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Economic Commission for Latin America and the Caribbean



ROUND TABLE ON EXTERNAL SECTOR POLICY OPTIONS:  
THE CASE OF LATIN AMERICA

(Santiago, Chile, 24-27 October 1983)

Sponsored jointly by the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) and the German Foundation for International Development (DSE). Organized by the UNDP/ECLA Project RLA/77/021, "Implications for Latin America of the International Monetary and Financial System".



Under the joint sponsorship of the United Nations Economic Commission for Latin America and the Caribbean (ECLAC)\*/ and the Development Policy Forum of the German Foundation for International Development (DSE), a Round Table on External Sector Policy Options was held at ECLAC Headquarters in Santiago from 24 to 27 October 1983. The Round Table took as a basis for discussion the following papers prepared within the framework of the project "Implications for Latin America of the International Monetary and Financial System" jointly financed by ECLAC and the United Nations Development Programme (UNDP), in collaboration with the International Monetary Fund (IMF):

M. Khan and R. Zahler

"The Macroeconomic Effects of Changes in Barriers to Trade and Capital Flows: a Simulation Analysis", IMF Staff Papers, Vol. 30, No. 2, June 1983;1/

M. Khan and R. Zahler

"Changes in Barriers to Trade and Capital Flows: a Further Analysis" (unpublished).2/

The Round Table also benefited from the following background ECLAC material:

Enrique V. Iglesias - "Speech of the Executive Secretary of ECLA at the 37th Meeting of Governors of Central Banks of Latin America and Spain", Caracas, Venezuela, September 1983;

Carlos Massad - "The External Financing of Latin America: Facts, Problems and Options" (unpublished);3/

Bases for a Latin American Response to the International Economic Crisis (E/CEPAL/G.1246);

The International Economic Crisis and Latin America's Capacity to Respond to it (E/CEPAL/G.1249).

Mr. Enrique V. Iglesias, Executive Secretary of ECLAC and Mr. Alexander G. Friedrich, Chairman of the Development Policy Forum of the German Foundation for International Development (DSE), chaired the inaugural session and delivered addresses at the meeting.

The Round Table was chaired by Mr. Carlos Massad. The cases of Argentina, Brazil and Chile, presented by Messrs. R. Arriazu and E. Gaba, Mr. A Moura da Silva, and Messrs. D. Tapia and R. Ffrench-Davis, respectively, were especially taken into account. The Round Table also heard a presentation about recent economic developments in Israel, given by Professor Jacob Frenkel.

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\*/ For the sake of clarity, the name of the Economic Commission for Latin America and the Caribbean (ECLAC) has been used throughout this report, although up to July 1984 the name was Economic Commission for Latin America (ECLA).

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/II. CHAIRMAN'S

## II. CHAIRMAN'S SUMMARY

### 1. Theoretical basis for analysis: strategy for further work

In the context of the simulation model presented for discussion at the Round Table by Messrs. M. Khan and R. Zahler, a number of suggestions for future work were made. They included the following:

1. It is essential that labour and capital markets be modelled so as to examine what would happen to factor prices and quantities during the process of opening up of the economies, including wage-price dynamics and indexation. In all the countries that were discussed these were crucial aspects. In this context it was felt appropriate that work had already been initiated at ECLAC, in collaboration with ILO's Regional Employment Programme for Latin America and the Caribbean (PREALC), on these issues.
2. While it is not necessary to go into the issues of gains from trade and related welfare questions, the model should explicitly include the analysis of investment and growth. As the model is currently set up, its results do not indicate some of the benefits that can be derived from economic opening up. By allowing for the possibility of increased growth as a consequence of opening up, this question could be examined.
3. The theory underlying the specific dynamics and the formation of expectations in the model should be carefully considered. While developing general theories to cover disequilibrium behaviour is undoubtedly difficult, an attempt should be made to derive the dynamic aspects in a consistent fashion, including the possibility of non-lagged adjustment. However, it was considered essential to maintain the present simplicity and clarity of the model.
4. The general equilibrium characteristics of the model should be maintained. It is only in the context of this type of model that issues connected with interrelations among markets, spillovers from one market to another, etc., can be really addressed.
5. It is now time to consider testing the model with parameters that are obtained from actual data rather than imposed arbitrarily. This immediately leads into the question of estimation. As a first step it would be advisable to estimate and test the model block-by-block and then later put it together.
6. The monetary sector in the model should be expanded to include some other important behavioural relationships, e.g., demand for credit and demand for different types of deposits. At present there is some unevenness of treatment between the real and monetary sectors in the model: the real sector has more detail and more theory, while the latter sector is treated in a rather sketchy fashion.

2. Lessons from experience and policy options in the external sector

1. External shocks, such as unfavourable changes in the terms of trade, the fall in growth rates in industrial countries and the sharp increases in interest rates in the international financial market, as well as the drastic reduction in the flow of foreign financing, were considered, at the meeting. It was recognized that such shocks had a particularly serious adverse effect on countries which, by reducing trade barriers rapidly and over-deregulating their financial markets, had accumulated debt and perhaps made themselves more vulnerable to these events.

2. It was pointed out that, in all the cases analysed, domestic real interest rates reached excessively high levels and showed extremely sharp movements. It was felt that while those movements might be justified on the basis of developments in the credit markets, their consequences for other aspects of the economy were such that there would have been ample justification for looking more closely into the events affecting the rates. By doing so it might have been possible to act on those events and to achieve results in the credit markets more in line with other objectives of economic policy. It was therefore felt that clearing in one individual market may not necessarily imply desirable results in the economy as a whole in an overall macroeconomic sense.

3. It was also recognized that disequilibria in one market may be due to disequilibria in other markets: in other words, a kind of "spillover" effect. Therefore, correcting the disequilibrium in one market may require consideration of the situation in a variety of other related markets as well.

4. A very important suggestion emerging from the discussions related to the question of "outliers", or economic variables that get far out of line. There was general agreement that policy-makers should be concerned when certain macroeconomic variables get very far away from some notional norm. Such variables would include, at least, the real interest rate, the real exchange rate, real wages, asset prices and foreign debt. While defining the so-called norm is not an easy task (comparable for example, to defining the equilibrium real exchange rate), nevertheless it is rather obvious when the variables in question get very far out of line.

5. What can be called "non-traditional signals" provided by the economy should also be taken into account. In the course of the liberalization process, attention should be given to excess expenditure of the private sector, "bubbles", the difference between actual and potential output, and the current account of the balance of payments, among other more traditional indicators. These signals provide information to help policy-makers react in the appropriate direction. There was a general feeling that the national authorities have not been sufficiently concerned with this type of signals and have tended to ignore them, relying relatively more on the automatic adjustment of the economy.

6. On the specific issues related to economic opening up, it was observed that commercial opening up is far less in dispute than financial opening up. Most participants were basically in favour of trade liberalization believing this to be a useful step for a country to take, even though there were some differences of opinion as to how the process should be implemented, especially as regards export versus import promotion, and the composition of imports as between consumption and investment goods.

7. At all events, it was clearly recognized that there was a need for supportive macroeconomic policies. For example, trade opening up is a matter of tariff reduction and exchange rate policy; demand management policies are a key ingredient of the liberalization process, etc.

8. In so far as financial opening up is concerned, there was less consensus among the participants. In the case of debtor countries, it was questioned whether it was necessary at all to have financial opening up, because the welfare gains to be achieved from this policy were by no means clear. However, if the capital account was to be liberalized there was no question but that a necessary, although not in itself sufficient, condition would be to first of all put the domestic economy in some kind of order. This would involve carrying out domestic financial reform, control of fiscal expansion, etc. Finally, when financial opening up occurred in the late 1970s it seems that considerable problems were created for the economies by the rapid inflow of mainly short-term capital. This would therefore suggest that policies aiming at more gradual and better-oriented capital flows should be an important component of any policy package.



### III. TRADE AND FINANCIAL LIBERALIZATION IN THE CONTEXT OF EXTERNAL SHOCKS AND INCONSISTENT DOMESTIC POLICIES

Prepared by Mohsin S. Kahn and Roberto Zahler \*/

#### 1. 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>4/</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 programmes, and even a reversal of direction in the liberalization policies. The sharp declines in growth rates in all three 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.

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\*/ International Monetary Fund and United Nations Economic Commission for Latin America and the Caribbean (ECLAC), respectively. The ECLAC participation in this study was conducted under the UNDP project RLA/77/021, "Implications for Latin America of the Situation of the International Monetary System", directed by Carlos Massad. We are grateful to Mario Blejer, Ken Clements, Sebastian Edwards, Jacob Frenkel, William C. Hood, Malcolm Knight, Carlos Massad, Peter Montiel, Luis Ramírez-Rojas, and Mario Teijeiro, for helpful comments on an earlier draft. The views expressed are the sole responsibility of the authors and do not necessarily reflect those of the above-mentioned institutions.

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 co-ordinated, 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.<sup>5/</sup> 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,<sup>6/</sup> and while different strategies may yield similar results in the long run, during the transition the behaviour 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 favourable 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

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 programmes 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.<sup>7/</sup>

In a previous paper (Khan and Zahler)(1983)) we analysed the macroeconomic 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

The concluding section brings together the main results and attempts to provide a judgement 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.

## 2. 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.<sup>8/</sup> 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,<sup>9/</sup> 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% per annum during the period 1973-1983 (see table 1).<sup>10/</sup> After falling sharply in 1974-1975 in the wake of the fourfold jump in the world price of energy products in 1973-1974, 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 1979-1980. Exacerbating the problem further was the decline in the growth rates in industrial countries.<sup>11/</sup> After increasing at about 3% during 1973-1977, the average growth rate in the industrial world declined in the following six-year period to around 2% per annum. During 1980-1983 real GNP of the industrial countries grew only at an average rate of a little over 1% per year (see 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% during 1978-1983; by contrast, the terms of trade had been relatively constant on average during the earlier period 1973-1977.

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 1977 debt service had not posed a serious problem for many oil-importing-developing countries because conditions in the international credit markets were generally favourable and, even though the foreign real interest rate rose in 1975,<sup>12/</sup> for the period 1973-1977 the average was still strongly negative, i.e., -7.1% (see table 1).

/Table 1

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.

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.<sup>13/</sup> Foreign real interest rates rose sharply and became positive --averaging about 9.5% per year during 1978-1983-- and in fact in the last three years (1981-1983) had reached the astronomical average level of over 17%. This turnaround of more than 16 percentage points between the periods 1973-1977 and 1978-1983 forced a number of oil-importing countries to undertake strong adjustment efforts once the limits on their recourse to financing had been reached.<sup>14/</sup>

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% in 1973 to 4.6% in 1983.<sup>15/</sup> 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.<sup>16/</sup>

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 about 5% in 1973-1977 to an average of a little over 3% during 1978-1983. The steady decline in the growth of real GDP from 1978 is particularly noticeable, and in the last two years 1982-1983 real GDP grew by an average of less than 2%. After averaging about 10% in the period 1968-1972, inflation rose to an annual average rate of nearly 30% per year during 1973-1983; for the most recent years 1980-1983, inflation was running at an average annual rate of about 34%.

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 1973-1974, with the deficit reaching a peak of nearly 28% of exports of goods and services in 1975. Favourable movements in the world prices of primary commodities led to a marked improvement in the current account balances in 1976-1977, 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 1982-1983 was reduced to about 16%. All in all if one looks at the economic situation in 1983 one

/cannot help

cannot help but be struck by the deterioration that took place on all fronts. The decade of the 1970s, except for the 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 1973-1980 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;<sup>17/</sup> 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 analysing it we should be able to have a somewhat firmer basis to try and explain the failures of the liberalization experiments.

### 3. 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 analyse short-term stabilization policies.<sup>18/</sup>

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 non-tradeables-- 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

one good into another, and the initial resource endowment.<sup>19/</sup> 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 income, the excess supply of money, and the domestic interest rate; government expenditures, as is customary, are assumed to be exogenous.<sup>20/</sup> By invoking separability we argue that once total expenditures are determined, the distribution between importable, exportable, and non-tradeable 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 tradeables ( $P_f$ ) and the exchange rate ( $\epsilon$ ), and the domestic price of importable goods, allowing for tariffs, is defined as:

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

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 tradeable goods. As the prices of importable and exportable goods are essentially given from abroad,<sup>21/</sup> disequilibrium in the tradeable 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 non-tradeable goods ( $P_n$ ) is, however, endogenously determined and is assumed to respond positively to excess demand for non-tradeable 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 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,



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:

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

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,  $\epsilon$  is the expected change in the exchange rate,<sup>22/</sup> 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:

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

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.<sup>23/</sup>

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>24/</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% tariff on imports, which it then reduces to zero. Following Dornbusch (1974) the relative price effect of this measure can

/be analysed

be analysed 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 tradeable goods, and by Walras Law, excess demand for non-tradeable goods is zero as well. North-east of the HH schedule the relative price of non-tradeable goods is too low and there is an excess supply of tradeable goods (trade balance surplus), and an excess demand for non-tradeable goods. Similarly south-west of HH there would be trade balance deficit and an excess supply of non-tradeable goods.

Assuming that  $\tau = 100\%$ , 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 non-tradeable 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 non-tradeable 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>25/</sup> which involves an appreciation of the real exchange rate (defined as the ratio of the price of non-tradeables to the price of tradeables). Obviously this is not an equilibrium position since at B there is an excess demand for tradeable goods and an excess supply of non-tradeable 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).

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,<sup>26/</sup> the fall in the prices of importable and non-tradeable 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 non-tradeable goods.<sup>27/</sup>

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 non-tradeables sector remain constant.<sup>28/</sup> 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

Figure 1

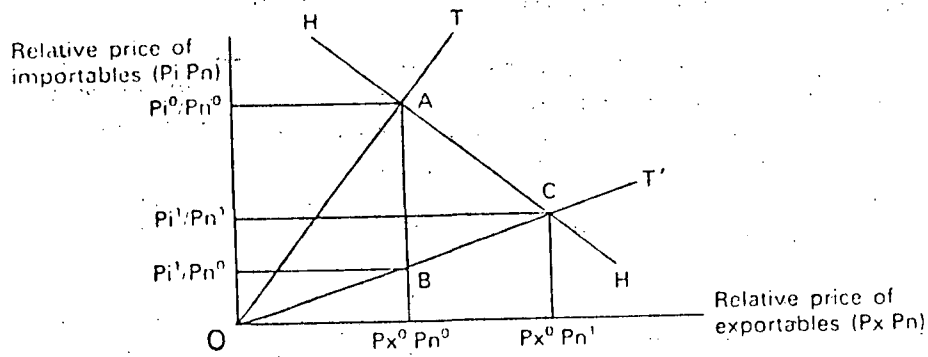


Figure 2

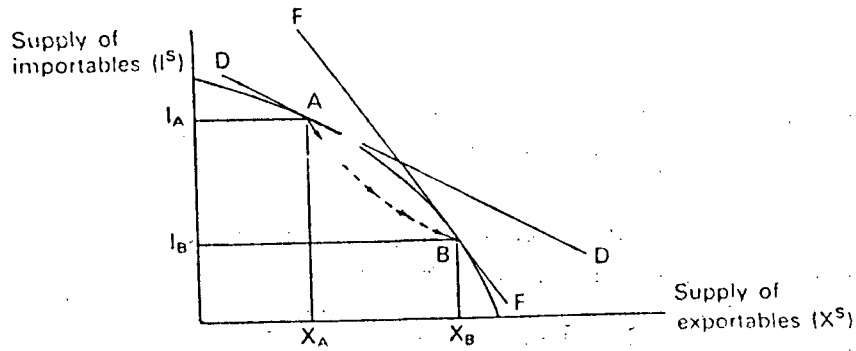
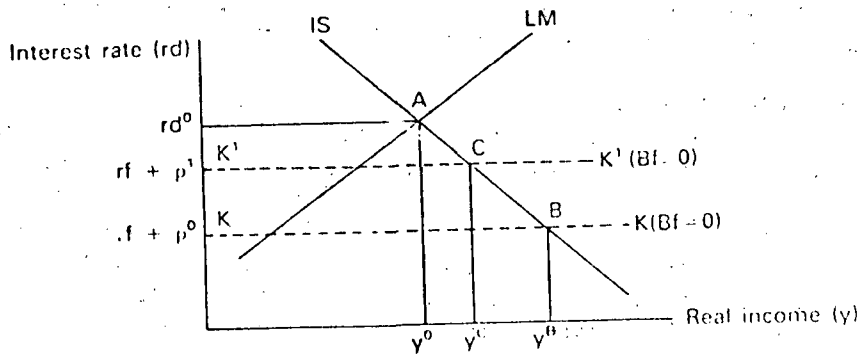


Figure 3



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 tradeables would be unchanged. However, if the reduction in the production of importables is faster than the expansion of exportables, then the path of tradeables 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 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, a fall (rise) in the nominal (real) interest rates, and assuming the production of importables adjusts faster than the production of exportables, a temporary decline in output and increase in resource unemployment.

To analyse 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:<sup>29/</sup>

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

In the traditional IS-LM framework (see figure 3) the initial equilibrium point would be A, with real income at  $y^0$ , the domestic interest rate equal to  $rd^0$ , and zero foreign debt ( $BF = 0$ ).<sup>30/</sup>

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.<sup>31/</sup> 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.<sup>32/</sup> 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 investment.<sup>33/</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 nominal 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>34/</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 analyse 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. 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, French-Davis and Arellano (1981), French-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.<sup>35/</sup> The domestic policy inconsistency scenario analysed here is represented by a simulation in which there is a temporary increase in the fiscal deficit.<sup>36/</sup> 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

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 non-tradeables relative to the price of tradeables, 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.

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 judgement on the principal effects of some specific external shocks and certain policy changes are likely to have in the course of liberalization.

#### 4. Results

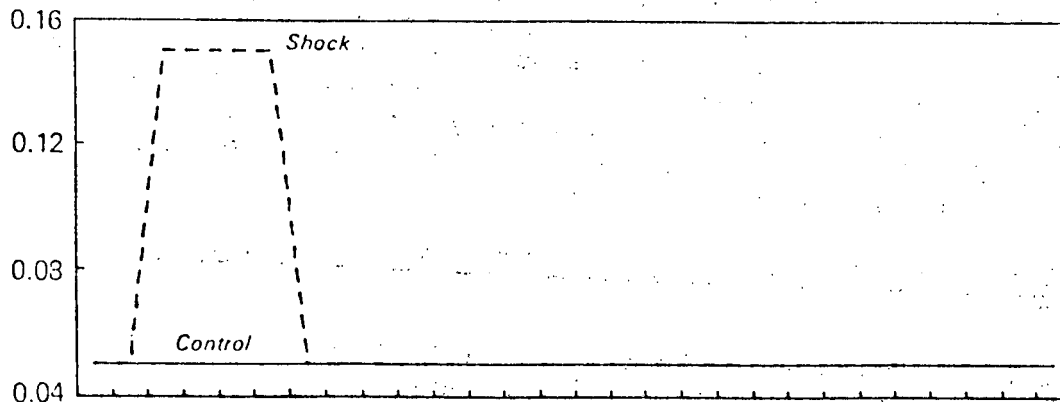
In the initial equilibrium the economy is assumed to have a uniform tariff of 100% on imports and capital flows are completely restricted.<sup>37/</sup> In other words, the economy is not completely closed to trade since imports are allowed, although at a domestic price substantially higher than the 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;<sup>38/</sup> 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.<sup>39/</sup> In the control simulation the foreign interest rate, the terms of trade, and the government budget deficit are kept unchanged (see chart 1). For the external shocks scenario the nominal foreign interest rate is raised to 15% in period 3 and is then lowered back to its original level of 5% after four periods --chart 1-A. Concurrently with this, the terms of trade are assumed to deteriorate by 5% per period for four periods, and then progressively improve so that by the seventh period they are at their original level (see chart 1-B). The domestic shock is represented by the emergence of a fiscal deficit (approximately equal to 7-8% of national income) for four periods (see chart 1-C), after which the budget is once again assumed to be balanced.

/Chart 1

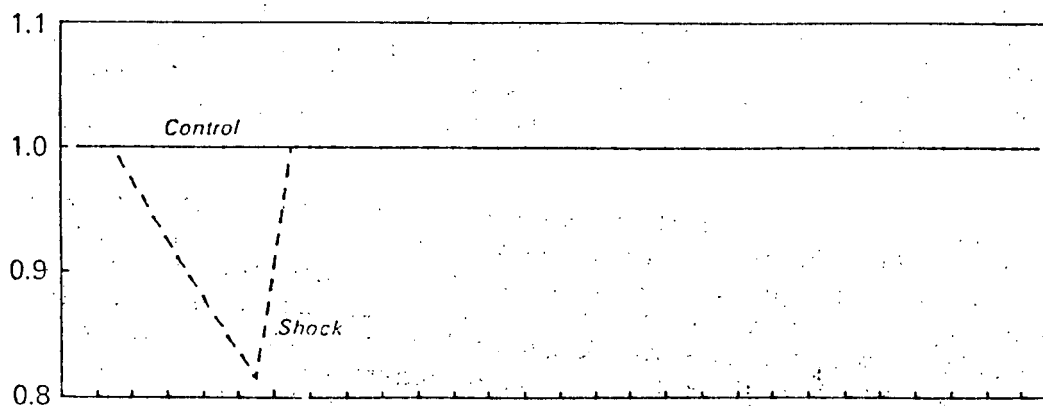
CHART 1

# EXOGENOUS SHOCKS

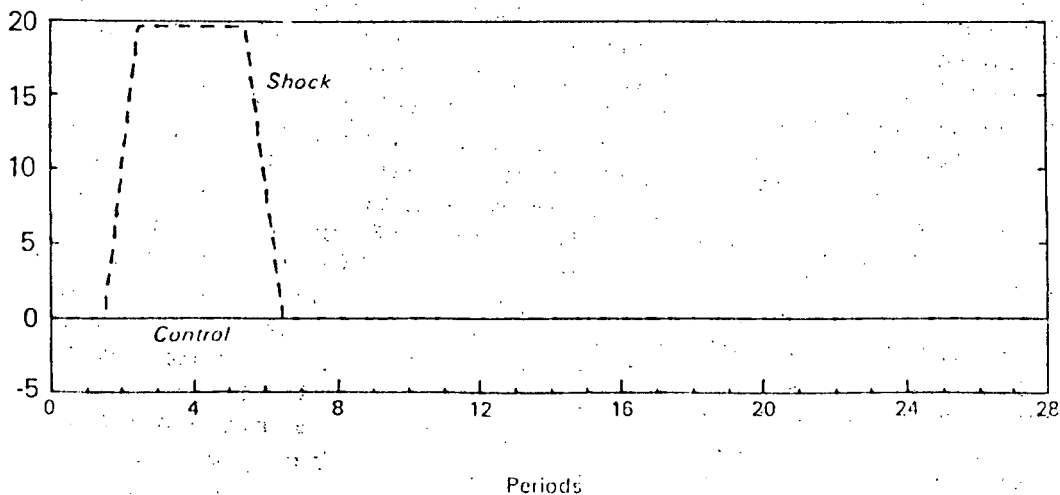
## 1-A. INCREASE IN FOREIGN INTEREST RATE



## 1-B. DETERIORATION IN TERMS OF TRADE



## 1-C. INCREASE IN FISCAL DEFICIT



A very important point to note in analysing 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.<sup>40/</sup> 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 flavour of what can be expected to happen if one superimposes shocks of certain types on the opening-up process.

a) 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 non-tradeable 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 non-tradeables 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 (see chart 2-A).

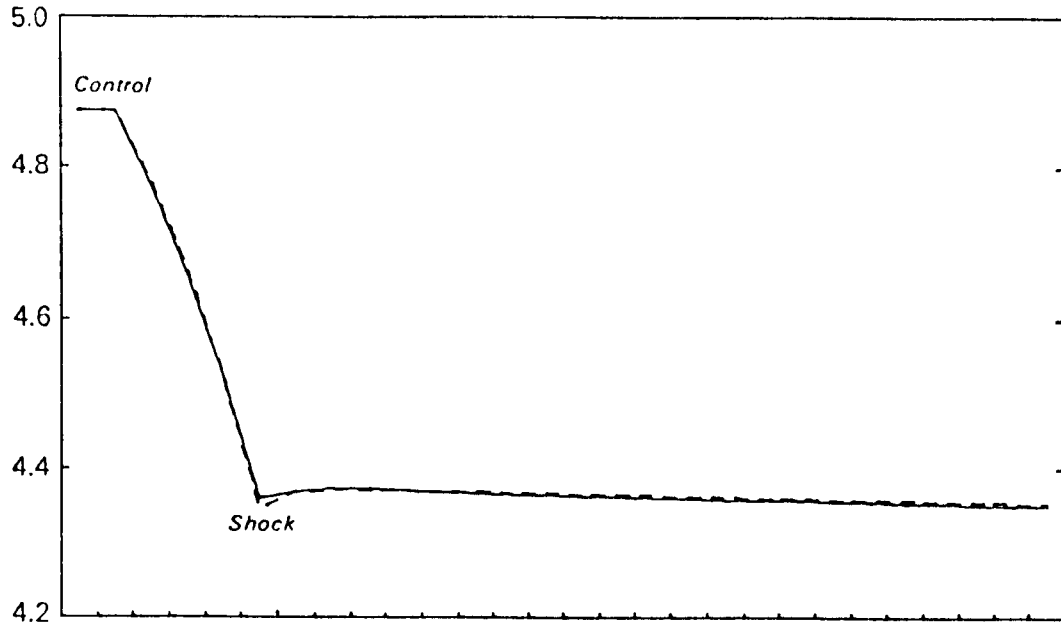
As expected, the fall in the overall price level lowers the nominal demand for money; furthermore, since initially the domestic interest rate is assumed to be above the corresponding foreign rate, with the removal of capital controls there is a large inflow of capital from abroad which augments domestic liquidity. The resulting excess supply of money causes the domestic interest rate to decline (see 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 (see chart 2-C) that persists for a number of periods.<sup>41/</sup> 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 (see 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% of national income (see chart 2-D).



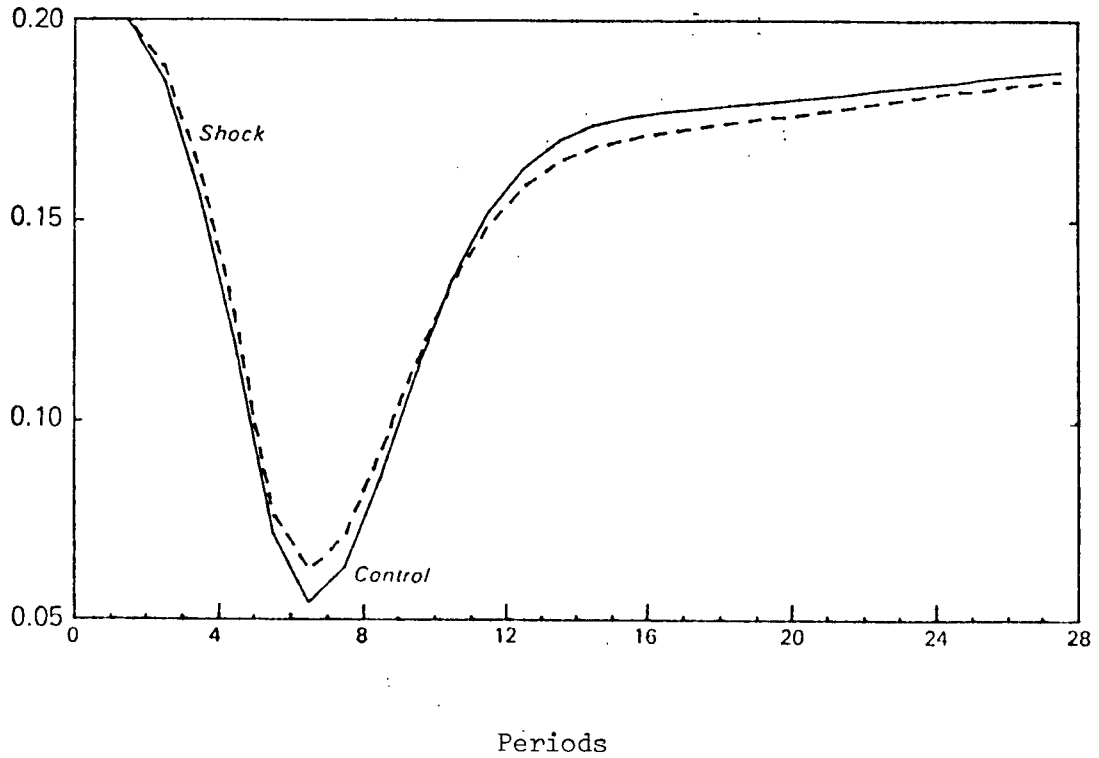
CHART 2

# COMBINED EFFECTS OF EXTERNAL AND FISCAL SHOCKS

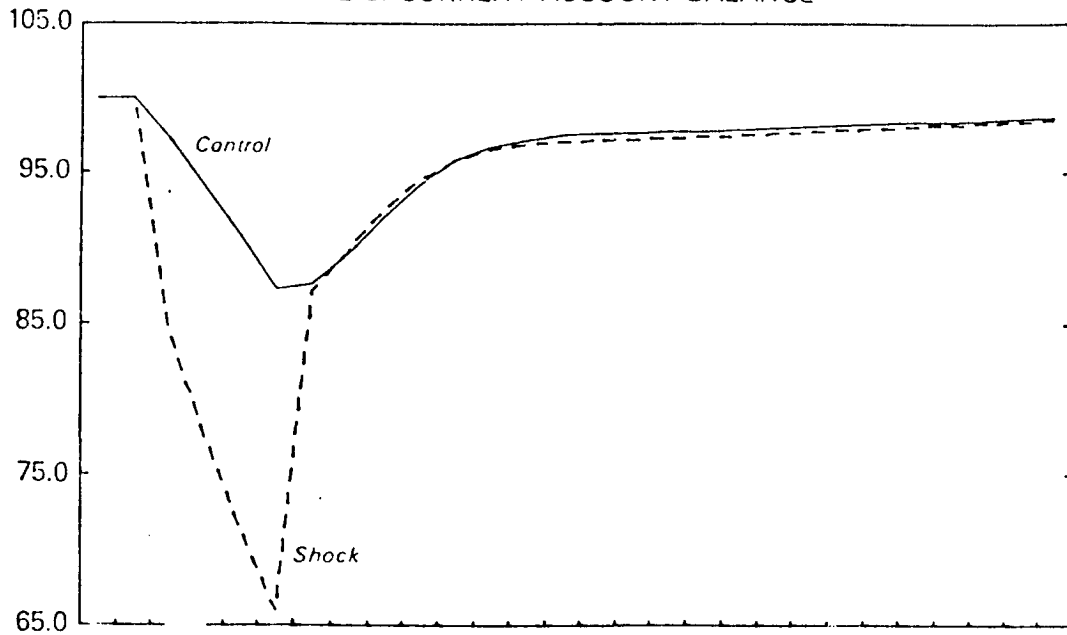
## 2-A. GENERAL PRICE LEVEL



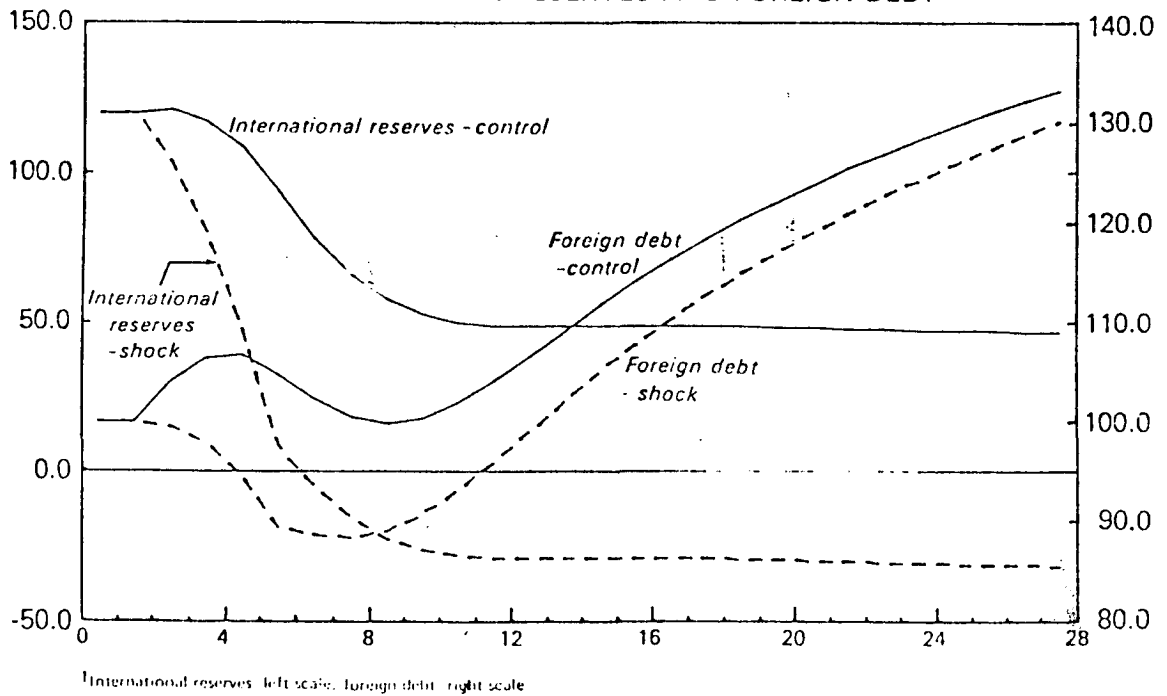
## 2-B. DOMESTIC INTEREST RATE



### 2-C. CURRENT ACCOUNT BALANCE



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



/Two additional

Two additional results, which were not stressed in Khan and Zahler (1983), are worth mentioning. First, real expenditures on goods and non-financial 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 (see chart 2-E).<sup>42/</sup> This tendency is then reversed as interest payments on foreign debt absorb an increasing proportion of the income of residents, although given the model structure and specific parameter values, in the long-run equilibrium real expenditures on goods and non-financial services are still higher than their pre-reform level.

Second, as was analysed in figure 1, during the course of liberalizing the domestic relative prices 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 non-tradeable goods to the price of tradeables, will be appreciated (see chart 2-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 rate policy.<sup>43/</sup> 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.<sup>44/</sup>

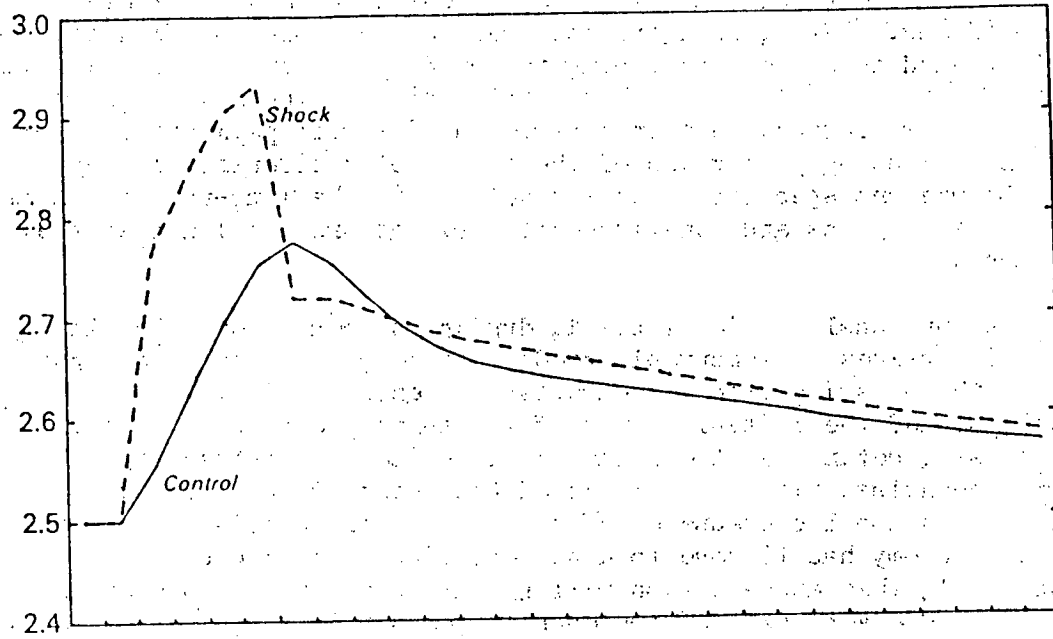
#### b) Effects of external and domestic shocks

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 non-tradeable 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.

