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Trade and Financial Liberalization in the Context of External  
Shocks and Inconsistent Domestic Policies

by

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Summary

There is general puzzlement in both academic and policymaking circles regarding the supposed failure of the liberalization experiments that were undertaken by a number of developing countries, particularly those located in the Southern Cone of Latin America--Argentina, Chile, and Uruguay. Initially these countries were generally commended for undertaking steps to remove restrictions on trade and capital flows, and other developing countries encouraged to follow their example. More recently, however, the serious economic difficulties faced by these countries have resulted in some pessimism about the gains to be achieved from liberalizing the foreign sector.

This turn of events has received considerable attention, and there is no shortage of reasons advanced for what occurred in the Southern Cone countries. This paper focuses on two particular sets of factors that are regarded as having played an important role in the turnaround. First, changes in the international environment, such as the deterioration

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in the terms of trade and the sharp increases in real interest rates in the international credit markets that occurred in the late 1970s and early 1980s, which are believed to have had a relatively greater effect on countries that were in the process of opening up. Second, domestic policies, including fiscal, wage, and exchange rate policies, that are now considered as having been inconsistent with the overall liberalization strategy. The analysis of the impact of these two factors is conducted through a series of simulations using a general equilibrium model designed specifically to study alternative opening-up strategies. From these simulations it is possible to determine how important these external and policy-related factors were in the eventual reversal of the liberalization experiments.

The results of this study support the view that external shocks and inappropriate domestic policies played a part in undermining the opening-up experiments. It is shown that the removal of trade barriers and capital controls entails certain costs even under ideal circumstances, and these costs are significantly raised if the country is subjected to foreign shocks and adopts inappropriate domestic policies. While the country can clearly do little about the international situation, it would appear that some of the negative aspects of foreign disturbances and liberalization could have been minimized by an appropriate blend of exchange rate, wage, and demand-management policies. As it turned out the policies adopted by the Southern Cone countries in many ways worked against the overall liberalization strategies, and in combination with external shocks, ultimately facilitated their collapse.

## I. Introduction

The move towards the elimination of restrictions and artificial impediments to foreign trade and capital flows, or what has come to be termed "liberalization" or "opening up" of economies, by some developing countries in the mid to late 1970s created a great deal of interest on the part of academics and policymakers alike. The Southern Cone countries--Argentina, Chile, and Uruguay--where the liberalization strategy was pursued most aggressively, and one might say with considerable fanfare, were being touted as the success stories of the last decade in both the international financial press and banking circles. <sup>1/</sup> Developing countries were being continually apprised of the benefits of "outward-looking" policies and encouraged to emulate the examples offered by the experiences of the Southern Cone countries. By now, however, the earlier enthusiasm has dissipated quite sharply as these very same countries have found themselves in serious economic difficulties, precipitating the adoption of strong stabilization programs, and even a reversal of direction in the liberalization policies. The sharp declines in growth rates in all three

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<sup>1/</sup> See Harberger (1982). Recent papers by Edwards (1982) and Diaz Alejandro (1983) contain an interesting sampling of quotations from the financial press on this issue.

countries, and the increases in current account deficits to levels that were no longer sustainable, exerted considerable pressures on the authorities to retreat from their earlier-announced policies. As these difficulties persist, the resolve of even the national authorities most committed to an open economy model is being severely tested. Needless to say, not many developing countries are being persuaded that the benefits of liberalization clearly outweigh the costs in the present set of circumstances. It seems that the euphoria that accompanied the initially successful attempts at liberalization have come to be replaced by serious misgivings, and perhaps even a degree of pessimism, about opening up.

What went wrong in such a short space of time is a question that is being repeatedly raised by a number of interested parties, both within and outside the countries that undertook the trade and financial reforms. Broadly speaking, it is possible to identify four main lines of thought on this issue. First, there is the view that the liberalization policies were themselves misconceived and were not really relevant for developing countries even at the theoretical level. For various reasons, given the institutional and structural characteristics of developing countries, it is argued that opening-up is destined to fail, and therefore it is of no great surprise to find the countries that pursued such policies in their present straits. A second view, which is related to the first, while not condemning liberalization policies per se, holds that it was the implementation of these policies that was at fault. In other words, the proponents of this view, while tending to accept the neo-classical premise that opening up has long-run advantages, are nevertheless critical of how the policies were in fact executed. Third, it is possible that the countries were the victims of exogenous, specifically external, shocks that coincided with their attempts to liberalize, and it was the deteriorating international environment that bears some part of the responsibility for the problems that these countries encountered. It is generally recognized that liberalization is fraught with difficulties even under the most ideal circumstances, and the task for the policymaker is made doubly demanding when the country is faced with external shocks while it is in the process of liberalizing. Finally, there is the argument developed by Edwards (1982), Pastore (1982), Sjaastad (1983), and Dornbusch (1984), among others, that lays the principal blame on what are referred to as "domestic policy inconsistencies". In essence their position is that fiscal, wage, credit, and exchange rate policies were not sufficiently coordinated, and furthermore towards the end, proved to be in basic conflict with the overall strategy of opening up.

The true picture most likely combines elements of the arguments listed above to some degree, and it would be difficult to pick only one as being the predominant cause of the "failure" of the liberalization experiments. For example, there is little dispute, even by the most ardent proponents of liberalization, that opening up does involve costs in the short and medium-term. Whether these outweigh the potential benefits is a matter that has not yet been examined in detail, and it is also a very difficult

issue having strong welfare overtones. 1/ In addition, it has to be noted that a number of developing countries, principally in South-East Asia, have been relatively successful in pursuing outward-oriented policies (although of a selective nature and with active government support) for many years now. The experience of these countries does provide a counter-example against any broad indictment of liberalization policies. How the policies ought to be implemented, namely whether they should be undertaken gradually or suddenly, and whether they should be simultaneously or sequentially applied to the trade and capital accounts, is also a difficult question. The short-run outcome for the economy is not independent of the way in which barriers to trade and capital flows are removed, 2/ and while different strategies may yield similar results in the long-run, during the transition the behavior of the main macroeconomic variables can be quite different and the choice between strategies would naturally have to depend on the government's objective function.

From a less normative perspective, developing countries involved in the process of liberalization benefited at the beginning from quite favorable external economic conditions, namely buoyant export markets, improving terms of trade, and very low (even negative) foreign real interest rates and abundant capital inflows. However, in the late 1970s and early 1980s these same countries were facing a worsening of the international economic climate, including declining terms of trade, falling growth rates in industrial countries, sharp changes in the availability of foreign financing that were accompanied by a dramatic increase in real interest rates on external borrowing, and finally, the growth of protectionist pressures in their principal export markets. While these external changes affected most developing countries in some degree, the countries that were opening up found that their liberalization policies had perhaps made them relatively more vulnerable to shocks emanating from abroad than other developing countries that continued to maintain restrictions on trade and capital flows. Furthermore, serious domestic policy inconsistencies arose in a number of countries that were liberalizing, possibly because, to quote Sjaastad (1983), of the absence of any "master plan" of reforms. The level of fiscal deficits and the rapid growth in private expenditures financed by foreign borrowing turned out to be incompatible with the desired expansion in aggregate demand in certain cases; institutional wage indexation schemes continued to be the rule; domestic financial and other structural reforms together with stabilization programs led to excessively high real interest rates which had a negative impact both on investment and the cost structure of production; and, with the benefit of hindsight, it is now clear that exchange rate policies adopted often led to steady real overvaluation of the respective currencies. 3/

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1/ An interesting recent attempt to analyze these types of welfare-related questions is contained in Edwards and van Wijnbergen (1983).

2/ See McKinnon (1982), Frenkel (1982), Edwards (1983), and Edwards and van Wijnbergen (1983), for a discussion of the issues involved in the sequencing of reforms.

3/ See, for example, Dornbusch (1984).

In a previous paper (Khan and Zahler (1983)) we analyzed the macro-economic effects of opening up and dealt with the issues of the timing and sequencing of reforms in some detail. However, as the focus of that paper was exclusively on the subject of liberalization, the analysis was conducted with two critical assumptions. First, we assumed that the international environment was unchanged, and second, that for the most part there was no change in domestic fiscal and monetary policies, and the nominal exchange rate was fixed. While these two assumptions were obviously necessary in order to isolate the direct effects of liberalization, they are of course unrealistic from a historical perspective. The main purpose of the present paper is to relax these assumptions and to conduct some further simulation experiments with the model that was developed in our previous paper, comparing the outcomes with and without external and internal shocks. This type of exercise allows us to ascertain whether such shocks could indeed significantly alter the paths taken by the main macroeconomic variables following the opening up of the foreign sector. It should be noted that, we purposely exclude from discussion the broader question of whether liberalization is in some sense beneficial or not, and which particular type of liberalization strategy is "optimal" for developing countries. Issues of this nature, although very important, are outside the scope of the essentially quantitative approach adopted here. It should further be stressed that while the types of shocks we study have in fact occurred in the 1970s, the exercise is still basically hypothetical and we do not pretend to reproduce the experience of any specific country.

