable. The ability to distinguish those countries that appear to fall into this category is central to the formulation of successful policy responses to the international debt problem.

That a triangular trade-off exists among debt service, growth, and long-term creditworthiness is well established.<sup>4</sup> Representatives of debtor nations and international agencies have argued in favour of introducing interest rate "capping" mechanisms that would roll over some portion of interest

service obligations into new debt to allow faster rates of growth in debtor countries. The ability to identify those countries for which the introduction of such measures would generate faster growth without significantly worsening their long-term creditworthiness is crucial.

Proposals to defer interest payments, while allowing faster short-term growth, could lower the long-term growth rates of some countries, since the efficacy of such proposals depends upon the ability of each country to generate new sources of foreign exchange in the "grace period" of faster short-term growth. The danger is that, if a country is unable quickly to gear up its exports, the build-up of debt during the "grace period" could end up crippling its long-term economic growth prospects.

Country-by-country sensitivity analysis of the underlying assumptions made concerning the world economy is important. For example, if industrial country growth rates and world interest rates are higher and lower, respectively, than conventional economists have predicted, what will be the effects on the analysis of long-term country creditworthiness? If debtors' abilities to export are enhanced through accelerated investment in their external sectors and/or reduction of industrial countries' import barriers, what will be the effect on each country's long-term creditworthiness?

### Methodology for Assessing Country Creditworthiness

When the present value of the assets held by creditors in a firm is not fully recoverable within some reasonable time limit, the firm is termed insolvent. This measure of solvency may be applied to the analysis of the creditworthiness of major debtor countries with the modification that, for a country to be deemed solvent, a principal rescheduling-cum-interest deferral scheme must not result (5 years later) in a significantly higher probability of having to reschedule. If imposition of the requirement that interest service must be met entirely from current net foreign exchange earnings leads to persistent recession and in addition if no interest deferral scheme can be devised that does not significantly worsen creditworthiness, the debt asset may be deemed not fully recoverable.

Foundations for the empirical analysis of the creditworthiness of debtors, developed from Kharas' (1984) theoretical derivation of a debt capacity model, were modified by Thomas (1984) so that the estimating equation reflects the cumulative effect of all past investment decisions on the current creditworthiness of the debtor.<sup>5</sup> The resulting debt-capacity ratios are: the debt-GDP ratio (a classical solvency measure), the capital-GDP ratio (a dynamic form), and the borrowing-GDP ratio.

Projections over a 5 year period of the variables of interest—external debt, foreign borrowing, fixed investment, and GDP—may be drawn from individual country models, with modifications where necessary to incorporate the trade-off between debt service and growth. Thomas and Shane (1985) impose the inequality constraint that, if a country is unable to meet its interest service obligations entirely from current net foreign exchange earnings, projected imports must be adjusted downwards. A fall in fixed investment will thereby ensure cutting economic growth. The trade-off between interest service and growth is thus modelled individually in the country projections. Two other scenarios are simulated in which debtors are allowed to defer one-third and two-thirds of their interest payment shortfalls every year by adding the residual to their debt load.<sup>6</sup> That principal repayments can be deferred almost indefinitely is assumed (perhaps optimistically), so that the primary constraint on growth is the necessity of servicing interest on the external debt.

The essence of any interest deferral scheme is that the amount deferred is added to the outstanding debt. Lenders thus retain 100 percent of their assets in present value terms, since interest is still payable on the increment to the debt. Equivalently, a portion of the interest service payment may be met by external borrowing as, for example, in the context of involuntary lending arrangements arising from IMF negotiations. These concepts may be incorporated by running alternative projection scenarios in which a variable proportion of a debtor's interest payment shortfall is added to the debt. Relaxation of the financial constraint will allow faster short-term growth and lower initial probabilities of rescheduling; it is tantamount to removing the problem of illiquidity. To close the model, however, one must track the probability of rescheduling several years into the future in order to determine the effect of removing the liquidity constraint on the long-term creditworthiness of the debtor. Confidence intervals bracketing the projected probabilities of rescheduling under each of the interest deferral scenarios may be examined to determine whether the long-term creditworthiness of each debtor has worsened significantly by the end of the period.<sup>7</sup> While short-term growth is higher with the liquidity constraint loosened, the effect over the longer term could also be lower cumulative growth. This hypothesis may be examined directly by reference to the macroeconomic projections for each country when the liquidity constraint is relaxed.

## Conclusions

Empirical analysis of several major debtor countries using the above methodology leads to the conclusion that the interest obligations of some countries will not be recoverable (under any feasible scheme to retain the present value of the debt) without persistent recession. Some countries are structurally less able to export their way out of both recession and debt. Instead, the prospect for this group of countries is likely to be a pattern of chronic inability to meet debt service obligations, despite repeated revisions of principal repayment schedules and deferrals of interest payments. This will undoubtedly be accompanied at each reiteration by IMF negotiations and continuing uncertainty concerning the international financial system.

The policy implications of these conclusions are complicated primarily by the fear on the part of the LDCs that, if lenders are not able to maintain 100 percent of the present value of their assets in LDC loans, they will never again tender loans voluntarily to those countries. The economic and political dangers of such an outcome include stagnating economic growth, persistent high unemployment, falling per capita incomes, and, possibly, political instability. The problem is that these are also the likely outcomes if insolvent borrowers must continue to sacrifice economic growth to service their external debts.

## Notes

<sup>1</sup>Data Resources, Inc.

<sup>2</sup>Also figuring in Korea's relative success was its early willingness to aggressively devalue exchange rates in response to external shocks.

<sup>3</sup>Note that economic conditions in the rest of the world are implicitly assumed to be static; a global downturn would lower the threshold of insolvency for every borrowing country.

<sup>4</sup>See, for example, Enders and Mattione (1983).

<sup>5</sup>The estimating equation used by Thomas is a dynamic form with a geometric lag structure. The estimation technique involves recursive inversion of the lag down to the initial period, subtraction of truncation remainders, and then probit estimation via a coarse-net, fine-net scan over values of the capital depreciation rate. All large sample properties obtain. See Klein (1958); Dhrymes (1969 and 1971); and Zellner and Geisel (1970).

<sup>6</sup>Interest payment shortfall is defined as the difference between interest owed on external debt and net foreign exchange earnings; the latter does not include external borrowing.

<sup>7</sup>See Daganzo (1979) for the derivation of the appropriate confidence regions for probit models.

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