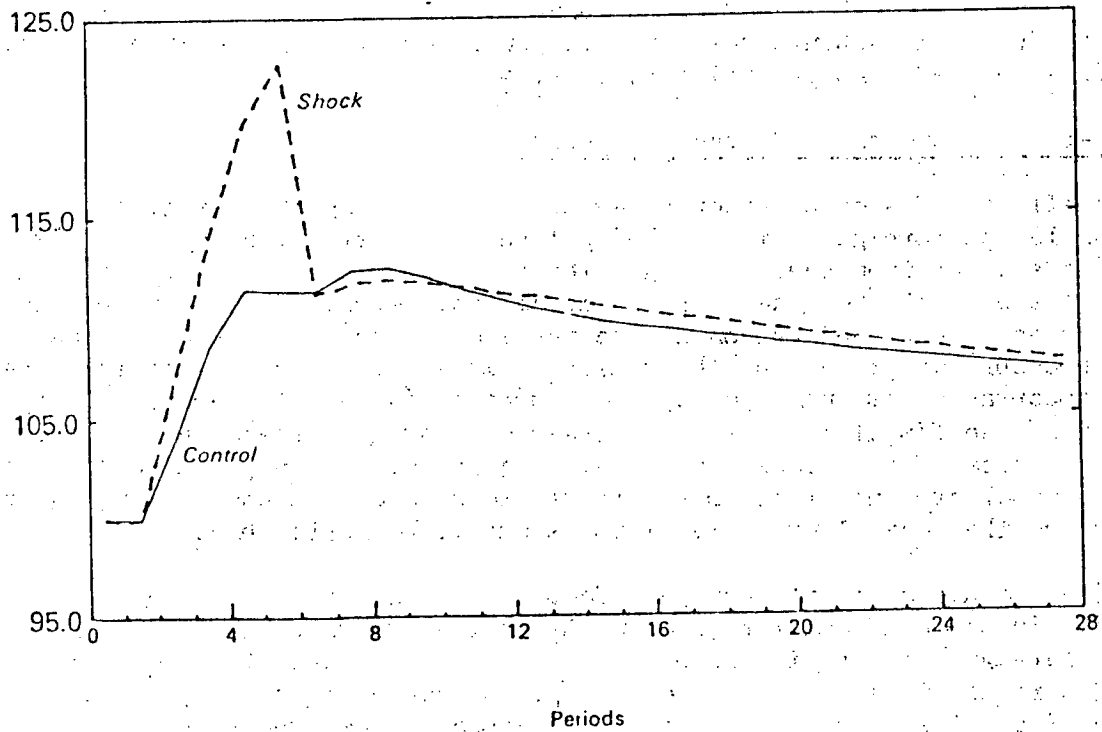
While the domestic interest rate does fall when the shocks are superimposed, the decline is somewhat smaller than in the control simulation (see chart 2-B). Since the foreign interest is increased there is a net capital outflow during the first few periods and a smaller excess supply of money, despite the fact that the financing of the fiscal deficit expands the nominal money supply.<sup>45/</sup>

A more striking difference between the two sets of simulations can be observed in the case of the current account position (see 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

### 2-E. REAL PRIVATE EXPENDITURES



### 2-F. REAL EXCHANGE RATE



/current account

current account deficit, as a proportion of nominal income, reaches around 18% by period 6, as compared to less than 7% 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 (see 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 foreign debt falls for the first 8 periods or so,<sup>46/</sup> and rises steadily thereafter, although its level remains permanently smaller than in the control simulation (see 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 --see 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 (see 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 non-tradable 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 non-tradables, 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 non-tradeable goods that would keep the current account deficit, and consequent loss of international reserves, within reasonable limits. In such

/circumstances fixing

circumstances fixing the nominal exchange rate would exacerbate the situation. This issue of inconsistency between excess domestic expenditures and exchange rate policies has been discussed by a number of authors engaged in analysing the experience of the Southern Cone countries during the 1970s.<sup>47/</sup>

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 analysed 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% 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. Although the policy of steady depreciation is not totally without costs, since there is an increase in the foreign debt above what was observed in the control simulation, and the price level falls by a smaller amount, nevertheless it can be argued that at least some of the negative aspects of the transition period following liberalization can be moderated if the authorities pursued a more flexible exchange rate policy.<sup>48/</sup>

## 5. 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 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 analysing 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.

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In this paper we specifically examined the short and medium-term 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. The simulation experiments, conducted using a general equilibrium model, were not intended to be completely realistic, in the sense of either applying to any particular country, or reproducing the actual shocks that hit developing countries, but rather should be treated as providing essentially hypothetical scenarios. Specifically it was shown that the removal of barriers to trade and capital flows produces some costs in the short run. While the rate of inflation and domestic interest rate tend to approach their respective international values, this is accompanied by a rise in the real rate of interest, a 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. In the context of this particular exercise, the negative effects of opening up become magnified if one then further allows for the possibility of domestic policy inconsistencies and an adverse international climate during the liberalization process.

Whether the liberalization experiments would have been successful in the absence of external shocks, and if the right macroeconomic policies had been in place, is something we have purposely stayed away from. What we can say, however, is that the possibilities of success were greatly diminished once the international picture worsened, and countries pursued other domestic policies that apparently worked at cross purposes with the policy of liberalization. Based on the results here it is possible that if external shocks are large and persist for long enough and inconsistent domestic policies are maintained, then it is quite likely that the economy would go into a recession if compensatory action is not taken. In reality, limits on external borrowing prevented developing countries from financing their way out of their difficulties brought about by the various shocks and inappropriate policies, and finally forced them to undertake painful adjustment, and even to 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 to control both public and private spending, coupled with a more flexible exchange rate policy, would seem to be the relevant instruments of adjustment in the circumstances

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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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## IV. APPENDICES

### 1. Simulation Model

#### A. EQUATIONS

##### PRODUCTION AND SUPPLY

Factor endowment

$$y_t^* = \bar{y}_t^* \quad (1)$$

Supply of importable goods

$$I_t^s = \lambda_1 \left[ \frac{\gamma_2 \gamma_3 y_t^{*2} P_i^2}{\gamma_1 \gamma_2 \gamma_3 P_i^2 + \gamma_1^2 \gamma_3 P_x^2 + \gamma_1^2 \gamma_2 P_n^2} \right]^{1/2} + (1 - \lambda_1) I_{t-1}^s \quad (2)$$

Supply of exportable goods

$$X_t^s = \lambda_2 \left[ \frac{(\gamma_1^2 \gamma_2) y_t^{*2} P_x^2}{\gamma_1 \gamma_2 \gamma_3 P_i^2 + \gamma_1^2 \gamma_3 P_x^2 + \gamma_1^2 \gamma_2 P_n^2} \right]^{1/2} + (1 - \lambda_2) X_{t-1}^s \quad (3)$$

Desired supply of nontradable goods

$$N_t^{*s} = \left[ \frac{(\gamma_1^2 \gamma_2 / \gamma_3) y_t^{*2} P_n^2}{\gamma_1 \gamma_2 \gamma_3 P_i^2 + \gamma_1^2 \gamma_3 P_x^2 + \gamma_1^2 \gamma_2 P_n^2} \right]^{1/2} \quad (4)$$

Supply of nontradable goods

$$\log N_t^s = \log N_t^{*s} + \lambda_3 [\log N_t^d - \log N_t^{*s}] \quad (5)$$

Real output

$$y_t = [\gamma_1 I_t^{s2} + \gamma_2 X_t^{s2} + \gamma_3 N_t^{s2}]^{1/2} \quad (6)$$

Nominal income

$$Y_t = P_i I_t^s + P_x X_t^s + P_n N_t^s + \epsilon_t \cdot \tau_t \cdot I_t \quad (7)$$

Disposable income

$$YD_t = Y_t - T_t - \epsilon_t \cdot \tau_t \cdot P_f \cdot I_t \quad (8)$$

##### EXPENDITURES

Total private expenditures

$$\log EPRD_t = \lambda_4 [\gamma_4 \log YD_t + \gamma_5 (\log M_t - \log M_t^d) - \gamma_6 rd_t] + (1 - \lambda_4) \log EPRD_{t-1} \quad (9)$$

Private expenditures on goods

$$EP_t = EPRD_t - rd_t \cdot Bf_t \quad (10)$$

Total expenditures

$$E_t = EP_t + G_t \quad (11)$$

Total expenditures on importable goods

$$\begin{aligned} \Delta \log (P_i I_t^d) = & \Delta \log E_t + \Delta \log P_i + (1/w_i^d) [-\gamma_7 \Delta \log P_i \\ & + (w_x^d + (\gamma_7 + \gamma_8 - \gamma_9 - 1)/2) \Delta \log P_x \\ & + (w_n^d + (\gamma_7 - \gamma_8 + \gamma_9 - 1)/2) \Delta \log P_n] \end{aligned} \quad (12)$$

Total expenditures on exportable goods

$$\begin{aligned} \Delta \log (P_x X_t^d) = & \Delta \log E_t + \Delta \log P_x \\ & + (1/w_x^d) [w_n^d + (\gamma_7 + \gamma_8 - \gamma_9 - 1)/2] \Delta \log P_i - \gamma_8 \Delta \log P_x \\ & + (w_i^d + (-\gamma_7 + \gamma_8 + \gamma_9 - 1)/2) \Delta \log P_n] \end{aligned} \quad (13)$$

Total expenditures on nontradable goods

$$\begin{aligned} \Delta \log (P_n N_t^d) = & \Delta \log E_t + \Delta \log P_n \\ & + (1/w_n^d) [(w_x^d + (\gamma_7 - \gamma_8 + \gamma_9 - 1)/2) \Delta \log P_i \\ & + (w_i^d + (-\gamma_7 + \gamma_8 + \gamma_9 - 1)/2) \Delta \log P_n] \end{aligned} \quad (14)$$

Nominal money supply

$$M_t = CRG_t + CRP_t + R_t \quad (22)$$

Domestic interest rate

$$\Delta rd_t = \gamma_{14}[\log M_t^d - \log M_t] \quad (23)$$

#### BALANCE OF PAYMENTS

Imports (in foreign currency)

$$I_t = Pf_t[I_t^d - I_t^s] \quad (24)$$

Exports (in foreign currency)

$$X_t = Pf_t[X_t^s - X_t^d] \quad (25)$$

Current account

$$CA_t = \epsilon_t[X_t - I_t] - rd_t \cdot Bf_t \quad (26)$$

Capital flows

$$DK_t = \lambda_9 \epsilon_t + \beta[\gamma_{15}(rd_t - rf_t - \rho_t - \Delta \log \epsilon_t)] \quad (27)$$

Balance of payments

$$BP_t = CA_t + DK_t \quad (28)$$

Stock of international reserves

$$R_t = R_{t-1} + BP_t \quad (29)$$

Foreign debt

$$Bf_t = Bf_{t-1} + DK_t \quad (30)$$

Risk premium

$$\rho_t = \rho_0 + \gamma_{16}(Bf/Y)_t \quad (31)$$

#### GOVERNMENT SECTOR

Government expenditures

$$G_t = T_t + \epsilon_t \cdot \tau_t \cdot Pf_t \cdot I_t + GD_t \quad (32)$$

Taxes

$$T_t = t_0 + \gamma_{17} Y_t \quad (33)$$

Credit to government

$$\Delta CRG_t = GD_t \quad (34)$$

#### DEFINITIONAL EQUATIONS

Proportion of expenditures on importable goods

$$w_{ii}^d = (PiI^d)_t / E_t \quad (35)$$

Proportion of expenditures on exportable goods

$$w_{xi}^d = (PxX^d)_t / E_t \quad (36)$$

Proportion of expenditures on nontradable goods

$$w_{ni}^d = (PnN^d)_t / E_t \quad (37)$$

#### B. EXOGENOUS VARIABLES

$\bar{y}^*$  = potential real output

$\epsilon$  = exchange rate (index of units of domestic currency per unit of foreign currency), set equal to unity

$\tau$  = uniform nominal tariff on imports

$Pf$  = index of foreign prices, equals 100

$rf$  = foreign rate of interest, set equal to 0.1

$\beta$  = index of restrictions on capital movements

$CRP$  = credit to private sector

$GD$  = government fiscal deficit

TABLE 2. VALUES OF PARAMETERS

Equation	Variable	Parameter Values		
		Structural	Adjustment	Constant
(2'')	$N^{**}$ = desired supply of nontradable goods	$\gamma_3 = 0.3591$	—	—
(4')	$I'$ = supply of importable goods	$\gamma_1 = 2.0$	$\lambda_1 = 0.8$	—
(4'')	$X'$ = supply of exportable goods	$\gamma_2 = 1.0$	$\lambda_2 = 0.4$	—
(5)	$N'$ = supply of nontradable goods	—	$\lambda_3 = 0$	—
(11)	$EPRD$ = private expenditures	$\gamma_4 = 1.0$	$\lambda_4 = 1.0$	—
		$\gamma_5 = 0.3$	—	—
		$\gamma_6 = 0.5$	—	—
(14')	$I^d$ = demand for importable goods	$\gamma_7 = 0.4721$	—	—
(14'')	$X^d$ = demand for exportable goods	$\gamma_8 = 0.0833$	—	—
(14''')	$N^d$ = demand for nontradable goods	$\gamma_9 = 0.4446$	—	—
(17)	$P_i$ = price of importable goods	—	$\lambda_5 = 1.0$	—
(19)	$P_n$ = price of nontradable goods	—	$\lambda_6 = 0.6$	—
		—	$\lambda_7 = 0.7$	—
		—	$\lambda_8 = 0.5$	—
(21)	$\Pi$ = expected inflation	—	—	$U_0 = 0.05$
(22)	$U$ = resource unemployment	$\gamma_{10} = 1.0$	—	$\alpha_1 = 0.2924$
(23)	$M^d$ = nominal demand for money	$\gamma_{11} = 1.0$	—	—
		$\gamma_{12} = 1.0$	—	—
		$\gamma_{13} = 1.0$	—	—
(25)	$rd$ = domestic interest rate	$\gamma_{14} = 0.5$	—	—
(29')	$DK$ = capital flows	$\gamma_{15} = 100.0$	$\lambda_9 = 0.0$	—
(32)	$\rho$ = risk premium	$\gamma_{16} = 0.2$	—	$p_0 = 0.05$
(35)	$T$ = taxes	$\gamma_{17} = 0.1222$	—	$t_0 = 0.0$

## 2. Values of parameters used in simulations

Despite the seemingly large size of the model, it contains only 17 structural and 9 adjustment parameters and 4 constants. In choosing the values for these various coefficients, we were guided by two basic principles. First, the parameters should be consistent, in that the various theoretical restrictions implicit in the model, particularly relating to the supply and demand elasticities, be satisfied. Second, the combination of parameters should be such as to ensure that the model be dynamically stable and that it settle down to a steady state, which may or may not necessarily be equal to the original equilibrium. The specific values of the parameters used in the simulations reported in the text are given in table 2.

### Structural parameters

Little information is available on the price elasticities of the demand for and supply of importables, exportables, and non-tradeable goods, other than those for the United States contained in the study by Clements (1980). Other general equilibrium models either use arbitrary values themselves or do not deal with sectors at the level of aggregation used in this study. For the supply side, therefore, we arbitrarily chose a value for the price parameter of importable goods (2.0) that was twice as large as the corresponding price coefficient of the supply of exportable goods. Developing countries in general, because of the type of goods that they export (primary and semi-manufactured), are characterized as having a relatively low supply response of export goods, while the supply response of importables is considered to be larger. After these two coefficients were determined, the price coefficient of the supply of non-tradeable goods was readily obtained from the restriction that the weighted sum of the three must equal zero. The relevant weights themselves were calculated from national accounts data for six Latin American countries --Argentina, Brazil, Chile, Colombia, Mexico and Uruguay-- using the methodology outlined by Clements (1977) and Goldstein and Officer (1979). The production and expenditure weights obtained are shown in table 3.

The price elasticities of demand for importables ( $\gamma_7$ ) and exportables ( $\gamma_8$ ) were calculated as an average of the price elasticities of demand for imports and exports, respectively, as reported by Khan (1974). Again, the use of the weights for expenditures (table 3) yielded the estimate of the price elasticity of demand for non-tradeable goods.

Table 3

SIX LATIN AMERICAN COUNTRIES: WEIGHTS OF IMPORTABLE, EXPORTABLE AND NON-TRADEABLE GOODS IN TOTAL INCOME AND EXPENDITURE, 1970-1979 a/

Goods	Proportion of	
	Income	Expenditure
Importables	0.35	0.47
Exportables	0.17	0.08
Non-tradeables	0.48	0.45

a/ Calculated as averages of the data for Argentina, Brazil, Chile, Colombia, Mexico and Uruguay.

/The parameters

The parameters in the private expenditures equation are based on the empirical results of Aghevli and Khan (1980) and Knight and Mathieson (1983), and the money demand coefficients correspond to those obtained for developing countries by Khan (1980), Mathieson (1981, 1983), and others. The risk premium parameter ( $\gamma_{16}$ ) is selected so that when the ratio of the stock of external debt to nominal income is 0.25, and the constant risk premium is 0.05, the total risk premium should be 0.1. The tax parameter ( $\gamma_{17}$ ) is also set so as to maintain equality between tax revenues and nominal income, assuming the constant to be zero. The remaining parameters were imposed to guarantee a consistent initial equilibrium.

#### Adjustment parameters

The adjustment parameters were selected for the most part to ensure non-instantaneous adjustment to equilibrium, in keeping with the intention of tracing out the transition path of certain important variables. The main distinctions were made in the supply sector and the determination of the price of non-tradeable goods. Basically, it was assumed that the supply of importables would generally respond faster than the supply of exportable goods, implying thus that  $\lambda_1 > \lambda_2$ . On the non-tradeable goods side,  $\lambda_3$  was set equal to zero in the simulations reported in the text, meaning that adjustment of the quantity of non-tradeables responded to changes in demand through variations in prices rather than directly. The parameter  $\lambda_3$  was, however, allowed to vary so as to permit a degree of direct demand effects on the behaviour of non-tradeable goods. The price of non-tradeable goods was assumed to adjust slowly to excess demand because of "stickiness", and in the long run was expected to grow at a rate somewhat less than the rate of increase of the price of importables.<sup>49/</sup> For the present analysis it was assumed (although it is not necessary to do so) that the price of importables adjusted immediately to a change in tariffs, that is, that  $\lambda_5 = 1$ . The coefficient of expectations ( $\lambda_8$ ) is an approximate average of the values obtained by Khan (1980) in the context of a study of the demand for money function for a group of developing countries. No autonomous capital flows were permitted so that  $\lambda_9$  was initially set to zero.

To allow for some permanent or "normal" level of underemployment,  $U_0$  was fixed at 5%. The constant in the money demand equation was chosen simply to ensure equilibrium in the money market, given the initial values of the variables involved and the relevant parameters. The constant risk premium is assumed to be 5%, and the average tax rate zero.

While there is no doubt that the choice of parameters for the simulation experiments is, in the final analysis, essentially arbitrary, the exercise was repeated by varying certain key parameters. The sensitivity analysis, while yielding different transition patterns for some of the variables, did not qualitatively change the results of the main conclusions of the study.<sup>50/</sup>

V. RECORD OF THE DISCUSSION

1. Inaugural session

Mr. Iglesias:

Good afternoon, ladies and gentlemen. We will now begin the proceedings of this seminar on "Policy options for the external sector: the case of Latin America", organized by the German Foundation for International Development and ECLAC, at which we are very pleased to have your valued presence. I should like to express our particular gratitude, because of what it means to all of us, for having this opportunity to exchange ideas with a group of distinguished personalities representing public opinion and academic circles from various parts of the world. We should also like to thank the German Foundation for International Development for giving us this opportunity to work together at its meeting of such great importance for Latin America today. Finally, I should like to ask the Foundation's representative, Dr. Alexander Friedrich, to say a few words to you.

Dr. Friedrich:

Thank you, Mr. Executive Secretary.

Ladies and gentlemen, I would like to share with you the pleasure to start a few days of discussions on one of the major issues in development policy. My Organization is in the happy position of supporting discussions which might lead, once you return to your own work in your area of influence, to translate our findings into action.

I am very glad indeed that we followed the advice of ECLAC and the International Monetary Fund to take up this particular subject. When we had our first discussion, one and a half years ago, we could not foresee that, in October 1983, this subject would be of such utmost importance.

I do want to associate myself with your words of welcome, Mr. Executive Secretary: you were in a position to be instrumental in bringing us together, and we all could exchange our seats here and everybody would be happy to do his neighbour's job.

Within the framework of our endeavour to support international co-operation and development policy, we are very closely related to the United Nations system. I am happy indeed that we are for the first time in Santiago, Chile, at your headquarters, and that we concentrate on your particular geographical region.

I may give you brief examples of the major areas the Development Policy Forum of the German Foundation is going to work on. I should mention, first, population issues, in close co-operation with UNFPA preparing the International Conference on Population which will be held in Mexico City in August next year; next, world food security, a subject of highest importance and closely related to the former; on trade and industrialization we have developed very close links with UNCTAD and UNIDO.

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I am glad to sit next to the Executive Secretary of the Economic Commission for Latin America and the Caribbean. This morning I could observe your work with the Andean Pact members, and I am sure that this will also contribute to a better understanding among the countries of your region.

Let me finish these few words of welcome by expressing my great appreciation that we have come together. My thanks to you, Mr. Chairman, and to IMF and, particularly, to the participants who have joined us on the subject which we consider of highest importance.

Thank you very much.

Mr. Iglesias:

This afternoon we are very pleased to have with us the representatives of the Board of the Cartagena Agreement, which, as you all know, represents for Latin America one of the institutions which has the most ambitious objectives and the most significant aims for a very important area of the world. As well as thanking them for joining at this afternoon's meeting I should like to give them the opportunity to say a few words on the central topic behind this meeting and to give their views on the type of discussions which we should carry out here.

I give the floor to Dr. Pedro Carmona.

Dr. Carmona:

Thank you very much, Mr. Executive Secretary, for this opportunity --which was not envisaged in our programme-- to say a few words to this seminar which is dealing with the tremendously important topic of external sector problems and options. The fact that such a highly qualified group of guests are taking part is a guarantee of very positive results in the analysis of such extremely topical subjects.

The members of the Board of the Cartagena Agreement are in Santiago with a dual purpose which includes participation in the celebration of United Nations Day, and in this respect we signed today a co-operation agreement between the Board and ECLAC which will make it possible to intensify the relations between our two institutions.

There can be no doubt that there is a need in Latin America for a reappraisal of the role of regional and subregional co-operation and integration as one of the options our countries have for tackling more effectively the serious crisis situation in which they find themselves. The Andean Group countries are in no way exempt from the effects of this serious crisis and, like the rest of the region, they are being affected by the worst situation experienced since the war. This has been reflected in very low growth rates, high rates of inflation, increased unemployment and the aggravation of political and social problems.

/Faced with

Faced with this destabilization of the Andean economies, which has influenced in various ways the progress made in the integration process in which we are all involved, our countries have been obliged to adopt particularly severe adjustment measures. In this respect, it is clear that our countries are faced with the need to unite their wills and capacities in order to tackle the situation appropriately and, at the same time, strengthen the regional co-operation and integration schemes. This idea, which has prevailed at most of the debates, meetings and analyses carried out at the Latin American level, especially in the last few months, should be reflected in important results within the framework of the Latin American Economic Conference due to be held next January, on the initiative of the President of Ecuador, in the city of Quito. The ECLAC Secretariat, SELA and all the co-operation and integration bodies of the region are striving to make an effective contribution to its success.

In our view, the fact that the integration and co-operation bodies have joined in these efforts to organize this meeting is of particular significance, for this will make it possible to enjoy the contribution of a set of studies and a wealth of experience which will undoubtedly help to guarantee the success of this conference, which can give rise to measures of a practical nature to guide the search for suitable solutions for the region.

In the Andean Group, we have been engaged for some months past in revitalizing our integration scheme and adapting it to the demands and needs of the present moment. We have a whole reorientation plan aimed at making its activities more dynamic and overcoming the obstacles which have arisen in its 14 years of operation; we are convinced that our possibilities of success depend to a considerable extent on the results of regional co-operation and integration efforts. We are acting with pragmatic and flexible criteria, seeking novel alternatives for overcoming difficulties and, at the same time, studying a set of strategies in the areas covered by the Andean integration process, such as external relations, agriculture, trade, industry, finance, technology, physical integration and the treatment to be given to the relatively less developed countries. We therefore feel that the results of this seminar will constitute a very valuable contribution to the analysis of Latin American problems at a time when, as we said, new alternatives are needed for tackling the situation which is affecting the Latin American region so particularly and acutely.

Without wishing to go into greater detail on our own scheme, I should like simply to transmit to you our most cordial greetings, together with our gratitude for having had the opportunity to spend a few hours with such a highly qualified group of personalities as those taking part in this meeting.

Thank you very much.

Mr. Iglesias:

I should like to take advantage of this opening meeting to put forward a few considerations which may be relevant to the debates that will take place this afternoon, tomorrow and the day after tomorrow and which have to do with some of the concerns and ideas we are dealing with in ECLAC, largely as a result of the

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requests of governments to seek new possibilities and alternatives for tackling the crisis being experienced by Latin America. These concerns are also the result of a whole process of evolution of the thinking of our institution, which must obviously be based on reality and, in particular, must seek to remain alert to the great queries raised by the evolution of the region in the last few years.

The changes which have taken place in the region in the last ten years are qualitatively and quantitatively greater than those of several previous decades put together. Although, in some periods of Latin American history, ideas have preceded events, in recent years it is rather the events which have preceded the ideas. The events have filled us with perplexity and doubt and have led us to approach this whole Latin American situation with a large measure of humility and pragmatism in order to try to understand how this region has come to undergo such violent changes in the economic, social and political fields.

Perhaps one of the most noticeable features is the dynamic political evolution of the region, as a result of which we keep up a permanent critical analysis of the situation in order to be able to understand events. At the present time, we are concerned in particular with two central topics which form part of the problems of other parts of the world also but which seem to have particular significance in Latin America. The first of these is the critical process through which Latin America is going: especially the economic crisis; the second topic is how to find a way of laying the foundations needed for structural changes in economic policies so that the region can face the coming decades on the basis of the lessons and experience of past years.

These two topics --handling the crisis and laying the basis for structural changes-- are very closely linked. I should like to make a few brief comments on both of them individually, however, in order to give you a picture of our present concerns, which I am sure those of you who are with us at this seminar will help us to analyse.

Handling the crisis is not an easy matter, nor does it allow of too many generalizations. The countries of Latin America, which are facing the most acute crisis of the last fifty years, are doing so by making use of fairly similar mechanisms or instruments, although as I said the relative situation of the countries does not allow of an excessively general approach. There are countries which are beginning to get their processes under control; there are others which are still a long way off this stage, and there are still others which show signs of marked disorder as regards facing up to the critical process they are experiencing. At all events, the "shock" of recent years and especially of the last two years has highlighted certain aspects of the debate.

a) The first aspect is that at the present moment this crisis is a specifically Latin American crisis. In general terms, the world is not in such a critical process as that of Latin America: there are other kinds of crises and there are countries which are going through very severe critical processes, but their origin is not exactly the same as that being experienced by the region.

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b) The second aspect is that we must acknowledge that the domestic policies followed in the region bear a good deal of responsibility for the present crisis. This responsibility extends from the application of unsuitable economic policies which have encouraged the flight of capital to the inappropriate use of policies of greater openness to the exterior. At all events, the fact is that the region is in a situation of enormous indebtedness in terms of its capacity to service the debt, due to the application of erroneous domestic policies or the lack of suitable policies.

c) The third aspect is that although at the origin there may have been erroneous domestic policies, it cannot be denied that the policies in force at the international level also helped to aggravate this critical process. The typical features of the situation are those of a very prolonged recession, with terms of trade which have deteriorated sharply and continue to be seriously depressed; with interest rates which, although they have gone down in nominal terms and also even in real terms, continue to be the highest experienced for several decades past; and with a sharp decline in the inflow of capital (especially that of private origin) to such an extent that in the past year the inflow was over 50% smaller than the year before. The precipitation of these phenomena --deterioration of the terms of trade, high interest rates and the big declines in the inflow of capital-- acted on domestic factors and produced a harmful combination of the two which gave rise to the crisis through which the region is now passing.

We have asked ourselves many times why this crisis is concentrated especially in Latin America. If we look at other regions of a similar level of development which are not faced with this problem, we find in the case of the South-East Asian countries an example well worth looking at. It is of course true that in those countries there has been a different type of opening up to the exterior and there has been a very different relation between the degree of this openness and indebtedness, which has meant that the servicing of the debt is much easier to bear than in some Latin American countries. Furthermore, in that region it would seem that better use has been made of the external debt as regards the application of the resources involved to the domestic productive base.

One of the aspects which Latin Americans should look at most closely is the flexibility of the economic structure of those countries, which has made them much easier to defend from the impacts of the international situation. One way or another, it must be admitted that the structural rigidities displayed by Latin America at present do not help at all to face up effectively to the critical situation through which the international economy is passing.

Another important aspect is that the crisis --at least in some countries-- is reaching limits of social and political tolerability which cannot be overlooked. In some countries of Latin America this crisis largely affects the middle classes, whose standard of living has suffered a very severe impact on recent times. Furthermore, this crisis finds those countries at a time of political transition towards more democratic forms, which makes it much more difficult to achieve some degree of collective discipline and ultimately makes it much harder to embark on solutions involving the adoption of measures of social discipline. Obviously, the social and political dimension cannot be ignored in the present critical situation of the region, the features of which are considerably different from those in other stages of its history.

/While handling

While handling the crisis naturally involves an important role for domestic policies which are made more complex by the social and political phenomena I have just mentioned, it also involves a certain reaction on the part of the international co-operation machinery. In this respect, although there has been dynamic and even unprecedented mobilization as regards international co-operation, through the action taken by the International Monetary Fund in relation with the private banking system, I think it is only true to say that this is not enough to help the countries which are in difficulties. We do not share those optimistic theories which hold that the solution is simply to keep on handling the process as it stands, and that economic recovery could bring a rapid solution or a peaceful way out from the crisis being experienced by the region. Perhaps our thinking is a little biased by the fact that we are actually present here in the countries which are experiencing these social and political conflicts; perhaps we have a tendency to present some situations rather too dramatically, but I nevertheless have the impression that --at least in some Latin American countries-- if the present international economic situation is maintained; if the proportions of the domestic recession in the region persist; if we do not begin to feel the effects of the recovery in the United States and Europe, and if we are unable to find ad hoc solutions --to use a neutral term-- then things could get even more difficult.

For these reasons, and in the light of the extraordinary economic meeting which is to be held in Quito by the Heads of State or their representatives in January, we express our hopes that sensible proposals will be made which will enable the international situation to be improved so as to make possible in some way a form of transition towards international economic recovery which can be more readily borne from the Latin American point of view.

The figures we are receiving this year on the Latin American economy are truly alarming. In many countries the drop in the product will be greater than the year before, and since this situation has now lasted three or four years, it has begun to give rise to concern on other levels than the purely economic one, which we cannot ignore. We have asked on many occasions: how is it possible that neither the international community nor our own countries managed to foresee this state of affairs? How did the situation escape from our grasp without the international organizations, the private banks (which acted with great financial permissiveness) and the International Monetary Fund foreseeing this? What happened to cause the region to find itself suddenly in a crisis of this magnitude which fell upon us like a true bolt from the blue?

In some respects, the fact that no one foresaw a crisis of these dimensions shows how difficult the prediction was. It is easy to see this by looking at past events. Beyond any doubt, the duration and features of the recession in the North in recent years were of fundamental importance in this: its duration was greater than could have been expected, and its features --especially the interest rates-- were very unusual and without precedent in other eras (we have heard it said that 40% of the Chilean debt, for example, represents indebtedness assumed solely in order to pay interest commitments). It is possible that this phenomenon may have a good deal to do with the last three or four years of the recessive crisis and its effect on the economy of the region. At all events, we are faced with this problem and this is the first great task that the region has before it.

/Much will

Much will depend on domestic policies; much will also depend on a qualitatively greater reaction from sources of international co-operation, and to a certain extent we will need good luck, in the sense that the effects of the international recovery will rapidly begin to bear fruit.

The second reason for concern, which is closely connected with the theme of this seminar's discussions, concerns structural changes. The region will have to set about these in the next few years in order to begin a process of economic growth which, profiting by these experiences, copes successfully with three conditions:

a) The first condition is that we must be able to live with our external debt for a considerable length of time, for whatever the hypothesis that is adopted, the fact remains that Latin America assumed US\$ 320 billion of indebtedness. This element will be of greater or lesser importance depending on the particular countries, in line with the evolution of the terms of trade or interest rates, but it is a new element. Latin America has inherited a great mass of debts from the past decade. When we look at these in detail, we see that in some countries part was burned up in the form of petroleum; another part went abroad through the flight of capital, a further part was spent on consumer goods, and yet another part went on armaments. This debt represents a heavy inherited burden with low relative productivity in the countries which assumed it. This is the first force conditioning our present and future situation.

b) The second conditioning factor stems from the structural imbalances which are caused in our countries by faulty development in recent decades, with very high rates of inflation; domestic indebtedness, which is a very important matter in many countries; the financial crisis through which some countries are passing; rigidities in the structure of production and income distribution itself; the considerable increase in population and in the demand for employment; low domestic saving; the distortion of the size and role of the State, etc. We will not go into details on this, but it is obvious that this financial syndrome is another great force which needs to be corrected in the countries of the region.

c) The third condition consists of the international situation, which is changing and will continue to do so. What can we say about this matter? I do not want to give way to the impulse to take either an over-optimistic or over-pessimistic approach; I want rather to tackle the subject with a degree of realism in the light of the data which seem to emerge from the international situation and which must be taken into account in different ways in order to appraise the new environment in which we will have to carry on our economic policies. In this appraisal, three elements must be taken into consideration in turn:

i) The first element could be the fact that we should postulate a more modest growth hypothesis for world trade. I think we can hardly hope for trade growth rates of 8% per year such as were registered between 1950 and 1973 or rates of 9% such as were noted between the years 1913 and 1939, or even a return to traditional rates such as those of the past century, which did not exceed 3% or 4%. If we look at what is taking place in a realistic manner, we must

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perhaps be compelled to think that a spectacular 8% trade growth rate represents an extremely optimistic assumption. Therefore, perhaps it would be much more prudent to expect a much lower rate of expansion of world trade, and this would be an important element in the international situation, whatever the hypothesis adopted with regard to Latin America's export potential.

ii) The second element is connected with the openness of world trade. We are clearly in a marked retrograde phase in this respect: protectionism keeps on growing and managed trade --as it is now called-- is also increasing steadily. A few days ago I read in The Economist that 40% of total trade is already being managed and intervened by the State, by the transnational corporations or through bilateral agreements. The truth is that we must wake up to the fact that even though there may be some tendency towards the opening up of markets, this is increasingly subject to conditions, since the capacity of some countries to influence the markets is greater than it was in the past and therefore, for Latin America and the world in general, protectionism is an element that must be taken into account.

iii) The third element refers to the transfer of resources. Whatever the hypothesis adopted, it would be utopian to think that Latin America could once again enjoy the tremendous inflow of resources which it had in the 1970s. The present attitude of the banks, which are so reluctant to join the International Monetary Fund in its actions, shows that we have really been placed in an unacceptable category as regards international credit. There are countries where the situation may change, and there are others, such as Mexico, where changes are already to be glimpsed. Nevertheless, however, it would seem that the third element that must be taken into account in these predictions of the future is that there are no grounds whatever for imagining that Latin America is likely to experience again the financial boom of the 1970s.