The remainder of the paper covers the following: in Section II we discuss the changes in the international picture and how it affected developing countries as a group, and also some of the domestic policies implemented by developing countries that embarked in the liberalization direction. Section III presents the basic framework of analysis, including a brief description of the model we utilized. The results from the various simulations are presented in Section IV. The concluding section brings together the main results and attempts to provide a judgment on the significance of the role played by external and internal factors in the liberalization experiments, and whether these factors were sufficiently important to unravel the whole opening-up process itself.

## II. The International Scenario and Domestic Policies

The late 1970s and early 1980s have been characterized as a period of considerable strain for non-oil developing countries as the international environment became increasingly inimical to their growth and current account prospects. Recent papers by Khan and Knight (1983) and Massad and Zahler (1984) have identified three external factors as being mainly responsible for the serious current account difficulties of this group of countries, namely the deterioration in the terms of trade, the slowdown in economic activity in the industrial world, and towards the end of the decade, the

sharp rise in real interest rates in international capital markets. 1/ At the same time, domestic developments, as evidenced by rising fiscal deficits and consequent inflationary pressures, or by increased private expenditures financed by excessive foreign borrowing, 2/ combined with rigid exchange rate policies, compounded the external payments difficulties that resulted from the deterioration in the international economic climate.

Insofar as the external factors are concerned, the terms of trade of the oil-importing developing countries deteriorated at an average rate of 2 percent per annum during the period 1973-83 (Table 1). 3/ After falling sharply in 1974-75 in the wake of the fourfold jump in the world price of energy products in 1973-74, the terms of trade improved somewhat in the following two years as primary commodity prices in the world markets registered substantial increases. From 1978 to 1982, there was a steady worsening of the terms of trade as commodity prices continued to fall at the same time that these countries were again faced with another significant increase in the price of imported oil during 1979-80. Exacerbating the problem further was the decline in the growth rates in industrial countries. 4/ After increasing at about 3 percent during 1973-77, the average growth rate in the industrial world declined in the following six-year period to around 2 percent per annum. During 1980-83 real GNP of the industrial countries grew only at an average rate of a little over one percent per year (Table 1). The increase in petroleum prices, the decline in primary product prices, and the fall in growth rates in industrial countries, combined to worsen the terms of trade of oil-importing developing countries at an annual average rate of over 3 percent during 1978-83; by contrast, the terms of trade had been relatively constant on average during the earlier period 1973-77.

The other major external factor affecting the payments positions of oil-importing developing countries during the late 1970s was the increased level of service payments on foreign debt. In the years prior to about

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1/ See also Khan and Knight (1982). Other external factors would include the growth in protectionist pressures in the principal export markets of developing countries, and the fairly drastic contraction in capital flows to the non-oil developing countries in 1982 and 1983 that sharply increased the costs of adjustment of debtor countries. It is, however, difficult to deal with either of these in a quantitative fashion.

2/ See Massad (1983) and Zahler (1983).

3/ This group basically includes all non-oil developing countries except those referred to as "net oil exporters." For a precise classification, see IMF (1984), Statistical Appendix.

4/ There is some empirical evidence available now on the positive relationship between growth in industrial countries and the international prices of non-oil primary commodities; see Goreux (1980) and Goldstein and Khan (1982).

Table 1. Net Oil-Importing Developing Countries: Selected Macroeconomic Variables, 1973-83

(In percent)

	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
Terms of Trade	4.0	-8.7	-7.5	5.6	6.8	-4.5	-2.1	-7.1	-4.8	-2.9	1.8
Foreign Real Interest Rates 1/	-16.2	-17.3	6.4	-0.6	-7.7	3.4	-3.2	1.7	19.9	20.3	11.6
Growth of Real GDP	4.1	5.5	3.3	5.2	5.7	6.4	4.7	4.7	2.2	1.6	2.2
Inflation 2/	23.8	29.9	30.1	29.7	23.8	21.4	25.9	33.2	32.3	31.1	39.1
Current Accounts 3/	-9.0	-24.5	-27.6	-16.2	-12.7	-15.7	-19.4	-22.0	-22.5	-18.8	-13.4
<u>Memorandum item</u>											
Real GNP growth of industrial countries	6.1	0.5	-0.6	5.0	3.9	4.1	3.5	1.3	1.6	-0.1	2.3

Source: IMF, World Economic Outlook (1984).

1/ Three-month Eurodollar rate adjusted for percentage changes in export unit values.

2/ Consumer prices.

3/ As percentage of exports of goods and services.

1977 debt service had not posed a serious problem for many oil-importing developing countries because conditions in the international credit markets were generally favorable and, even though the foreign real interest rate rose in 1975, 1/ for the period 1973-77 the average was still strongly negative, i.e., -7.1 percent (Table 1). From 1978, however, the picture changed quite dramatically as developing countries began to acquire increasing amounts of external debt at floating rates while interest rates in the international capital markets were climbing to post-war highs and export prices were beginning to weaken. 2/ Foreign real interest rates rose sharply and became positive--averaging about 9.5 percent per year during 1978-83--and in fact in the last three years (1981-83) had reached the astronomical average level of over 17 percent. This turnaround of more than 16 percentage points between the periods 1973-77 and 1978-83 forced a number of oil-importing countries to undertake strong adjustment efforts once the limits on their recourse to financing had been reached. 3/

While these external events were obviously beyond the control of the developing countries, inappropriate domestic policies also contributed in no small measure to the overall difficulties faced by these countries. Fiscal policies in the non-oil developing countries continued to be expansionary as a rule and budget deficits, expressed as a proportion of GDP, more than doubled--from about 2 percent in 1973 to 4.6 percent in 1983. 4/ The pressure on available resources created by rising government expenditures, as well as the rapid increase in liquidity resulting from the financing of these deficits and of private sector expenditures through the banking system, led to a significant upsurge in inflation. Since exchange rate changes typically tended to lag behind domestic price increases that were in excess of those experienced by trading partners, upward pressure was put on the real exchange rate which was allowed to appreciate substantially in a number of developing countries during the decade. 5/

The combined impact of the external shocks and inappropriate domestic policies on the main macroeconomic variables in the oil-importing developing countries is evident from Table 1. Taking the year 1978 as a convenient breakpoint, we find that the annual average growth rate fell from

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1/ The foreign real interest (rr) is defined here as the nominal foreign interest rate (rf) adjusted for percentage changes in the export prices of oil-importing developing countries (DXP), i.e.,

$$rrf = (rf - DXP)/(1+DXP)$$

2/ The empirical evidence on the relationship between high real international interest rates and prices of primary commodities is discussed by Gotur (1983).

3/ See Massad and Zahler (1984).

4/ See IMF (1984), page 51.

5/ See Khan and Knight (1982), (1983).



about 5 percent in 1973-77 to an average of a little over 3 percent during 1978-83. The steady decline in the growth of real GDP from 1978 is particularly noticeable, and in the last two years 1982-83 real GDP grew by an average of less than 2 percent. After averaging about 10 percent in the period 1968-72, inflation rose to an annual average rate of nearly 30 percent per year during 1973-83; for the most recent years 1980-83, inflation was running at an average annual rate of about 34 percent.

Finally, the current account position of the oil-importing developing countries, expressed as a proportion of exports of goods and services, deteriorated sharply following the first major oil price increase in 1973-74, with the deficit reaching a peak of nearly 28 percent of exports of goods and services in 1975. Favorable movements in the world prices of primary commodities led to a marked improvement in the current account balances in 1976-77, but from then on the deficit rose steadily through 1981. Since the possibilities of increasing exports significantly were small in view of the relatively flat foreign demand situation, the adjustment policies initiated by a number of countries in late 1981 consequently put considerable emphasis on reducing aggregate demand, which caused a decline in imports and economic activity; the current account picture did improve as a result of these efforts, and the average ratio of the current account deficit to exports of goods and services during 1982-83 was reduced to about 16 percent. All in all if one looks at the economic situation in 1983 one cannot help but be struck by the deterioration that took place on all fronts. The decade of the 1970s, except for the earlier years of abundant foreign financing and low real foreign interest rates, contained some of the worst periods from an economic standpoint for countries that were perhaps the least equipped to handle them.

The relative influence of external and domestic factors on the current account positions during 1973-80 was tested empirically by Khan and Knight (1983) for a sample of 32 non-oil developing countries. The results in this study showed that the most important determinant of the current account balances was the terms of trade, followed by foreign real interest rates, fiscal deficits, and real effective exchange rates, which were roughly equal to each other in importance. The growth of real GNP in industrial countries played a relatively minor role, but it can be argued that the effect of this variable is already captured to some extent in the terms of trade and foreign real interest rate variables.

Given the empirical results obtained by Khan and Knight (1983), it would be fair to hypothesize that the experiences of countries engaged in opening up their economies would have been similar to the other non-oil developing countries. In fact the economic situation of the Southern Cone countries during the last two to three years has been far worse than the average outcomes for the group reported in Table 1. Growth rates in Argentina, Chile, and Uruguay had turned negative by the early 1980s;

inflation in Argentina was far in excess of the average rate for net-oil importing countries; 1/ and, the ratio of the current account deficits to exports of goods and services was markedly higher in all three countries.

It would seem therefore that there is at least some prima facie evidence that external shocks and domestic policy inconsistencies had a more severe impact on the countries that were liberalizing their foreign sectors. This is the basic question we focus on, and by analyzing it we should be able to have a somewhat firmer basis to try and explain the failures of the liberalization experiments.