There are some other very general phenomena which have some connection with the medium and long-term trends that can be distinguished: for example, the share of raw materials in world trade does not give us any grounds for being over-optimistic as regards the terms of trade. We are in an international situation which cannot be considered as very positive, or, at the very least, can only be considered as similar to that which we have experienced in recent years.

The task of formulating structural policies must therefore be tackled on the three fronts I have just mentioned: the accumulated debt, the legacy of the faulty policies of the past, and finally, the international setting. This latter idea seems very important to me. It sometimes seems that this phenomenon has had a frequently imperceptible influence on the theoretical concepts of Latin American development. The theories formulated in ECLAC were largely the result of a hypothesis based on the mediocre prospects of external trade. In some respects, the entire thinking of the early years of ECLAC was considerably influenced by this factor of the mediocre trade prospects. In contrast, the external openness of recent years was due to the 8% annual growth rate of world trade.

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These elements, set against their appropriate background, influenced not only the opportunities for growth of the economies but also the theoretical concepts themselves. If these hypotheses must be changed, we will have to adapt ourselves to a world with perhaps a different scenario. We will certainly have more optimistic positions, but it is important to acknowledge that this environment has an influence which must be suitably appraised.

Finding the way to articulate these three fronts into meaningful and realistic economic policies is a great challenge. Of course we are better prepared for this now than we were before, because we have had extensive lessons of all types which it is important to analyse and appraise, but one of the most important topics --and this is why it is the subject of this seminar-- is determining how to introduce the element of openness to the exterior into this future development scheme.

In recent decades, two hypotheses with which you are quite familiar have been put forward in Latin America: one involving the type of opening up to the exterior practiced in South-East Asia, and the other involving the reduction of openness in favour of import substitution. We have had both good and bad experiences on both sides. The present problem, however, obliges us to define the way in which we are to tackle a type of openness which really fits in with these objective elements that the region must take into account.

In the present circumstances, two initial hypotheses could be put forward. The first is that, in view of the present conditions, we cannot accept that the driving force for Latin American development should come only from international trade. This is a reasonable and politically almost inevitable hypothesis. On the one hand, our continent has a degree of development, a domestic market and opportunities which we must not fail to use. On the other hand, we must not forget that it is not the same thing to talk about Brazil as to deal with Uruguay or Costa Rica, but at all events this hypothesis is valid. The second hypothesis is that experience shows us that imparting greater dynamism to internal factors is closely related with the degree of openness to the exterior, and that it is therefore necessary to achieve a degree of openness which will promote the mobilization of the domestic market itself. An important contribution which this seminar should make is to appraise these two hypotheses: that of the activation of the domestic market and that of the degree of openness to the exterior, which is the great challenge of the future and regarding which we would like to make recommendations for putting forward to governments.

We believe in developing and giving greater importance to the domestic markets of Latin America, where certain sectors, such as agriculture, have obviously lagged behind, but we also believe in the need to develop and give greater importance to the question of openness to the exterior, which should perhaps be viewed as something much more complex and less simplistic than might have been thought in the boom period of trade expansion, and which should be a selective openness, and not a comprehensive one, as we have said several times before.

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For Latin America, all this means a tremendous challenge as regards the quality of domestic macroeconomic policies, and this is the main topic on which we would like to center this debate. We are fully aware that we are living in a period in which we must depend much more on domestic saving, in which we must apply a policy of maximum efficiency in the use of resources, and in which we must carry out structural reforms in the Latin American State, which is one of the great regional problems. The last few years have undoubtedly given us important lessons on what the distortion of the State apparatus can mean.

In this international environment, everything forces us to think in terms of more sophisticated and more complex economic policies, and hence, policies which are much more difficult to tackle. This is the central topic on which I invite you to reflect, and I hope that we will have an opportunity to exchange ideas and experiences in order to improve our capacity to understand these phenomena.

On top of the problem of overcoming the great short-term crisis being experienced by Latin America, which is very difficult to handle, there is another challenge: we cannot allow the short-term problems connected with external indebtedness to take up all our attention and absorb the whole of our capacity for reflection. We think the time has come when Latin America should think further ahead, in order to define the development strategies that correspond to the phase we will have to live in. This would also enable us to escape to some extent, at least for a time, from the limitations involved in tackling the short-term problems.

Rather than comments, these are reflections of the concerns that we feel today. We do not have clear answers: if we had, then everything would be so much easier, but we feel that holding dialogues with people with experience in economic policy and in the academic world from various angles is of enormous importance. I am most grateful to have been able to take part in your proceedings here and to have the chance to take advantage of the debates that will be taking place on these topics in the forthcoming days.

I should now like to ask Carlos Massad, the Chairman of this Round Table, to make some additional comments, and, in particular, to explain to us how the seminar will operate.

Mr. Massad:

Thank you very much, Enrique. I think you have provided us with an excellent framework for our discussions.

What we are interested in here is seeking ways of appraising the possible consequences of external "shocks" and determining how a country can adjust more easily to them.

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This topic arose as a concern of ours some ten years ago, when I was with Ricardo Arriazu in the International Monetary Fund and we were discussing the validity of the concept of international liquidity then being used. We argued that the official concept of liquidity was too narrow to be of use in economic policy, especially since it was necessary to recognize the great interchangeability of various forms of money in the economy. From there, we went on to the question of private sector indebtedness: a concern which was relatively new at that time. Subsequently, in ECLAC, we continued with our interest in the real cost of debt servicing. At that time it was asserted that inflation would mean that debts consistently diminished in real terms, so that the debtor countries had no cause for concern, whereas the creditor countries did have such cause and a serious one, since on account of inflation the debts owed to them became smaller and smaller in terms of real resources. Afterwards, with the financial assistance of the United Nations Development Programme, this study became a joint ECLAC/UNDP project.

We began discussion of the possibilities of appraising alternative external strategies in the countries and agreed on the need to seek some systematic way of making this appraisal, with a view to going further than the somewhat superficial analysis then being made of this subject. We had the good fortune to receive the support of the International Monetary Fund, which asked Mohsin Khan to participate in this work. The result was the joint study by Mohsin and Roberto Zahler which you have before you on alternative strategies in the external sector of each country. They have also prepared a second document, which you also have before you, which goes a little further than the first one, especially as regards the introduction of certain external "shocks" and their effects on a hypothetical country.

The task we propose to carry out in the next few days consists firstly of setting forth the basic model, which Roberto and Mohsin will do tomorrow morning, followed by comments on the two documents: the basic model and the additional document. It is interesting in this respect to look at these studies from two points of view: one, that of their internal congruence and analytical capacity; the other, the suitability of this type of model for being applied empirically. It is a question of examining the ways in which such models can be thus applied: whether through pure numerical experimentation, through estimation of the model in itself, etc. It is of particular interest to evaluate the possibilities of empirical application.

We have here among us Ana María Teja, of the Central Bank of Uruguay. We are collaborating with this bank in an effort to adapt the model and apply it empirically to the case of Uruguay, and we hope to do the same in the cases of other Latin American institutions with whose representatives we have already spoken in this respect. We are very interested in the possibility of empirical application of the model and we would therefore like to have your comments in this direction too.

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We are also interested in extending the field of the discussion --which we would hope to do on Wednesday-- to the consideration of some lessons of the experience gained, especially by Latin American countries. We would like to hear some of the lessons to be drawn from the experiences of Argentina, Chile, Uruguay and Brazil, and I have made a special request to Jacob to tell us something about the experience of Israel. Judging from what I have read in the press, the experience of this country seems to be of particular interest for us. Afterwards, we would try to draw some general conclusions on the basis of these experiences.

On Thursday morning we would work internally; there would be no formal meeting of the seminar, in order to give time to prepare a brief summary of the main conclusions. The afternoon meeting of that day is set aside for the presentation of the main conclusions that could be drawn from this seminar.

From the discussions and the work which we have already carried out, some interesting non-traditional questions have already arisen: one, for example, is why, in the generation of macroeconomic imbalances, the imbalances of private sector expenditure are just as important as, and perhaps even more important than, public sector expenditure imbalances.

In Latin America, we note that external problems of this type have arisen in both large and small countries; in countries with and without open economies; in countries with fiscal deficits and fiscal surpluses, etc., so that the phenomenon seems quite general and it is therefore of interest to examine why it has occurred. One of the answers which emerges is that in some of the cases which we are familiar with, private expenditure imbalances have been due to an increase in the prices of assets, which generates a wealth effect, with all its consequent effects on spending. When the private sector can avoid domestic budgetary restrictions by seeking loans abroad, it can generate an imbalance of such magnitude that it affects the macroeconomic balance just as seriously as the fiscal deficit financed by the issue of money.

A second aspect is that frequently the traditional indicators of so-called "good conduct" do not register what is really taking place in an economy: take for example the case of a private sector which is indulging in excessive expenditure financed by external indebtedness. In this case the fiscal deficit could be zero or there could even be a surplus, the country's reserves could be growing, and domestic credit might not be increasing and might even be decreasing. These are the three major indicators most frequently used to appraise the main macroeconomic imbalances. However, they would give no reflection of the type of imbalance being generated in an economy when the excess expenditure is of a private nature.

Furthermore, in the course of the work that we have been carrying out, aspects linked with the macroeconomic effects at the international level have emerged and although not covered by the model because it is designed to

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operate at the country level, these are nevertheless important: for example, in a situation of external difficulties, if a large number of raw-material-exporting countries devalue their currencies, the main and perhaps the only effect will be a decline in their own terms of trade, without this having any effect on the improvement of their external situation. If, in a situation of this type, many countries restrict their domestic expenditure as part of their adjustment policies, this may be reflected basically in a decline in their own level of income and may not make a sufficient contribution to the adjustment, or else may not do so with sufficient flexibility. Consequently, the drop in income needed to achieve some degree of adjustment may be extremely abrupt. Finally, by way of another example; there is simply no sense in a situation where all countries place their trust simultaneously in export promotion policies with the aim of expanding their exports and thus closing their external trade gap: naturally, if all of them do this, none of them will be able to close its gap. There are certain elements of the international congruence of policies which are brought out when we go into these subjects in detail, and this type of fallacy does not seem to have been sufficiently recognized at the level of the international formulation of economic policies.

This fact obliges us to look in a new light at the options open to the Latin American countries as regards external sector economic policies, because of the restrictions imposed on these policies by external "shocks", on the one hand, and, on the other, by fallacies which apparently continue to be accepted as realities.

At this point, it seems appropriate to conclude the inaugural session and to initiate the discussions of the Round Table. The first part will deal with the theoretical basis for analysis and the strategy for further work.

## 2. Theoretical basis for analysis and the strategy for further work

Mr. Massad:

I would like to request Mohsin Khan and Roberto Zahler to make a presentation of the two papers which we have before us. Mohsin, would you like to start?

Mr. Khan:

After the opening session Roberto and I got together to plan our presentation, and we decided that we would do this very informally, since all of you in fact have copies of the paper. The plan is that the two of us will be alternating, so we have divided up the presentation into specific parts. We further realize that there is a bit of redundancy in this presentation, as the paper has been published already in English, in IMF Staff Papers, and in Spanish, here at ECLAC, and it will be published again in Argentina. As such, there are three versions published or about to be published. Furthermore, this paper has been given about seven times in various places: we presented it at the IMF; at ECLAC, in Mexico City, at the Econometric Society Meeting; in Santo Domingo, at the Central Bank Technicians Meeting; Roberto has taken it to Argentina and to Uruguay as well. Also drafts were circulated to some of you at early stages for comments. Today, we feel that perhaps 90% of the group here has either read the paper, commented on it, or has attended one of the sessions where it has been presented. Consequently, we have decided that we will just go over it in very general terms rather than equation by equation.

Before we go into the model, I just want briefly discuss the background of the project, and specifically of how we came up with this particular model, as I think this might be of interest to you.

The project started off after discussions between the senior staffs at the IMF and ECLAC on the general issue of liberalization in Latin American countries. It was felt in the Fund that we ought to do something to learn more about liberalization and the effects of reductions in tariff barriers, and that perhaps we could do some kind of analysis on this subject with ECLAC. In the beginning it was very unclear as to how we would proceed, and we had several options. One thing I should say right up front, because it will recur over and over again during this session, is that ultimately, at least Roberto and I believed, this model would be empirically implemented in some form. Whether this would involve the actual estimation of a model, or case studies, etc., was not however clear. Nevertheless, we felt that eventually there would be some kind of empirical work on the subject. In essence, therefore, our task was to develop a framework which would lend itself to eventual quantitative applications.

The project was formally initiated at a meeting held in ECLAC, in which a number of people participated. I remember at that stage we had three options one was to do a purely theoretical study. This would essentially involve an analytical exercise dealing with the reduction of tariffs, removal of restriction on capital flows, etc.; the second was to go into what has been termed computational general equilibrium analysis, which a number of people, including some in the World Bank, are doing. The third option, was to try to develop some kind of model that would incorporate the main features of the other two approaches.

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The analytical approach would, of course, be very difficult. You would find yourselves quickly in a situation where you cannot get any meaningful answers or could not, to be more precise, sign the derivatives or determinants, etc. That was clear to us very early. We also rejected the computation general equilibrium approach. I can give you a lot of good reasons for this decision, but I think perhaps Kenneth Clements, at some point, will go into this. We in fact rejected this approach for a very pragmatic reason, namely that neither Roberto nor I know very much about it and we felt we were not the right people to do it. So we chose what we called an intermediate approach: we would develop a macromodel which has certain features of the computation general equilibrium model and, at the same time, certain well-known analytical properties. This is an area where Roberto and I think we have a comparative advantage. The model grew very quickly into its 37 equations in the end, and just by looking at it one can see that it is just too difficult to handle analytically, so, naturally, it became obvious that it would have to be simulation exercise. We would impose values for the parameters in the model and then simulate it for various scenarios.

This discussion is just by way of a preamble of how this model was developed and it was utilized. It was not done overnight, there was a lot of back and forth, with numerous iterations, consultations, etc., seeking of opinions of various people.

By and large we feel the resulting model allows us to study the principal macroeconomic effects of a reduction in tariffs and a removal of restrictions on capital flows. How this is done will be brought out in the subsequent discussions.

Thank you.

Mr. Zahler:

What I will try to do now is to give a relatively brief overview on some of the basic aspects of the model. I will start first with certain methodological characteristics which I think should be considered and which are clear or became clear along the development of this work. In the first place, and complementing a point that Mohsin mentioned, our attempt was essentially to study the process of opening-up, that is to say, because of the time when this model was developed, we were trying to understand the characteristics of the process of commercial or financial opening-up, or both. We tried to abstract the opening-up process from the stabilization process, or from any other type of economic policy that usually accompanies or has accompanied opening-up in certain countries, especially in Latin America. It seems that we should keep this in mind, in the sense that this was our specific aim in our original attempt.

During the development of the model, we realized that there was the possibility of making a model sufficiently general so as to include characteristics of general economic policy, particularly, other type of foreign sector economic policy changes, monetary or credit policy, fiscal policy, etc. In this sense, even though the model perhaps should be developed more thoroughly in certain areas, it gives the possibility of analysing a combination of policies, as is the case with the fresh paper that you have with you, and other policies different

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from the foreign sector ones. It should be noted that, at this stage, this model does not refer to a specific country; it refers to an "average country" and the idea is essentially to understand the adjustment process when going from an initial equilibrium to another one, as a consequence of removing tariffs or barriers to capital flows, or both. We are not discussing here whether or not opening-up is a good long-run policy; we are essentially dealing with the short-run characteristics of opening-up processes. This is the main purpose of the exercise.

In this sense, I would like to mention especially Ricardo Arriazu, who with Walter Robichek, José Gil and others, acted as a sort of consulting committee in the beginning of the study of this model. He was most helpful in pointing out the type of issues to be discussed. These are related to the characteristics of the adjustment process, following opening-up policies, a subject which has been practically neglected in the literature as well as in empirical studies.

The theoretical model we use here is based on the work of Kenneth Clements, who is with us now. We construct the hypothetical economy on the basis of a given transformation curve. This curve interacts with a generic utility or indifference curve. What we try to do is the following: let us suppose that we start from an initial equilibrium point in an economy that is closed to capital flows, without being closed to trade flows, although there are certain restrictions on them. What happens a) when we remove customs tariffs or trade barriers; b) when we remove barriers to capital flows, and c) when we remove both trade and capital flows barriers? We are interested in the path from one point of equilibrium to another, the idea being to analyse the characteristics of such path.

The first block of the model corresponds to production and supply. When working with certain optimization procedures we derive production and supply functions for the three composite goods in the economy: exportables and importables which constitute the tradeable sector, and the non-tradeable sector. The main determinants of these supply functions are the relative prices of the three goods, the technical conditions of transformation of one good into another and the aggregate endowment of resources. Dynamics in the supply of tradeable goods is introduced by allowing actual supplies to respond gradually to any changes in their determinants, due to lags in the speed of adjustment when resources move from or to the tradeable sector.

In the non-tradeable sector the approach is different: we assume that the way in which the quantity of non-tradeable production adjusts to the different determinants may depend on aggregate demand as well as on relative prices. In equation 5, actual supply of non-tradeable goods may differ from desired supply, depending on a sort of excess demand of non-tradeable goods, which in essence incorporates two aspects: one, an inventory effect and, two, an aggregate demand effect. Obviously, this is conditional on the value of  $\lambda_3$ . If  $\lambda_3$  is zero, then, in this model aggregate supply will be completely independent of aggregate demand; but, if  $\lambda_3$  is different from zero, then we allow for a direct effect on aggregate demand on aggregate supply through the impact of excess demand for non-tradeables in that market. Given this condition, we can analyse the evolution of real income in this economy and compare it with the potential

real income reflected by the given transformation curve. Thus, in this model resource unemployment is associated to the difference between the potential output given by the transformation curve and the real output, which is determined from within the different determinants just mentioned.

The second block of the model, is the expenditure block. Here, we first considered aggregate private expenditure, which is a standard equation wherein the principal determinants are the national disposable income, excess supply and the nominal interest rates. We distinguish between the aggregate expenditure on goods and the aggregate expenditure on goods and financial services to allow for what, later, will be a very important element in the model, that is, interest payments on foreign debt. Total expenditures are the sum of private sector expenditure and government expenditure. Then we derive the demand curves for the three goods: importables, exportables, and non-tradeables. Through an optimization process, also derived from work done essentially by Kenneth Clements, we obtain an orthodox demand structure where the demand for goods depends on total expenditure and on relative prices.

The third block of the model is that of prices and unemployment. Here we consider that, in the long run, prices of tradeable goods follow essentially the law of one price type of mechanism, although in the short run we allow the price of importables to deviate from that of imports, adjusted for any type of restrictions, due to the pressure of lags or of monopolic influence or other mechanisms of this nature. In the case of exportables, we assume that the law of one price prevails. Again, it is in the non-tradeable sector where we introduce some ad-hockery: we consider that the change in the price of non-tradeables responds to the excess supply or demand of non-tradeables, on the one hand, and on the autonomous or exogenous evolution of the price of importables on the other. Therefore, it is essentially in the market for non-tradeables where we have one of the main elements of dynamics in this model; similarly to the supply equation, non-tradeable price adjustment will depend on the value of the particular parameter incorporated into it. We then have an equation for the aggregate price level and, next, we introduced an expected inflation equation in a very traditional way, as used by Cagan years ago, since we were not particularly interested in the whole issue of expectations, but merely wanted to incorporate it, so that it would have an impact on the demand for money equation.

The fourth block of the model is the monetary and financial sector, which follows a traditional approach. Demand-for-money depends on a scale variable, income and on the interest rate and expected inflation. Supply of money is defined in terms of the monetary theory of the balance-of-payments literature, incorporating both the internal credit and international reserves. Then, we consider the change in the interest rate, as one of the mechanisms through which this market attains equilibrium, as determined essentially by excess supply or excess demand for money. Here, again, this is rather an ad-hoc type of equation, since we could have incorporated, in a similar way as we did with the price of non-tradeables, a direct effect of the foreign interest rate on the domestic interest rate.

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Fifth, is the balance-of-payments block. Here, the trade and current account definitions are standard. Perhaps, the most interesting equation is that of the capital flows which we assume are determined by an autonomous component, and by the differential between domestic and foreign interest rates, the latter adjusted by risk premium and by expectations of exchange rate changes. In this equation we incorporate one of our main policy elements, which is the degree of financial opening-up (coefficient  $\beta$ ). Again, here we have another very ad hoc way of incorporating this element, in the sense that we have a combination or product of two parameters: one is gamma 15 and the other is beta. Gamma 15 represents the endogenous speed of adjustment of capital flows to the differential in interest rates and beta represents the policy induced degree of financial opening-up. Obviously these two are quite interdependent, one on another, and, depending on the choice of parameters, we may arrive at different conclusions. This is another point which, probably, could be much improved.

The way we incorporate foreign debt is another rather ad hoc method, in the sense that only foreign residents are allowed to acquire domestic debt while domestic residents (including the government) are restricted from holding foreign debt. In this economy, foreigners invest through buying papers from the private sector, depending on the differential between domestic and international interest rates. Then we incorporate explicitly, as an endogenous variable, the risk premium, in the sense that we consider that the risk premium has an autonomous component and is also a positive function of the ratio of external debt to national income. Finally, we have the government sector where we have a traditional government expenditure equation, with three sources of finance: one, direct revenues coming from income, two, revenues derived from customs tariffs applied on imports and the other way of financing is through high powered money, flowing from the central bank.

Mohsin will explain the first simulations we performed with this model but, before, I would like to take a few more minutes regarding certain caveats and limitations, which we are very conscious of. I would like to state them very clearly because we consider them to be quite important. We have perceived at least six main subjects which have not been developed in this model; they simply do not fit and I think this should be mentioned now. Some of them are easy to incorporate in a model like this, but others would require more work, and perhaps they could be included at a later stage. These are the following: first of all, and perhaps one of the most important, there is no treatment at all of factor markets in this model. The type of production function we used is a very particular one. Neither wages nor interest rate payments appear as components of costs of production, etc.

A second limitation is that the model does not incorporate explicitly any treatment of either income or wealth redistribution.

A third one, which is quite relevant, is the whole issue of capital accumulation or the savings investment process. Because we consider that the transformation curve is fixed, we are implicitly assuming that net investment is zero, and therefore, as we mention in the paper, we also implicitly assume that all foreign saving, i.e., all current account deficits, are exactly compensated

by a movement in domestic savings of the same magnitude and different sign as the foreign savings component. Therefore this is an obviously quite restrictive assumption and it was needed because, in this version of the model, we wanted the transformation curve to be fixed and real output to be unchanged. The issue of no-accumulation and no-net investment is obviously very important.

Fourthly, there is no treatment on intermediate goods. Therefore, this is another element which could require perhaps a quite different scenario from the one we have here.

Fifthly, there is no distinction in our model between consumption and investment goods. The sixth element we do not analyse here is the whole issue of asset markets, including price of assets, "bubbles", etc. This latter element, which has played a key role in certain countries, is related to the issue of overly optimistic, or pessimistic, expectations and has affected mainly the behaviour of the private sector. This omission, then, may be very important and should be made clear at the outset.

I would like to add some final comments. As mentioned, the model intends to analyse the adjustment process in an economy that is subject to either foreign shocks or to policy changes, but we have attempted to introduce quite reasonable long-run conditions. Nevertheless, it should be pointed out that in the way we worked out the model, there is no direct relation between aggregate supply and aggregate demand. The only way it works is through changes in relative prices and, even though that may be a reasonable assumption for the long run, we also applied it, in fact, to the short run. This is something that could be changed in the non-tradeable sector. Perhaps, for a short-run type of policy, the direct linkage between aggregate demand and supply should be emphasized, especially, in the implementation of the model.

This model has not been estimated and this is one of the main points upon which we would like to receive your comments. The parameters, coefficients and lags have been introduced from outside, having, of course, as background, certain elements of the empirical literature. We have done some sensitivity analysis and this is another area upon which we would like to receive your comments.

We have not defined which is the time dimension of this model. We talk about periods, but we are very cautious in talking about them, because we are not really certain as to whether we should talk about months, quarters, or years. This will be also important in regard to the possibilities of implementation of a model like this.

Another issue which I should like to point out is that to do simulations of this type and to have meaningful results, we should start from the initial equilibrium conditions. This may be quite complicated because many of these policies have been implemented previously due to certain macroeconomic disequilibrium initial conditions, but if you want to isolate the effects of particular policy changes, it is important to start from initial equilibrium conditions.

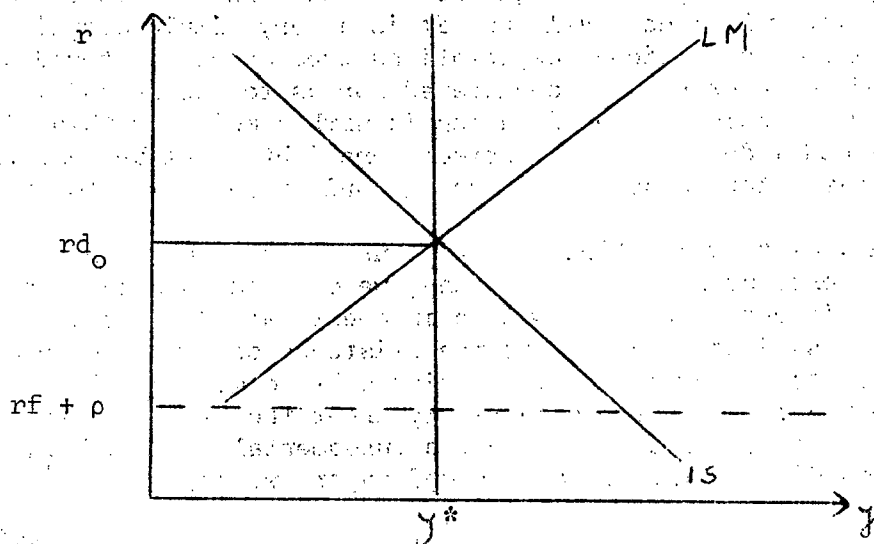
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We have not mentioned in this paper an element which is important to consider: real expenditures. When analysing the opening-up simulations, you see very clearly the short-run costs associated to it. It is possible that the costs may outweigh benefits in the short run, but there is one benefit that we have not mentioned explicitly in the model, although it appears clearly from the simulations, which is that real expenditures, due to the change in relative prices and/or to the current account deficits, tend to increase initially, as compared to their pre-reform level.

Finally, there is a very important analytical point related to the financial opening-up which we would like to mention.

In a IS-LM framework, given the potential (long-run equilibrium) real income  $y^*$ , we assume that initially the domestic interest rate  $rd_0$  is above the foreign rate adjusted for risk premium ( $rf + \rho$ ). Financial opening-up means that, at the end, interest rate parity will prevail, since only in this way will capital movements stop and the economy return to an equilibrium position. The short-run effect of financial opening-up is for the LM schedule to rotate towards the horizontal line at the ( $rf + \rho$ ) level. But, given  $y^*$ , expenditure will exceed income, inducing a current account deficit and an increase in foreign debt. Equilibrium requires the IS curve to be vertical or the risk premium ( $\rho$ ) to be endogenously determined. The first alternative creates a serious problem since the real interest rate could depend on monetary variables only. The second alternative, which we used in the model, was to allow  $\rho$  to be a function of the proportion of foreign debt to national income. Therefore, the horizontal line ( $rf + \rho$ ) will shift upwards as the economy's foreign debt grows at a faster pace than national income.

Consequently, the traditional result stating that the domestic interest rate will fall to the foreign rate ( $rf$ ), should be qualified either by recognizing the endogenous (and variable) nature of country-risk and/or by making explicit the appropriate assumptions required to incorporate the "real" effects of the financial opening-up process into the model.



With this I leave Mohsin to go on.

Mr. Khan:

Roberto managed to mention six main areas that are not fully developed in this model; I have a few more which are worth bringing up. First, it should be made clear at the outset that this is a perfect substitutes model, i.e., imports and domestically produced goods are perfect substitutes. While casual empiricism would indicate that perhaps this is not a good assumption to make, this proved to be necessary. Even with just three goods in the model --exportables, importables and non-tradeables-- we already have three demand equations and three supply equations. Any extension of the number of goods increases the size of the model quite dramatically and makes the model very complicated.

Another aspect that Roberto and I puzzled over a lot was the specification of equations (3') and (3'') on page 234 of the printed version. In the adjustment of the supply of importables and exportables, the partial adjustment mechanism that we have used is a very simplistic way of introducing dynamics. We have insured both in the supply side and in the demand side that the model should have sensible theoretical properties and we tried to be reasonably rigorous in this respect. That is all right insofar as the long run is concerned. However, once you introduce the short-run adjustment equations in the model, that is once you put in equations (3') and (3''), and obtain (4') and (4''), those theoretical properties no longer hold. That is, in equilibrium these properties hold, but in disequilibrium they do not, and as such we have no specific restrictions on the  $\lambda$ s. We could have made sure that the properties held in the short run and picked our  $\lambda$ s accordingly, but then we would have had a problem when the model was in equilibrium.

I have a few additional points on the model itself. Let me start with the issue of expectations and how it is dealt with in the model. We wanted actual supply to respond slowly, and had really two ways to go: one was partial adjustment the other was to use expected prices and put them into the desired supply equation. There is no particular reason for choosing one over the other, and we decided to go with the partial-adjustment model. An expectation mechanism is used for the general price level, but it is a very simple adaptive form. The idea of going to a sort of rational expectations type model was toyed with, but it really turned to be extremely complicated for us to handle and we could not even visualize how we would proceed in doing it with a model of this size. Anyway, in the end, the model does become a perfect foresight model because the adaptive-expectation parameters ensured that actual prices are equal to expected prices.

The capital flow equation also gave us a lot of problems and we experimented with several versions of it. In the end, we decided to stay with the most simple formulation. It made sense to have an interest rate differential determining capital flows, subject of course to the existence of a risk premium which itself was endogenous to the ratio of the foreign debt to gross domestic product (GDP) or GNP. The model also does not directly treat the issue of wage indexation. Without it you cannot handle, I think, a fundamental point in all this liberalization discussion. In our second paper, we try to consider in a loose way

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this question of indexation. If you have wage indexation in the model, there are certain conclusions that may be reached. If not, there is a way of trying to get around it and that is to assume that the price of home goods really is equivalent to a wage index. The price of tradeables enters the equation for the price of non-tradeable goods with a particular parameter. By altering that parameter we can sort of reproduce wage indexation, very approximately. If we made that parameter unity, then any variation in the exchange rate will immediately change the price of non-tradeable goods, so you will not have a relative price change. This would be equivalent to perfect wage indexation. I think these points in addition to those covered by Roberto, are probably what we regard as the main weaknesses in the model.

Now, I will turn to the simulation experiments. We outlined why we start from an equilibrium position and I would like to stress that while I recognize that the actual liberalization experiments have not taken place from an equilibrium position, starting from a disequilibrium position creates certain technical problems for us. For example, if we are interested in the transition path, it turns out that this path is not independent of the position from where you begin. If, to start with, you take a point inside that transformation curve, then the time it takes for the economy to get to a new equilibrium will depend on where exactly one started from. The path becomes so dependent on the initial conditions, that we really wanted to avoid this issue, and that is why we chose to start from an equilibrium position. Having set up this model, we had the other major problem, that is, the choice of the numerical values for the parameters. We tried to find in literature ways to obtain reasonable estimates, but ultimately we chose a number of parameters in an arbitrary fashion. As Roberto said, some sensitivity analysis was done but perhaps not sufficiently so. Specifically, we had no information on the supply price elasticities. All we expect here is that the supply of importables responds faster than the supply of exportables. In fact here we are more concerned about the ordering of these parameters, not so much about their actual value, because we are looking at the qualitative results. As mentioned, in the initial equilibrium this economy has a uniform tariff of 100% on imports and no capital account flows are permitted. The simulations involve reducing tariffs down to zero, and opening up the capital account. This was done in a variety of ways which are reported in the paper.

The basic simulation experiments conducted were the following: first, we had a gradual and sudden removal of trade barriers, keeping the capital account closed; then we had the reverse type of opening-up, i.e., maintaining tariffs and removing restrictions on capital flows. The third experiment involved the simultaneous gradual removal of both restrictions on capital and reduction in tariffs. The fourth simulation deals with the issue of sequencing of reforms. We try to analyse what would happen if you open the trade account first and then the capital account, or the capital account first and then the trade account. There have been a lot of views back and forth on this question, and we felt it was an interesting issue to look into.

These are then the four basic sets of simulations conducted with the model. We have an additional one dealing with compensatory policies, which I will come to later. Briefly I can describe the results which are fairly apparent from the charts in the paper. When tariff barriers are removed and we keep intact the degree of

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controls on capital, we obtain some very standard results. As a result of the reduction in tariffs, the price of importables falls and overall prices are lowered permanently and, consequently, inflation falls for a number of periods. This decline in prices creates an excess supply of money, causing the domestic nominal interest rate to fall temporarily, although the real interest rate does rise. I think this is an interesting issue although we do not go into the question of the impact of this real interest rate increase. There is a worsening of the current account position and a loss of international reserves. We could, of course, have picked a set of parameters such that there would be an improvement in the current account when tariffs were removed. All we need is that relative responses to supply of importables and exportables be reversed; that is, that the supply of exportables responds faster to the change in relative prices than does the supply of importables. This was not considered, however, to be a very realistic case and we chose not to pursue it.

With the reduction in tariffs we also observed that real output falls below potential output. You move inside that transformation curve, so that there is unemployment of resources, as resources are moving from one sector to another. What worried me (although not Roberto) was, that given the choice of parameters, unemployment tended to persist for a long time. I would have thought that there would be a fairly rapid move back to a new equilibrium. The difference between "gradual" and "sudden" scenarios is quite obvious, that is, when there is a sudden removal of tariffs you get very sharp movements at the outset, which then smooth out. In the gradual case, you have by definition a sort of gradual transition path, and there is nothing really surprising in that.

Now, assuming that tariffs are maintained at the original level and capital controls are removed, whether immediately or over a number of periods, the results obtained generally are quite different from those obtained from the first set of simulation experiments. We start from a position where the domestic interest rate is above the corresponding foreign interest rate. This implicitly assumes that some type of financial reform has already occurred in the economy; that is, domestic interest rates are allowed to be free. We did not want to handle simultaneously domestic financial reforms with these other trade and payment reforms. The liberalization of the capital account results in an immediate decline in domestic interest rates as capital inflows occur. However, due to various factors, such as market segmentation, or non-tradeable assets, etc., the decline is not sufficient to immediately eliminate the differential between the foreign and domestic interest rates, adjusted for exchange rate changes and other forms of risk. This implies continuing inflows of capital and an increase in foreign indebtedness, with the country having to run a continuous trade balance surplus to cover the interest payments on the rising foreign debt. The changing structure of production creates a downward pressure on prices, although this effect is not very significant. While the current account does go into deficit, the inflows of capital, due to the interest rate differential, more than compensate for this and there is an increase in international reserves at the cost of increasing foreign debt. Eventually, international reserves stabilize at a level higher than that of the initial equilibrium. In short, financial opening-up, unlike trade liberalization, does not significantly affect the level of the output or prices. There is, however, an increase in international reserves and foreign debt.

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When you eliminate restrictions on capital and simultaneously reduce tariffs, the combined effect of both policies is to bring about a fall in prices, inflation, a lower level of output, and a worsening of the current account. While the deficit in the current account is large, the fall in prices and in output is approximately the same, as in the case of the simulations when only tariff barriers are removed. However, because of the combined effect of the decline in the demand for money, due to the fall in prices and real income, and the increase in the money supply due to the inflow of capital, the interest rate falls more sharply in this case than in the situation when either of the two policies was considered separately. You are now getting a joint effect on the domestic interest rate and, as a consequence, the level of foreign indebtedness and the stock of international reserves is lower than that observed when only the capital account was liberalized. The real rate of interest, however, does rise as prices fall relatively more than the nominal interest rate. The fall in the real interest rate occurs in all the simulations because of the sharp decline in the price of importables.

In summary, while many of the elements are common between this simulation experiment and the previous two, it tells us that the simultaneous implementation of trade and capital liberalization policies are not quite the same as the "sum" of the results of each of the policy actions considered separately. This is basically because there is an interaction between the trade and the capital account which is not considered when the two cases are analysed separately.

The fourth experiment refers to the question of the sequence of the liberalization policies. We found that there was no significant difference in the effects on prices, output, and the interest rate of different policies, although the achievement of equilibrium takes longer when capital restrictions are eliminated first. The main difference in respect to the current account that turned up was that, when trade liberalization was undertaken first, the cumulative deficit was somewhat smaller. The worsening of the current account due to interest payments on foreign debt, when capital controls are eliminated, is apparently reinforced by the effects of the subsequent tariff changes. International reserves decline in the context of both sequences, but, again, the path of reserves is different, as can be seen from the charts. If capital controls are removed first, there is an initial tendency for international reserves to rise as capital flows in, which is not the case when trade is liberalized. The behaviour of foreign debt reflects the same pattern, remaining constant when tariffs are removed and then rising with the inflow of capitals. In the opposite scenario, there is a sudden jump in foreign indebtedness, followed by a fall when tariffs are eliminated. After this gyrations, the path of the stock of foreign debt approaches the new equilibrium asymptotically.

These were the basic simulation experiments that we looked into. As an afterthought we felt it might be useful to try to see whether the government policy could be used to reduce the costs of the liberalization experiments. We have assumed throughout that the authorities are completely passive, i.e., there is no autonomous policy whatsoever, the nominal exchange rate is fixed, the budget is balanced, and there is no active monetary policy. Money supply is, of course, changing endogenously in the model, but there is no active monetary policy. Now

/let us

let us assume that the government does have an active monetary policy and wishes to minimize some of the costs associated with liberalization. Designing such a compensatory policy is possible and we did so in a preliminary fashion in this paper. Basically, we argued that since the deterioration in the current account is one of the primary consequences of trade liberalization, suppose, for example, that the authorities decided to use monetary policy to keep the current account from worsening. Essentially, what we are trying to do here is to reduce both aggregate demand and the price of non-tradeables at the same time, while tariff barriers are being eliminated. A strong contraction of domestic credit would seem to be sufficient to keep the stock of international reserves from falling, but, of course, such policy does have an adverse effect on economic activity and, particularly, on private expenditures. A clear trade-off would be present. Therefore, we believe that in all such attempts to apply compensatory policies the authorities will be forced to choose between various combinations of policies that have different types of costs and benefits.

Mr. Zahler:

I would like to add quickly two additional points. One relates to the impact of financial opening-up on the different variables of the economy which is counter-intuitive. We got a very little impact of financial opening-up on relative prices, on the absolute price level and on real output. I think this is something that has not been observed in many experiences and it is a point which has to do with what I mentioned before: the model in its current version is "relative-price intensive" as well as "excess supply of money or money disequilibrium intensive", and very little effective demand intensive. I think that is a point which, perhaps for certain experiences, should have to be taken into consideration.

The other point which I would like to insist upon is that, if one considers the main results of financial opening-up in the way it is described in the model, wherein one has no feedback of real interest rate into the economy, then financial opening-up, at least in the short run, has mainly negative effects. I think this is essentially a consequence, at least in our model, of the way in which foreign debt is being used: only to finance consumption and not investment. The whole issue of the use of the foreign indebtedness in the sense of the feedback of capital inflows into capital accumulation is a point which should be considered in further analysis.

Thank you.

Mr. Massad:

Thank you very much. Mohsin tells me that he still has a few comments to make regarding the paper that was distributed to you only after your arrival in Santiago.

By the way, I would like to warn Ken that since he has been accused of having had some influence on the development of this model, I will offer him the floor right after the comments from the authors.

/Mr. Khan:



Mr. Khan:

Thank you, Carlos. I will not take too much time.

The model is quite capable of handling shocks, other than those which are simply associated with the liberalization process. In the second paper we took up briefly what effects certain types of external and domestic shocks would have on macroeconomic variables while the country was undergoing the liberalization processes.

This shock idea arose from work by Carlos Massad and others in the Fund trying to identify the principal factors responsible for the deteriorating current account positions of the oil-importing countries during the 1970s. If you look at the external situation facing developing countries during the 1970s, it is very striking to observe how things have changed and how much worse the situation is now compared to the 1960s. We present some of the relevant data on page 8, table 1, of the new paper (October 1983). It is quite obvious that the terms of trade of non-oil developing countries have been deteriorating steadily over the last decade. There are some improvements, essentially in primary commodity prices, in the mid-1970s, particularly in 1976 and 1977, but, on the whole, the terms of trade over the decade deteriorated by about 2% per year. Foreign real interest rates --essentially Eurodollar rates adjusted for changes in the export prices of oil-importing countries-- which were negative during the early part of the 1973-1982 period and, certainly were negative in the 1960s, became sharply positive towards the end of it. They reached 18%, which, in our paper, we termed as "astronomical". During the past ten years growth rates were also falling as a consequence of both external and internal factors; inflation was rising; the current account deteriorated sharply after the first oil shock, then improved a bit but it continued to worsen through 1982. Furthermore, growth rates in industrial countries also fell sharply over the decade (in the last two years they were almost negligible). All these factors, we believe, certainly had an adverse effect on the oil-importing countries.

In another survey we tried to identify which were the most important factors, that is, external or internal, in this process and we found that for a sample of 32 developing countries, external shocks were perhaps more important than internal factors in the increased current account deficits of developing countries. In the present exercise, we asked the following question: suppose that in the process of liberalization there are external shocks as well, what would be the end result? To analyse this question we superimposed the terms of trade shock and an increase in the foreign interest rates involving a simultaneous gradual removal of barriers to trade and capital flows. Those results are described in the charts on page 19, and we find that the picture, as one would expect, becomes significantly worse when you have external shocks.

A question regarding the real exchange rate arose in our work which I would like to put to the participants of this conference. We defined the real exchange rate as the ratio of the price of tradeable goods to the price of non-tradeable goods, and it turns out that when you have a three-goods world, certain complications arise when you have terms-of-trade changes. To give you a specific

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example, the terms-of-trade change that we have modelled here, or the shocks that we have, is a decline in the price of exports. When combined with a decline of price of imports due to the removal of tariffs, gives you a certain real exchange rate change which is shown on page 19(c). However, one can have different terms-of-trade changes, such as an increase in the price of imports rather than a decline in the price of exports. If that happens, it turns out that the real exchange rate does not behave in the same way and you could very well have a situation where the real exchange rate depreciates. We are still somewhat confused as to how exactly this difference in the two results can be reconciled. You could very well say, as Arnold Harberger did, that the real exchange rate is the nominal exchange rate adjusted for changes in wages, and one should use that definition. But this is the sort of question that I would put to you.

I would end here by saying that external shocks do worsen the picture, and the experience of the Southern Cone countries during the last two years was in some ways similar, and in others quite different from non-oil developing countries as a group. Growth rates were much worse; current account deficits as a proportion of exports were much larger; inflation in Argentina was much higher, but inflation in the other two countries was below the average for oil-importing countries. One inference you could draw is that these were the countries that liberalized and the opening-up makes a country more vulnerable to foreign shocks, more susceptible to changes in international environment and therefore rather worsens the situation. This is one thing. Then, of course, there is the question of domestic shocks or, if you like, domestic policy inconsistencies, regarding which Roberto has a few words to say.

Thank you.

Mr. Zahler:

Just to finish our presentation, I think it is interesting to know that, in the second paper, as Mohsin was saying, we tried to incorporate in addition to the liberalization issue, some of the facts that happened in the last years and essentially what we call here the effects of fiscal shock. Our idea was to incorporate something that was very specific of the Southern Cone countries, namely Argentina, Uruguay and Chile, but especially Argentina and Chile, in the following sense. One of the arguments that has been given to explain the outcome of the economic policies of these countries refers to what is called generally inconsistencies in economic policy. These inconsistencies have been linked to exchange rate, interest rate and wage policies. One aspect which I mentioned before and which is very difficult to put in a model like this, has to do with "excess spending". The excess spending of the public sector, especially of public sector enterprises, is quite relevant to the Argentine case.

What we have tried to do here is to model the liberalization process, in combination with a fiscal deficit, but actually this exercise could also be interpreted as being valid for the case where one has a type of "non-traditional" disequilibrium process, which is that of the excess spending by the private sector. This latter situation, perhaps, is more pertinent to what happened in Chile and also in Uruguay during recent years. This is a situation where the private sector

/could evade

could evade the domestic financial restrictions through foreign borrowing increasing its expenditures to a level which was inconsistent, in the way we expound in this paper, with the opening-up policies. In this sense, we should interpret this simulation as being a case of "general" or global excess domestic spending accompanying the opening-up process.

An interesting thing in regard to the value of parameters is that even though we have quite a big fiscal shock during four periods, the excess supply of money in the model is very similar to the case when there is no fiscal shock. This is due basically to two reasons: one, the way that the fiscal deficit impacts aggregate demand and, consequently, national income and increased demand for nominal money; and, two, the very quick way in which the supply of money generated by the fiscal deficit leaks into the current account. Therefore, the net impact on the excess supply of money is not as big as one would perhaps have expected. Thus, excess supply of money is very similar in either case, with or without fiscal deficit. Consequently, the impact on the price level and the impact on the interest rates are also very similar, and so is the impact on the foreign debt.

The main different results are, of course, the additional current account deficit generated by fiscal deficit and the issue that Mohsin was just pointing out, in which I agree with him and which is a very relevant one: the impact on the real exchange rate. As mentioned, we think there is a problem with defining the real exchange rate in a three-goods model. I think, regarding Arnold Harberger's view, that is to say, to relate exchange rate with wages, could perhaps be treated in our model by comparing the exchange rate with the price of non-tradeables, the latter being a proxy of wages. However, we still have the problem when relaxing the assumption that prices of exportables and importables are constant, so that when you have changes in terms of trade and when tradeables are an important component of either your expenditure or your income, they have to be taken into consideration.

In any case, what we observe here is that the real exchange rate again appreciates substantially due to the impact of the fiscal deficit on the price of non-tradeables. With our model we are able to capture this sort of inconsistency, a lot of which has been written about recently, especially in the Southern Cone countries, and which has to do with exchange rate policies that accompanied that excess spending, in the sense of not having followed the path that was compatible with either the fiscal deficit, in one case, or excess domestic spending of the private sector, in the other.

The preliminary conclusions of this exercise, are basically that, as expected, both foreign shocks and fiscal deficits tend to amplify and aggravate the "negative aspects of opening-up". The exercise, however, is useful to show that the model is capable of analysing not only opening-up, but also of incorporating these other aspects: shocks, in one case, or economic policy changes, in the other.

Thank you.

Mr. Massad:

Thank you very much.

Al, you wanted a clarification?

/Mr. Harberger:

Mr. Harberger:

It seems to me that we need to recognize that when you liberalize you are affecting the real exchange rate. Liberalization increases the incentives to produce exports and imports that have neither taxes nor subsidies. The incentives to produce import substitutes for the liberalized commodities tend to be reduced, though not necessarily because the rise in the real exchange rate works in one direction, and the tariff reduction in the other. If the tariff reductions are of differing amounts for different commodities, it is easily possible for the exchange rate effect to outweigh the tariff reduction for some of them, thus actually increasing the incentive to produce them at home. For this reason, too, I prefer what I call a "clean" definition of the real exchange rate --i.e., the real rate affecting the production of those tradeables that have no tariff, no export tax and no export or import subsidy. The real exchange rate thus defined must rise as a consequence of liberalization.

Mr. Williamson:

I have some remarks on alternative definitions of the real exchange rate. The definition that I have normally used is the nominal exchange rate multiplied by the foreign price level and divided by the domestic price level. In the type of model with which Mohsin and Roberto are working, that comes out as giving the same results as the ratio of the price of non-tradeables to tradeables. I have no objection, in certain contexts, to using that as a measure of the real exchange rate, but I do not think it is appropriate to use it as a definition of the real exchange rate. My definition in a wide range of circumstances will agree with Al Harberger's. In the particular case in question, it is absolutely true that the two reasons for changes in the terms of trade would have different implications for the real exchange rate, because implicitly you are thinking of the price of exports falling on account of a fall in the price of competitive foreign goods, and in that case you would get a reduction in the real exchange rate (less competitiveness). If the price of imports rises because of movements in foreign prices, that implies an increase in the real exchange rate. That is absolutely right, those are the different effects on competitiveness that come about, as a result of those two different changes.

Mr. Clements:

I believe that there are large gaps in our knowledge about the quantitative effects of trade liberalization on macroeconomic phenomena such as unemployment. This lack of knowledge is to be contrasted with the situation in two closely-related areas: i) computable general equilibrium models and ii) conventional macroeconometric models. CGE models are concerned with measuring the economy-wide gains from trade liberalization which are familiar from the pure theory of international trade. As these models are all static, they are to be interpreted as referring only to the changes which take place over the longer term, after all the adjustment dynamics have worked themselves out. As such, they say nothing about path of adjustment which the economy follows in going from one long-run equilibrium position to another. Accordingly, CGE models do not deal at all with the short-run macroeconomic effects.

/Conventional macroeconometric

Conventional macroeconomic models, on the other hand, do deal with the adjustment path. Although macro models are used to analyse trade policy, I believe that they are not well-suited for this purpose. The basic problem is their lack of commodity disaggregation, so that there is insufficient scope for resources to move from one sector to another in response to the relative price changes associated with trade reform.

It is because of this lack of knowledge about the macro effects of trade policy that the paper by Mohsin Khan and Roberto Zahler is, in my view, so welcome. The paper goes in the direction of a marriage between a CGE model and a macro model in that it has both the commodity disaggregation and the short-run dynamics.

I find the paper bold and wide-ranging in its objectives and analysis, and it is in this spirit that I do not wish to nit-pick with details and with particular parameter values. Instead, in the remarks that follow I focus on three issues: i) the methodology of a simulation model; ii) one of the key policy results, the effects of trade liberalization on unemployment; and iii) possible extensions of the model, including estimation.

#### The methodology

The model is constructed in a straightforward manner in two steps. First, the structural equations are specified on the basis of what has worked satisfactorily in previous empirical work; e.g., the demand and supply equations, the hoarding function, the money demand equation and so on. Second, the numerical values of the parameters of these equations are chosen with three considerations in mind: i) some adjustment parameters are specified on the basis of a priori considerations; e.g., that the supply of importables adjusts faster to relative price changes than does exportables; ii) the parameters of the hoarding function and the money demand equation are based on previous estimates obtained at the Fund; iii) all the parameters must satisfy the constraints from theory, such as the economy-wide budget constraint, demand and supply homogeneity and Slutsky symmetry. Furthermore, the parameter values must be such that the model is stable. It is to be noted that the model is not estimated itself.

Once the model has been constructed in this manner, it is then used for hypothetical policy simulations in the usual way.

To place this methodology in context, I want to return to CGE models and macro models. In the CGE models of the Shoven-Whalley variety, parameter values are chosen such that the model exactly replicates the data in some base period. This is achieved by simply adjusting as many coefficients as there are data points, so that the model must fit the data exactly. Although this is known as "calibration" by those who work in that area, it really amounts to a form of econometric estimation. From a statistical perspective, the exact fit of these models raises the question about the quality of estimates with zero degrees of freedom. Because such estimates entirely ignore random fluctuations in the data, they are almost just pulled out of thin air and can do no more than confirm that  $1 + 1 = 2$ .

/Accordingly, econometric

Accordingly, econometric estimation, at least in its usual form, plays no role with this type of CGE model. I hasten to add that there is an excellent reason why this is so. These models are typically very large, sometimes being made up of thousands of equations. It is often impossible to obtain a time series of data required for estimation; e.g., a time series of input-output tables is unavailable in most countries. There is the further problem that the appropriate econometric methodology for estimating these models has not yet been fully developed, although Dale Jorgensen is making progress on this.

This is to be contrasted with the situation regarding the well-known large-scale macro models. Here econometric estimation does play an important role. In fact, I would argue that the role of econometrics is over emphasized, causing economic theory to be often neglected. As examples of this I would cite the extensive specification searches that usually take place and the associated overfitting of equations to account for special events. These practices lead to ad hoc equations, parameter instability and standard errors which seriously understate the true sampling variability of estimates.

As indicated previously, I see this paper fitting in between the two extremes of a CGE model and a macro model. The strengths of the model are that i) it is simple and that its economics can be easily understood; ii) the model can be presented in an admirably succinct way, as in the two appendices; iii) it is strong on the use of economic theory, so that it is not ad hoc; iv) its parameters values are not pulled out of thin air; and v) its aggregative structure --the division of the economy into exportables, importables and home goods allows interesting aspects of the open and closed economy to operate simultaneously.

In my view the major weakness of the model as it now stands is that it has not been verified; it has not been tested with real-world data. The transcending principle of positive economics is how does a model predict (or forecast); this model should not escape this test.

A related problem is that as the model relates to a representative Latin American country, it is not specific enough. As long as there are different countries in Latin America, policy makers will always tend to argue that circumstances are sufficiently different in their country, to make policy prescriptions from a general model not applicable to them, particularly when they entail unpopular policies.

I shall return to these issues when I discuss extensions.

#### Trade liberalization and unemployment

With the gradual tariff reduction unemployment increases from 5 to 8%. The reason is that as the importables sector contracts, it sheds labour more rapidly than can be absorbed by the exportables and home goods sectors.

Some further insights emerge if we focus on the market for home goods. As the tariff reduction causes the current account to go into deficit, there is an excess demand for traded goods. It follows from Walras' Law that this is matched

/by an

by an offsetting excess supply of home goods. To restore full equilibrium we need the price of home goods in terms of both importables and exportables to fall. If we recognize that home goods are mostly services, which are labour intensive, we can identify the price of home goods with wages.

Accordingly, we have an excess supply of home goods, which amounts to unemployment because wages are downward rigid. Only over time as wages are reduced will unemployment be reduced to the natural rate.

There is, however, another policy available that will help in the adjustment process. The problem is that wages are too high in terms of both traded goods. We need a decrease in real wages. If nominal wages are downward rigid, we can depress real wages by increasing the nominal prices of importables and exportables by the same proportion, i.e., by a devaluation.

#### The way forward

As indicated above, the natural next step is econometric estimation. I believe that estimation is possible, but the resources required in terms of data, software, professional advice should not be underestimated.

It is clear that the estimation of such a model has demanding data requirements. First, the national accounts data have to be redone to accord with the exportables, importables and home goods commodity structure. Second, the successful estimation of the substitution possibilities in production and demand requires considerable variation in relative prices. Third, to focus only on the actual liberalization experience in Latin America, the data cannot go back too far before the mid-1970s.

With these considerations in mind, prior to estimation I would suggest that some resources be devoted to the construction of the data base for the chosen countries. I could envisage this including a good deal of preliminary data analysis, along the lines of the excellent work of Morris Goldstein and Larry Officer on traded and non-traded goods data for some OECD countries.

In terms of estimation, there is the question whether it is possible to apply the model to one country or a group of countries, with pooled data and country intercept dummies, along the lines pioneered by Mohsin Khan and Malcombe Knight in previous work.

This is basically a question of effective degrees of freedom available, i.e., do we have enough observations with sufficient variability. As such, this must be an empirical question. My feeling is that the answer to this question would be to locate somewhere between the two extremes of estimating one model for each country separately, on the one hand, and pooling data across countries to estimate one common model for all countries, on the other. I could envisage the consumption parameters not varying much across countries, so that the demand data could be pooled. I could equally well envisage that the supply side differs systematically from country to country because of different factor endowments, production functions and so on.

/Once the

Once the model has been estimated econometrically, it would be possible to carry out system-wide simulations for the relevant countries involved. This would cover both trade between Latin American countries and trade with the rest of the world. Furthermore, the econometric methodology would naturally produce simulation results with standard errors; i.e., it would be possible to say something about the certainty which could be placed in the simulation results.

In my view a research programme which includes these further developments would potentially represent a major contribution and be very exciting.

Mr. Massad:

Thank you.

Jacob, would you like to go on.

Mr. Frenkel:

First, trying to deal with the issues contained in the papers before us is one of the most important tasks that we, as economists, have to undertake. What we have seen over the last few years in Latin America, has been a real laboratory exercise and it will be complete professional irresponsibility if we did not allocate resources and effort to study and learn lessons from it, because "those who do not respect history are bound to repeat it".

As far as the general specifications of the model utilized are concerned, indeed, there is the question of the optimum model size and I side with K. Clements' evaluation that it is almost just right. Only those who tried to dirty their hands in dealing with this type of research realize how difficult it is and, therefore, all the compliments to the authors.

There is the question of optimum specificity and here I am not sure that I side with Ken Clements' advice or potential recommendation to pool countries. If you are coming from the outside, the Southern Cone is a group; yet the differences among its countries are so serious that I think it would be a mistake to think of the various Latin American experiments as one huge experiment. It reminds me of a little joke that Bob Solow once made, when he commented on aggregation of countries. As he spoke about monetarists, "like Karl Brunner and Milton Friedman", Karl Brunner jumped up and said "What do you mean? How can you put us together? I'm Karl Brunner, I am different from Milton..." Bob Solow responded by saying that for most people who look at poodles, they do not see the distinction, the only ones who see it are the poodles themselves. So, in a way, I think that we should play the role of the poodles and acknowledge that it is a mistake to over-aggregate countries.

As far as the specification of the model and its limitations, I think that the presentation has been extremely frank; nothing was swept under the rug and, therefore, many of my comments will repeat some of the reservations that are already mentioned in the paper. With your permission, what I am going to do is just go through the paper following the order of things as they appear there.

/There is



There is one critical point, the essence of the paper is dynamics. Now, essential to dynamics in general are issues related to expectations and other things that link the present to the future and, by linking them, affect the present. It is here that one could make many comments by asking how sensitive are the results to the specification of the way in which expectations are formed. I will come back to this again and again, as we go along.

Future research should put expectations in the forefront, rather than just as part of the model. It is related to the question of sensitiveness of the results to changes in the parameter values, changes that are themselves induced by the policies that are being introduced. For about ten years we have been talking about the Lukas critique and simulation analysis. There is no need to repeat the discussion here, but I think that we may wish to ask, can we elevate the Lukas critique from the footnote, that says "that we are aware of it", to the text where we are dealing with it? I do not offer an answer and I think that the authors were extremely open by noting and emphasizing awareness of that issue.

There is the question of ceteris paribus. What do we hold constant in the analysis? Some of the things that we hold constant are very reasonable and some are occasionally counterfactual. For example, in most countries that I am aware of, liberalization policies have usually come side by side with attempts at stabilization policies. Conceptually, those two kinds of strategies are distinct, but in practice they have appeared so frequently side by side, that one may want to specify in greater detail the macroeconomic policies and I think that they will typically include a good dosis of stabilization policies.

Let me turn now to some of the more detailed specifications. An important factor in the various specifications is the speed of adjustment. Several questions come to mind. First, is there a link between speeds of adjustment of different variables and relationships or are they independent parameters? Since the speed of adjustment itself is an outcome of costs, or other economic factors, there is some formal link that can tie together parameters and therefore help us in putting some restrictions on the model to be tested. I do not yet provide a suggestion; I just raise a question.

As far as specification of the excess supply of money is concerned, the authors are introducing the difference between desired and actual cash balances in the various spending functions, relating it to some work by Rudi Dornbusch and Michael Mussa. I think it would be wise to replace excess cash balances with excess wealth. This really is a theory of savings relating desired to actual wealth and it so happens that, under some specifications, wealth is identified with money balances. But if we are about to work with a broad array of countries, we should put wealth at the beginning of the specifications.

Another simplifying assumption in the model, which helps a great deal and is emphasized by the authors, is the assumption that spending patterns of the governments are identical to spending patterns of the private sector. As a consequence, it makes no difference from the viewpoint of aggregate demand whether it is the private sector that does the job, or the government and, consequently, balance budget changes in government spending will have no significant impact on the economy because, as the private sector contracts, the government expands, and conversely.

/The authors

The authors have used this assumption very wisely. In practice, I believe, it would be useful to extend the model to allow for specific differences between those two patterns. The reason for it is that it brings to the forefront issues that come from the tradeable problem discussions, differences in marginal propensities, specific differences: governments are spending more on imported defense, maybe on non-tradeables, etc. How to spend, how to calibrate aggregate demand between domestic and foreign goods is an important issue. This will have a bearing also on the optimal policy mix. In short, it is time, at this stage, for the extensions to allow for systematic differences between spending patterns of the private and the public sectors.

Later, in the paper, there is a discussion of the price of imports. The authors, through  $\lambda_5$ , allow for slow price adjustment of importable goods as a function of the parameter, the policy changes. If you change the tariff rate, the exchange rate, and the foreign price, the changes will transmit themselves gradually to the current price of importables. Here, it is useful to distinguish the source of the change in the equilibrium price of imports. If the change in the equilibrium price of imports came from a rise in aggregate demand, the impact on the current price of importables will be different than if it came from a huge devaluation. I just come from Israel where there was devaluation in some scale of hugeness, and, of course, during the night there was an inventory count, and prices themselves changed overnight proportionately to those of imported goods. This is for exchange rate changes. Maybe, for tariffs, it is slower; maybe, for aggregate demand it is yet slower. In a way, one might want to ask what is the source of the equilibrium change in importables and, therefore, allow  $\lambda_1$ ,  $\lambda_2$ , etc., to differ.

Once we come to the essence of the cost, we see that if we are confused permanently, or transitorily, that is a source of cost; if we are not confused, maybe there is less cost. So the cost of price adjustment will probably underlie the size of the stickiness of prices.

Let me go a little faster through the various elements and jump immediately to expectations. Inflation is being modelled as expected inflation, that is, based on the error learning model, in all the Southern Cone. And I think, such modelling has served its role up to now.

Where I find a bit of an issue is in the different treatment of expected exchange rates variations and expected inflation rates. Expected exchange rate variations, in practice, are modelled as perfect foresight, whereas inflation is modelled as adaptive expectations. That may well be the case, but we should notice that those expectations are formed by the same economic agents and, therefore, we may want to discuss why is it that for one segment of the economy we form expectations in one way while we do so in a different way for another.

There is an issue which has to do with the link between unemployment and output. The authors define this issue saying that there is a link between the level of output and the level of unemployment, and, therefore, the discussion of unemployment is conducted in terms of output. Indeed, in a footnote they say that for that to be true, basically all the reallocation of factors, all the resources

/that are

that are engaged in reallocating sectors, must be measured as unemployment. This is a correct deduction from the assumption. When we go into the data, we may have a problem, because each country will deal differently with the reallocation issue. Some will use public sector spending to help the reallocation; if such spending is financed through open market operations, the data will be measuring the degree of opening-up of the capital account by the variations in what they refer to as the beta coefficient, or the speed by which capital flows respond to interest rate differentials. Indeed, this is one sensible definition.

Let me skip now to the monetary sector, money and credit, and say something about the specification of the demand for money, just one sentence. The demand for money is defined to be a function of expected inflation and the interest rate.

Mr. Massad:

John, you are next in my list.

Mr. Williamson:

I am part of the ten per cent of the audience, I think it was said this morning, to whom this model has not been presented previously. It is the first time I have come across it. Let me mention two things: one point on which the authors seemed to have been extremely defensive this morning, their modelling of the risk premium. That seems to me to be done very nicely and I would certainly back them against their critics on this point. I have some difficulty in understanding why that should be so controversial.

The second point is the size of the model and the attempt to cut down a dynamic macroeconomic model to a manageable size and to use it in this context. Going back to what was said by Ken Clements this morning, I wonder whether it might not have been more fruitful to have started the other way round in trying to marry the conventional general equilibrium and the conventional macroeconomic model approaches. I will start with the conventional macroeconomic model. This has some reasonably conventional dynamic relationships built into it, concerning which markets adjust relatively rapidly and can be treated as in continuous equilibrium, and which, on the other hand, are slowly adjusting.

One might have started with that and built in an adequate measure of commodity disaggregation to handle these problems, rather than starting with the general equilibrium model and then building in ubiquitous partial adjustment dynamics. I do have some difficulty in understanding the interest rate; for example, should it be a slowly adjusting variable in the model? If we are talking about controlled interest rates, then, that is another matter, but the supposition is that there is a relatively free domestic financial sector and, in that case, I expect the financial sector to remain more or less in equilibrium permanently.

In fact, this leads me on to my two main concerns, with the specification of the model: one is the lack of factor markets, which I think has been adequately discussed already; the other is the specification of the price equation. What is done there is to postulate that one has partial adjustment to equilibrium or market clearing prices. And I ask myself, which markets do behave like that? Some

/markets in

markets in the world can be adequately described as flexible price markets, which clear more or less continuously: the financial markets, and markets for homogeneous standardized commodities. Everything else --many services, certainly wages, manufactured goods-- come into the category of fixed prices. They are not determined independently of economic considerations, but they are set by sellers or, in some cases, by buyers, or by negotiations between the two. That is, there is a price set by someone, and it has never been proved that there is any reason for thinking that partial adjustment to a market clearing price is in any sense an adequate approximation to what goes on in those types of markets.

The basic point is that someone is fixing those prices. What is the simplest hypothesis which seems to describe what goes on there? It is that the prices are set in the light of two types of considerations: costs, which is why one ought to have factor markets in the model, and the price of competitive products. This is the natural way to introduce the foreign sector into the analysis, because in the case of import competing goods, the price at which imports are supplied from the world market gives you the price of the competitive goods. One gets a feedthrough into domestic prices, but it is not a one hundred per cent feedthrough. Instead of having a law of one price, what one gets is a law of finite price differentials, if you like. It is a fact that when the price differential between imports and import competing goods gets sufficiently large, this drags down the rate of increase of the price of competing goods domestically produced. But it is not a fact, as far as anyone has observed yet, that those prices ultimately go back to equality with the prices of the competitive foreign products. There is an equilibrium price differential which gets established and as far as one has observed so far, it is maintained indefinitely. This is quite crucial to understanding why the Southern Cone liberalization experiments failed.

There was a misunderstanding of the nature of the competitive mechanism in fixed price markets, which meant that one could only get rid of inflation through the mechanism of pegging the exchange rate, as was attempted, at the cost of permanent distortion in relative prices. This led the current account of the balance of payments into a chronic deficit, or else the economy into permanent depression. The misunderstanding of the price mechanisms, in my interpretation, is serious and prevents understanding what went on in the Southern Cone liberalization.

The other fundamental problem that I have with the paper is that it reflects, all too accurately, other intellectual preconceptions of the Southern Cone liberalization, which I would like to distinguish very sharply from other episodes of liberalization. Here, I think partly of East Asia, but also certainly of the liberalization in Europe, in the post-war years. There, it was not a move towards laissez faire, with the government withdrawing from macroeconomic management, on the assumption that the economy would guide itself gradually to equilibrium as portrayed in the results of this paper. Instead, there was the neoclassical synthesis, call it what you will, the notion that if you want to have microeconomic liberalization, that really only makes sense in the context of macroeconomic management: an attempt to maintain the economy along some sort of satisfactory macroeconomic path. As Rudi has said, the right question is not what are the effects of liberalization when you have set all the macroeconomic variables on a

/steady course,

steady course, but rather what are the accompanying sets of macroeconomic policies which are necessary in order to enable liberalization to be undertaken without these crippling short-run costs?

The three rules of thumb which are generally accepted as the types of policies that should accompany a liberalization scheme (or, indeed, the appropriate sets of macroeconomic policies in general), might be summarized as follows. First, one should maintain the level of aggregate demand with the objective of minimizing the resource gap subject to the need to maintain control of inflation, or, in other words, internal balance. One should also try to maintain the relative prices of strategic macroeconomic significance (by which I mean the real wage and the exchange rate) somewhere in the vicinity of equilibrium.

The second rule of thumb is that one should borrow from the international capital market in order to satisfy international reserve constraints (a concept that is lacking in the paper), while fulfilling an optimal savings/investment plan. It is strange that, as has been said, we have countries liberalizing their capital account for no apparent reason. I am not too worried about the fact that it is not explicitly built into the model simultaneously with everything else, but one does need some sort of concept of what is it that one is liberalizing the capital account for. In a capital-poor country, I think, the answer is surely that one is wanting to liberalize to the extent that it is necessary in order to borrow as much from the international capital market as is consistent with stepping up investment to the point where the marginal rate of return on investment is equal to the marginal cost of foreign borrowing. Incidentally, I am not convinced that for that purpose liberalization was really needed, in the sense that it was done in the Southern Cone. One needs to exploit the international capital market, as Brazil was doing in the 1970s, but this does not imply liberalization. They are two very different things. Liberalization becomes important to a creditor country, or near creditor country, because then it is very important to the individuals and societies in enabling them to diversify their risks internationally. This point is a clear motive for liberalization, as opposed to simply making provisions to tap the international capital market. If one is thinking of a capital-poor country, then the relevant criterion is whether it is borrowing up to the point where it is able to invest all that is rational, given certain rates of return and rates of cost.

The third macroeconomic rule of thumb is one which says that you want to maintain the real exchange rate at a new equilibrium level --perhaps I already included that in the first. Specifically, if one is liberalizing current account transactions, lowering import controls, then liberalization needs to be accompanied by devaluation, as Clements said this morning. Now, if you go back and have a comprehensive set of compensatory policies, there is a presumption in my mind that you could eventually eliminate the type of transitional costs that you are investigating in this paper. I do not say that there would not be any kind of transitional costs, but they would be microeconomic adjustment costs rather than these costs of macroeconomic performance. That is the conjecture that I would like to see you directing your attention to.

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Now, an addendum on Carlos Díaz-Alejandro. His view is that the International Monetary Fund, when it sets targets for countries, should only see whether they are achieving their current account objectives. It should not look at whether they are doing well in terms of monetary policy or inflation, state or distributional objectives, or other internal policies. There is no suggestion there, on the part of Carlos, that the current account is the only variable that matters. On the contrary, he certainly agrees with me that internal objectives are quite crucial, but simply believes that the IMF should stop dictating to countries.

Mr. Massad:

John, we surely might find an opportunity to ask Carlos Díaz-Alejandro about what we thinks now, particularly after his recent visit to Central America. I am sure he is modifying somewhat his views. Yes, Al?

Mr. Harberger:

Three recent papers of mine have used a model that bears considerable family resemblance to yours. For more than thirty years I have felt that models have to be constructed with a certain set of problems in mind, that they should be kept simple, but consistent with good theory. I think that is what you are doing, and I have argued a bit with Ken Clements in the sense that I do not think that econometric studies are the only raison d'être for a model. We know that, in an econometric model, there are unstable functions as well as very stable ones. With one or more key functions being unstable through time the econometric performance of a model may be terrible. Yet this does not mean that the conceptual framework of the model is bad. Indeed, it may give us a very rational picture of the economy.