### III. Framework of Analysis

The analysis of the effects of shocks that occur while the foreign sector is being liberalized is conducted within the framework of the dynamic general equilibrium model that was developed by Khan and Zahler (1983) to examine the transitional macroeconomic effects of changes in barriers to trade and capital flows. The model has its roots in the general equilibrium econometric models developed by Clements (1980), the computational general equilibrium models such as the ones designed by Feltenstein (1980) among others, as well as the more monetary-oriented models typically specified to analyze short-term stabilization policies. 2/

A detailed description of the basic model is given in Khan and Zahler (1983), so that here we only present a brief outline of some of its main features. The model contains three composite goods--exportables, importables, and nontradables--for which supply and demand equations are separately defined. The supply equations are derived in a manner outlined by Clements (1980) in the framework of a multiproduct supply model. The supply of each good depends exclusively on the relative prices of the three goods, the technical conditions of transformation of one good into another, and the initial resource endowment. 3/ Total output of the economy is simply the aggregate of the outputs of the three goods, and the unemployment of resources is modelled as a linear function of the difference between potential output (equal to the resource endowment) and total output.

The demand system incorporated in the model represents a fairly straightforward application of standard demand theory. The private component of total aggregate expenditures is related to disposable

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1/ The rate of inflation in Uruguay was close to the average rates experienced by developing countries as a group, while that of Chile was well below.

2/ We can include in this group the models of Blejer (1977), Blejer and Fernandez (1980), and Khan and Knight (1981).

3/ Since the resource endowment is fixed we do not allow for any net investment or savings.

income, the excess supply of money, and the domestic interest rate; government expenditures, as is customary, are assumed to be exogenous. <sup>1/</sup> By invoking separability we argue that once total expenditures are determined, the distribution between importable, exportable, and non-tradable goods is determined by a process of maximization subject to a budget constraint represented by the (given) level of aggregate expenditures. This yields demand equations for each good, as a proportion of aggregate expenditures, that depend solely on relative prices, satisfying the properties of symmetry and additivity.

The domestic price of exportables ( $P_x$ ) is taken to be equal to the product of the international price of tradables ( $P_f$ ) and the exchange rate ( $\epsilon$ ), and the domestic price of importable goods, allowing for tariffs, is defined as:

$$(1) \quad P_i = (1 + \tau)\epsilon P_f$$

where  $P_i$  is the domestic price of importable goods,  $\tau$  is the tariff,  $\epsilon$  is the exchange rate, and  $P_f$  is the international price of tradable goods. As the prices of importable and exportable goods are essentially given from abroad, <sup>2/</sup> disequilibrium in the tradable goods markets results in changes in imports and exports. Imports are defined as the difference between domestic demand and domestic supply of importables, and similarly exports are equal to the domestic excess supply of exportables.

The price of nontradable goods ( $P_n$ ) is, however, endogenously determined and is assumed to respond positively to excess demand for non-tradable goods (and variations in foreign prices). The general price index, constructed as a Divisia index of the three composite goods, with the (endogenous) weights corresponding to the expenditure shares of each of the three goods, is therefore endogenous as well. Expectations of inflation are also incorporated into the model, although in a fairly simple fashion using an adaptive-expectations formulation.

The monetary sector of the model contains three basic relationships: a money demand function, a money supply identity, and an equation that links changes in the domestic interest rate to the excess demand for money. The demand for money is specified in the customary way, i.e., relating money holdings to income, inflationary expectations, and the

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<sup>1/</sup> Private expenditures on goods alone require that interest payments on foreign debt be subtracted out. It should also be noted that we assume that the pattern of government spending on the three goods is identical to that of the private sector.

<sup>2/</sup> Assuming that the exchange rate and the tariff level remain unchanged.

domestic interest rate. The supply of money is made up of net international reserves, credit to the private sector, and credit to the government. It is assumed that all fiscal deficits are financed by government borrowing from the banking system, so that there is a one-to-one correspondence between the budget deficit and variations in the money supply brought about by changes in credit to the public sector. For the case of the interest rate, a standard LM mechanism is assumed so that an excess demand (supply) for money leads to an increase (decrease) in the domestic interest rate. In the model, monetary disequilibrium affects aggregate demand both directly through the spillover into private expenditures, as well as indirectly through changes in the interest rate.

Capital flows, aside from an autonomous component, are assumed to be determined by the differential between domestic and foreign interest rates, adjusted for expected exchange rate changes and a country risk premium. The presence or degree of controls on capital movements is represented by a parameter  $\beta$  which scales the explanatory variables in the following way:

$$(2) \quad DK = \overline{DK} + \beta[\gamma(rd - rf - \dot{\epsilon} - \rho)]$$

where  $DK$  is the flow of capital (with  $\overline{DK}$  representing the autonomous component),  $rd$  is the domestic interest rate,  $rf$  the corresponding foreign interest rate,  $\dot{\epsilon}$  is the expected change in the exchange rate,  $\frac{1}{\gamma}$  and  $\rho$  is the risk premium. In this formulation, by varying  $\beta$  one can control the extent of capital flows; for example, for  $\beta = 0$  the economy is completely closed and for  $\beta > 0$  capital flows are assumed to respond to variations in the explanatory variables.

To allow for the possibility of an upward sloping supply curve of foreign credits the risk premium is made a function of the ratio of external debt to income:

$$(3) \quad \rho_t = \rho_0 + \rho_1 (Bf/Y)_t$$

where  $\rho_0$  is a constant,  $Bf$  is the stock of external debt, and  $Y$  is the level of income. The parameter  $\rho_1$  is assumed to be positive so that as the ratio  $(Bf/Y)$  rises the risk premium will also increase. This will reduce net capital inflows to the country even though domestic and foreign interest rates, and the expected exchange rate, remain unchanged. 2/

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1/ The expected change in the exchange rate is assumed throughout to be equal to the actual change.

2/ The relevance of this particular formulation to the analysis will be made clear below.

Basically, despite its high level of aggregation, as compared for example to the computational general equilibrium models, the model is sufficiently detailed to be able to provide meaningful answers relating to the short-run consequences of opening up. The model explicitly incorporates the linkages between the balance of payments, fiscal, and monetary sectors, as well as their relationship to expenditures and output. Moreover, considerable attention is paid to the role of relative prices in the demand and supply functions for the three composite goods. Finally, since it is formulated in dynamic form the model is able to provide the path of adjustment of the main macroeconomic variables from one equilibrium to another. <sup>1/</sup> The analysis of the transition path, which is essential in devising operational liberalization strategies, clearly requires the introduction of some type of dynamics into the system.

The main theoretical characteristics of this model can be shown through some simple experiments relating to trade and financial liberalization. Consider first the case where a country has a 100 percent tariff on imports, which it then reduces to zero. Following Dornbusch (1974) the relative price effect of this measure can be analyzed through the aid of Figure 1. In this figure, assuming that income and expenditures are equal, along the HH schedule there is no excess demand for tradable goods, and by Walras Law, excess demand for nontradable goods is zero as well. North-east of the HH schedule the relative price of nontradable goods is too low and there is an excess supply of tradable goods (trade balance surplus), and an excess demand for nontradable goods. Similarly south-west of HH there would be trade balance deficit and an excess supply of nontradable goods.

Assuming that  $\tau = 100$  percent, the nominal exchange rate fixed (and for simplicity set equal to unity), and that the economy is closed to capital movements, the initial equilibrium is at point A where the ray OT (the slope of which measures the domestic price of importables in terms of the price of exportables) intersects HH. At A the relative prices of importable and exportable goods in terms of nontradable goods are  $P_i^0/P_n^0$  and  $P_x^0/P_n^0$ , respectively, and there is equilibrium in both the trade balance and the nontradable goods market.

If  $\tau$  is reduced to zero the domestic price of importables falls (to  $P_i^1$ ) and rotates the ray to OT'. Assuming that  $P_n$  is unchanged, the initial effect of the tariff reduction is represented by a movement from A to B, <sup>2/</sup> which involves an appreciation of the real exchange rate

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<sup>1/</sup> This is generally not possible in the larger computational general equilibrium models.

<sup>2/</sup> Following Khan and Zahler (1983) it is assumed here that nontradable goods substitute with each of the tradable goods, but for simplicity we rule out cross price effects between importables and exportables. This assumption does not change the conclusions reached by Khan and Zahler (1983) in any important way.

(defined as the ratio of the price of nontradables to the price of tradables). Obviously this is not an equilibrium position since at B there is an excess demand for tradable goods and an excess supply of nontradable goods, requiring a fall in  $P_n$  along  $OT'$  so as to restore general equilibrium at point C, with  $P_n^1 < P_n^0$ . This movement from B to C has been identified in the literature as the real exchange rate depreciation associated with trade liberalization. Although at point C the trade account is in balance with both imports and exports above their respective values in the original equilibrium (A), it should be recognized that the initial effect of opening up (point B) generates a trade balance deficit. In other words, the depreciation of the real exchange rate associated with the movement from B to C represents a transitory equilibrating movement necessary to close the foreign exchange gap created by the trade deficit that occurs in the process of moving from A to C (through B). Overall, however, the real exchange rate appreciates to a new equilibrium level defined by point C.

The changes in relative prices and their effects on demands and supplies that result from tariff removal correspond to a sort of production and expenditure "switching" effect. However, it should be noted that opening up also creates an expenditure "augmenting" effect. Assuming that inflation is zero initially, 1/ the fall in the prices of importable and nontradable goods causes a reduction in the general price level which in turn creates an excess supply of money and a fall in the domestic interest rate. This stimulates expenditures which reinforce the trade balance effect, and in the short run, dampen the fall in the relative price of nontradable goods. 2/

The effect of trade liberalization on aggregate supply and output can be seen in Figure 2, which relates the production possibilities between importables and exportables, assuming that resources utilized by the nontradables sector remain constant. 3/ At the initial relative price DD the economy would be at point A, producing  $X_A$  of exportables and  $I_A$  of importables. When the tariff on imports is reduced to zero the country will face the new (domestic) terms of trade FF and the new equilibrium will be at B. If adjustment were instantaneous we would simply move along the transformation curve from A to B, and output of tradables would be unchanged. However, if the reduction in the production of importables is faster than the expansion of exportables, then the path of tradables output would be pushed inside the transformation curve (indicated by the dashed line). In such a case, during the transition period as the economy moves from A to B, it will be operating below its productive potential, creating

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1/ Starting with a positive rate of inflation would not alter the analysis.

2/ See Blejer (1978).

3/ In general a change in relative prices would change production of nontradable goods, and the transformation curve between importable and exportable goods would have to shift. We make this restrictive assumption in Figure 2 only for expositional purposes.

Figure 1

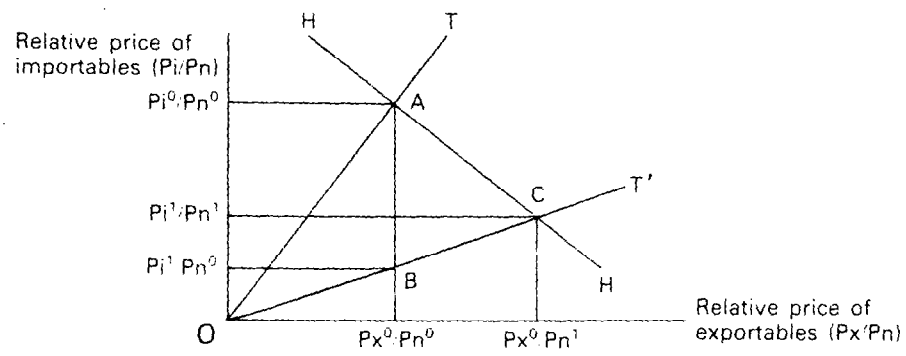


Figure 2

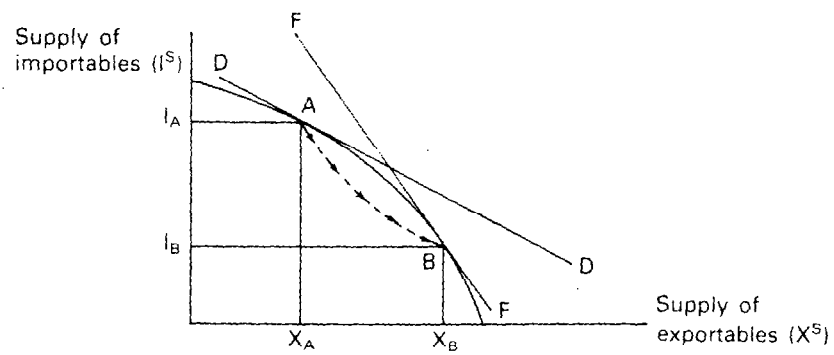
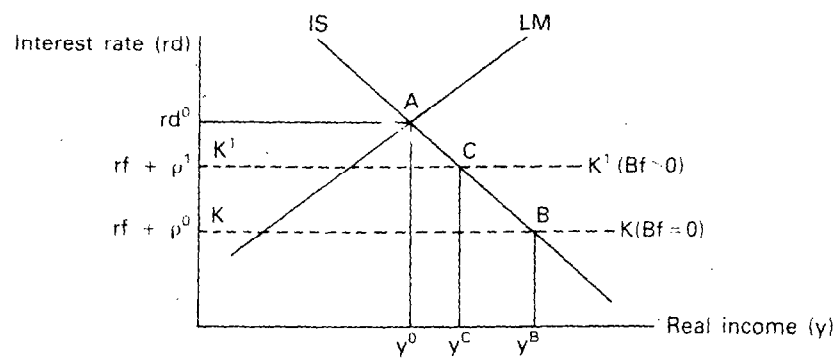


Figure 3



greater resource unemployment and a larger output-gap, as compared to the respective long-run equilibrium levels of these variables.

In summary, as demonstrated in Figures 1 and 2, the main theoretical results of a tariff reduction in the short run are a trade balance deficit and consequent loss of international reserves, an increase in both imports and exports, a lowering of the price level, and assuming the production of importables adjusts faster than the production of exportables, a temporary decline in output and increase in resource unemployment.

To analyze financial opening up, as in Khan and Zahler (1983), we start from an initial equilibrium in which the domestic interest rate is above the foreign rate plus the risk premium, and capital movements are completely restricted ( $\beta = 0$ ). Financial liberalization takes the form of increasing the value of  $\beta$ , and capital movements then take place as long as: 1/

$$r^d > r^f + \rho$$

In the traditional IS-LM framework (Figure 3) the initial equilibrium point would be A, with real income at  $y^0$ , the domestic interest rate equal to  $r^d$ , and zero foreign debt ( $B^f = 0$ ). 2/

With a constant risk premium and foreign interest rate, the (small) country faces an infinitely elastic supply of international financial capital which, when monetized, makes the effective LM curve horizontal. 3/ The short-run effect of financial opening up is therefore represented by shifting LM to KK. At point B expenditure ( $y^B$ ) exceeds income ( $y^0$ ) and induces a current account deficit. 4/ Whether international reserves rise or fall depends obviously on the size of the capital inflows relative to the current account deficit. As a consequence of the capital inflow the stock of foreign debt would naturally rise.

In Khan and Zahler (1983) it was assumed that the resource endowment (potential output) was fixed, which implies zero net savings and

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1/ We assume here that the expected (and actual) nominal exchange rate is constant.

2/ Starting with a positive stock of foreign debt would not change any of the basic results.

3/ In the Khan and Zahler (1983) model it was assumed that the response of foreign capital to interest rate differentials was high, although not instantaneous. The approach adopted here for the graphical analysis, i.e., shifting the LM curve, yields qualitatively similar results.

4/ The current account deficit is also marginally increased by the increase in the relative price of nontradable goods that results from the excess supply of money created by the inflow of capital.



investment. <sup>1/</sup> Consequently, as output remains constant and foreign debt increases, the risk premium rises and increases the total cost of financing faced by the country. This shifts  $KK$  upwards to  $K^1K^1$ , reducing the difference between expenditures ( $y^C$ ) and income ( $y^0$ ) and, therefore, the current account deficit. At the point  $C$  the inflow of capital is smaller due to the lower interest differential, and the foreign debt rises at a smaller rate. The process continues until a new overall equilibrium is reached at the original values of income and the domestic interest rate (point  $A$ ), with expenditure equal to income, and current account equilibrium. However, now at  $A$  there is a larger stock of foreign debt and higher risk premium, and a lower level of real expenditures on goods and non-financial services, as compared to the initial equilibrium.

The main results of financial opening up are that the domestic interest rate initially declines and then rises back to its original level. The current account deficit is financed by increases in foreign debt rather than by a fall in international reserves, as was the case in the trade liberalization. During the transition period real expenditures on goods and non-financial services increase, but then would be lower in the final equilibrium due to the need to service the now larger stock of foreign debt. <sup>2/</sup>

The model embodying the characteristics described was simulated in the earlier paper for a variety of opening up strategies, including among others, the gradual and sudden removal of barriers to trade and capital flows, both simultaneously as well in different sequences, and was found to yield generally sensible results. The way in which this model is structured it is quite capable of handling a large variety of shocks aside from those directly related to opening up. The only change we made to the original model was to introduce a distinction between the price of importables and exportables, which had previously been assumed to be equal to a single international price level. This change had to be made so as to be able to discuss terms of trade variations, and therefore the current version of the model contains two separate foreign prices—one for importables and the other for exportables.

Formal models of any type are clearly not able to analyze all of the interesting questions arising from foreign sector reforms, nor for that matter can they capture the complex nature of some of the other structural changes implemented which are less amenable to quantification.

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<sup>1/</sup> This would hold, for example, if domestic and foreign savings were perfect substitutes.

<sup>2/</sup> It should be stressed that by assuming that net savings are zero the potential benefits of financial opening up are in a sense being minimized. For an alternative approach where productive capacity grows with foreign savings, see Zahler (1982).

However, the advantages of using a model, such as the one here, to determine the effects of liberalization, external shocks, and autonomous domestic policy changes, over the approaches taken by, for example, Ffrench-Davis and Arellano (1981), Ffrench-Davis (1982), Pastore (1982), Edwards (1982), Harberger (1982), Hanson and de Melo (1983), Sjaastad (1983), Wogart (1983), Zahler (1983), and Ramos (1984), are quite obvious. A number of things tend to be occurring simultaneously during the period of interest, namely opening up itself, stabilization efforts, etc., and it is really only with a model that one can hope to identify and isolate the effects of different sets of factors. In other words, by using a model one is able to make suitable ceteris paribus assumptions, something which is not really possible in the type of studies that have hitherto addressed the issue.