Various points have come up, on the particular model I have been using. It is not quite as complicated as this one. (For example, I only recently separated tradeables into importables and exportables. Although that was always in my mind, I was not up to recently dealing with problems that required the separation.) Let me give you some idea of the problems that I have worked on with the model. It started out with Indonesia, two years back when the issue came up of whether inflation was the necessary consequence of Indonesia having received the proceeds of the 1978 oil price boom. My model showed that under certain very plausible values of key parameters, the monetary adjustment could overshoot. There was a necessary and natural appreciation of real exchange rate in the move to a new equilibrium. That is not something you want to stop, but if you can have a sensibly even path, instead of one that is crazily uneven, then you should choose the smooth one. It turns out that you may get overshooting of the price level if you spend 100% of your oil proceeds in the first period. And, certainly, you do not spend 400% of the oil proceeds as they ended up doing in Mexico and Venezuela. But if you work up gradually to the full use of the oil proceeds, you can get a quite smooth path of adjustment. In another paper, which some of you probably have seen, we first talk about the problem of how much you could expect the real exchange rate to appreciate as a consequence of substantially heavy capital inflows, as Chile had. It turned out that it was quite plausible to have a big appreciation of real exchange rate. Secondly, on the policy instruments side, we consider the idea of

/printing and

printing and spending money, presumably to stimulate the economy. When we simulated printing plus spending in a classical version of the model, we got virtually nothing; in the Keynesian version of the model we got an increment of demand, but also a loss of reserves equal to the amount that we had spent (in a fixed exchange rate setting). More recently we are trying to look again at the problem of capital inflow and what to see, how its effects differ in different settings. We explored different time patterns of capital inflow. The inflow may rise gradually to a peak, then fall gradually, or may climb all the way, then drop precipitously. For the same general shape of time path, what are the consequences of stretching it out over time (i.e., doubling the time span over which a given amount of capital arrives) versus receiving the same amount of capital in a shorter time period? It turned out as a first answer, that stretching the interval of flow is not a bad idea. It is the course of wisdom to approach your debt limit gradually. You will get there anyway. It is unnecessary, and may be quite costly, to be hasty.

I have also been working on a model that Carlos Massad also experienced in the old days, when we first started to worry about these problems, when life was a lot simpler, when people had yet to learn what indexing was and when indexing was always a good thing. Back in those days the countries of this part of the world tried to defend their nominal exchange rates for long periods and then they had to have huge devaluations of their currencies. Students of modern open economies do not understand how that worked; Carlos and I do. How it worked was that during this process they did not let the reserves go out. Instead, they put on ad hoc restrictions, building a whole set of barriers, such as prior deposits, customs duties surcharges, etc. Then, when these barriers got too high (and usually too complex and confused), a big devaluation was used to get rid of most of them. The piling up of barriers was a semidevaluation hitting the imports side. Only later, as these barriers were reduced (or eliminated), would a real devaluation take place.

We are working through other experiments. We start with a monetary expansion every period --to finance an assumed government deficit. If there is a fixed exchange rate, the consequence is that reserves go down. When they have fallen to a critical level, the government starts to pile on trade restrictions. And when trade restrictions build up to where prices have risen say by 80%, or something like that, then the monetary authorities devalue, and at the same time (try to) get rid of the deficit. That is more or less the story of the Klein-Sacks reform in Chile in the mid-1950s.

I am telling you this, because the Khan-Zahler model is of the same general class. And, in spite of the fact that I believe that models should in principle be built around specific problems, this particular class of models has a certain versatility that enables them to deal with quite a lot of different situations. Therefore, I think we should all try to do our best to perfect this tool.

Now, I am going to talk about a few odds and ends. Number one, I want deeply to urge you not to have the kind of expenditure function that most economists use --i.e., one that makes total expenditure an argument in the demand functions for different goods and services. I am ready to assume that people spend their income, and it does not bother me to assume they spend all of it. What they do not spend

/on consumption,

on consumption, they put in the bank and, in this part of the world, most of the time that gives room for spending by somebody else. I like the assumption that all income is spent. Then, when people have excess cash, they spend it following a certain pattern, and this is not the same pattern in which they spend their income. Finally, when they have access to foreign borrowing, that borrowing can be spent on anything. If they spend it to buy tradeables, it goes out as fast as it came in; there is no problem, at least in the immediate instance. But if, as they did here in Chile, they borrow abroad and spend the proceeds largely on housing construction, such as apartments, the picture is entirely different. The foreign money has to be converted into pesos, and for the capital inflow to take effect in real terms, a current account deficit must be generated, and the real exchange rate must fall. There is no reason why the coefficients that apply to the way income is normally spent should apply to the way foreign borrowing is spent. There is no reason why, as between tradeables and non-tradeables, foreign borrowing cannot be spent 80%-20% in one period and 20%-80% in the next period. One must recognize that the fraction of foreign borrowing spent on tradeables is not constant over time; it is a kind of arbitrary coefficient that will change as circumstances change. The users of the model should be alert to the fact that this is not a permanent parameter; it is something to be dealt with in each particular case.

In my model, I did exactly what you people have done; I had a change in money supply, it being the change in reserves times a money multiplier. You have other elements in there, but I notice that when you get down to it, those elements do not change, so that really  $\Delta m$  and  $\Delta r$  are the same. The vision of the amount of money available to private credit being a residual, makes one think that somehow there is a money supply generated by some sort of mechanism; that based on such supply the government is going to demand certain credit (those could be very big demands at certain times). What is left is this private credit and reserves. In any case, when all is said and done, private sector credit is a residual. That is a useful model at times.

I think it is useful to think about Chile as an economy that is over-run by a huge demand for credit. Here I think you have to make some changes. It is a question of having a demand for credit in which people were ready, but not happy to pay incredibly real high interest rates; the money was not forthcoming at normal interest rates but the banking system produced funds in the form of time and savings deposits, by paying people, in effect, huge bribes to hold that supply. That is how the money supply in Chile got up to nearly 30% of the gross domestic product. It seems to me, for situations prevailing in Chile in recent years, the correct way to model the process is to have the demand for credit in the driver's seat, with  $M_2$  responding along a relatively stable demand-for-deposits function, positively related to the interest rates paid on those deposits.

Now, just a final word or two. I think, as we make simulation models, that all of us have been careful to try to be as faithful as possible to what we know to be the fundamental long-term result. We can be off the transformation curve in the process of adjustment, or in the presence of certain types of distortions, but not in full equilibrium. That is to say, we surely do not want to deny the results of comparative statics as we explore dynamics. But these dynamics can be

/treacherous. You



treacherous. You can get yourself into a set of dynamic adjustment functions that will do surprising things --things you will sometimes find gratifying, and sometimes troublesome and worrisome. I think I have a little of both in my own results. For example, in dealing with the debt, we dealt with a classical case and a Keynesian case.

In the classical case, under our assumptions about the dynamic process, if capital flows in over a period and then simply stops flowing in, the model generates a bulge of output above its norm, followed by a period of shortfall of output below its norm. If you cumulate the extra output during the bulge, you find it is exactly cancelled by the cumulated shortfall later. The integral over the whole period is zero. I find this fascinating --there is no free lunch even when we only have capital flowing in. When the time comes to pay back debt, there will be first a period of shortfall followed by a bulge with the two sets of deviations from the "norm" once again cumulating to zero.

In the Keynesian case, you do not have both a bulge and a shortfall on the inflow, you have only the bulge: you only get benefits while the debt is coming in, and there is no corresponding fall of output later on. But ultimately, there is no free lunch even in this case. For, when in the Keynesian case you pay back the debt, you get a shortfall but no subsequent bulge in output. In this case there is no feedback either when you get indebted or when you pay the debt. All this is, to me, fascinating, not troublesome. However, when I tried the flexible rate, I just put the debt coming in and I held international reserves constant and made the price of tradeables an endogenous variable. What happened? Wages stay at 100 all the way; income stays at 100 all the way; the flexible exchange rate works perfectly. We know, however, that real-world flexible exchange rate systems do not work like that.

It thus does not make sense to use this simulation to try to think seriously about the meaning of how a flexible exchange rate would function.

Now, on the dynamic implications of your case, what bothered me in a certain sense was that I did not see the model go to a long-run equilibrium as I would like. If real output is lowered when you reduce tariffs, would it not increase if tariffs are increased? Is this the way we think we should go? Since I know from other models that I worked with, and believe on the basis of long experience, that this is not the right long-run answer, we must ask, how can your model be modified so as to produce the "correct" answer for long-run equilibrium?

Anyway, I think you made a wonderful effort, and I congratulate you.

Mr. Massad:

Thank you very much.

Here we have now with us Ricardo Ffrench-Davis.

/Mr. Ffrench-Davis:

Mr. Ffrench-Davis:

I would like briefly to comment on something I think should be present in this model and in the coming exercise: two aspects that incorporate a link to growth, and that take account of the actual behaviour of this type of economies. These have to do with some of the asymmetries in the behaviour of markets.

In respect to trade opening-up, the paper starts with a uniform tariff that moves uniformly to zero. This assumption omits the relevant point that initially protection is practically never uniform and liberalization is not uniform either. We might find quite different results if we had different trade opening-ups.

Usually import liberalization processes, actually do not start from a uniform tariff but from a wide dispersion of tariffs. Thus, the reform would be changing deeply the relative prices, not only for importers vis-à-vis exporters but particularly within importables. The direction of change will tend to be, for example, in the relation of competitive and non-competitive goods, and between consumer and investment goods. As a rule, duties and non-tariff restrictions on investment capital goods were already totally liberalized, while those on consumer goods were considerably high. So across-the-board liberalization changes abruptly price relations in favour of demanders of consumer importables and against capital goods. Both changes may have very deep effects on the saving-investment relationship and, consequently, is linked to growth.

A second related point is that in several countries the opening-ups have started with or have concentrated in exports, and action on the import side has come latter and/or on a gradual or selective basis; and the implications may be very different with respect to a process of across-the-board import liberalization. What has predominated in many cases is a move towards less or no discrimination between the domestic production of importables and exportables. But that can and has been achieved by a road different to that of "free trade" and implies differentiated protection within different categories of importables and within exportables. This is not taken up in the model and I think that it is a point that necessarily ought to be emphasized in any analysis of opening up the country to the international economy.

The second issue I want to mention relates to the financial area. In several country cases where a deep domestic financial reform has taken place, in direction of liberalizing the domestic market and capital movements, interest rate differentials have prevailed for long terms. This has been the case in the experiments imposed on the countries in the Southern Cone. This fact, an average annual spread of 20 points between the cost of domestic and foreign credit, for seven years, cannot be explained by exchange rate expectations. Moreover, when capital inflows operated by domestic and foreign private agents were climbing persistently, in Chile, net debt with transnational commercial banks averaged a rise of 54% per year between 1976 and 1981, and the overwhelming majority was contracted by the domestic private sector. Consequently, the explanation is somewhere else.

/The explanation

The explanation is in "market segmentation" and in asymmetric responses of the market. In other words, a market behaviour that instead of being "benign" for growth might result "pervasive".

First a word on crowding-out, of a non-traditional type. When private capital inflows increase, there results a crowding out of domestic credit, loans to the public sector have fallen and also loans to private sector. The private sector that was using domestic loans is not necessarily the same one that is receiving the foreign loans, so there we have an asymmetry that might be very important in explaining the behaviour of investment and savings, the sizeable transfers of property made since 1975, and the spectacular growth of two economic groups. Within this area, one of the asymmetries that it seems has operated, as long as the large interest rate differentials persist, and they persisted for eight years, compared with what we had before, is again related to consumer foreign importables. These tend to be more intensive in foreign loans at the international interest rate, while the most part of the domestic economy keeps operating with the still much higher interest rate in the domestic market. This relation implies a big change with respect to the customary situation of low domestic real interest rates. So again we have a bias against domestic output and national tradeables. (Notice that, with import liberalization, the production of tradeables fell from 41% to 36% of GDP between 1974 and 1981.) While imported capital goods tended to already have cheap foreign loans so there is not a change in that part, we have a series of changes converging towards making more attractive the imports of consumer goods. I think that the weight these changes may achieve might be an explanation why some of the successful country cases of opening, that are one of the many varieties of opening to international markets, have taken care of not liberalizing too much the imports of consumer goods.

A last point within this issue, is the incidence on the exchange rate, that has been so talked about, and that was important in several of the countries where the capital inflows were the strong factor allowing, or explaining the appreciation of the real exchange rate. For a long while the exchange-rate policy was given a signal against the production of tradeables, not only of national importables but also of exportables. That contributes to a very complicated spectrum of the incentives for the activities to be increased, in order to compensate for declining activities (import substitutes).

The market seems unable to foresee the accumulative disequilibria being generated. I think that the policy contributing to stability and growth would have been a restriction on capital movements. Given the short run variability of the interest rate spread, that could not be taken care by a tax on capital flows or interest payments; additionally to the tax quantitative regulations or the channelling of funds (not necessarily its use) via the public sector seems to be needed. The market is not self-correcting in this area.

If one incorporates one additional element, that foreign loans tend to have rather short maturities, that generates another signal in the market in favour of consumption as against investment.

/Finally one

Finally one finds out that the market has shown a tendency to identify "comparative advantages" in activities like trade of imported goods, and activities geared to transfer cheap foreign capital to the domestic economy where the domestic interest rate is substantially higher. That is what happened at least in one or two of the countries, where the "dynamic activities" have been the trading of importable goods and financial services, and the production of other services and goods has been going down through the whole period. I think that these are some dynamics of asymmetries that might be very important to explain what has happened in the neo-liberal experiments. For relevancy, economic models should try to take account of them.

Mr. Massad:

I have now Ernesto Gaba in my list.

Mr. Gaba:

I have a few points and some are related to the foregoing discussion. Point number one has to do with the production and supply. The assumption in the model B that the transformation curve as given requires other assumptions, namely, that there is foreign saving and that the domestic saving has to be reduced to the same quantity in order that total net savings keep constant. The idea of this assumption is that the model is built for the short run, but my question is which is a time dimension for the short run. In the different simulation exercises each period has no time dimension, but all coefficients are derived from annual or quarterly data. If I make an assumption that each period is one quarter and look at all the parts of the variables during the adjusting process, this short model covers three years. Then, my question is if the economy is closed out, it is open to the trade during three years, it begins to import capital, raw materials. That, in the short run, will have to cause some effect on the transformation curve, probably in the short run we have some gains in terms of production.

Point number two is related to the assumption about the behaviour of the domestic and the foreign residents. The foreign residents can buy domestic debt but the domestic residents cannot buy foreign assets. The experience, especially in the case of Argentina, shows that the demand for money, with external assets, improves the result. Also, the foreign residents have an expectation function in the model, because, if they perceive that the relationship foreign debt to gross national product is growing, they will increase the risk premiums. My question is, why is it that the domestic residents do not have the same perception and also have an expectation function about the rate of exchange. Then, in line with these expectations, probably, the ways to work the model are asymmetrical with regard to foreign and domestic residents.

The third point, which was mentioned this morning, is more specific and in regard to it I have more doubts. If we look at the money and credit specification, as in equation (23), the nominal demand for broad money, let me say, is  $M_2$ . However, this money does not pay interest. Then footnote 36 is necessary, in that if the interest rate for time deposits increases there is a change in size of the definition of money, but broad money does not change. I have some doubts about

/this assumption,

this assumption, because in the experience of Argentina --and I believe also in Uruguay and Chile-- when you put free rate of interest for deposits, broad money increases. The specific point is this, if the demand for money is for broad money and includes time deposits, what is  $r_{dt}$ ? What is this rate of interest? Is it the rate of interest of the domestic bond? Usually, and you mention this in the second paper, in our economy we do not have market for bonds. In reality, the market for bonds is a banking market; the market for bonds is the deposits. Then, I believe, the model can be improved through the introduction of some distinction between currency and deposits.

On another hand, I make this exercise: let us assume, in equation (23), that the expected inflation rate increases. Then, according to (23), the demand for money goes down. Let us look now at equation (25). If the demand for money goes down, in accordance with this equation, we have an excess supply of money. Then, according to this specification, the nominal interest rate goes down. I do not believe that if the inflation rate, the expectations about inflation, increases, the model needs to reduce the nominal rate.

You take this model, where you put real assets, money without interest and bonds with interest, and free interest rate, and you increase the rate of expectations about inflation, the result in the model usually is the increase of the nominal rate. There is some discussion relative to the way to see the transmission in the real rate, how it increases or decreases. On this point, if I am correct in my doubts, my suggestion is this: equation (23) is the demand for currency (this is money accruing no interest); equation (24), the supply of money, is high power money, it is the base. Then, this relationship is true in the balance of the Central Bank, where the demand money and the money supply is the condition for high power money. To introduce other markets, markets for loans, for bonds, and assume that the market for bonds is the market for deposits, then the supply of loans is a demand for deposits, in equilibrium, equal to the demand for credit.

Equation (25), how to adjust the nominal interest rate, has two markets: the money market (the high power money), and this is the right sign,  $\gamma_{14}$ , and the market for bonds or loans where, if it is in disequilibrium, the excess demand for credit is going to be the nominal rate of interest. You put this specification and make again this exercise to increase the rate of expectations about inflation. The result is more in agreement with the usual model of portfolio selection. One criticism could be the following: if I apply what is suggested, I do not need both markets; but all the exercise is to take one position of equilibrium and look at what happened during the adjustment process. In this way, you also can work in the model with the requirement of the reserves, because the demand for deposits, with some coefficient, is a requirement of reserve. If the government wants to finance the economy just with money, it can issue money or increase the requirement reserve. This is more or less the MacKimon proposed way where the second paper recommends that, if the deficit of the government is increasing, you have to increase the requirement of reserves.

These are my comments on this point.

Thank you.

/Mr. Massad:

Mr. Massad:

Mr. Daniel Tapia.

Mr. Tapia:

Thank you.

I regret that most of the comments that I would like to make, have already been anticipated by several participants. I am part of the ten per cent that only recently were "exposed" to this model. My comments will anyway be brief and probably sort of disorderly assorted.

The main problem I have with the model, notwithstanding its merits, not only is the lack, which has already been pointed out, of certain equations in terms of the factor market, but also the lack of the explicit role of expectations in many of the sectors. One of the objections, for instance, is the complete substitution of foreign savings by domestic savings, so as to have total savings constant. I would say that if we introduce expectations in regard to permanent income, different results could be obtained. Of course, there would be a variation in the model.

Another aspect that has already been mentioned is the direct relationship between falling output and falling employment. This very direct relationship, also, is not ad hoc. In this respect, I have some --let us say-- mixed interpretations. For instance, what happens with a reduction in tariffs, in the first model under analysis, is to bring about a fall in prices. This, in the model I understand, causes a similar fall in wages to keep real wages constant. Aside the difficulty posed by this sort of phenomenon, it was stated that everything is adjusted so quickly here that actual values are the same as those expected: wages or expected wages, for instance, have no role, in terms of the labour market.

I have some doubts in terms of the selection of ad hoc parameters to suit some of the equations. I understand this is something that is functional and they are based probably on previous experimental quantification. However, this could be quite misleading in regard to what could actually happen in different countries.

I have also some doubts as to the possibility of having a large aggregation of all the area, in terms of obtaining a response to this model. I mean, all poodles are not alike. For instance, in this case, the parameter for each country is determined from its past experience. The observed change in prices can have, in a country that historically has had changes in prices, a very different response in another country that normally has had stability. This could affect, of course, the results.

Along this same line, if we are trying to say that this model, more or less, represents a typical Latin American economy, some sort of growing inflation would have been an adequate hypothesis. Probably, the result can also be different or uncertain, whether we are talking about a reduction in the rates of inflation or about a reduction in prices, as is stated here.

/The opening-up

The opening-up of the capital account could introduce changes in the demand for money, as was also stated, and that was another opinion I had. The model in general and the opening-up to three types of goods, I think is a very adequate sort of analysis. However, I also have the feeling that having these three types of goods is not exploited in the manner that it could have been exploited. I would say that the opening-up to these three types of goods, at a certain moment, does not seem so necessary in terms of what is the analysis; I believe there is much more to come from a deeper insight.

There is also, I feel, some very frequent use of partial equilibrium models, without having specific arguments or some sort of microeconomic maximization that justifies their use.

I realize of course, that it is very easy to offer comments, while it is hard to work a model. As conclusions of the model, I think there are some dangerous statements, at the end, when speaking of choosing a best unemployment or employment policy that is based on the results of the model, and we know that those results are very much based on the characteristics given to the model itself. The sort of unemployment that is generated, is not easily grafted out of the model. It seems that this is a sort of first-of-all reaction, in terms of the decline in the production of importables or what is the increase in the production of other goods, or maybe some sort of specificity of labour in the different sectors. Anyway, I find that the unemployment problem is not duly tackled when we run into those sort of quantity adjustments.

This is also a point that is present in the inventories treatment, where we could also think of having some sort of demand, or derived demand, for inventories, based on the expected prices in respect to actual prices, instead of having only a quantity adjustment. Anyway, in terms of what is the reason for having this model, the great problem that I have with it is that, from the start, we have completely overlooked what the principal reasons for the process of the opening-up of the economy are; that is, the increase in product, efficiency, and technological improvement. Of course, they are stated as a short-run model, but we must not lose the point of view that all the purpose of opening-up is obtaining benefits. That is why these results are explained by the short-run nature of the model, in terms of the equations that are stated. However, let us say, it is a sort of different and difficult experiment for a country to engage in the opening-up of the economy with such a dark future, when it would expect reductions of employment and output.

In terms of its future applicability, I think that the aggregation process is a very difficult one. What we have observed in the countries that have engaged in liberalizing especially the trade area (not the capital market necessarily), are the dramatic changes in the production structure. These changes, with the time period, which is not specified either, but which Mr. Gaba said could probably be three years in terms of the parameters used, should have already taken place and, therefore, it is sort of peculiar having this rigidity in the productive structure in such a long space of time.

/In terms

In terms of the analysis of what happened in the area during recent years, we must take into account the very special circumstances that took place and that proved determinant in producing these results. We should have to go back to the oil crisis, when the world financial markets began to face very special circumstances, which most probably will not be repeated, such as the large amounts of money available for lending to countries that could engage in some sort of liberalizing of capital markets.

Those were my summarized comments.

Mr. Massad:

Thank you very much, Daniel.

Ricardo Arriazu, your turn to contribute your comments.

Mr. Arriazu:

Thank you, Mr. Chairman.

In my opinion, this paper makes a good contribution to the understanding of the working of small semi-opening economies. Since I cannot improve on the comments of Ken Clements in reference to the structural part of the model, I will concentrate my favourable comments on other aspects of the subject.

The model has been specifically built to study the dynamics of opening processes to trade and capital flows. After the failure of the opening process of the so-called Southern Cone countries, it might be thought that the model has become rather obsolete. However, while studying the dynamics of the opening processes, we have also obtained, as a by-product a powerful instrument to answer other very important questions for small semi-opening economies. For example, if the model is correctly specified, and I will come back later to this, it should allow us to answer questions such as the differential efficiencies of alternative policy instruments under different degrees of opening to trade and capital flows. Most models seem to imply that all instruments work always identically under differing conditions of integration to goods and capital markets. In my opinion, this is not the case and this model allows us to study how different policy instruments react to different conditions in relation to integration to world markets. In think this is one avenue of thought that should be explored by the authors.

For instance, it is well known that, if economies are almost closed, exchange rates work mostly through changes in relative prices; but it is also well known that if economies are almost totally open, exchange rates work mostly through inflationary avenues. Likewise, causality goes from money into prices, if the economy is almost closed to the movement of capital and goods, and causality goes from exchange rate to prices and to money, if the economy is totally open to the movements of capital and goods. So there is still a vacuum in economic theory in regard to how different economic policy instruments work when subjected to different degrees of opening. I think this model can fill in this vacuum and it is an approach that I strongly recommend to the authors of the paper.

/Coming out



Coming out to the model itself, my first two comments are very similar to those expressed by Ernesto Gaba. I imagine this is so because we have suffered the experience of Argentina. In the first place, I am a bit worried by the lack of a financial system in this model. While it is true that here we can consider the money market as a money base market, and bonds as deposit markets, there is a minor difference between this assumption and the way the model works within a financial system.

Normally, minimum reserve requirements give rise to demand for monetary base. If an economy is open to the movements of capital and capital flows are strong enough, when the interest rate rises, the demand for time deposits and the demand for monetary base will both increase. Therefore, the sign of the relationship between the monetary base and the different rate will tend to be positive, rather than negative. Were this not the case, the working of interest rate as an instrument of adjustment of the balance of payments will be incorrect. In the model, it has been assumed that the relationship between the interest rate and the demand for money has a negative slope, which is only true for currency and for demand deposits, but it is not true for  $M_2$ ; neither is it true in general for the monetary base, and we are either talking about  $M_2$  or about the monetary base.

The second point is that the model does not allow for private holdings of international liquid assets and, even though the assumption is that foreigners can hold domestic financial instruments substitutes in some cases, this lack of assumption of holdings by the private sector raises the point that there is not a reciprocal relationship. It only allows for holdings to be zero or positive, but it does not allow for these holdings to be negative and, in cases where private sector holdings of foreign assets are larger than the private sector holdings of domestic financial assets, such case could not be considered in this model. Therefore, like Gaba, I would strongly recommend that this assumption be changed. In Argentina, I would say that the dollar holdings by Argentines are at least ten times the monetary base. Therefore, unless you take into account this factor, the model will not be able to take up this problem.

Incidentally, I was very pleased by the consistency shown by the authors in the treatment of interest flows, since these flows are included not only in the balance of payments but are also included in expenditure equations. Most macro-economic models tend to include interest rates as influencing the behavioural assumptions, but then they forget the impact of the flows of interest payments upon expenditures. Here I have to say that the authors have been very consistent. However, they made life too easy for themselves when they have, for example, restrained the holding of external debt just to the public sector. I insist on this point, because the public sector external debt is not the same as the private sector external debt. Interest payments by the public sector normally give rise to the public sector deficit and to creation of money, while the private sector interest payments normally will imply capital flows or decreases in expenditure. Therefore, in trying to approximate the model to reality, one of the bigger problems that Latin American countries face today is the impact of the public sector interest payments on the budget deficit. In most of the Southern Cone countries these interest payments represent from 5 to 7% of gross domestic product. To make the model more consistent I would say that we would have to introduce this element.

/The other

The other point, that was raised by Dornbusch, is the relationship between nominal public expenditure and real public expenditure, and I would say that while I tend to agree that if we have an opening-up process and the prices of imports drop, to maintain the level of nominal expenditure implies having an increase in the level of real expenditure, which is not wanted in the model. On the other hand, my experience in public sector budgets indicates that budgets follow real expenditures when inflation goes upwards, but they follow nominal expenditures when it goes downwards. So I would say that, in this case the assumption approximates real life behaviour.

The other point that I would like to mention is that I wholly agree with Rudi Dornbusch and other speakers, that the model needs a specification of the factors markets. Definitely, part of the problem of Latin American countries has been the behaviour of real wages in the past, especially when you combine opening processes with stabilization processes, while you have widespread indexation of wages. When you are stopping inflation and you tend to adjust nominal wages by past inflation, then, real wages will tend to increase, and as a consequence, the real exchange rate will tend to drop.

It is obvious that to make it politically feasible, the model has to include the effects of the opening-up process on the supply side. I was very impressed by the comments of our German colleague in the sense that if any person is reading the paper and the model and sees that the resource opening-up processes are declining real wages, declining output, increasing unemployment, increasing debt, and the deterioration of the current account, definitely, nobody will see any advantages in the opening-up. Therefore, the supply side has to be worked a little more.

Another point, Mr. Chairman, not related to the paper, but related to a subject that was touched this morning and this afternoon are the terms of trade and exchange rate policy. I tend to agree with Professor Harberger in that the only way to measure real exchange rate is to measure the competitiveness of the export and of the import substituting sectors, but I would also add that the only way to achieve this measurement is by looking at the whole balance sheets of the export and of the import substituting sectors. Even though the practice of measuring real exchange rate in terms of real wages normally will produce good results, wages are not the only input nor the only element of costs. For example, I can give cases in which taxes were increased to pay for unusual expenditure in armament, reducing, therefore, the competitiveness of the tradeables sector. Similarly, if there is an increase in the international interest rate, competitiveness will also be decreased.

The final point, if, for example, by looking at the balance sheet, we come to the conclusion that competitiveness in the tradeables sector is reduced because of the deterioration in the terms of trade, then, is that enough to conclude that we have to adjust the nominal exchange rate to maintain the real exchange policy? If our answer is positive, it implies that the non-tradeables sector will be the one paying the adjustment and, therefore, to maintain the policy of always keeping the real exchange rate constant implies that we are looking basically at the current account, not caring about what is happening to employment or output, and, therefore,

/I would

I would say that we are much closer to the position of Díaz-Alejandro than to the position of what people here have been saying.

Mr. Massad:

Thanks very much, Ricardo.

I can see from your comments that national experience marks us in one way or another. Tomorrow, we will have an opportunity to go, in more detail, into the Chilean, Argentine and other experiences.

I have now Andras Uthoff, from PREALC.

Mr. Uthoff:

I tend to agree with Daniel Tapia. It is very difficult to make additional comments, especially, being a non-macroeconomist. However, one of the most important points that have been raised here, which I know the authors are aware of and on which we are working, is the inclusion within the model of the factor markets.

I agree on this and also in keeping the model simple as Harberger has pointed, but I disagree on the solution he proposed. The first question we must raise is the following: once we are in disequilibrium in the goods market, do we have excess supply or excess demand. The answer has a lot to do with what type of demand function for the factor we will have. I am sure that in our type of modelling, we will find that there is excess supply in most of our disequilibrium situations, so the economic activity will be bound by demand. Hence, the type of equations Al Harberger wrote should include in some way the level of economic activity and the arguments which explain such level. In this sense, the idea of incorporating the labour market is fundamental to explain equilibrium. The dynamics of equilibrium will work through effective demand. In the case of excess supply in the goods market, what you do by indexing the economy and the consequences you get on real wages are problems which have to be dealt with very carefully in the model.

My second point concerning equilibrium is that, once we depart from a point of equilibrium and we move to another one, we are talking about changing relative prices. Changing those prices will mean that we are reallocating resources, but it may also be the case that some of the resources will not be used at all. Some of the activities will not be part of the feasibility set on which the model is built. We have to be very careful on how we deal with this problem. It is a very crucial issue. In Chile, there is great concern about what is the real potential for reactivating the economy.

These are the two issues I wanted to point out.

Mr. Massad:

We are very happy that we have joined efforts with you in trying to introduce the labour market into the model.

Now I have Willy Van Ryckeghem. Would you like to take the floor?

/Mr. Van Ryckeghem:

Mr. Van Ryckeghem:

I belong to the group of participants whose exposure to this model has been relatively recent, so my reactions are relatively fresh. The first one would be a reaction to the relatively gloomy consequences which the liberalization scenario seems to lead to. I wonder whether that is not the consequence of the simulation approach, which I think has a tendency to use only one or two policy instruments at the same time in order to isolate their impact. Therefore, it tends to neglect the use of a sufficient number of policy instruments. I do think that it should be possible to have models using more policy instruments, so that the transition from one equilibrium point to another be less perturbed. For example, I suppose you could introduce the restriction that you would try to stay on your production possibilities surface. My specific question would be whether it is possible to use the model in some kind of optimal control framework that would use all available policy instruments.

The second reaction and I think this is shared by various participants, is that what seems to be missing in the simulation is some description of what the country gains as a consequence of the liberalization measures. In private conversations, the authors told me that, in fact, what they should have done was to calculate in each case the real expenditure which had been maximized in each of the simulations. That is somewhat dangerous in the sense that maximizing expenditure can lead to an increased inflow of foreign capital and this may not really be regarded as optimal. But, independently of that, maybe there should be a calculation of the gains from trade that result from the liberalization.

My third comment is with respect to the domestic credit variable. If I understand it correctly, in the original formulation of the model, domestic credit is an exogenous variable; it is not determined within the model. In your compensatory policies scenario, however, domestic credit becomes the adjusting variable. Now, if there is any feedback from this domestic credit variable to the real sector, this would further depress the economy, but I do not see this reflected in the model. By the way, maybe this is related to it, the simulation graphs on page 267 do not include the path of the output gap. I do not know whether that is because the drop in output was so dramatic that it could not be shown.

And, finally, a similar comment to that which has already been made by Rudi Dornbusch on the determination of imports. I have a problem with the determination of export as some kind of residual. The economy seems to export what it does not consume itself. Now, clearly, this will vary from country to country. I suppose that for smaller countries this would be less the case than for larger economies. It would apply to some extent to Argentina, e.g., which would export the meat its own people do not consume themselves, but it probably would not apply to the case of Chile's copper, where domestic demand plays a much less important role. The authors recognize this themselves in their paper, when they say that the only way the demand of the rest of the world is reflected in their model is through prices. I think if you have to apply this model to small countries, you may have to revise the way exports are being determined.

/This brings

This brings me to some preliminary suggestions, as far as the future research strategy is concerned. Personally, I would be reluctant to go ahead, full steam, with the model as it is now and try to apply it to a particular country. I would rather be tempted to test the essential building blocks separately for a range of countries. If some do not work out, then, in fact, you may have to abandon that part of the model and have it replaced by some other one. It might be the case for the supply function, for example; or for what I just mentioned with respect to the determination of exports.

Mr. Frenkel:

I just want to make two minor comments in reply to Harberger's response, as for the transformation schedule. I am not sure that we are really talking about triangles and, if we do talk about triangles, they are huge. We are talking about removal of tariffs from 100% to 0%, so, when we say those are triangles, we think about small numbers; they can be huge numbers and, as a matter of fact, as you taught us, when you get to this order of magnitudes, we have a lot of compensatory rectangles. If we do not have a measure of the welfare gains of the removal of the distortion, the long-run welfare gains, then we do observe immediately everything gets worse and, why should we start at the worst place? So, it would be useful to have some measure there.

Mr. Williamson:

This is not, I confess, a response to Jacob; it is just one other point that I thought I would like to ask, before the authors reply. It arises out of their second paper, which we saw yesterday. The assertion is made that aggregate demand in the North is not important in the determination of the balance-of-payments position unless, at least, it works by influencing commodity prices or interest rates. But abstracting from those, they argue that their empirical results show that there is not a strong effect. This is very much contrary to what we have been arguing at our Institute, so I want to find out just how strong the basis for this conclusion is. Particularly, is this a regression in which you have estimated balance-of-payments outcomes of individual countries in certain years? Or is it a sort of cross-section/time series regression in which one of the variables is a cyclical variable from the North? For, if that is the type of exercise, then surely it could be that as countries earn more through exports, a year later they start spending the import proceeds: after all, the business cycle has a lot of serial correlation.

If that is what is going on and the results are accepted, we are not required to change the policy conclusions that we have been drawing in the North, which amounts to arguing the importance of making certain that aggregate demand in the North is adequate to give the South a chance to adjust. If that is not the right interpretation, I think we should know about it.

/Mr. Frenkel:

Mr. Frenkel:

It seems that the objective function is in terms of employment, that is proxied by the level of output and, therefore, it seems that if we are on the transformation curve per se we feel good about it, whereas if we had started from consumption, we would have had many questions about the efficiency of consumption and things like that. I wonder whether, in the presence of initial distortions of that type, we know that rates of substitution are not equal to the rate of transformation, if we just emphasize the production side.

Mr. Khan:

The test that we did, and I will be happy to send you a copy of the paper, was to run regressions on both the aggregate data, as calculated in the WEO, and for a sample of 32 non-oil developing countries, covering the period 1973-1981. In these regressions we have a variety of factors on the right-hand side, including the growth rate in industrial countries, and we found the effect of this variable on the current accounts to be small. I think this result is principally related to the fact that growth in industrial countries affects the terms of trade, which is another variable in the regressions. It also affects the real foreign interest rates, and so we believe that while it may be important empirically, we did not find it to be so in our tests.

Mr. Williamson:

Except that the main fact will be a question of the countries spending more because they are earning more, which is influencing those results as well. I certainly would not accept at all that foreign demand factors are unimportant.

Mr. Khan:

I think I will just go quickly through the many questions related to factor markets. I do not want to take them up individually. There is no denying that the model lacks factor markets, and that they should be there. Almost all participants have made that point. We are already working on this, so I agree with that criticism. Regarding the question that the results are really gloomy, and there seem to be only costs and no gains from liberalization. Actually the gains can be measured in two ways: one is a sort of straight gains from trade argument and in the paper we took that as given. Ken Clements commented at a very early stage of the draft that maybe there was some merit to grafting what we were doing on to some type of computation general equilibrium model so as to be able to measure welfare gains. I think that is probably something that we ought to think about. We had restricted ourselves, as our introduction says very clearly, into taking as given the improvements in resource allocation, efficiency, and gains from trade. Here we just wanted to look at the short run.