The simulation experiments start with the case of a gradual reduction in trade barriers and restrictions on capital movements. This particular case was studied by Khan and Zahler (1983) as well, and here it is taken as the "control" or base-line simulation to which the other simulations are compared. The specific foreign shocks we consider are a simultaneous temporary increase in the nominal foreign interest rate, and a temporary deterioration in the terms of trade. The change in the terms of trade is taken for purposes of this particular exercise as a decline in the price of exportables relative to the price of importables. 1/ The domestic policy inconsistency scenario analyzed here is represented by a simulation in which there is a temporary increase in the fiscal deficit. 2/ Furthermore, as it is assumed in all the simulations that the nominal exchange rate is fixed, this implicitly yields a second inconsistency that has been stressed in the recent literature. Keeping the exchange rate unchanged while opening up in the presence of certain external shocks or an expansionary fiscal policy will generally lead to a real appreciation, defined here as an increase in the price of nontradables relative to the price of tradables, a weakened external payments position, and increased vulnerability to speculative attacks on the currency. In each of these simulations that are undertaken we trace the response of the following macroeconomic variables: the general price level, the domestic interest rate, the current account balance, international reserves and foreign debt, the real exchange rate, and real expenditure on goods and non-financial services.

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1/ Obviously one could also obtain the same decline in the terms of trade by increasing the price of importables relative to the price of exportables. The outcomes, however, are not symmetrical so that one has to be careful to note that our results are conditional on how the terms of trade change is specified.

2/ A similar set of results are obtained if private sector expenditures are increased through an expansion in domestic credit.

These various simulations obviously do not cover all the possible shocks that occurred during the 1970s. For example, we do not explicitly consider the effects of a slowdown in the growth rates in industrial countries. As this effect was not found to be particularly significant in the results reported by Khan and Knight (1983) we felt we could exclude it from consideration here. Furthermore, we do not attempt to determine the effects of growing protectionist pressures in industrial countries on the exports of developing countries. Neither of these simulations is particularly difficult to perform, but they would require some respecification of the basic model to incorporate a foreign demand function for exports. As the model is currently formulated it utilizes a small country assumption and implicitly assumes that foreign demand for exports is infinitely price elastic. Finally, we do not go into the wage indexation question since the model does not include an explicit wage-determination equation, although it is possible, as discussed in Khan and Zahler (1983), to handle this indirectly. Nevertheless, we feel that the simulations here provide sufficient information to enable one to form a reasonable judgment on the principal effects of some specific external shocks and certain policy changes are likely to have in the course of liberalization.

#### IV. Results

In the initial equilibrium the economy is assumed to have a uniform tariff of 100 percent on imports and capital flows are completely restricted. 1/ In other words, the economy is not completely closed to trade since imports are allowed, although at a domestic price substantially higher than the world price, and the country does engage in export activities. On the other hand, neither capital inflows or outflows are permitted. The balance of payments, the current account, and the government budget are all in balance; prices are constant; the economy is assumed to be on its aggregate transformation curve; 2/ and the exchange rate is fixed. In specific terms, liberalization involves lowering the tariff rate gradually to zero over four periods, and simultaneously eliminating restrictions on capital flows, also over four periods. 3/ In the control simulation the foreign interest rate, the terms of trade, and the government budget deficit are kept unchanged (Chart 1). For the external shocks scenario the nominal foreign interest rate is raised to 15 percent in period 3 and is then lowered back to its original level of 5 percent after four periods--Chart 1-A. Concurrently with this, the terms of trade are assumed to deteriorate by 5 percent per period for four periods, and then progressively improve so that by the seventh

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1/ For the reasons for choosing an equilibrium position to begin from, see Khan and Zahler (1983), page 245.

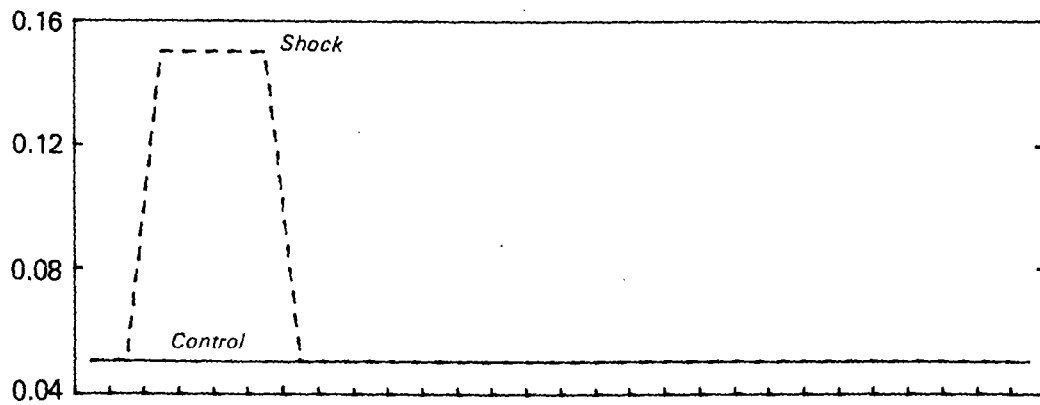
2/ The model assumes a "normal" rate of unemployment of 5 percent.

3/ All changes in the exogenous variables are assumed to occur in the third period.

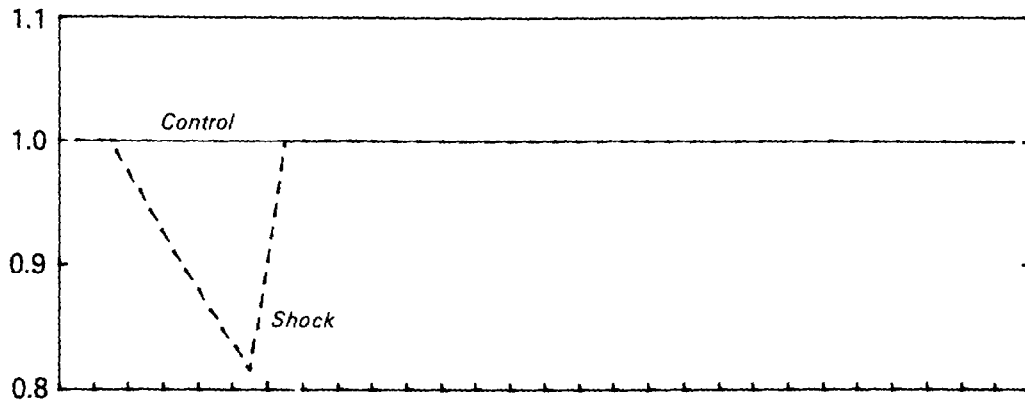
CHART 1

# EXOGENOUS SHOCKS

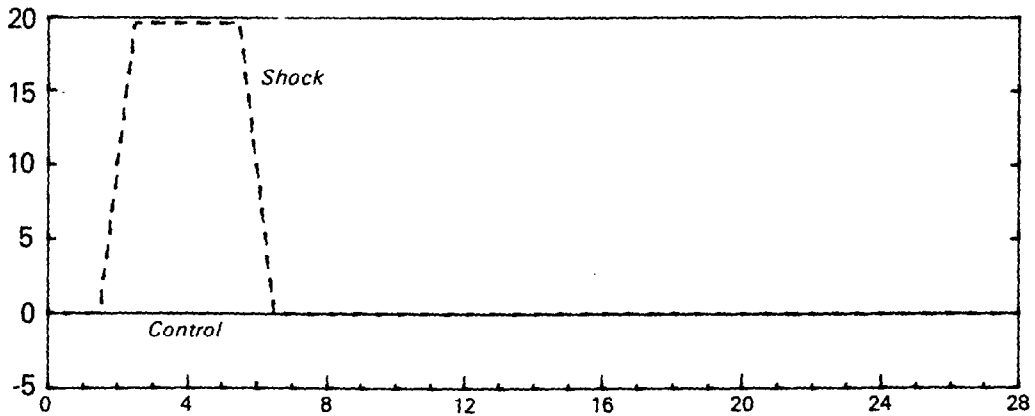
## 1-A. INCREASE IN FOREIGN INTEREST RATE



## 1-B. DETERIORATION IN TERMS OF TRADE



## 1-C. INCREASE IN FISCAL DEFICIT



Periods

period they are at their original level (Chart 1-B). The domestic shock is represented by the emergence of a fiscal deficit (approximately equal to 7-8 percent of national income) for four periods (Chart 1-C), after which the budget is once again assumed to be balanced.

A very important point to note in analyzing the simulations reported here is that the outcomes for the variables under consideration are conditional on the numerical values of the parameters of the underlying model. 1/ Clearly alternative scenarios could be created by changing the parameter values employed. It should also be stressed that the values chosen for the shocks, and the periods over which they extend, are only illustrative and not intended to be necessarily realistic. However, even though these specific shocks are arbitrary, they nevertheless should give a reasonable flavor of what can be expected to happen if one superimposes shocks of certain types on the opening-up process.

1. Control simulation: simultaneous removal of restrictions on trade and capital flows

The liberalization of the trade and capital accounts directly lowers the price of importables (by the amount of the reduction in the tariff rate), and thus initially raises the relative prices of both exportables and nontradable goods in terms of importable goods. The change in the pattern of demand and production resulting from the change in relative prices tends to exert downward pressure on the price of nontradables as well. As a consequence, the general price level falls quite rapidly in the beginning, and then once the effects of the tariff reduction have worked themselves out, stays permanently at the new lower level (Chart 2-A).

As expected, the fall in the overall price level lowers the nominal demand for money; furthermore, since initially the domestic interest rate is assumed to be above the corresponding foreign rate, with the removal of capital controls there is a large inflow of capital from abroad which augments domestic liquidity. The resulting excess supply of money causes the domestic interest rate to decline (Chart 2-B), and both these factors have an expansionary effect on aggregate demand. The combination of the change in relative prices and the rise in domestic absorption results in a pronounced deficit in the current account (Chart 2-C) that persists for a number of periods. 2/ The volume of trade (imports plus exports) however is larger than in the initial equilibrium, which is the desired result of the liberalization policy. Given the parameters of the model, the capital flows generated by the interest rate differential are not adequate to cover the deficits in the current account, so that the country will continue to lose international reserves until monetary equilibrium is reestablished

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1/ For these values see Khan and Zahler (1983), Appendix II.

2/ In equilibrium the current account is set equal to 100; values below 100, therefore, imply a current account deficit.

(Chart 2-D). By the end of the transition the stock of international reserves falls to less than one half of their original level. In the context of our model this result points to an important precondition for liberalization policies, namely that when starting off the process of opening up the policymakers should ensure that the country has a comfortable cushion of reserves. The foreign debt of the country rises in a somewhat cyclical fashion, reflecting closely the path taken by domestic interest rates and the resulting capital inflows. Until the risk premium rises by enough to close the differential between domestic and foreign interest rates, the stock of foreign debt will continue to increase. In this particular simulation equilibrium is reached when the final stock of foreign debt is about 25 percent of national income (Chart 2-D).

Two additional results, which were not stressed in Khan and Zahler (1983), are worth mentioning. First, based on the model structure and specific parameter values, real expenditures on goods and nonfinancial services, which can be treated as a proxy measuring the welfare effects of liberalization policies, increase substantially when the domestic price of importable goods falls (Chart 2-E). 1/ This tendency is then reversed as interest payments on foreign debt absorb an increasing proportion of the income of residents, although in the long-run equilibrium real expenditures on goods and non-financial services are still higher than their pre-reform level. 2/

Second, as was analyzed in Figure 1, during the course of liberalizing the domestic relative price of importable goods with respect to the other goods decreases, and the relative price of exportables tends to rise. With the assumed parameter values, and the initial shares of the three goods in total output, the real exchange rate, defined as the ratio of the price of nontradable goods to the price of tradables, will appreciate (Chart 1-F). This real appreciation is a natural consequence of the removal of tariffs on importable goods, and the economy has to move to a new equilibrium real exchange rate. Other things being equal, this appreciation will result in a loss of international competitiveness and a worsening of the current account for a period of time. Although this movement represents an equilibrium change, the authorities could reduce its impact on the current account through appropriate exchange policy. 3/ What is more important, however, is the prevention of a real appreciation beyond the new equilibrium real exchange rate that is consistent with the elimination of restrictions on trade and capital movements. 4/

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1/ Real expenditures, as defined here, are closely related to the concept of national income adjusted for changes in the terms of trade.

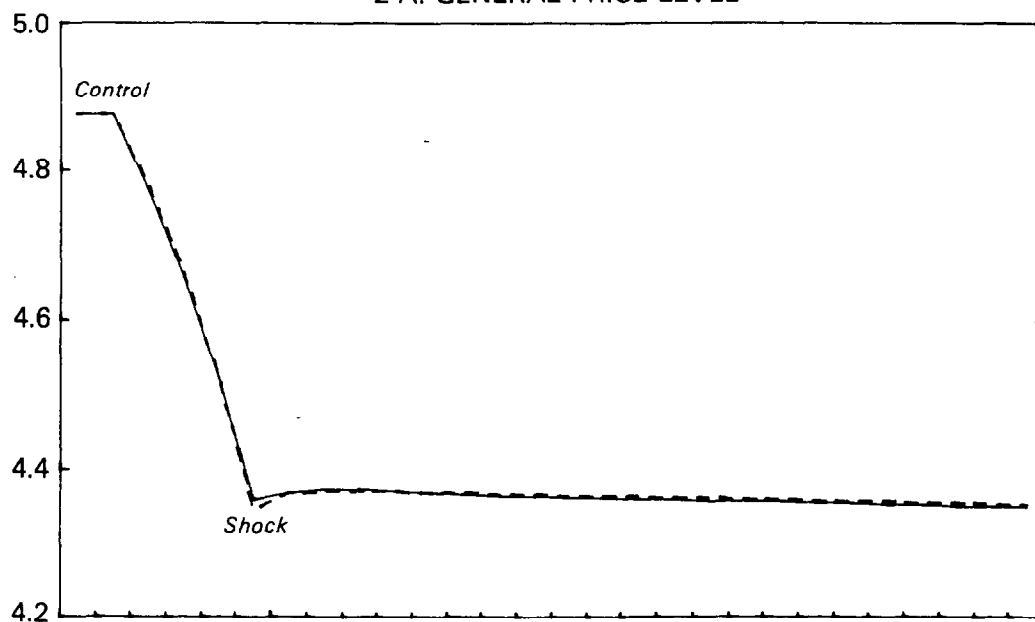
2/ As are the levels of imports and exports.

3/ Of course nominal depreciation of the currency would have costs, particularly with respect to inflation.

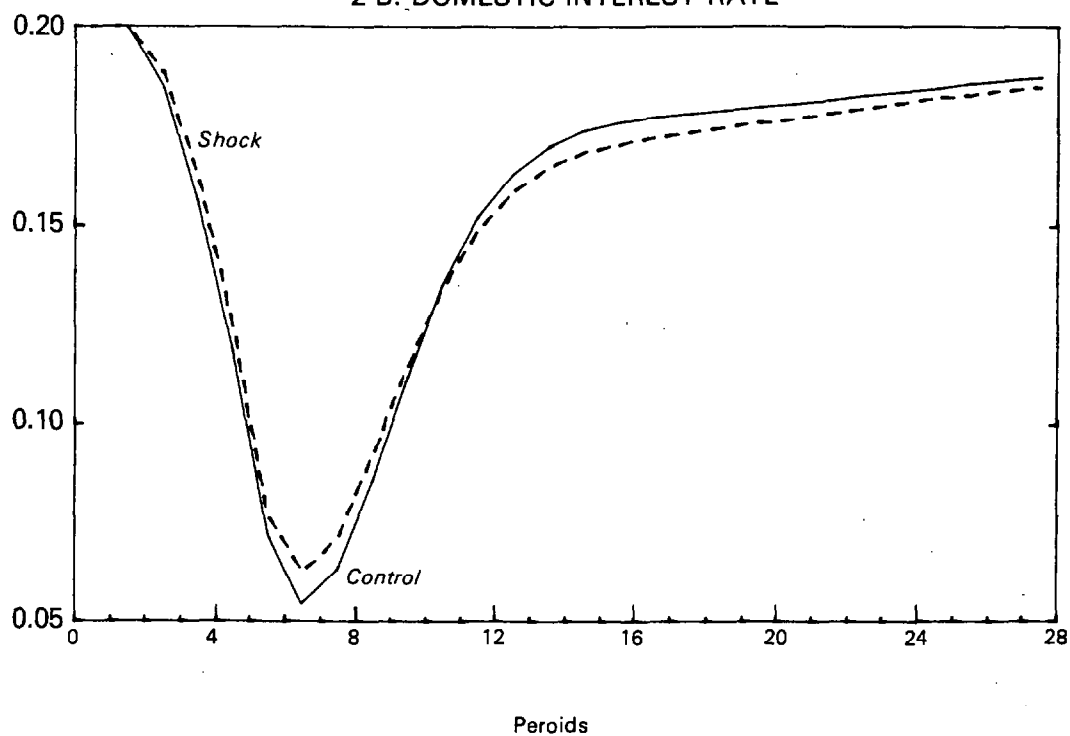
4/ For a discussion of the reasons why the real exchange rate may appreciate in the course of a stabilization program, see Dornbusch (1982), (1984).