Another way of approaching the question, of course, is to examine what happens to growth, and a number of people, for example Daniel Tapia, have mentioned it. The moment you allow for net investment, the transformation curve shifts out and you get an increase in production and thus increased growth. We have excluded this possibility from consideration by fixing that transformation curve. So those two general points are well taken.

/Now, I

Now, I come back quickly to John Williamson's points on the paper. John asked me early if I was prepared for the assault that was going to come. John, if that was an assault, then I really did not notice it, because your comments are extremely constructive and helpful. My response to the partial adjustment question is something we can take up later, especially as I think we have already talked about it. There are some recent papers, e.g., by Sebastian Edwards, on Colombia; by Mario Blejer and Gil Díaz, on Uruguay; by Mathieson, on Chile and Argentina, that use this type of approach. There is also some work done recently on Indonesia and Malaysia. We were just following in the same spirit, but you are right, we should probably think some more about it. The other question that you raised, namely, why the market does not clear instantaneously, I think one can come up with a number of good reasons, i.e., market segmentation, information lags, etc. On the issue of compensatory policies, an obvious and excellent idea is to do the simulation and then putting a sort of a package of "optimal policies" in place to minimize the cost. There is, however, a technical problem because you are flipping around endogenous and exogenous variables. We found that out through trial and error that sometimes you can do it easily; other times it requires a major manipulation or even respecification of the simulation model. However, the idea is certainly worth thinking about. Roberto and myself plan to do it. It might be interesting, in the context of the second paper, to have these external shocks and to go through a liberalization process, incorporating all the negative effects. Then one could see what kind of policies can be designed in order to minimize the costs? I think that is a very worthwhile suggestion.

In relation to Al Harberger's remarks, namely including foreign borrowing directly in the expenditure function, it is an obvious thing that should have occurred to us. At present foreign borrowing works indirectly through its effect on the money supply. In other words, a capital inflow increases reserves, which increases the money supply and, in turn, increases domestic expenditure.

Mr. Harberger:

In that case we can say that the banks then lent to the domestic constructors so the foreign money ended up going to domestic construction. We were not treating it as income; we were treating it as somebody else's money that they were using to finance investment. In a certain sense, if one breaks out investment, maybe even the way we spend any borrowing ought to be separately treated. If the nation as a whole is doing this borrowing, at least, that extra part ought to be separately treated, because of its great importance in the sense that its allocation between tradeables and non-tradeables has no necessary connection with the way ordinary income is allocated between them. Moreover, whereas the allocation of ordinary income between these two broad categories is likely to be quite stable over time (at least within a given policy environment), we have every reason to expect the allocation of foreign borrowings between the two categories to be quite volatile.

Mr. Khan:

I agree with the idea of this foreign borrowing having an impact on expenditure. I thought we had captured it, but I have to think about it. Ricardo Ffrench-Davis has left the room, but I think he made a very useful point; it is

/semantics, but

semantics, but it has a lot of bearing on this whole topic, and Ken Clements' as well. We take liberalization, opening-up, outward oriented policies, to mean the same thing. In fact, however, outward oriented policies in Southeast Asia are different from the opening-up and liberalization policies as practiced in Latin America. There is no question about that. To treat all these countries as the same is a mistake, because you find countries, like Singapore, that are completely free, while there are the cases such as South Korea, etc., that still impose controls on imports, yet are outward oriented in the sense that they push exports. That is an essential difference, and I think it is a very good point. Ricardo Ffrench-Davis also talked about tariff dispersion but I do not think we can deal with this having only one importable good in the model. Ernesto Gaba is absolutely right that there is a very strong assumption about the substitution between domestic and foreign savings, and also that three years is probably too long to keep the transformation curve fixed. It is also quite restrictive to assume that domestic credit and foreign assets are not substitutable. This argues for the development of some type of portfolio model, but we did not go into this. I am wondering whether, if in our interest rate equation we had a sort of a Fisherian type effect, as well as expected inflation, would our rationale not work? Still, we can talk about that.

On Daniel Tapia's comments, I think most of them I have dealt with. On the question of two interest rates, we could, in fact, introduce two interest rates into the model. This has been done in money demand functions in the United States, and in a number of other countries. However, one should remember that it is not clear what sign one should expect for the deposit interest rate, since an increase would raise the time deposit component, while lowering the currency and demand deposit components. On balance there is no presumption whether money holdings would rise or fall.

Andras Uthoff is going to help us on the factor markets and on the movement of the transformation curve. I think, on this question of the export demand function, the same rationale I had for the import demand function this morning applies. To introduce an export demand function implies imperfect substitution on the export side as well.

Finally, whenever one goes through these empirical exercises, there are lots of specification checks. When one has a model built up theoretically, one does not immediately go to the computer and estimate the model after imposing all the relevant restrictions. Typically, the strategy is to go block by block and try and test alternative specifications. After this initial experimentation the whole thing is put together. Therefore the methodology of testing that is being suggested for us is one we would normally adopt anyway.

Thank you.

Mr. Zahler:

First of all, what I would like to point out is that I agree plainly with all the comments made by Ernesto Gaba and Ricardo Arriazu, in regard, essentially, to the way we have treated the domestic financial setting. This is quite rudimentary and also it seems to me, looking at it with some perspective, we really have two

/different definitions:



different definitions: one for the money and one for the supply of money, in the sense that we should take a little bit more care and we should realize what we are really doing. Even the interest rate has a negative hang on demand for money. There is a relatively narrow definition of money, while in the supply of money we have a broader definition. Therefore, it seems that we have to check our work and there, I think, your suggestions will be very welcome.

Now, regarding the other point that has been mentioned today, of the assumption of rigid transformation curve, we consider that it is exactly a very restrictive assumption. In the first paper that we worked on and which was published by CEMLA, we made an explicit assumption, namely, that foreign savings substitute a certain percentage of domestic savings, as complement a 100 times than X percentage for domestic savings. Consequently, this is a situation where, when you have foreign savings --I should say when you have a current account deficit-- then you have a movement of the transformation curve. Thus, you have a real effect essentially of the financial opening-up, and also of the commercial opening-up, whenever you have a current account deficit. That is an indirect way of capturing an obviously beneficial effect of the liberalization process, that perhaps should be also an investigation area where we could work.

I also agree with Ricardo Arriazu in that we have to incorporate the public sector foreign debt, particularly, because of its effect on the budget deficit and its implications for the money supply, differently from what happened with the private sector foreign debt.

I would like to make just two final comments; one is in regard to what has been called here the gloomy consequences of the liberalization scenario. I think it is true, when you see the chart, that we really give, or may give, that impression, although in the text we are very clear in stating that we do not want to deal with the long-run consequences. Nevertheless, there are two things which must be stated here: one, the commercial opening-up had, in the model, as it is a long-run model, beneficial effects. Unhappily, we did not mention nor graph in our paper that the real expenditures are permanently higher than in the initial situation. That is a reasonable proxy of welfare, let us say, due to the present relatively lower price of the goods that can be imported. Consequently, there is a long-run beneficial effect, which, as I said, could have been stated and graphed, but neither was done.

On the other hand, on the financial opening-up, if one does not include the impact of the financial opening-up on domestic capital formation, there is no way we can capture a beneficial effect of that type of policy. Therefore, I think it is a crucial issue to consider that financial opening-up has to have a positive effect on net domestic capital formation.

The last point I wanted to make refers to two things: one is the question asked by Mr. Van Ryckeghem as to why we did not show the output gap on the compensatory policy of the credit policy. The reason is the following: it is not that the output gap appears much bigger than it was --it really shows a very minor difference-- and that is because due to the way we worked the model, the output gap depends essentially on relative price changes and, in fact, through the lags in

/the supply

the supply of importables and exportables in respect of production. As we do not have a big shift in relative prices due to this effect, and as we are not capturing the effective demands on supply, we really did not capture a reasonable outward gap and, therefore, we used real expenditures as a proxy to show the trade off. That is a problem of the model itself, in the sense that, as I said in the morning, we are too relative-price-intensive and too little-effective demand-intensive. That is why we wanted to show that there was a trade off. If we had shown output we would have shown only a good reasonable result in terms of current account with almost no lateral effect, and there is a lateral effect. You can capture it on expenditure and on employment and output gap, if you consider, which we did not, in this model a direct linkage between effective demand and effective supply. That was the reason why we did not put it there.

One further comment, has to do with a matter upon which I agree plainly with Rudi, in regard to disequilibrium. I think you mentioned a very basic point we have discussed extensively with Mohsin. There is a way in which we could capture what you say and I think that is something also we should do. The problem is the following: if we start from an initial disequilibrium situation and want to put some type of policy opening-up or shock, terms of trade, interest rates, etc., then, as Mohsin mentioned in the morning, the problem is that we do not know in principle what parts of the time path of the macrovariable are due to the policy change and what parts are due to the initial disequilibrium. What one can do and check for that, is to have two experiments: one, to start with initial disequilibrium and do the policy change and, then, to start with initial equilibrium and do the policy change. Therefore, you are correct in the sense that if we capture the difference between the two, let us say, we compare the two, the comparison will give an appropriate explanation as to which is the impact of the policy change and which is the impact of initial disequilibrium. I think that is a very relevant issue for practical or empirical implementation.

Thank you.

Mr. Williamson:

Just to explain my lagging assault very briefly. The first bit is purely historical. I made that remark to Mohsin just after Roberto had denied any affiliation between his model and Keynes. That led me to believe that it must be far more Walrasian than I had realized when I had read it. When I went back and looked at the equations, they actually were not as silly after all. The second point is that, as the morning went on, I became more convinced that really the bottom line of the conclusions is that liberalization without macroeconomic management is a rather bad idea, and that is a conclusion that I find very congenial.

/That suggests

That suggests to me that one topic we might possibly discuss tomorrow is the extent to which disagreements among those around this table refer to the central guidelines that should guide macroeconomic management: Do we really have this enormous gulf that people used to imagine existed between those with affiliations to Chicago or to Keynes ten years ago, or do we really have a significant measure of common agreement which could be of use in policy prescription?

Mr. Massad:

I think we have had an excellent meeting today. We appreciate very much all comments and the extremely valuable debate.

Thank you very much.

### 3. Lessons from experience and policy options in the external sector

Mr. Massad:

Today we have planned some presentations of specific policy experiences in the external sectors of some countries, particularly, Argentina, Brazil, Chile and Israel. Perhaps it would be useful to spend the morning with the relations of those cases. Then, after the four cases have been presented, we might have a general discussion on the most important issues and lessons arising from them. Since it is not the purpose of the meeting to discuss individual cases as such, or to discuss policies in individual countries, but rather to draw lessons from their experiences, I have thought it would be more useful to have all the presentations first and then a general discussion encompassing all the cases before us. So let us start with the case of Chile and allow me invite Daniel Tapia to open the debate.

Mr. Tapia:

I will try to summarize the evolution of the liberalization of the commercial side and the financial side of the Chilean economy. This summary, I think, could be especially useful for the foreign visitors who are not well aware of how this was done.

The usual assumption is that Chile was a case where there was a very extensive trade liberalization, although the financial liberalization was much less important. Also, the conclusions are that the trade liberalization caused important losses in terms of employment and, probably, the appreciation that the implications of both, trade and financial liberalization, are not too clear. I will start with the liberalization in the trade sector, which was, and that is true, the first to be accomplished.

At the outset, we must recall what was the situation in 1973. Very briefly, we can observe that in the trade aspect tariffs had a range that went from 0% to 750%. The average tariff level was 105% and this solely accounts for ad valorem duties, that is, only tariffs; it excludes any other non-tariff barriers, which were very extensive. Fifty percent of all the positions in the tariff structure had duties of over 80%. Besides that, there were specific duties that were not ad valorem. There were also 187 positions in the tariff structure that were not allowed to be imported. We must recall that there was an extensive list of allowed imports and anything that was not in that list could not be imported. One thousand and eight hundred different tariff positions had other restrictions: for instance, the "depósito previo" (prior deposit) which, in certain cases amounted to 10 000% of the value of the good to be imported. This had to be deposited with the Central Bank, which was, of course, tantamount to prohibiting the import. One thousand and two hundred different other positions in the tariff structure were subject to have "advance approval" and 50% of those were completely banned. Furthermore, for other goods, there were import quotas.

/That was

That was the duties structure in 1973 and, of course, it meant a very closed economy. With this distorted structure, there were three different steps in terms of opening the trade sector. The first one was taken between September 1973 and July 1975; the second step, between August 1975 and November 1977 and, the third step, from December 1977 on.

During the first stage of these correction steps, the target was to try that, by 1977, the maximum tariff would not exceed 60%; that is, lowering from 750% to 60% in what were the defined tariffs. However, there was not a very clear structure defined in terms of the lowering process, and three general revisions of the tariff structure were made prior to December 1974; that is, scarcely more than one year after starting the liberalization.

In that year, the maximum duty was reduced from 750% to 140% and the average nominal duty was reduced from 105% to 65%. Concurrently, there were many other provisions directed to eliminate numerous duty exemptions in favour of the public sector; this was because the whole tariff structure was obligatory for the private sector, but the public sector enjoyed, in many instances, 0% duty.

Between January and July 1975, a tentative final tariff structure was designed. It was a sort of target also, a medium-term target. That structure contemplated three tariff levels: 25%, 30% and 35%. It was an attempt to eliminate discriminative protection. Also, the attempt was to approximate, in a uniform pattern, to this tentative final structure, with approximations that were reducing in uniform percentages the differences between actual and desired tariffs. All duties that were in the 0% range were raised to 5% and, gradually, some regional exemptions were also eliminated. The maximum tariff was lowered to 120% before July 1975.

In the second stage, that is from August 1975 to November 1977, a new target was defined for the beginning of 1978, and that was called the basic tariff structure. It had levels of 10, 15, 20, 25, 30 and 35%; that is, there was a wider tariff range. All these tariff levels were defined in terms of the number of productive processes that were incorporated in the products. Therefore, reductions that initially were very steep, were levelled. The final tariff structure, the one that we have just defined, was reached by August 1977. Therefore, the maximum tariff level was lowered from 120% to 35%, and the average duty came down to 19.7%. In this new structure, the criterion was to give each step in any process an effective protection that would be the same or higher than the one that was incorporated in the previous step of processing.

Also, there were adopted some other measures in terms of deferring the payment of duties on the importation of capital goods; deferred in terms similar to the deferred payment of the goods proper. We must observe that this approach of the tariff structure to something more uniform than what it was at the starting point meant, in many cases, the increase in duties on the import of capital goods, which, in many instances, amounted to naught, and the lowering of tariffs for consumption goods.

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Also, a system of free zones and free deposits was established for the processing of duty-free goods destined either to be exported or to be eventually imported into the country. Likewise, several tax discriminatory rules were eliminated, especially those that were previously considered sumptuary goods.

It can be observed from the evolution just described that there was a sort of attempt to make the tariff structure more uniform, but that there was not a very clear definition of the goal. Probably, this evolution may be better appraised when considering the resistance to it or the pressure exerted by the sectors in favour or opposed to liberalization. We know that at the time there was a very acrimonious debate as to whether liberalization should be implemented only in a very gradual manner and on a quite extended period, or whether it should be carried on faster.

The gradual approach usually is bound to lose momentum in the presence of pressures and that is the main reason why the steps taken were quicker than what they could have been in a rather progressive fashion. Also, it can be observed that the successive changes in the targets were the only possibilities of success, in terms of what would have been the initial target, which was the one that in the end was accomplished, and that was what was defined as from December 1977.

By that time, the target was again changed, and instead of having several tariff levels, higher for more processed products and lower for intermediate goods, the definition was that the new tariff structure would be a uniform tariff of 10% and that would be reached by June 1979 through gradual monthly adjustments, starting from the former tariff structure. That meant raising tariffs which were below the 10% level, and lowering those above it, which in some instances reached up to 35%.

Here we can observe in a way different from that about which we heard yesterday, in the model, that this liberalization of the trade sector, through the reduction of tariffs and through the complete elimination of non-tariff barriers, was accompanied by an increase in the exchange rate, that is, the compensatory policy that was adopted was to raise the exchange rate.

Therefore, if we define an exchange rate of 100, let us say, for 1969, an equilibrium year, by September 1973 it was, by different measures, in the range of 60% to 65%. These measures are, either, the nominal exchange rate, deflated by the consumption index of Chile and inflated by the United States wholesale price index, or the ratio of the wholesale prices of Chile deflated by its consumption prices. It does not take into account restrictions to imports or tariffs. Unfortunately, I do not have more measures for that period, but the three indexes show that the 100 level of 1969 had gone down to levels in the 60-65% range. By July 1975, when the first stage of trade liberalization, or reduction of tariffs, had taken place, we have three different levels of this real exchange rate.

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I have two deflation figures for the consumption price index of Chile: one is the official price index and, the other, a parallel price index that has been calculated by other sources. Anyway, it is a very important increase in the real exchange rate, either, from the September 1973 figure of 65, or from the 1969 figure of 100. It is a more than 50% increase in real terms.

By November 1977, that is, when the second stage had taken place, the real exchange rate had fallen, mainly because in July 1975 there was a drastic reduction in the price of copper, so that the July 1975 figure that we have just observed was benefiting from a very sharp devaluation that was intended to solve the balance-of-payments problem that arose in 1975. This generated domestically an important crisis in that year, but it was solved by the middle of 1976. So, actually, the exchange rate did not remain at such high levels as those existing by the middle of 1975. Anyway, by our real exchange rate indicators, we can observe that with the official price indices, the real exchange rate was still in the 200% level, as against the 100% of 1969. With the parallel price index, a real exchange rate level of 105 is not so different from the 1969 level. By December 1977 and by June 1979, the real exchange rate had risen a little by any of these indices that is, the real exchange rate was higher than in November 1977. Nevertheless, the point is that all the trade liberalization was made with a compensatory exchange rate policy.

We can observe also that the response of exports to liberalization was very dramatic, in terms of the levels of exports and their diversification. For instance, the level of exports, that by 1969 was US\$ 1.2 billion per year, rose in 1975 to US\$ 1.55 billion, in 1977 to US\$ 2.19 billion and, in 1979, when the total reduction of tariffs was accomplished, to US\$ 3.9 billion. The 1969 figure is a comparative one so as not to take the one for 1973, which probably was a very distorted year. Anyway, the 1973 figure was a little bit higher than the 1969 one for total exports. All these are nominal dollars. The year when this country's exports were higher was 1980, when exports reached US\$ 4.7 billion; that is, in seven years since 1973 they increased from US\$ 1.25 to US\$ 4.7 billion.

The change in composition of exports is quite impressive. In 1969 and 1973, mining products accounted for around 90% of exports: they were 87%, in 1969; 90% in 1973. This proportion fell gradually to around 60% of total exports; that is, from 90% they reduced to 60%, in 1979, and in 1980. Industrial product exports, that amounted to US\$ 100 million, in 1969, and accounted for 10% of exports, rose to US\$ 1.2 billion, in 1979, accounting for 32% of exports, and to US\$ 1.6 billion in 1980, accounting for 33% of total exports.

Of course, there are other elements that bear upon these figures. One of them, that reduces the impact of the percentage increase in industrial exports is the price of copper. However, this cannot eliminate the absolute level of increase from US\$ 100 million to US\$ 1.6 billion in seven years.

The proportion of industrial exports would have been lower if the price of copper had maintained the levels it had during the 1960s. However, this would have meant that the total level of exports would have been much higher than the US\$ 4.7 billion that were reached in 1980.

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In this regard, there are some very important figures to consider; for instance, in terms of purchasing power dollars of 1978, the 1969 price of copper was US\$ 1.35; in 1973, US\$ 1.30; however, in 1975 and 1977 it fell below 70 cents and, in 1979 and 1980, was in the 80 cents level; that is, it had had a decrease of one half dollar, in real terms. This would have accounted for a much higher increase in exports.

In 1982, as we know, the price of copper, in terms of 1978 dollars, was only 48 cents; that is, almost one dollar less than in 1969. Also, we can observe that, in terms of current dollars, the average price of copper in the 1960s was in the US\$ 1.5 average, as compared with the 65 cents price at present. This explains why exports would be much higher than currently and that probably, as I said before, would have reduced the proportion of industrial exports in total exports, but also would have rendered much higher levels of exports and would have anyway showed that industrial exports rose dramatically.

I think it is interesting that we observe also what happened in that period with employment. Usual unemployment rates in Chile were in the 6% range. That was the figure for 1969. It was a bit lower in 1973, 4.6%. Here, of course, we cannot attribute changes in unemployment wholly to trade liberalization, since we know that important domestic changes in the employment structure took place, especially the drastic reduction in the public sector employment and, also, the sharp drop in the terms of trade, which meant a reduction in Chile's real income. This also accounts for the reduction in employment.

Unemployment rates, anyway, rose from the 6% average in the 1960s, let us say, to 16.2%, in 1975; 16.8%, in 1976, and showed a decrease, up to 1979, reaching a 13% average. Thus, the drastic increase in unemployment actually did not take place in terms of an imports invasion. No, it took place at a moment when, in 1975, there was a dramatic change in the terms of trade, a drastic decrease in income, a 12% decrease in Chile's gross domestic product, and the unemployment rate recuperated in the ensuing years, even though --the trade-- liberalization was taking place.

In terms of real wages, I have the official index figures only; that is, wages deflated by official price indices. By these indices, if 100 is the real wage index for 1979, we can observe that, in 1975, it was 51. So, by official indices, there was an increase, a doubling of the real wage rate, in a progressive scale, from 1975 to 1979.

The current account deficit, also, showed an increase during that period. In 1973 we had almost US\$ 300 million deficit in current account. It increased to US\$ 490 million in 1975, due to the drop in copper price, even though the domestic adjustment was very dramatic. There was a surplus, in 1976, and that is the only surplus in Chile's current account in many years. From then on, up to 1979, there were increasingly deficits in current account, from US\$ 550 million, to US\$ 1 billion and US\$ 1.2 billion.

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However, we must remember that in the same years reserves were increasing also. In similar fashion, that is, in 1978, against the US\$ 1.1 billion deficit in current account, there was an increase of US\$ 700 million in reserves and, in 1979, there was a US\$ 1 billion increase in reserves against the US\$ 1.2 billion in current account. Of course, this difference was accounted for the surplus in the capital account. Nevertheless, it is important to bear in mind that, by that time, in this surplus in capital account, an important share corresponded to the public sector; it was not a private sector inflow of foreign capital, particularly in the year of 1978. This is important, inasmuch as we will talk later in reference to the capital account liberalization. We must not get mixed up with these figures. After very small surpluses in current account only in the two or three hundred million levels, from 1973 to 1977, there was a drastic increase to US\$ 1.8 billion surplus in capital account, in 1978, but this was mostly offset by a public sector debt.

Above figures serve only to show a picture of what were some of the implications of domestic variables that accompanied trade liberalization, which climaxed in June 1979 with a 10% tariff.

Now, I will more or less trace a similar evolution of what was the financial liberalization in terms of its timing and the level of liberalization. One can observe that most of what happened in recent years was probably due to these aspects more than to the trade liberalization.

Chile's capital imports were destined to three sectors: one, the public sector, which normally accounts for multilateral organizations or government inflows of capital; the private non-financial sectors, that import capital for very specific purposes, probably capital goods; and, three, the financial sector, which normally had a foreign debt, mainly destined to financing trade. This is, more or less, the picture observed until 1977. In fact, most of the private capital imports were made by non-financial private firms. The financial sector worked under the idea --which had been the historic evolution-- that it could only finance trade.

The financial sector also had a maximum level of indebtedness with the foreign sector, in terms of the banking system capital. No financial institution could have foreign debts that were above a level between 200% and 100% of its capital and reserves.

What was the evolution? First, there was a decrease in this global limit of external indebtedness from 200% to 100% of capital and reserves and then there was an increase, again, to the level of 200%. That was between 1973 and April 1979, so that amounted to a global restriction to capital imports by the financial sector. The private non-financial sector had no restrictions for capital imports. However, these came automatically through lending agents that usually lend to sound private non-financial firms, only.

The global figure that was allowed, until April 1979, to the financial sector amounted to twice its capital level, as already mentioned, and it was used to finance trade, as had been the historical role of the banking system.

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Actually, its operators had no other idea until then, but something happened in 1977 or 1978, which made banks realize that they could also import capital for financial purposes; that is, with no specific purpose and, in turn, lend it to their own customers. That was not forbidden, but they asked of course, and the authority set a limit, since at that moment, there were some misgivings that any excess of capital imports could cause undesired domestic effects. So, at that moment, when banks were officially allowed to import financial capital, a limit was set for them of only 25% of their capital. Furthermore, there was a gradualization of those imports in terms that in any month they import more than 5% of their capital. This was intended to avoid sudden capital imports in huge amounts.

The initial global limit had been increased by July 1979 to 70% of any bank's capital, the 5% monthly inflow being retained. On that date, these restrictions were abolished. From then, there were no capital import restrictions. Neither were there restrictions in terms of the monthly amount that could come into the

Again, in this evolution of the regulations, there appears clearly the conditions that bring pressure to bear on policy making, at some times. We observe that from an initial very cautious position of having a regulated inflow of capital, so as not to cause domestic disturbances, restrictions were gradually eliminated. This, of course, is the result of sustained pressure from all the sectors intended to eliminate them. Many arguments were offered for the elimination of these restrictions, such as, that the import of capital prevented the country from exerting its real potential; that the country's destitutes were not allowed to improve their living conditions; that there would be no capital formation, etc. An acrimonious debate followed and, as usually happens, restrictions were abolished.

It is important to remember that, as a rule, this sort of evolution is usually slanted; that once the slide starts, it is very difficult to go back. Actual liberalization of the financial sector took place in July 1979. It is peculiar that once trade liberalization was completed, the tariff level had come down to 10%.

The only restriction that was maintained, and which existed prior to the two just mentioned, was that of deposit scheme or reserve requirement for the import of financial capital and which was based on the average repayment period. This restriction was revised now and then while it was in force, but it always meant that a deposit or reserve requirement had to be made at the Central Bank as a percentage of the loan, and depending on the repayment schedule. Financial capital imports for less than one year were forbidden. Financial capital imports had to be made for at least a two year average term and, if the average repayment bill covered five years and one half, no deposit was required.

The idea behind the deposit scheme was that, since we were going to have a capital inflow, at least we should avoid short-term debt structure. However, as we know, at that moment the world capital market was flooded with money; banks were eager to lend, anywhere, and even this restriction which required money coming in at least for five and one half years, did not prove to be

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efficient in preventing a substantial inflow of capital. The pertinent figures illustrate this point. One can observe that the net imports of capital (aside investment capital imports) rose from the US\$ 200 million level, from 1974 to 1977, to US\$ 1.8 billion, in 1978; half of it was for the public sector. In 1979, the figure reached US\$ 2 billion. In 1980, it was US\$ 3 billion. In 1981, it was US\$ 4.4 billion. Of course, the result of that huge inflow of money was a very large increase in the current account deficit. That was the only way of pulling out that money, in a period when the exchange rate was fixed, that is since 1979.

That was more or less what happened in terms of the inflow of capital. I do not have the figures here, but during that period, also, there was a very large response in terms of monetary aggregates, which increased quite considerably and which helped to absorb some of this capital. However, the current account deficit rose from US\$ 1 billion in 1978, to US\$ 1.2 billion, in 1979; to US\$ 2 billion in 1980; to US\$ 4.8 billion in 1981. During those years, there was also an increase in reserves, that was made possible by this increase in money demand, although it did not prove as large as the capital inflow.

Anyway, it may be observed that by 1981 the economy was operating on the basis of a very large inflow of capital and that keeping the same rate of increase in output would have been possible only if the inflow of capital rate would have held its rhythm. This does not mean that the accelerated rate of growth of the 1976-1979 period was based on capital imports, since in that period these were held at manageable levels.

There were, of course, several other happenings in the domestic economy, since 1973, that were important in terms of the private property structure and the domestic capital market that also were very relevant in the developments. The exchange rate pegging was in 1979. At that time, the rationale was that the public sector deficit had been eliminated to hold any inflationary accumulation, let us say, through an increase in the exchange rate since there was no need to collect the inflation tax. After a while, prices would level to world prices and, therefore, the fixing of the exchange rate would cause no problems.

However, two elements conspired against these arguments: one, the very policy of opening the financial sector to the inflow of foreign capital, which meant that although the public sector deficit had been eliminated, the conditions existed for the creation of an important private sector deficit, which in fact happened. The other element was the probability that the world context for tying the exchange rate to the dollar would change for better or worse and what that probability would be was difficult to guess.

It must be remembered that by 1979 the United States were still under the Carter administration and that the tying of the exchange rate to the dollar coincided with the steep drop in the exchange rate of the United States dollar in respect of the European currencies. That was very important for us at that moment, since when we measured foreign inflation in relation to Chile's it proved to be very high in the face of domestic inflation or of the United States inflation. In other words, measuring world inflation based on the variation

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of the Chilean peso exchange rate as against the dollar and the European currencies and their inflation, the world's relevant inflation in respect to Chile's was more than 20%, and our current inflation rate was reaching the 25 to 30% level. This did not have much effect on the United States prices because of the very large volume of its domestic economy, but for a very small open economy as the Chilean, those price movements meant an important increase in domestic prices. We must recall also that we were coming from a period of very high inflation rates and that there was an extensive indexing of prices so any foreign price increases were incorporated into the domestic economy and were perpetuated through an indexing of many values, wages and long-term loans, among other items.

After that period of devaluation of the dollar and very high foreign inflation relevant to Chile, there was a change in the United States administration with the election of President Reagan and we observed that the dollar revalued dramatically in respect of the European currencies, while our peso remained tied to the dollar. So, we revalued also in a dramatic manner against all European currencies, after having incorporated a very high inflation and, since we still had a running inflation, we continued to index wages and everything else. The final outcome was a largely overvalued peso.

In regard to output, during recent years its evolution has been very uneven. However, after 1976, domestic increase in output showed rates of 9.9%, 8.2%, 7.8% and 5.7%, until 1981; quite important rates as compared with what was the usual increase in output. All this evolution was based on the trade and the financial liberalization.

Unemployment rates continued to fall from the 13% range that we had in 1977, 1978, 1979, after the financial liberalization, to an 11% level in 1980-1981. There was, however, an important change in the employment structure. In the 1960s, for instance, according to Santiago's figures and the Santiago classification, the employment in Chile was as follows: approximately 55% in the services area; 37% in the goods production, and 7% in communications and transportation. After the opening of the trade and the capital account, these figures had changed, showing an increase of four points in the services area, and a reduction of three points or four points in the goods production area, that is, an increase to 59% and a reduction of 33%, respectively, on average in the years 1978 and 1981. A very exceptional year was 1982, since everything went up, these figures changing to 63% employment in services and 28% employment in the goods sector. These figures, however, do not reflect long-term trends since 1982 is a crisis year. After some very bad experiences observed in 1981 and 1982 in the domestic and in the world financial markets, there was a highly dramatic reduction in the capital inflow. These fell from US\$ 4.4 billion in 1981, to only US\$ 900 million in 1982. Consequently, the economy had to adjust and reduced its current account deficit from US\$ 4.8 billion in 1981, to US\$ 2.4 billion in 1982. In addition, it experiences a loss of US\$ 1.2 billion in reserves. This drastic reduction in expenditure meant that output fell by 14%, so really the employment structure for 1982, I repeat, does not reflect long-term trends.

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We must, however, be careful with these figures, since we know all depends on what is the actual definition adopted for services. For instance, there have been structural changes derived from the large decrease in employment in the public sector that for instance mean that public enterprises that hold people for "productive" purposes now contract the same services in the private sector and as accounted for as services. There are many more insights to explain why different effects accompanied the opening of the trade and the financial sectors. However, I think that all of you have a complete knowledge of the subject, especially of the second aspect of the world context and what it would have meant for the situations I have just described.

Thank you very much.

Mr. Massad:

Thank you very much, Daniel, for a very complete exposition. I have next in my list the name of Ricardo Ffrench-Davis. You have the floor, Ricardo.

Mr. Ffrench-Davis:

I have been asked to talk on some of the lessons that one can derive from the Chilean experience, without going into a general discussion of the case. So, what I will do is to take five points that I think are important in the sense that they provide good insights of the changes that I think ought to be introduced on standard policy recommendations in some crucial areas.

I want to talk about vulnerability of the domestic economy; on real exchange rates, export promotion and import liberalization; on visibility of comparative advantages; on the allocation of given resources, and of changing stocks of them; and lastly a few words on financial market segmentation. I shall try to do it within these thirty minutes.

#### 1. Vulnerability

Something that may be found in Chile's recent history on two occasions, in 1975 and 1982, when, in response to external shocks, among many things that happened simultaneously within its economy, a large abrupt fall in GDP took place.

On both occasions, we had in different external and internal frameworks, a sort of automatic adjustment, a desire to have that from the official point of view. That was very explicit in 1982, but we also have some of those elements in 1975. The outcome was a very large multiplication of the external effects within the domestic economy. This is not too different from what used to happen in the automatic adjustment processes characteristic of the nineteenth century economies and had vanished in the post-World War II period. What I want to emphasize here is the danger which, if the road of automatic adjustment is taken one will have a very large downward adjustment in the domestic economy. In the case of Chile, we find multipliers in the order of two or three times the external shock; a 6% shock turned into a 13%, or 15% fall in output and,

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consequently, a fall in domestic income of 13 or 15%, plus 6%, or around 20%. This is a very large multiplication. Furthermore, the subsequent recovery trends tend to be slow. Thus, I think there is a clear need for a regulated process of adjustment, not at the end but since the beginning of it, when you first become aware of the problem. Otherwise, there will be a very large cost in terms of loss of resources and of potential output.

Now, I would like to draw your attention to a point which in my opinion is very important. It is the role of financing in this process of automatic adjustment. There are economies where indebtedness is quite important and that was the case in the Southern Cone; not only external debt but also domestic debt with enterprises that are highly indebted domestically too. In a process of domestic adjustment that implies a fall in nominal prices, that may have very disruptive effects. For example, during some months of 1981-1982 there was an accumulative 2% fall in the consumer price index and an 8% fall in the wholesale price index. That meant a big change in relative prices of finance vis-à-vis goods and services. There was a decline in the sale of production and a large increase in the real financial expenses, and this has to do with the change in relative prices and with the behaviour of the financial market. The adjustment in this case is complicated when there is a large debt stock.

Now, we had a real exchange rate that had lost in the previous three years about one-third of its purchasing power, so it was needed a relative fall in domestic prices of one-third. What was happening abroad at that time? The external inflation faced by Chile was not 4, or 6% per year, but was below zero. An index elaborated by us gave -2% as the yearly international inflation relevant for Chile in 1982. So it was needed a net fall in prices that was beyond 33%; that is, 33% plus 2%, instead of -6%. Thus, a minor fraction of the adjustment needed domestically had taken place in 1982, while output fell abruptly 14%, manufactured value added fell 22% and open unemployment exceeded 25% in Santiago. In other words, an extremely inefficient outcome. What would have happen with an additional deflation of 30% in an economy with highly indebted firms and positive nominal interest rates? So, it was very exacting, if one was looking for automatic adjustment within, let say, the standard monetary approach to the balance of payments, the fixed nominal exchange rate, the neutral monetary policy and so forth. It was not purely a matter of wages as sometimes is asserted, but there were other very important matters going on in the economy which could be much more meaningful than what was happening with nominal wages. Incidentally, these were decreasing in nominal terms at that time too.

## 2. Exchange rates and trade policies

Second, some thoughts on the real exchange rate, measured in the way John mentioned yesterday, which is the more common way of measuring it in Latin America, among other things, because of the availability of indices and because of the way we understand these economics work. The real exchange rate thus measured, varied considerably within the period. It was not a one or two month variation, but a long-run one. So, it shows that policy can affect for long periods the real exchange rate. We had long heard in the Southern Cone from the "global monetarists" that economic policy cannot affect the real exchange rate except

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for the very short run. However, for long periods, we had strong policy induced effects on the real exchange rate, as we have shown somewhere else.