CHART 2  
COMBINED EFFECTS OF EXTERNAL  
AND FISCAL SHOCKS

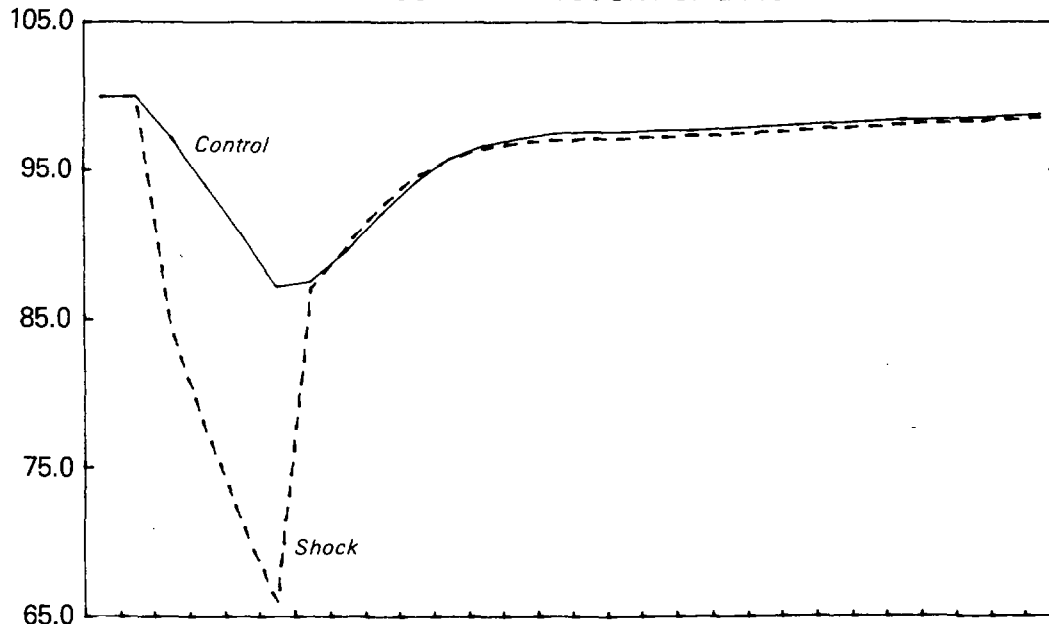
2-A. GENERAL PRICE LEVEL



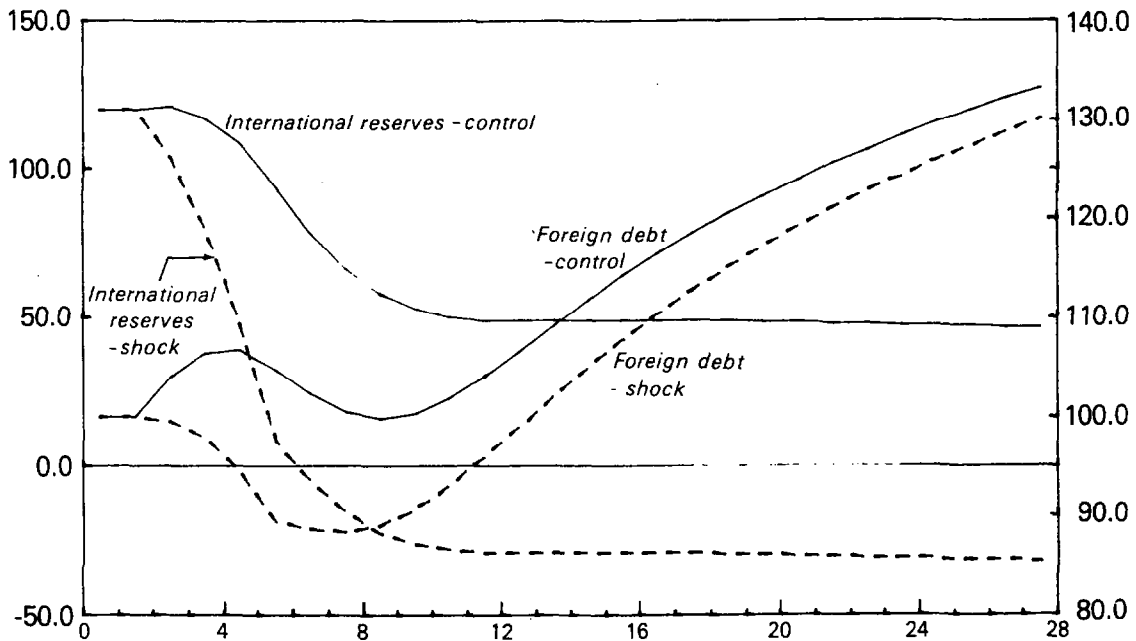
2-B. DOMESTIC INTEREST RATE



### 2-C. CURRENT ACCOUNT BALANCE



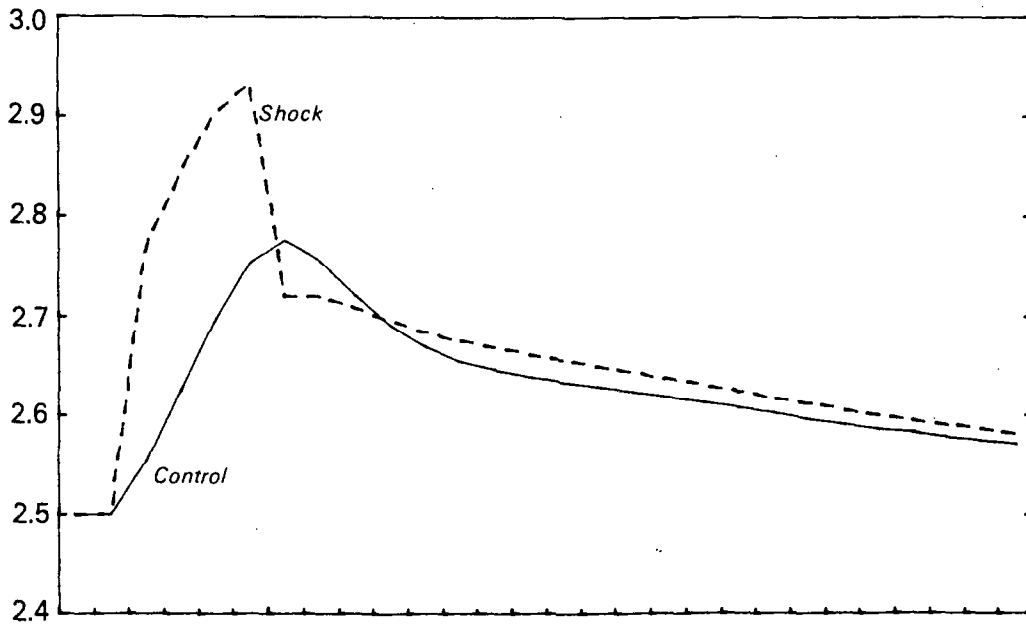
### 2-D. INTERNATIONAL RESERVES AND FOREIGN DEBT<sup>1</sup>



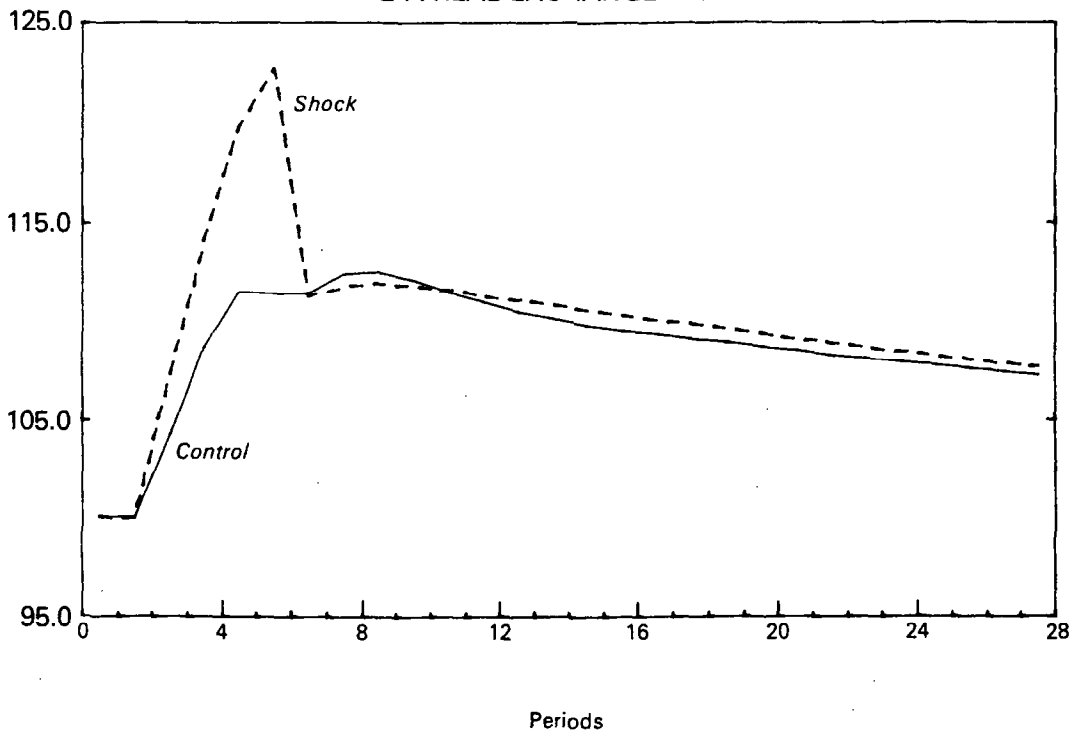
<sup>1</sup>International reserves: left scale; foreign debt: right scale



### 2-E. REAL PRIVATE EXPENDITURES



### 2-F. REAL EXCHANGE RATE



## 2. Effects of external and domestic shocks

The effects of a combination of external shocks and the emergence of a budget deficit while the foreign sector is being liberalized are also shown in Chart 2. It is quite evident from Chart 2-A that the various shocks appear to have little impact on the path of the general price level that results from only opening up. We would expect the deterioration in the terms of trade to exert additional downward pressure on prices, as the decline initiated by the fall in the domestic price of importables is amplified by the reduction in export prices. However, at the same time the fiscal deficit, by increasing aggregate spending, would tend to push up the price of nontradable goods. The values of the parameters of the underlying model are such that these effects tend to offset each other, and the net impact on the general price level turns out to be negligible.