Another point related to this is what the market expectations about the price in pesos of the dollar are. Until well advanced in 1981, there were no expectations of devaluation, despite a deficit in current account that was 21% of the annual GDP; it was tremendously large for Latin America, where as a whole it was 6%, but at the beginning of 1982, yet, people were not expecting a devaluation. Moreover, people were shifting from domestic credit denominated in pesos to domestic credit denominated in dollars. Actually they were doing so immediately before the large devaluation in June 1982. Thus, the market, generally, was not expecting a large devaluation and actually believed what the government was saying (recall that information was tightly controlled). Consequently, there was a large accumulative imbalance in the market but certain conditions compensated temporarily for it: a high supply of capital inflows and a tight monetary policy; both made the situation to be under control, despite a fundamental disequilibrium, that in the end proved to be extremely disruptive of economic activity and of efficiency.

Next a comment on export promotion, about the hypothesis that if you want to promote exports you have to liberalize imports, because you cheapen inputs and you contribute to an increase in the real exchange rate. We heard a lot about this supposedly univocal relation; many students will still be saying, "there is no other way to promote exports but to liberalize imports".

I do not want to talk more about the exchange rate nor of several countries that did it the other way round. Just a brief reference to inputs. In general, before import liberalization, inputs for exported exportables did not pay tariffs; that is not equivalent to the general liberalization of inputs, but at least it is so for the main part of the inputs: exporters were allowed to import their inputs with tariff exemption. This was a rather widespread mechanism in Chile and in several other developing countries.

What I want to discuss now, is how things were evolving in the market between 1973 and 1982. At the beginning there was a large reduction of import restrictions, but there was also very large redundant protection. The painful liberalization --painful for the protected firms-- took place mostly between 1977 and 1979, the year that ends with a uniform 10% tariff for 99.6% of the importable items.

Now, what happens with exports? The peak push in exports, in terms of diversification of items and of markets, takes place between 1974 and 1976, when the more modest tariff liberalization was enforced. What was the force behind the strong increase and diversification in exports? I am talking of non-traditional exports, leaving aside copper and some other minerals. First, one point that has been present in several countries, is that there was a sort of export lag; Chile had created capacity to export more than it was being done, but domestic policies were such that encouraged operating within the domestic economy, segmenting it from world markets. This has to do with relative prices, but also with attitudes and information. We live in a world of limited information and, in many cases, producers did not know which were the markets available. They had no information about what was going abroad and there were  
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no marketing channels developed for exports. In some instances, there were no financial channels; the entrepreneur had financing only for some markets; for others, it did not exist. Actually, then, it was necessary to change institutions, attitudes, and relative prices. Changes in these three aspects took place during the years 1974 to 1976. There was quite intensive official talk in favour of export promotion, some provision of information, plus the existence of an export lag and of the capacity to export. That explains why in six or nine months Chile could start exporting commodities which had never been sent abroad; several hundred items. The process was supported by a sizeable increase in the real exchange rate and a deep domestic recession. But it is not enough to have these factors and other elements such as goods markets available abroad. But, if you do not have the export lag, if the market is in a sort of equilibrium, the process of export growth and diversification is more costly and slow. In brief, the prior lag in exports allowed for an "easy" stage of export expansion.

An additional point that I would like to mention is the role of negotiated markets. Between 1974 and 1976, of the large increase, in real terms, in non-traditional exports, 41% went to the Andean market, that is, to the small Andean countries, which represent a very minor part within the world economy. The 41% went there because they faced negotiated markets and new marketing and financing channels organized that covered not only products that are negotiated, but also non-negotiated products.

During 1976 Chile withdrew from the Andean Pact and its exports to the Andean countries declined in absolute and, of course, in relative terms. This negative action partly explains the changes in the trend of non-traditional export flows between 1976 and 1980.

There was a general diversification of exports from 1974 to 1976; in fact, a very large diversification. After 1976 a trend towards reconcentration took place. However, it did not mean a return to the initial point: the exchange rate may appreciate, as it did; Chile may withdraw from the Andean Pact, the domestic demand may recover, but exports do not retrieve to the relative position they had in 1974. The explanation is in the prior "export lag". So we turned to a new balance. There is no return to the previous point, but a loss of the speed, of the dynamism of prior years and, by 1980, we arrived at a situation where non-traditional exports start to decrease, except for six or seven important products which kept growing very fast; all these are very intensive in natural components. Fruits, timber, fish flour, molybdenum oxide and so forth.

Now, what lessons can derive from this process of reconcentration of exports? It is not bad that raw material exports grow; the problem is that they have not enough volume so as to impart dynamism to overall exports, in a country with a per capita income of US\$ 2 000, not US\$ 200, that has eleven million inhabitants, not 25 000, and so on. Chile is rich in natural resources, but beyond them needs value added to these resources, and activities intensive in "acquired" productive capacity.

/3. Diffuse



### 3. Diffuse comparative advantages

Now, in regard to comparative advantages in a world of "limited information", what we find for import substitutors is that they receive a lot of signals telling them no more substitution is required. Therefore, substitutors reduce their activity, or close it down, or shift to other activity: several entrepreneurs do transform from producers of a given commodity to importers of that commodity or, in some of those lines, they have a sales mix: part of what they produce and part of what they import. This adjustment of firms has had negative implications in respect of investment, output and employment, but allowed those firms to remain in activity.

What happens in the sectors that are supposed to receive the positive signals. Only some of them expand. That happens mostly with those intensive in natural advantages, such as fruits, and information that there is a market for them in the world economy; in fact, the very limited overall gross capital formation is concentrated in that type of production. But again, investment in producing apples, grapes, and so on, which is very efficient in itself, is insufficient to provide an overall dynamic process. In the end we find, I would say, a situation where comparative advantages are very difficult to identify, the weight of acquired advantages makes them "diffuse", in the absence of a public policy that shows sectors where resources can be concentrated, thus reaping economies of specialization and dynamic externalities. All these became absent from the Chilean market. The unregulated market is unable to observe them, so that investment is limited to cases of "clear" comparative advantages.

Many other things were happening during the past years. For instance, the exchange rate; if it falls 50% or goes up 30%, it has something to do with market comparative advantages; also the performance of the financial market. There are many ways to do financial reforms. One is that which, from the government point of view, not from the economic groups point of view, which gained an increasing influence, interest rates and terms are left free. That was the case in the Southern Cone. The outcome is that the market ends with an average real rate of 40%, and modal terms of 29 days in Argentina and a 30 days basic period of deposit and loans in Chile, and practically no restrictions on the use of funds, which is not common either in several Southeast Asian and in other Latin American countries. Overall, the financial market ends working against investment and in favour of widespread consumption, until the economy collapses.

So, the financial market was working against a dynamic process of investment. If we have sound investment, it is easier to reallocate resources. If we do not have a large investment rate, it is difficult to allocate; we do half of the work; we disallocate from one activity but we do not reallocate to some other activity. The result was that the rate of gross capital formation was notably low in the period 1974-1980 as compared to the 1960s and unemployment tripled the rate of the decade.

Let me repeat something that I said yesterday: the market shows "clear comparative advantages" from the private point of view, but not from the social point of view: there are "comparative advantages" in land and stock speculation

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and in the transfer of firms ownership; there is a very large process of transfer of property. The two larger economic groups, for example, make considerable "investments", buying enterprises to the public sector and within the private sector. There is a quantity of transfers in both sectors, but they do not create new activity; only transfers at depressed prices, as a result of the combination of a depressed effective demand, and of the working of the financial system and the segmentation of the domestic and international markets; in fact, despite the very large capital inflows, a 20 points annual spread prevails between the domestic and international interest rates. There are also clear "comparative advantages" in trading imported goods, as long as the market does not adjust totally to normal returns on the imports of consumer goods, and that takes very long. Until 1981, there were people going into the market to organize more trading activities, mostly of imported consumer goods.

It is interesting to see what were the more dynamic "productive" sectors in the Chilean economy during this experiment. In going over the national accounts, we find that in per capita terms, between 1974 and 1981, value added in financial activities and in the trading of imported commodities went up 14% per annum, in accumulative real terms. What happens with the rest of the economy? The official National Accounts show 0.2%. That was giving a strong signal that the sort of import liberalization and the sort of financial liberalization provided by the economic policy were not creating a truly dynamic economy, nor a basis for development; actually the opposite was happening. I think these are lessons that have much relevance for the 1980s, and not only for Chile, but also for other countries, on the pervasive effects that "ideologized" financial reforms may have.

#### 4. Reallocation and volume of resources

Another lesson is that we must think not only of efficiency, in terms of reallocation of resources, but also to carefully consider what happens with the rate of use and volume of those resources. We know that, in standard static models, a very large reallocation of resources may bring a welfare increase of 1/2%, 1%, 2%; thus a 10% fall in the rate of utilization of resources, for two or three years, can easily compensate for the eventual gain in "static efficiency". The process of adjustment is very important and, in this sense, the model presented in this meeting directly tries to find what happens during the transition period; it not only looks to the initial and final points, because if the transition is pervasive, apart from the losses during the transition, it is probable that we never get to the ideal final point.

The other thing is that a lower rate of utilization of resources during the transition tends to bring a fall in their volume, as it happened in a notorious way in the Chilean case. There was a very large fall in the rate of gross investment and a tremendous fall in the rate of domestic savings. Unfortunately, there is no time to discuss why savings fell so much. That is tied, I think, to the extremeness that trade opened and to the financial reform which was carried out.

#### /5. Financial

5. Financial market segmentation

A word about the segmentation in the financial market. This prevailed for the seven years that the financial liberalization lasted, before its collapse. Despite the large inflow of capital, mostly private, in net terms, in some years, the public sector debt fell in absolute terms and in real terms. Also, despite the very large liberalization of the financial market and the sizeable capital inflows, which, in net terms, rose to 7 and 9% of GDP in 1978 and 1980, and climbed to 21% in 1981. Nevertheless, we have segmentation in the sense that this part of the market, operating with foreign loans, at international interest rates taking into consideration what happens with the exchange rate exports pay real interest rates persistently negative, and -8% in 1980, while the rest of the economy operates with real lending interest rates averaging 40% in the seven-year period; that was the average real interest rate in the domestic market for thousands of domestic enterprises and consumers. Those who operated through the financial system were paying an average interest of 40% in the period 1975 to 1982; 40% over the true inflation, and not the underestimated official inflation that was lower than the corrected consumer price index. So we have a significant segmentation and that is not a phenomenon only peculiar to Chile, but it is present also in Argentina, Uruguay and in some other countries, over extended periods.

Finally, one brief comment. It refers to the standard assertion that inflation would hardly go on together with a surplus in the public sector. It is true, in many cases, that inflation is created by the deficit in the public sector, but the fact that you reduce the deficit and move to a surplus is not enough to stop inflation. Already in 1975, the deficit in the public sector was below 3% of GDP or lower than that in countries such as Japan or Germany. In 1978-1980 there was a surplus and still we had inflation going at a rate clearly above the international rate.

Those are, in a very fast sketching, some of the points that I think are important as lessons from the Chilean case. We cannot discuss them at length, but we have taken over most of them in previous publications.

Thank you very much.

Mr. Massad:

Thank you, Ricardo, your participation has been very interesting and thought provoking. Ernesto, would you like to illustrate us about the Argentine experience?

Mr. Gaba:

Thank you, Mr. Chairman.

I should like to make three kinds of comments in the light of the Argentine experience. The first of these, bearing in mind yesterday's discussion when the study by Mohsin and Roberto was analysed, aims to describe some features of

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the Argentine experience in the light of the results emerging from their second study, where the model is subjected to external and internal shocks.

I should like to make it clear to start with that the period covered by the Argentine experience is different from that of the case of Chile. The financial system was liberalized in 1977, and during the whole of 1977 and 1978 the exchange rate policy was basically that of the "crawling peg". Only at the end of 1978 did the Government begin to announce the exchange rate in advance, and this policy of advance announcement of the exchange rate lasted, I would say, some two years (1979 and 1980). At the same time as these two years of experience in announcing the exchange rate in advance, the process of elimination of the restrictions on movements of capital was kept up. Compared with the model we have seen, the Argentine case placed more emphasis on the liberalization of movements of capital and less on the liberalization of trade flows through a sharp reduction in tariffs.

The Argentine case may be viewed as having been subject to the two types of shock referred to in the model: both external and internal. I think that although both of them were significant, there was much more internal shock than external. Basically, this was because there was a severe fiscal imbalance which increased the need for domestic credit. Also, especially in 1980, much domestic money was created through the liquidation of major banks within a system providing guarantees on deposits.

The second study by Roberto and Mohsin shows that if a shock in the form of fiscal deficit is introduced, there will be a deterioration in the current account, with heavy loss of reserves. I am particularly impressed by the fact that in the exercise it was shown that a fiscal deficit shock leads to a situation where the reserves at the point of equilibrium are only 15% of those arrived at in the exercise without any fiscal deficit shock. The result as regards the reserves is thus extremely sensitive to this bigger expansion of domestic credit. One way and another --in order not to tire you with figures-- the year 1980 already showed a number of indications that the Argentine economy was diverging greatly from an equilibrium state. For example, the balance-of-payments current account had a deficit of the order of US\$ 5 billion: something which had not occurred in previous years. The trade account itself showed a deficit of the order of US\$ 2.5 billion in 1980, and while the policy of maintaining the advance announcement of the exchange rate continued during the whole of 1980 there began to be some perception of the fact that at some time this situation would have to be adjusted. This adjustment may be said to have taken place at the beginning of 1981, and subsequently, in the remainder of 1981 and in 1982, the economy followed a much more difficult and complicated course. It is now rather difficult to decide how much of the problem since 1981 was due to the imbalance of the previous period and how much to the policies followed as from 1981: there is in fact a combination of these two types of factors.

/What are

What are the salient features of the Argentine case? At the end of 1980, the total Argentine external debt was of the order of US\$ 27 billion, divided equally between the private and public sectors. A particular feature of 1980, when this current account imbalance began to show itself and flights of private capital were recorded, was that part of the public sector debt was due to the compensatory policy pursued. What was the situation of the Argentine economy at the end of 1982, after the emergence of this imbalance which to some extent was already to be glimpsed in 1981? The situation was that the total debt increased, but in a very special way. At the end of 1982 the external indebtedness amounted to approximately US\$ 39 billion, and if we look at the composition of the debt --private and public-- we find that there were some US\$ 15 billion of private debt, but with a special feature which I shall now describe.

Thus, practically all the private debt recorded at the end of 1982 was debt which enjoyed exchange insurance or had some kind of subsidy from the Government. The adjustment mechanism for the private sector debt was to transfer it to the Government in one way or another. Through the acceptance of State responsibility for the external debt and its servicing, the authorities began to commit the interests of future generations. To my mind, this is a most important element in the experience. Sometimes, the behaviour of the private sector was such that it seemed to be operating in complete contradiction of economic theory. Thus, for example, in spite of there being expectations of devaluation, people were taking out debts indexed in line with the exchange rate. I think that in a way this behaviour is rational, however, because experience shows that there is some degree of readiness on the part of the Government to shoulder the burden of the problem. The cost of the adjustment is not borne by the private sector: it is passed on to the Government and thereafter becomes a problem for future generations. This has happened a good deal in Argentina, and the clearest indication of it is that practically the whole of the private debt enjoys exchange insurance.

Thus, from 1981 onwards Argentina returned to a kind of closed economic model: very closed as regards the capital account but less closed as regards the current account. The prospects are that this type of policy, which I would call a return to the economic policy models of the 1960s will continue to be followed.

I have serious doubts, however, as to whether the external sector can be handled by returning to the kind of model used in the 1960s. I say this, because I think there are two different elements involved. Firstly, there is the burden of the external debt, since if we take account of the rate of return on the use of this external debt and the cost involved, the latter is seen to be much higher than the experiences we had in the 1960s.

The second aspect --and this is crucial in Argentina-- is that the economic agents have changed their behaviour completely as regards their portfolios. Argentine residents have a portfolio where external assets enter into this model. Ricardo Arriazu mentioned this yesterday: if we take  $M_2$  and the product, the amount of dollar assets with respect to the product will probably be more than double the amount of domestic assets. This is a new policy ingredient. Likewise, when the

/models began

models began in which inflation gave rise to the inclusion of goods as a value reserve, and people accumulated them as such, this meant that the dollar is beginning to carry out two functions: on the one hand, we look at the exchange rate in the light of the current account, but on the other the dollar is also a value reserve which depends on the expectations of the economic agents.

A large part of the expected value of the dollar as a value reserve is due to the expectations of the private sector with regard to the evolution of the domestic variables of economic policy. The greater the imbalance they see among these variables, the greater the problem, since there is a kind of "crowding out" of domestic assets in terms of dollars.

This places severe restrictions on the ways in which the Government can finance its debt. The degree of imbalance of the economy can be perceived according to the instruments which the Government is obliged to use in order to finance its debts. If the situation is one of equilibrium, the Government finances its debt by issuing money which does not pay interest. When people begin to worry about inflation, the Government is obliged to cover its debt by means of interest-bearing bonds. When the rate of inflation is already beginning to go beyond acceptable limits, the Government has no option but to cover the debt by means of price-indexed securities. When the economic agents no longer believe that the Government can pay the adjustment, they begin to change their portfolio to dollars and the Government has no choice but to issue securities in dollars. When the private agents begin to see that the Government has no dollars for redeeming them, they are not interested in acquiring these securities issued in dollars either.

Thus, the basic point in the design of exchange rate policies, and a lesson which is being taught us by the experience of the last two years, is that the success of an exchange rate policy is closely connected with the success of the design of domestic economic policy. Since, because of this phenomenon of replacement of portfolios, it is essential that such policy should inspire some degree of confidence among the economic agents regarding the domestic policies of the Government.

The last point I want to make in connection with this experience of opening-up of the economy is that there was excessive confidence on the part of those who designed the policy in the law of one price. In the models we looked at yesterday, starting from an equilibrium situation and opening up the economy to trade or to capital, the law of one price is applied. I think that the conditions under which the economic openness policies were initiated, however, did not warrant the application of this law. Why? Because there were internal imbalances which prevented the law of one price from being applied even to internationally non-tradeable goods. The segmentation of the market, or the existence of monopolistic groups or regulation policies meant that non-tradeable goods are not subject to this law. I would like to illustrate this by describing what happened to me the first day I came to ECLAC. I took a taxi at the door of the hotel, arrived at ECLAC, and was charged 250 pesos; I spent some time talking to Carlos and then I returned to the hotel in another taxi and was charged only 130 pesos. What happened in this case as regards the law of one price?

/The answer

The answer is that the first taxi was at the door of the hotel and worked in conjunction with it, while the other taxis circulated in the streets. In order for the law of one price to operate, all the taxi drivers circulating in the streets would have to go to the door of the hotel with a placard reading "I only charge half" and even, if it rained, offer the benefit of an umbrella. This is a point which has been clearly demonstrated by experience; if we do not have the capacity to apply the law of one price domestically, the adjustment process will be much more severe in terms of relying on external restrictions to impose this law.

Thus, the experience of Argentina as I see it --and thinking in terms of possible future policies-- is that the success of an external sector policy depends largely on our capacity to formulate a coherent domestic economic policy which inspires confidence among the economic agents.

Thank you very much.

Mr. Massad:

Thank you very much for your very interesting comments. Now I ask Adroaldo whether he would like to illustrate on Brazil's experience.

Mr. Moura da Silva:

I shall try to summarize data on Brazilian macroeconomic policy developments. Then, I shall say something on the trade and monetary events which took place in recent years. As you all know, Brazilian external debt is around US\$ 80 billion. Debt service is close to 5% of GDP and 85% of total export proceedings. This puts a lot of pressure on the policy makers and on the debt management. Brazilian inflation rate is around 250% per year and it has been steadily rising in the last three years. The output growth, as you know, is negative and it has been so for the past three years. Per capita income has fallen by something like 10% over the last three years. Unemployment, as you may imagine, is increasing as well.

This information summarizes the Brazilian economic disaster of the past two years. Of all this information the only good point is the trade balance surplus, which is expected to be a little bit over US\$ 6 billion this year. It is really a big turn around. We had a negative trade balance between June 1980 and July 1981; from then on there was a huge cut in imports, in 1981 and 1980. Now, Brazilian imports are supposed to reach US\$ 15 or 16 billion. As you know, Brazil imports mainly raw materials and petroleum. This implies a big decrease in its industrial output.

Just a glance over the information on the macroeconomic level. A description of policies should give you an idea of what is going on. Money policy is tight. The relationship between total loans by the private banking sector and the money supply has been growing from 0.9, in 1973, to 6, in 1981. This is a tremendous change in the composition of the banking system liabilities and this change took place due to the so-called opening to the international financial market. The private banking system has been funding its operations with

/foreign exchange.

foreign exchange. The total domestic deposits are smaller than the total amount of money raised abroad to finance such operations. The tightness of the monetary policy was intended to stimulate people to borrow abroad in order to finance their operations.

After the 1982 crisis, there was a halt in the flow of money into Brazil. By then, the exchange rate policy was a dominant factor in the pricing of assets and in the decision making. So, the maxidevaluation of last February had a devastating effect on the financial sector and caused a lot of bankruptcies in the industrial and commercial sectors. It also provoked liquidity crisis in the banking system, thus compelling the Central Bank to step in so as to avoid a greater disruption in the economy. This is the monetary situation in a broad sense.

In terms of fiscal policy, the picture is also complicated. As Gaba just said, the borrowing needs of the public sector are large, something like 7 to 8% of the total gross national product and this weighs heavily on the exchange rate policy. So, Brazil's real depreciation has a tremendous negative impact on the cost of carrying the debt, the public sector's borrowing needs are enormous.

The net effect of this borrowing is unbearably high by any standard. Over the last two years, the average cost of carrying a debt has been around 35 to 45%. This rate, is heavily dependent on the expected devaluation for the coming years, since, despite the fact of a real depreciation of 32 to 33% over the last 12 months, people do expect a further real depreciation for the coming years due to the balance-of-payments adverse situation.

In turn, this has a tremendous impact on the financial sector of the economy, in terms of asset pricing and decision-making going to either dollar denominated assets or cruzeiro denominated assets. This dominates Brazil's policy-making picture, either on the monetary front or on the fiscal one.

We also have another problem. As you know, Brazil has a peculiar price indexing system. Wages are tied to the cost of living index, and the exchange rate is tied to the wholesale prices. In other words, all has been indexed to the exchange rate.

We also have problems with steel and energy pricing in Brazil. These have been priced in such a way that we have obtained a real cost of energy, which has been increasing at a real rate of some 1.5% monthly, over the last 12 months. The same thing applies for the steel production.

In addition to the foregoing, we have eliminated some subsidies mainly concentrated on wheat, milk and other food items. If you add all this to the list of price indices, you get an economy highly alien to reduction of the inflation rate and, due to these indices, we have this tight money policy pressing downward output and speeding up the inflation rate.

/Over and



Over and above all this, we are facing nowadays a dramatic food shortage caused by a low crop last year and a drastic shortage of raw materials for the industrial sector. If you put together all this, you can imagine what are the inflationary pressures we are facing nowadays and what has been Brazil's situation in recent years.

Mr. Massad:

Thank you very much, Adroaldo.

We have now covered some cases in Latin America. For a change, we should move out of this continent in this question of external trade policies. I have asked Jacob Frenkel to give us an insight of what is going on in Israel. He has been good enough to agree. You have the floor, Jacob.

Mr. Frenkel:

Yes, it is one of those things that, up to 1973, or so, when one wanted to talk about the Israeli economy the immediate comparison that came to mind was the Japanese economy, with its growth speed, high savings, and things of the sort. From 1973 onwards, or since the late 1970s, Israel, in a fundamental sense, became a Latin American country.

One key question is how can a country transform itself from a model of a fast growing economy, low inflation and things of the type into a model of hyperinflation economy. Is it a two-way street, in the sense that we can reverse the wheel or is it really, in a fundamental sense, a one-way street?

One of the problems is that once institutions are created to cope with troubles, it is very difficult to change them when the troubles are over; for example, indexation. You need a threshold to go into it, but once you are there it is very difficult to get away. One of the issues is not necessarily the detailed description but rather some processes. So, to give a general idea of the Israeli economy from an overall point of view, I shall take three periods, concentrate on the last one and, particularly, on the last three weeks.

Let me start from Japan and then end up in Latin America. The Japanese stage would appear, let us say, in the early 1950s and up to 1973. There, we have a steady real growth of GDP at a rate of roughly 10% per year; inflation, never above 8% per year; in some periods, 2%; in other 7.5%; on average, less than 7% per year over those 25 years ending in 1973. Then from 1973 through 1979, we had a drop in the growth rate from 10% to about 3%; and a jump in the inflation rate from about 7% to 50%, on average. From 1979 to 1982, we are deeply in Latin America: growth rates are low: about 2% per year; inflation reaches a triple digit in 1982, it is 120%; now, it is about 140%, and let us say, something above that next year.

/In regard

In regard to the general macroeconomic magnitudes, to give you a perspective of the size of the economy and the division of spending, the ratio of private consumption to GDP is not extraordinarily different from the rest of the OECD countries during the period 1973-1982; private consumption to GDP was about 65%; investment to GDP was about 25%. Where we have a fundamental difference is when we speak about the government's share of consumption to GDP, 40%. The foreign sector to GDP is also very large and the export gap, or trade balance deficit, is about 25% of GDP. These are the magnitudes.

Where are we by the end of 1981? Again in order of magnitudes: income per capita is about US\$ 5.5 thousand; magnitudes for Greece, Singapore, Ireland, if you wish, about 45% of the United States counterpart. The size of GDP, about US\$ 22 billion and this is just a number to remember, because that is the size of the external debt. Now what is the ratio of government spending to GDP? Again, this is just a number to remember, for it is the last one that I am going to give you now --later on I will speak of something else-- the ratio of government spending to GDP during 1978-1982 was about 75%; in 1982-1983, there was a once and for all jump ---maybe due to the Lebanese crisis-- of 90%. Deficit of the government relative to GDP was 26%; half of government spending was on defence. Inflation, as I said, was for the first period 7%, second period 40% and then Latin American type rates.

Unemployment: the unemployment rate in Israel has been about 2.5%, 2%, 3%. It is a country where, of the various targets of macroeconomic activities, growth productivity, balance of payments, employment, its key variable is unemployment. You will not understand its macroeconomic policy without realizing the importance of unemployment and employment. Labour force is highly unionized in a very centralized labour union and basically all transactions with the labourers are done through one huge union of workers. Indexation is practically complete; there is full indexation of most magnitudes; all contracts are indexed: wage contracts, financial contracts, etc. And we have also a complete indexation of the tax brackets. This was achieved a little later, in the 1970s. There are no bracket creeping issues as are typically discussed in high-inflationary countries. The economy has been managed by basically one government, labour government, and it is important because it means that many of the economy's institutions were built around a government that has the outlook of a labour government; a lot of managed parts in the economy; an important role of the union in all activities. I mention this because, by the end of 1977, there was a fundamental change in government that came against the background of existing institutions; economic institutions that grew up for 30 years in an economy to accomodate outlooks, political and social, of a different régime and, obviously, there was clash. There was a fundamental change in policy. The liberalization reflected itself in several dimensions; removal of food and other subsidies; removal of foreign exchange controls; and, in a way, a complete opening-up of the capital account. I will say a little bit about the implications of these changes in policy.

Much of government spending is stated in real terms. Actually, the budget is stated also in real terms. Directly or indirectly, the government is bound to have so many employees in activity one or so many in activity two.

/Consequently, and

Consequently, and obviously, with a rise in wages, nominal expenditures will go up proportionately. There are subsidized credits to exports, in a way indexed. They have exchange rate insurance; in other words, the money supply or government spending is highly indexed to the rate of inflation. It is an important scheme that has to be broken, if you are to have any hopes to get out of the vicious circle.

Let me say a few words about the way in which we went from a 7% inflation to a 40% inflation, and with this will conclude my discussion of the preliberalization. In 1973, right after the oil shock and the Yom Kippur war, which was associated with large government spending, there was a once and for all rise in the price level. Other things equal, in normal economic circumstances, it would have meant a decline in real wages and in living standards. The system would have worked itself out of the mess. However, since you have complete wage indexation, real wages were not allowed to decline. With the shrinking of the pie, something else had to yield and, of course, what yielded were profits. You had a very sharp fall in profits, a sudden drop in the rate of real investment, and a very acute decline in growth rate. This was the impact of the once and for all rise in the price levels, in the 1973-1974 shock. We stayed there until 1977-1978, when liberalization took place. Again, there was the impact of dollarization; an immediate decline in the nominal holdings of domestic currency and a once and for all shift to foreign exchange.

All this happened against the background of a very large budget deficit. Consequently, in order to finance the latter, vis-à-vis the inflation, and inflation indeed accelerated, it was necessary to raise tax rates. Notice that we had full indexation and here was a first major error. When you remove a distortion caused by food subsidies, for example, and create a big devaluation, you want to make sure, in a system which is fully indexed, that the price level is set in a manner that such action should not include the indexation. This was not done and, consequently, every price rise, which was supposed to have been a once and for all price rise, turned into a permanent rise that set itself into the inflation process.

We had at that time the notion that somehow inflation was easy to live with and everyone thought of the Brazilian experience: if you have a fully indexed economy, why should you care about inflation? The entire discussion went from trying to lower inflation to trying to create institutions that would lower its cost. In other words, you stopped asking what was to be changed, what change in policy was required to lower the inflation, rather than take the inflation for granted and ask what to do about it. If you look at employment and other indicators you may say that inflation was costless; but then you look into the composition of GDP and you see that the financial sector's share in it jumped to 40%; that everyone in the streets of Tel-Aviv sees that every other building is a bank and, literally, people go to the bank twice a day, you get a notion of the shoe-leather-cost of inflation.

The 15th of the month is an important day, for that is the day when the index is published and that is the only thing that matters in the news; whether there appear headlines about the Malvinas crisis or of the Lebanon invasion, on the 15th of the month there is no chance that anything else but the index will make news. By now people are recognizing that the higher the inflation /rate the

rate the more costly it is in a deeper sense: in the sense of allocation of resources, in the sense of social notion of the attitudes towards contracts and towards agreements that, somehow are not being properly respected.

In 1979-1980, some puzzles started to emerge. There was a sudden long jump in the inflation rate, which they called the "steep jump". Many people did not really understand where it came from. Of course, you can account for it by the fact that by the end of 1979 there were a large devaluation, a second oil shock, another decline in subsidies. Yet, inflation was hard to account for specifically, when the rate of nominal growth of money was by far smaller than the rate of inflation. Real balances kept going down and there were several views; one of them that, if balances went down, obviously it could not have been the monetary sector that provoked the fall. Really, I do not think anyone understood fully the jump in the rate of inflation. Now, it was each time better understood that the causes were a very sharp decline in the demand for money, associated with a rise in the expected inflation. People realized inflation was there to stay, but more important still was the escape to the dollar or to a different type of money; so the normal definition of money was not a relevant one. It was against this background that the concept of bubble came in, and the bubble theory of inflation became very popular. The notion was that it was a system that feeds itself and, therefore, if we could break the bubble, without fundamental changes in policy, we could remain in a lower plateau of inflation.

With this in mind, a new policy started to be introduced: that of trying to consider inflation from the cost side; to announce that you are pegging the exchange rate at 5% per month, when inflation is 10% per month; then, people will realize that if an increase of 5% per month will become the new rate, and they are certain of it, they will proceed accordingly. This is familiar to some of you. Along that period there was already, in many countries, the notion that we were really importing inflation and all external shocks got shattered.

Let me give you a bit of background as to where we are in the financial system, before I go to a more recent episode. In the 1982 financial system, let us look at the financial assets of the entire private sector. Here I have data from a paper by S. Fisher, which gives pertinent figures. The amount that is held in domestic currency is equivalent to 3%; that is the entire portfolio in domestic currency dominations; then, in foreign currency denominations, 15%; price index link, about 50%, and equity shares, the rest. This is the composition of financial assets. It is important, because very soon I will tell you how the equity share, which was 30% early in 1982, became 60% last month. Now taking you back a little, the policy of trying to lower the inflation rate through slowing the exchange rate brought about, of course, very sharp changes in the real exchange rate, which led to a collapse of exports, accelerated imports, and large balance-of-payments deficits, coupled with large budget deficit.

You see now why geography and economy do not coincide in the Latin American experience. The external debt is rising and you need to start borrowing; you continue borrowing and you know that such course is untenable. Some announcements are made here and there and there starts a run for the dollar. How do you run for the dollar? Everything you have is an open window. Everyone is allowed to

/buy, say,

buy, say, US\$ 3 000 per trip abroad. In principle, you have to say that you are going abroad, but you do not have to produce the ticket. You do not say that, because you are not asked. So, you go to stand in line and buy the dollars, and then you go again the next day. But, since you have time to return next day, you go back to the end of the line; after a while, someone will tell you that you should not do it in the same bank, that you have to remember the bank has a branch office in the next building; every building has a bank office. So you go to the next bank. In short, every morning you are literally running to the bank. What do you sell in order to buy dollars? Your portfolio does not have liquid assets any more. What do you sell? You sell securities. What kind of securities? For this we have to go two years back.

In Israel, you do not have a securities and exchange commission, as there is in the United States. Consequently, if firms and banks wish to support the price of their securities, they can do so. Banks wanted to expand and sell lots of immobilized resources. So, they started to support the price of their securities. Therefore, whenever there was a boom, the price of securities went up; when there was no boom, the banks made sure that prices did not go down. The only thing that happened to the price of securities was that they went up and this actually represented an extraordinary real rate of return of 30% per year. There was nothing nicer than this for a local investor or for one from abroad. After a while, the proportion of bank shares in portfolios jumped from 30% to 60%. Needless to say, their price and their earning ratio were completely unrelated to their equities. Stock prices were really bubbles, if you want, and they went out of line. This had implications on individual behaviour, because you did not need to save any more. You spent your income; savings went to zero, because the appreciation of existing securities went up very much; it sounds just like appreciation of real estate in some other countries.

In any event, this is the story. There is no link between the changes in the value of wealth and the flow of income and spending.

When you have to find resources to buy dollars, those are the securities you are bound to use, all your portfolio is the security; so you are selling the security, but if you are going to do it, then somebody, the banks, will have to buy those securities because that is what they do to maintain security prices. So, what is the mechanism? As they want to buy the securities, they give dollars to the private sector and, in turn, they get securities from the private sector. That is all that took place. In the meanwhile they lost liquidity and so, we got into a liquidity crunch; then, the question is how do we get out of it? You either get out of it by giving up the idea of supporting the price of securities, which may mean an overnight 50% to 60% fall in stock prices. This is an important point, because most firms, in their credit demand, used as collateral those securities and when the collateral went down to half or 30% of its value ... you know what the credit crunch means.

At that stage, the managers of the major commercial banks went to the Bank of Israel, and the Bank authorities realized that the situation had turned into a macroproblem, in the fundamental sense, and they decided to close the stock exchange and to find a way out of the mess. It was the last week of September

/of that

of that year, and by then it had been realized that the problem was not the bank stocks, but the dollar demand and that, in order to obtain dollars, there was no other way than to try to unload those securities.

This was an extraordinary experience, because you could see how essential credit is in an economy: you see it when it does not work.

How do you re-open the stock market and what do you do with the price of stocks? The choice was to let the market drop by 50% or whatever percentage, nobody knew, or step in: that was the first disaster. There was an agreement that the government would back those stocks; there was a plan to do so within five years; if some unloaded their stocks, that was their problem, those who kept their stocks, were assured that in five years they would get the initial dollar value of those stocks. In other words, the government undertook a US\$ 7.5 billion potential five-year commitment. Remember US\$ 7.5 billion relative to US\$ 22 billion external debt. The problem is that we have to get used to distinguish between external debt and domestic debt and to treat them differently.