While the domestic interest rate does fall when the shocks are super-imposed, the decline is somewhat smaller than in the control simulation (Chart 2-B). Since the foreign interest is increased there is a net capital outflow during the first few periods and a smaller excess supply of money, despite the fact that the financing of the fiscal deficit expands the nominal money supply. <sup>1/</sup>

A more striking difference between the two sets of simulations can be observed in the case of the current account position (Chart 2-C). Even though there is less excess liquidity in the economy during the initial periods, the combined effect of the deterioration in the terms of trade and the expansionary fiscal policy causes the current account balance to be significantly worse than it would be in the absence of such shocks. Starting from an equilibrium position, the current account deficit, as a proportion of nominal income, reaches around 18 percent by period 6, as compared to less than 7 percent in the same period in the control simulation. Once the shocks have worked themselves out the paths of the current account balance from the two simulations become quite close.

Accompanying this larger current account deficit there is also an initial outflow of capital because of the increase in the foreign interest rate, and the decline in the domestic interest rate brought about as a result of the removal of capital controls. As a consequence, international reserves decline much more rapidly in this scenario (Chart 2-D); in the final equilibrium the stock of international reserves actually becomes negative. In marked contrast to the control simulation, the stock of

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<sup>1/</sup> One would normally expect an increase in the fiscal deficit to result in a greater excess supply of money, but in this framework there is a larger increase in the demand for money (due to the increase in nominal income); furthermore, the additional monetary expansion created by the deficit leaks out very rapidly through the current account.

foreign debt falls for the first 8 periods or so, <sup>1/</sup> and rises steadily thereafter, although its level remains permanently smaller than in the control simulation (Chart 2-D). This would necessarily mean that debt service payments would be smaller than in the scenario without shocks, despite the temporary increase in the foreign interest rate.

From periods 2 to 6 real expenditures on goods and non-financial services increase significantly more than in the control simulation--Chart 2-E. This is primarily due to the expansionary effect of the budget deficit, moderated somewhat by the impact of the terms of trade deterioration on domestic spending. As the terms of trade and the foreign interest rate return to their respective original levels, and the fiscal deficit is eliminated, real expenditures end up being slightly higher than in the control simulation because of the smaller debt service payments.

The appreciation of the real exchange rate also turns out to be more pronounced when there are external and domestic shocks (Chart 2-F). This occurs basically for two reasons: first, the price of tradable goods falls relatively more, with the decline in import prices caused by the tariff reduction now being accompanied by a fall in the price of exportables. Second, the expansion in aggregate demand caused by the fiscal deficit increases the price of nontradable goods. Eventually, as the foreign price of exportables returns to its original level and the fiscal balance is reestablished, the real exchange rate first depreciates (relative to the control simulation path) and then moves to a slightly higher equilibrium level. This long-run result occurs because less resources from the tradable goods sector, i.e., smaller trade balance surpluses, are required to service the now lower stock of foreign debt.

The movements in the real exchange rate clearly highlight the importance of adopting an appropriate exchange rate policy during the liberalization process. Maintaining a fixed nominal exchange rate, or for that matter simply operating a policy that does not permit the exchange rate to move in line with the relative price of tradables to nontradables, when there are external shocks or domestic fiscal imbalances, would not appear to be suitable. In particular, budget deficits, and excessive private expenditures financed by foreign borrowing, result in an expansion in aggregate demand that is basically inconsistent with the reduction in the price of nontradable goods that would keep the current account deficit, and consequent loss of international reserves, within reasonable limits. In such circumstances fixing the nominal exchange rate would exacerbate

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<sup>1/</sup> In the model only foreign residents are allowed to acquire domestic debt, and domestic residents (including the government) are restricted from holding foreign debt. As such, an increase in foreign interest rates, by reducing the incentive for foreigners to invest, leads to a smaller (or even negative) inflow of capital and a lower stock of foreign debt.

the situation. This issue of inconsistency between excess domestic expenditures and exchange rate policies has been discussed by a number of authors engaged in analyzing the experience of the Southern Cone countries during the 1970s. 1/

In connection with the exchange rate issue an interesting question arises as to what would be likely effects if the country in fact did adopt a more flexible exchange rate policy while it engaged in opening up. We analyzed this case by repeating the experiment of reducing tariffs and eliminating capital account restrictions, but now instead of maintaining a fixed exchange rate we allowed for a gradual depreciation of about 50 percent between periods 3 and 6. This policy led to a much smoother evolution of the real exchange rate over time, although, as expected, in the final equilibrium there was still a real appreciation. The decline in the general price level and domestic interest rate was markedly smaller, as was the increase in real expenditures, relative to the control (fixed exchange rate) simulation. There was also an improvement in the current account position even though restrictions on trade and capital flows were removed, and the stock of international reserves rose initially before settling down to a value very close to the original equilibrium level. Of course, the counterpart of the improved current account and international reserves picture was a sizable build-up of foreign debt, so that the policy of steady depreciation is not totally without costs. However, as the additional increase in the foreign debt turns out in this model to be far smaller than the reduction in the loss of international reserves, it can be argued that in "net" terms the country is still better off, and that at least some of the negative aspects of the transition period following liberalization could be moderated if the authorities pursued a more flexible exchange rate policy. 2/

#### V. Conclusions

The widespread interest generated by countries that embarked in the direction of opening up the economy to allow for the freer flow of goods and capital across borders still continues. There has, however, been a radical shift in the type of questions being raised about the relative economic performance of these economies. Initially the questions focused on the success these countries achieved in some areas on the macroeconomic

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1/ See, for example, Edwards (1982), Pastore (1982), Sjaastad (1983), Zahler (1983), and Dornbusch (1984).

2/ This result confirms the argument put forward by Dornbusch (1984) that the exchange rate policies in the Southern Cone countries led to steady overvaluation of their respective currencies, and that this outcome could have been avoided through more flexible exchange rate management.

front, but now in the light of their current situation, equally relevant questions are being asked about the supposed failure of outward-oriented policies. The burgeoning literature analyzing the experience of the countries in the Southern Cone of Latin America continues to attest to the fact that there remains considerable puzzlement as to how the situation could change so dramatically in the space of only a few years.

Certainly there has been no shortage of reasons presented for this turn of events. In this paper we focused on two specific reasons: first, the role of certain external shocks; and second, various domestic policy actions that proved in the end to be inconsistent with the overall strategy of opening up. These particular factors are ones that are relatively more amenable to quantitative analysis. It is well-recognized that external events contributed to the difficulties experienced by developing countries, and these events were obviously outside the control of these countries. Nevertheless, it can be argued that opening up in order to increase economic efficiency and improve resource allocation, made the countries more vulnerable to foreign shocks. Furthermore, in some cases the inability to control excessive domestic spending, whether public or private, and the general inflexibility of exchange rate policies, during the liberalization process compounded the problems, and can thus be held partly responsible for the negative consequences that later emerged.

In this paper we analyzed the separate short and medium-run effects that certain types of external shocks and an expansionary fiscal policy can have on key macroeconomic variables while the economy is being opened up. It was shown that the removal of barriers to trade and capital flows entails certain costs in the short run. While the domestic price level and interest rate tend to approach their respective international values, this is accompanied by a rise in the real rate of interest, a temporary decline in output and employment, a worsening of the current account, a loss of international reserves, and a significant build up of foreign debt. There is, furthermore, an appreciation of the real exchange rate to a new equilibrium level. The adverse effects of opening up become magnified if one then superimposes domestic policy inconsistencies and changes in the external situation on the liberalization process. Our results do seem to support the conclusions reached by a number of writers who have looked carefully at the recent Southern Cone experience, namely that the possibilities of success in the liberalization experiments were greatly diminished once the international picture worsened. The problems were further exacerbated by the adoption of domestic policies that apparently worked at cross purposes with the policy of liberalization. In reality, limits on external borrowing that prevented the countries from financing their way out of their difficulties brought about by the various shocks finally forced them to undertake domestic adjustment, and reverse the overall strategy and reimpose barriers to trade and capital flows.

What then is the policy lesson that can be drawn from the analysis conducted here? The conclusion that comes out quite forcefully is that opening-up policies have to be actively supported by domestic macroeconomic management. This becomes even more imperative if the country is subjected to external shocks while it is in the process of liberalizing the foreign sector. While the individual developing country can do little about changes in the international environment and has to take those as given, it would seem that a judicious combination of external financing, use of international reserves, and domestic adjustment would be called for at an early stage to offset or minimize the effects of any external shocks that occur. Since there are quantitative limits to the amount of international reserves and foreign financing, it is obvious that eventual adjustment of the basic supply-demand balance in the economy is necessary. Fiscal and monetary restraint, coupled with a more flexible exchange rate policy, would seem to be the relevant instruments of adjustment in the circumstances that a number of developing countries found themselves in the late 1970s and early 1980s. While there were attempts in this general direction they can perhaps be characterized as probably being too little and too late. As a consequence, many developing countries, and particularly those engaged in the process of opening up, found that they had to eventually undergo more painful adjustment than would have been necessary if action had been taken more promptly.

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