There is another lesson to learn, because somehow at the end of the road somebody has to pay, and the government cannot produce something for nothing, whether it is external or internal. Well, here the trial balloon exploded. Really, there is not much more to tell, except that there was a governmental meeting and it was decided to devalue the currency by a tiny amount relative to actual needs, a 23% devaluation to be accompanied by a large fall of subsidies. This induced a very sharp rise in the price level, which wiped out the real devaluation. Furthermore, it was said that now labour should also do something about it and that we should forego indexation. A political error was the argument that if labour did not forego indexation, if the unions did not like it, there would be legislation and they would have to like it. In a country where labour unions are so strong and big, and the government coalition is so weak, there is no way to carry through this kind of policies without ex ante making a deal with them.

Well, what are the lessons that one can draw?

Mr. Iglesias:

By the way, what happened with the stock market?

Mr. Frenkel:

They decided to open it in two steps, and this was intelligent: the first step was to open it on Thursday, the previous week and to allow exclusively sales and purchases of index linked bonds; not of securities. The reason to do it that way was that there was a potentially high demand for index linked bonds, since the index includes the whole effect of the devaluation and of the removal of price subsidies. The notion was that if we were to have no big collapse on the third day, maybe the panic would disappear. What happened on the third day of trading, I really do not know.

/Now, the

Now, the budget deficit is of course there, extremely large and, probably, it is the root-cause of things.

The second lesson which many people learned the hard way is that it is not wise to attempt to stabilize inflation through the use of the exchange rate as an instrument. So, here, repeating what John Williamson mentioned yesterday, and I think it is well identified and recognized now, there are really five key strategic macroeconomic variables, namely, real exchange rate, real wages, real interest rates, unemployment rates, and debt. When they show extremely large changes, I think it is better to stop and consider what is going on.

One needs to have what Fisher called, in some earlier reports, a nominal anchor. There was, literally, no nominal anchor; everything was done in real terms.

Then there was the issue of the bail out --I call it bail out-- of the banks. In five years we stand behind their securities. There is a most subtle issue to which I am not sure we have an answer, which is the trade off between the loss of faith and the really fixing of things. There is no doubt that Israel opened the capital account much too fast. In the face of a large budget deficit, there was no way that, in an accelerated inflation, the massive opening-up of the capital account could have ended in a different way. But it was opened. The potential fall in the stock prices, really arose because of a run into dollars. You know that it would have been very nice if the dollar window had been closed, because that would have meant the immediate elimination of that problem, or at least of its manifestation. Should you close the window at that moment, knowing that it should not have been open in the first place? What do you lose? Could you afford closing the window? Or, maybe you can put it differently: can you afford not closing the window? This issue reminds us of the early discussions in the IMF, in the old days, about a "fundamental disequilibrium" or a "more fundamental disequilibrium"; one or the other, the word "fundamental" is there. Do you try leaning against the window in the face of a storm? Up to now, they resist closing the foreign exchange window and, therefore, at least up to now the root cause of the run for the dollar remains unchanged. Of course, there is a change in personnel, but that is always happening and everyone is inclined to think that just changing faces and policies will change things. That happens only if you believe in bubbles, if you believe there is nothing real underlying, so you just have to gain credibility. All governments say "give us one more chance". One always wonders "what did you do with your last chance?" So, let me stop here.

Mr. Massad:

Thank you very much, Jacob.

What you say is interesting and I think that most of us can identify, in your presentation, problems and issues that are quite relevant to our own experience. Rudi, would you like to say a few things about Brazil?

/Mr. Dornbusch

Mr. Dornbusch:

Thank you, Mr. Chairman.

One of the important issues in Brazil is why real interest rates are so high and why people believe, at least in Brazil's Central Bank, that you cannot lower them. The common view would be that money demand and supply determine the interest rate, and you would be surprised if you learned that in that country that is not true. Yet, if you were to listen to discussions, it would appear that there the interest rate is determined otherwise and that, because other things are different in Brazil, the determination of the interest rates is also different. But, in fact, when we think of money demand and supply, we have to understand what the money supply process is. In the Brazilian money supply process one essential part is the dollar liability of firms. Under that country's regulations firms borrow abroad; the Central Bank makes firms borrow abroad, in order to ensure long-maturity of the debt but, in exchange, offers those firms and banks a domestic exchange rate guarantee that takes the following form: firms, any time before maturity of the loan, any time of their choice, can apply to the Central Bank and pay off their loan. From then on, the Central Bank assumes the exchange risk, and firms sit quietly without their dollar liability. If no devaluation is expected and Brazilian interest rates are high relative to the New York rates, you want to be financed in dollars at the New York loan rate, but if you think a big devaluation is about to come, you want to pay off your dollar liability before you have a major increase in your balance sheet. So, somehow, the firms' possibilities of paying their dollar liabilities to the Central Bank, in anticipation of depreciation, enter into the interest rate determination. If they actually choose to do so, what would happen? High powered money would decline one for one with the reduction in the firms' liabilities and the Central Bank's assumption of the exchange risk. Why was it that, the Brazilian authorities had a very hard time increasing the money supply? Because firms expected the devaluation and were madly paying off dollar loans to the Central Bank. Therefore, high powered money was sharply falling. On the other side, the Central Bank was buying securities to keep it growing. When we have this story, what is now the question about lowering the interest rate? The interest rate is kept high because it has to be high enough so that firms will not try and pay off all the loans. What does the Central Bank do? One possibility is to have an open market operation big enough to absorb the entire dollar debt and then you can increase the money supply. Note, a big open market operation does not mean a great increase of the money stock. But the moment the endogenous component is abolished because you have absorbed your dollar debt, of course, the money supply is sharply affected and the interest rate is lowered.

The other possibility and I mention it as well, is to get rid of the dollar debt, not by buying it in an open market operation, but by doing one or two things: either you say "this exchange guarantee has to disappear" and you pay off your loans when they mature. The alternative is to say: you have to pay them off now. So, where are we after that? Of course, money demand and money supply influence the interest rate and an increase in the money stock will change the interest rate, but because high powered money is largely endogeneous, you will have to have a lot of it before you get to affect the interest rate.

/Is there



Is there any reason why we should not buy up the entire dollar debt of firms? It is a good idea to do that. First, you go out to make a market operation. You sell money and buy securities. As interest rates fall, firms say "we will want to borrow at low interest rates the old debt". And the increase in money is very small. You keep doing that. But in order to do it, you have to be buying something; you buy securities. We can buy government securities that are denominated dollars. So, by the time you are through buying the dollar debt of the firms, by buying securities in the open market, you have also abolished the government's dollar debt. There are no more dollar securities around, neither government debt nor dollar liabilities of firms.

Mr. Massad:

Thank you very much, Rudi.

This reminds me of a situation in Chile, by the middle of September last year, when an effort was done to increase the money supply and reduce interest rates, with the only result that the dollar indebtedness of the private sector was reduced. It is exactly what you are concluding here. Now is the time to extract some lessons from the experiences we have heard about this morning. Here, in ECLAC, some work is being done on that; particularly, the Economic Development Division of ECLAC is doing some work, and Joe Ramos is the man who has been writing on the subject. So, would you please, Joe, give us an account of what you are doing.

Mr. Ramos:

I would prefer not to give an account of what I have been doing in my study of stabilization and economic liberalization in Argentina, Chile and Uruguay, because it might take us too far from today's topic. Moreover, in one way or another most of the key lessons that I have drawn, already have been stated by the majority of you. So I would like to limit my comments to one central issue: variations on the theme of getting prices right.

I think one of the paradoxes of the neo-liberal experiences as they are called in Spanish, I suppose they would be considered neo-conservative or neo-monetarist in English, is that an approach that placed so much emphasis on getting prices right should have failed because, in fact, prices got so much out of line. This is the issue I would like to address. The three prices most obviously in disequilibrium in these experiences were: i) the exchange rate, with the problem of the eventual overvaluation of the currency and the ensuing balance-of-payments crisis; ii) the real interest rate, well above what anybody would consider to be an equilibrium interest rate and which would eventually lead to a major financial crisis; and iii) the wage rate, real wages falling far below what one would think would be required to maintain full employment, without always yielding full employment.

The main lesson is fairly obvious; the literature now abounds in it: movements toward equilibrium are not speedy, or not speedy enough. Nor are they necessarily convergent; they are often divergent, at least for a while. At a

/more theoretical

more theoretical level, the lesson is that market clearing prices are not necessarily equilibrium prices, at least if we understand by equilibrium prices those which would prevail if all other markets, in addition to the one we are examining, are also in equilibrium. I think to a large extent this lesson fits in very much with the other experiences we have heard about this morning.

To examine this point in greater detail, I would like to refer to two of the disequilibria that I mentioned. First, let us take trade liberalization. At this stage, I think, everyone is aware that trade liberalization was rather successful in its export promotion phase. So long as the real exchange rate was relatively high exports really expanded. The failures of trade liberalization were associated exactly with the reverse situation, when the exchange rate was used, not to achieve external equilibrium as in the first years of each of these experiences, but was used for purposes of price stabilization and the exchange rate lagged behind inflation. Nevertheless, the question arises: why did not internal prices adjust in accordance with the programmed rate of devaluation plus international inflation, but rather rose more rapidly eventually leading to a balance-of-payments crisis due more to this fall in the real exchange rate than the lowering of tariff?

Several microeconomic explanations seems relevant. One of the explanations deals with non-tradeables. There might have been an excess demand for these raising their prices. To the extent that the producers of tradeables had some room for setting their prices without losing much of their market, and to the extent they tried to set their prices in accordance with their historic relation to that of non-tradeables, then the price of tradeables may have rises even without an excess demand in that market. A second reason is that the law of one price held, but it held in the wrong way: rather than internal prices moving down to international prices, the price of goods tended initially to move upwards to that of domestic goods. Of course, we all know that this could not continue forever; eventually prices need fall to international levels or a balance-of-payments crisis would ensue. The question remains to why there was this tendency to set the prices of imports at the level of domestic prices and not the reverse?

One explanation for this is that there are quite a lot of marginal importers. If someone imports but ten bicycles, he obviously is going to sell them at domestic prices and not at international prices plus tariff, and so on. Another reason is that many of the former producers of import substitutes later came to import many of these same goods. Consequently, they themselves would try to set prices so as to maximize their operations, both of importing as well as producing.

A third reason, which I think has not been sufficiently emphasized is that though there are possibly 5 000 (to give a number) tradeables produced within each of these economies, they substitute 50 000 tradeables outside; that is to say in mosts cases there is very imperfect substitution between domestic goods and foreign goods. The case of Uruguay, I think, is quite pertinent in this regard. Uruguay did nothing or virtually nothing, in terms of tariff reductions. Yet, the growth in its imports of consumption goods

/was as

was as strong as that of Argentina and Chile, who did cut tariffs significantly. Yet in Uruguay tariffs were not cut; they simply eliminated import prohibitions, quotas, and the like. This suggests that in the upper- and lower-income strata, especially there is non-price competition. Some people, for example, will prefer whisky in terms of quality, say, at almost any reasonable price rather than aguardiente or pisco. There are people of sophisticated taste, who possibly make up 10%-20% of the market for whom it is virtually pointless to try to compete by lowering the price of pisco by whatever percentage necessary to keep that 20% of the market. So, you lose an upper class fringe and, of course, the reverse, in the other case. Hence, a certain amount of market is lost because of non-tariff reductions but simply, because of the elimination of quotas + prohibitions. And this virtually has no effect on domestic prices.

In any case, the conclusion that one arrives at in examining the three country experiences is that the law of one price did not hold; that most of the increase in imports was due not to the reduction in tariff, but to the fall in real exchange rates. The comparative study of these three countries also suggests that we have been over-emphasizing the issue of sequence. Argentina did not open up its trade as soon as Chile nor as much, whereas it opened up financially. This has led many to believe that there was less pressure on prices in Argentina and, consequently, its domestic prices were able to distance themselves considerably more from international prices; that is, the exchange rate would overvalue much more. This explanation is valid for Argentina vis-à-vis Chile. Yet the country that had the least exchange rate overvaluation was not Chile, but Uruguay. And its trade opening-up was only slight, the least of the three. What I am getting at, in this respect, is that the exchange policy and the behaviour of domestic producers were considerably more important in the determination of what happened to imports than were tariff reductions or the sequence or speed with which these were put into effect.

The second case that I want to examine is financial market disequilibrium. Professor Frenkel, this morning, and Rudiger Dornbusch, this afternoon, have drawn attention to one of the points that I wanted to make. Whereas in my student days one generally assumed stable and convergent movements, today we see that divergent movements leading to explosions can take place. We have seen "bubbles" in financial markets and now we have to try to explain them. I recognize that this is very easy to do ex post, and not so easy, ex ante. But I also think, in all fairness, that ex ante there were clues. What were these clues of possibly explosive disequilibria? In all three countries, very high real interest rates, of the order of 20%, 30% per year in some cases, for several years. There were also huge spreads between domestic interest rates and international ones, again of the order of 20%-30%. Obviously, no economy that grows at 5% annually can be paying such high interest rates. The only values that grew at similar rates as a matter of fact, and this is where Professor Frenkel's analogy between Israel and Latin America comes in, the only thing that really moved on at that rate were stock prices and, I would say, the value of assets. For example, the value of stocks in real terms sextupled in Chile

in seven years. That is the only thing, the only magnitude, that moved roughly in accordance with real interest rates.

What explained such high interest rates? An unusually high demand for credit. In addition to the normal parameters which enter into any demand for credit -- expectations of income flows or the (high) costs of that credit -- I would mention another two; expectations of exceptional capital gains (something which recurred in the beginning of these experiences) and its inverse, the desire to avoid exceptional capital losses, having to sell off assets or inventories when nobody is buying (as occurred in the last year of these experiences). In such a case the demand for credit increases and firms are willing to pay almost any price for credit so long as banks are willing to oblige. Consequently, the demand for credit and the ensuing high interest rates then become destabilizing elements. Banks, of course, attempt to renew such credits to the extent that they have no other alternative, or to the extent that they in fact belong to the very same owners as those firms.

Hence, one of the phenomena which I think we should try to consider is the possibility that markets may be destabilizing and, especially, that the financial market which is a fast price adjuster, may reflect disequilibria from other markets. Disequilibrium may come from exchange rates; or from overblown prices; or from overblown assets. All these disequilibria will reflect themselves in an excessive demand for credit. What is the moral of this? As far as I can see, it is that disequilibrium is possible and for a sustained span of time. Since speeds of adjustments between markets are not uniform, movements can be transitorily divergent rather than convergent. Moreover, the disequilibrium in one specific market may be a reflection not so much of disarray in that market, but of disequilibria in other markets, be they asset markets, goods markets, exchange markets, or whatever.

If this is so, what do you do about disequilibria? I think one of the reasons why the disequilibria theory in the literature is not favourably regarded is that disequilibria are very easy to spot after the fact, but not to predict. One can mention an infinite number of ways of achieving disequilibria; so it is almost useless, ex ante, to try to programme that into any model. Nor certainly would one normally want to argue for the reverse orthodox policy conclusions: for example, that in the case of a stabilization policy one would normally want to increase the money supply because this might, in the short run, lower interest rates and, consequently, prices; or that one should raise real wages in order to reduce unemployment. To be sure, one can imagine disequilibrium situations where this might be the case but I don't think one normally would want to prescribe these adjustments ex ante. There was a tendency in the three countries that we are examining to believe that the market clearing price is the correct price, that is to say, the correct equilibrium price; and that relations which hold in the long run also hold in the short run. In short, they believed that disequilibria were either impossible or irrelevant. Hence, they tended to overlook or rapidly explain away odd phenomena: the notable difference between domestic and international prices; or the strange fact that while real wages fell, unemployment shot up, and when wages rose, unemployment fell.

/I think

I think one of the implications of disequilibrium analysis, let us call it the negative lesson, is that "outliers" are possible, to borrow Professor Harberger's term. In a more positive plane, one of the policy implications is to try to keep variables within a reasonable range of their normal, long-run values, for the market is efficient as regards marginal adjustments. It is not so good, however, when we are dealing with large adjustments, in several markets. In a sense, in such conditions, the market is groping for "numéraire". And policy need provide it.

Finally, returning to stabilization policies, here is a case where this positive lesson can be applied. We all know that slowing inflation is basically a question of bringing down or decelerating the nominal value of all variables at roughly the same rate. If that happens, there will be no loss in output. We have learned, after a long time, that it is not just a question of decelerating one of these alone, for example, money supply, to bring down the rest. No, when only money supply was decelerated or money supply and wages, it proved to be insufficient. Prices were sluggish in slowing and/or real interest rates got out of line, and so we generated a recession and a regressive redistribution of income. Or in phase II of these experiences when the exchange rate was controlled in accordance with inflationary goals in the hope that prices would move in the same direction and at the same speed, and so interest rates and wages, these did not. An external disequilibrium was eventually generated.

The lesson I draw is that a successful stabilization policy requires getting the nominal values of four or five key variables of the economy to slow down simultaneously, which implies not repressing them, but guiding them, controlling them, targeting them, at least for some time, harmonizing them, lest they get out of line.

Mr. Massad:

Thank you very much, Joe.

In this task of drawing lessons, Ricardo Arriazu wants to help us too. So, please go ahead, Ricardo.

Mr. Arriazu:

When, this morning, I was coming to this meeting, where we were going to talk about each country's experience, Rudiger Dornbusch asked me if I was going to explain how I had managed to achieve the highest overvaluation of a currency in history. Besides disclaiming the fact that I was the sole author of that achievement and disclaiming the fact that this overvaluation was the highest in history, I had thought that this was an occasion to spare the participants having once again to listen to how we attained this epic achievement, particularly since this epic achievement has become now a kind of legend, like all legends growing through time. In that sense I am happy to inform this meeting that the famous two-dollar coffee in a Buenos Aires hotel in 1980 has now become the five-dollar coffee, so that you can see that it has really become

/an epic.

an epic. If you allow me to continue with this cynic tone, I should also like to inform this meeting that things after adjustment, in Argentina, have worked "all right". We have now devalued the peso 7 000%, and exports have fallen and the overall balance of payments has deteriorated. I think that the question of why exports have fallen after this 7 000% devaluation needs further analysis, including the role of exchange rate changes. Inflation, last month, was 24%. We are in the verge of hyperinflation. However, since the subject of this section is what we have learned from experience, that is what I want to talk about.

In most disequilibria there are internal and external elements. Let me talk first about the external elements, since on this subject we are more in agreement. The external shocks, in the period 1979-1982, were extremely acute. I was surprised to see the figures in the paper of Carlos Massad; they are quite similar to some of the calculations that I have completed recently. In Argentina, for example, during the period 1975-1982, the impact of external factors upon the deterioration of the external sector can be estimated approximately at US\$ 16 billion. Of this total, the largest deterioration took place in 1981 and 1982. At present it can be estimated that the external factors account for a deterioration in the current account of the balance of payments of approximately US\$ 4.5 billion per year; that is, the combination of terms of trade, of interest rate and of lack of external demand.

I was listening just a moment ago, to the questions in relation to interest rate. It is interesting to note that, if you take international interest rates and deflate them by the behaviour of external prices of Argentina, real interest rates turned out to be extremely high. During 1981, for example, real interest rates reached a level of 70%.

In the case of Uruguay, the decline of terms of trade and the rise in interest rates explain a deterioration of national income equal to approximately 12% of GDP per year. Which are the factors behind this external shock? I would put the blame on the United States monetary policies, especially after the Tokyo decision related to the effort of industrial countries to fight inflation.

What happens when a country which is in fact an open economy behaves and conducts its economic and monetary policies as if it was a closed economy? Basically, the fact is that the United States is an open economy and conducts its monetary policy as if it were a closed economy.

Another important question related with these external factors is why other areas that have also suffered these external shocks, have not ended with the same problems of Latin America. If they have suffered the same kind of external constraints, why have they not suffered the same consequences? Here, I think that we should consider, first, the possibility that they have indeed adjusted earlier and, second, the possibility that since many Latin American countries are used to inflation and many people think that to be indebted is good when you are in an inflationary environment, perhaps this experience of the private sector has restricted the effectiveness and the will of the public sector, and therefore, most of the Latin American countries got into debt thinking that inflation will alleviate the burden of their debt.

/The second

The second subject that I would like to talk about, and this was touched upon by Mr. Iglesias, the first day, is the question of capital flows and holdings of external assets by the private sector. We have all heard that the total of Latin American debt is about US\$ 300 billion; what is not mentioned, however, is that Latin American liquid assets abroad exceeds US\$ 100 billion. In the case of Argentina, my own estimation is that dollar holdings abroad by Argentinians are approximately US\$ 14.5 billion, and, of these, US\$ 13 billion left the country from 1980 onwards.

The third question that should be considered when we are examining external factors and the behaviour of the external sector, is the problem that the available data for individual countries is not consistent. We know that the sum of all current accounts of the world should be by definition zero. However, according to official statistics the aggregate is approximately US\$ 15 billion, negative and growing. The question is why? If you take individual countries and you take the current accounts, which should be matched by variations in assets and liabilities, you find that they do not match. Here, of course, we have the problem of overinvoicing and underinvoicing and also, we have the problem that there are many real transactions that do not appear in the balance of payments. Specifically, I am talking about arms, which increase the debt, but do not appear in the balance of payments.

Finally, we have internal factors, in which I include exchange rate policies, trade and capital liberalization, fiscal deficit, wage policies, tax policies, public service tariffs, etc. What have we learned about these internal policies? The first thing that I have learned is that economic policy has to be consistent; if it is not consistent, then you are bound to have internal and external disequilibria; this is obvious. The second point, which is also obvious, is that the real variables --by this I mean real exchange rate, real money, real interest rate, real wages-- play a very important role in the determination of macroeconomic equilibrium in the real sectors. However, the problem is that governments do not manage real variables; they only manage nominal variables and not very well. Do we really "know" how to manage nominal variables to obtain certain objectives in terms of real variables.

We have learned that sharp modifications in nominal variables not only affect flows but they also affect stocks and, as such, produce enormous transfers of net wealth among economic agents. We tend to forget this lesson, especially when we talk about nominal exchange rate movements.

Another point mentioned in this meeting is related to the fact that capital flows tend to be disequilibrating. Based on this conclusion many analysts have suggested imposing controls on capital movements. The problem is that we have not learned how to control capital flows. My own experience is that you cannot control capital flows in a country used to controls, for example, at this moment, in Argentina, you have a whole barrier to capital flows and if you look at the statistics it would appear as if capital were not going out at all but, according to many calculations, just during this year we have US\$ 3.6 billion of capital outflows hidden through the current account. This explains partly why, with a 7 000% devaluation, exports have not increased: officially recorded exports have not increased; real exports have indeed increased.

/The final

The final point, Mr. Chairman, is that when we talk about managing the external sector, we have to take into account some problems that appear in the present treatment of the external sector statistics. We all agree that the current account registers the flows of goods, services and transfers during a certain period, and as such any disequilibrium in the current account must have a counterpart in variation in assets and liabilities, of either the public sector or the private sector. The balance of payments is a measurement of the variations of some assets and some liabilities in the accounts of the authorities. It used to be important, but no longer. With all the problems of overinvoicing and underinvoicing, the official current account does no longer register what is really happening in the current account. For example, my own estimation is that at present Argentina, that has a recorded current account deficit of US\$ 2.7 billion, has a surplus of US\$ 700 million, capital flows therefore find their way through the current account.

Another problem in the analysis of the balance of payments in an inflationary environment has its origin in the fact that the nominal interest rates include a "real" component and a maintenance of value component. To impute all interest payments to the current account without considering the fact that part of interest rates is for maintenance of capital, implies overestimating and sometimes underestimating what is happening in the current account as a measurement of transfers of real resources.

Therefore, Mr. Chairman, to conclude, I think that we have quite a number of lessons to learn from experience, but we have to learn both the good lessons and the bad lessons.

Mr. Massad:

Thank you very much, Ricardo. As usual, a very stimulating presentation. Yes Rudi, go right ahead.

Mr. Dornbusch:

I wanted to ask a question, Ricardo. You made a very important point, we have learned that consistency of policies is of prime importance. I, really want to disagree. I think we have lived with economies that have been mismanaged, for, as far as memory will go, and even though economies stay, within one standard deviation of where they might optimally be, on occasions they go extremely far away.

Policies always have been inconsistent: certainly under the gold standard, certainly in your country, so why is it that only so rarely they go so far away. I think very rarely we combine our inconsistent policies with the payment of the positive rates of return on paper assets. Every time we allow that, the system blows up, because we shift the centre of gravity from production to financial markets, and that in the shortest time. There is no limit on the amount of over-determination we can achieve; in a month, in a few months, we can blow up the whole economy. So I think that your inconsistency is not the problem. We have to be aware, in the financial market, that you cannot get positive rates of

/return on



return on paper assets, make them safe, make them more than competitive with real capitals and surpluses, nor go and speculate with those. Everybody knows that it is going to bounce in one half year, if we let it go. The problem is there; not in the inconsistencies. Even with the best of intentions, inconsistencies never turned solid, and, if we try, we will make a great depression on the way. What we can do is to abolish this belief in making financial markets the centre of the economy.

Mr. Ramos:

Rudi Dornbusch, when you say avoid paying positive real rates of interest, do you really mean positive or either you mean something greater than the historical range of  $3\% \pm 2\%$ ?

Mr. Dornbusch:

What I really have in mind is we should not try to promote the payment of real rates of return on paper assets as an active concern of economic efficiency. Every time we do that we will get the centre of gravity wrong. What I mean, is that with these policies of raising the real rate of return on demand deposits to promote intermediation, the economy can very, very rapidly, go wrong in the way that has been described for each of these economies.

Mr. Arriazu:

Based on what was said this morning, I was playing with compound interest rate and, of course, with the 5% real term, in ten years it becomes 62% and 10% becomes 150%; 20% is 520%, and, of course, we can continue. The problem is that when you have that the main reserve currency has a real rate of return which, in terms of its own inflation, is 7 or 8%, but that in terms of our inflation or of our export prices it is 70%, like in 1981 --or 25%, like now--, it is very little what we can do. How do you convince our people to hold our own financial assets at smaller returns unless you have effective controls on capital movements? My own experience says controls are not effective; perhaps you may insist that they are, but again, my own experience says that they are not, unless you play some kind of trick; for example, set your internal interest rates high in terms of dollars, but low in terms of your own currency, which implies playing with the exchange rate. Really, I do not know how you could solve that problem, and this is one of the biggest problems that we have now in Argentina.

Mr. Dornbusch:

Orthodoxy cannot be the answer. That causes this discrepancy. I disagree with what John says, not with what is in his heart. When the return on capital goes down, as a consequence of policy, there is a disequilibrium. I agree that, in Argentina, capital controls cannot work, if people live thinking in dollar terms. In Brazil that is a totally different issue. I thought I was making a remark that you could endorse, that the move to consistency is really not the answer, in many cases, and that we are to be careful with the financial system so as not to allow it to be so attractive; that we have to definancialize the economy whenever there are big shocks.

/Mr. Massad:

Mr. Massad:

This has to do with one of the main points raised by Ernesto Gaba this morning, in describing the Argentinian experience and the different ways in which they go over and try to get the financial market changing the nature of instruments and so on.

I had warned Al Harberger that he would be called upon to give us his conclusions from his own experience. Al, will you please take the floor.

Mr. Harberger:

I shall try to be concise, concentrating on my own opinions and my own conclusions, drawn from my own experience, not attempting to summarize the debate.

Number one, a big lesson is that lots of people have made mistakes by bailing out banking institutions. We have seen this, in different ways, in Argentina, Chile, Brazil, Israel, etc. Ultimately, one must realize that in most relatively modern economies the financial system is just too big for the fiscal system or the government to be capable of coping with a large systemic disaster. Too much bailing out encourages lack of discipline by other banks. Yet there must be an underlying discipline. In Chile, the problem started way back with the Banco Osorno. If the government had not bailed it out (which would have been easy to do, for Osorno's failure was an isolated instance), it would have given signals. I have lamented and written so many times that when a banking institution fails and the government wants to bail it out, not do it by paying all the interest; pay half the interest; pay no interest; pay 90% of the capital and no interest; you have a perfect range of calibration from 0 to 100%. Why have you to pick 100%? The big mistake is the 100% bailout. Anything less than 100% is a lot better and it gives a different signal. So that is one big lesson. I say, never bail out 100%; always, no more than 95%, if you want to bail out anything.

Ernesto Gaba was talking about the law of one price. Where does that fit in? A number of economists seem to feel that this law applies even to non-tradeables. Presumably this comes from countries having the same production function, plus factor price equalization. In our world, that is nonsense. The law of one price tends to work with tradeables, but actual and real tradeables. On interest rates, what do we know? One set of interest rates that are broadly similar across countries are their rates of return on physical capital measured over long periods. I did quite a lot of that kind of work in this area, and others have done similar studies. In my study, Korea was an outlier, with a 16% real rate of return. Uruguay was an outlier, at 4% or 5%, depending on how it was measured. Most countries, however, yielded measured real rates of return between 5 and 10%. You take any real interest rates measured from financial data, across countries, in recent periods, and you see an ample range of variations. In that context, the empirical data do not reveal any genuine one price tendency. I do not think any strong argument exists that says that real

/interest rates

interest rates will be the same across countries in the real world. It's like factor price equalization in general. Models can be built in which it is a necessary implication. But the real world data do not support those models.

Another thing that I think has been a mistake in the Southern Cone is letting in too much capital, too fast. We have heard that it is hard to keep capital from going out, when it is eager to go away, but it is not so hard to keep it from coming in. It seems to me that the time to control inflow is when there is too much capital coming in. Now, here in the Southern Cone, Argentina, during, say, 1980, had an interest rate in pesos of about 6% per month; devaluation was pre-programmed at the rate of 1 to 1 1/2% per month, and there was absolutely free and legal entry of capital. Together these imply an interest rate of dollar inflows equal to 4.5% per month. Since a fair fraction of these inflows went into reserves (this was endogenous under the prevailing exchange rate system), this meant the country was paying 4.5% per month in dollars for accumulated international reserves. I contend that Argentina was letting in too much capital, too fast, and that this was a mistake.

In the Chilean case, the policy flow was somewhat more subtle. Chile always had more controls than Argentina, and for a number of years capital flowed in at a rate that caused no problems, but ultimately (in 1981) the capital inflow amounted to more than 15% of GDP. Indeed it was probably more than 20% in one half-year period. In both Argentina and Chile the reason why the real exchange rate got so far out of line was partly (probably mainly) due to the very high rate of capital inflow. One can rationalize this in two ways: for those of you who think in terms of real economics, the real exchange rate is the relative price of tradeables versus non-tradeables; there is a supply and a demand for tradeables in these countries, both of which are relatively inelastic. Since importing capital to use for domestic purposes requires that an excess demand for tradeables be generated, doing so in the presence of relatively inelastic supply and demand for tradeables requires (for a large capital inflow) a highly appreciated exchange rate.

In an old fashioned monetary sense: if you have a fixed or tabular exchange rate, and you allow capital to come in, where does that capital go? To the Central Bank, where they print money. Until that money returns to the Central Bank, it circulates within the economy and fosters inflation in the old fashioned sense, pushing up the price of non-tradeables. Either way of thinking about a large capital inflow thus leads to the conclusion that it will result in a highly appreciated exchange rate. I feel that allowing capital to flow in at grossly unsustainable rates is usually a mistake. I feel confident that it was so in the Argentine and Chilean cases.

Another thing we have learned is about the regulations that countries have had --Brazil has had them for a long time, Chile and other countries have had them-- to guard against the contingency that the international banking community will act like a bunch of sheep. Experience shows that this is a very real, not a remote contingency. Most of the time, it seems to me, the international banks have tended to share similar views. When they love a country they shove capital down its throat, and when they stop loving, they take it all back, sometimes massively. One way to guard against the ensuing problems is to make sure that they cannot take out too much at a time, thus keeping the situation under control.

/This can

This can be done by regulations giving strong disincentives to short-term debt (other than trade credit).

The lesson that Joe Ramos mentioned and that I would like to summarize, drawn from experience, is that we should try to avoid situations where key variables reach absurdly high or absurdly low levels. I do not feel one could do this by trying to fix the variables in the way you would like them to be. This is too tough a task; it is a losing fight. But at the same time I think that when interest rates get high, really high, one ought not to take as a natural event, but as something to look into, to try to understand and explain. Here, in Chile, I should have said: "let us find out what makes this so." In the Chilean case I have concluded that there was what I call a false demand for credit; bad credit, being rolled over and added to the true demand. So, when you get a double demand on the same supply, you get a very high price (i.e., real interest rate). You have to realize that we all know about this "false demand" for credit; what we did not know was how big it was. If we had followed what is now my advice, we would have taken the "absurdly high" real interest rate as a signal that something was probably wrong, and we would have mounted a crash programme of research and "detective work". Had we done so, I think we would have found out quite early about the importance and extent of rollovers of bad loans and corrective steps could have been taken early.

Similarly, when real exchange rates get out of line, you have to worry about them, too. Certain things can be done. An interesting thing that I think, retrospectively, might have been a useful policy tool in Chile, is a tax on consumer durables; not an import tax on consumer goods, but a general surtax, say of 20%, 25% --over and above the IVA on consumer durables. This would cause people to buy less imports, because there are a lot of imports of consumer durables. Consequently it would tend to encourage investment goods imports. Indeed, the proceeds of this tax could have been dumped on the capital market, thus helping to moderate the very high real interest rate. If you are taxing consumer durables now and people think that you might not tax them later, maybe they will save more. So the tax on consumer durables would have a) encouraged investment goods imports; b) helped to lower the real interest rate if the tax proceeds were "fed" to the capital market; and c) at least to the extent people perceived the tax as transitory, it would have eased the demand for durables and presumably stimulated savings, investment in plant and equipment, and technical improvement.

One of the things we all have to worry about, that nobody should ever forget, is the fiscal deficit. I am convinced that it is dangerous for the government to finance more than 1 or 2% of GDP at the banking system. Deficits larger than this can be financed by going outside the banking system. But here, too, prudence should prevail. I worry more when the fiscal deficit gets too big and is financed at the banking system than I do when the financing comes from outside the banking system.

/Now, there

Now, there are things that we have learned and others that we have not learned. We have learned how crises emerge; how, once things get out of hand, they kind of tend to go too far (overshoot); how, when people are trying to deal with a problem, they take a tentative first step and that tentative first step may turn out enough or not enough. Look at all the devaluation sequences: Chile's devaluation sequence looks wonderful in comparison with many others, yet the movements of the exchange rate reveal an initial devaluation (from 39 to 46) that was far too small. This was followed by other tentative steps and experiments. Then came the great overshoot, to well over 100, before the rate finally settled in the mid 1970s. This shows how the tendency to overshooting works. This same type of dynamic response occurs in respect of many variables.

Mr. Gaba was talking about where you start with an ordinary debt and then people do not like their ordinary debt, and you have to give them indexed debt. Then, they no longer like the indexed debt, and then you have to give them a dollar debt. Next, they do not like the dollar debt; by now, for lack of confidence one faces huge real interest rates in every currency. You have a terrible budget problem, about which I do not think we know anything, in the sense of methodology, dynamics or anything else. All we know is that it is something we have to avoid, and we have to do it by acting prudently on these other variables: the money supply, the exchange rate, the tax system, and so on; the variables that are under our control. We should not in such a case attempt to fix them or to hold them within some narrow band. But we still should try to hold key variables like real interest rate, real exchange rate, unemployment rate, rate of inflation within some plausible big tunnel, plenty big. One does not need to be too perfectionist within the tunnel, when you compare the situation with the dangers of being outside of it.

I do not think there is much of a lesson to learn on liberalization of trade as such, it seems to me that in the Chilean and in the Brazilian cases we have two very successful liberalizations: the Brazilian case, under the economic miracle; in the Chilean case, when non-traditional exports grew from 10% to 40% of total exports and things like that. Those were pretty good times. Even 1980 and 1981 were very good years; 1979 was a good year. By that time the liberalization was already completed; the purpose of liberalization is ultimately to make the real exchange rate a proper allocative signal or guide. In Chile's case the liberalization as such does not appear to have had a significant deterrent effect on manufacturing, etc., for liberalization carries with it a rise in the real exchange rate. The threat to tradeables activities come from the fall in the real exchange rates, or better said, from the creation of a situation where the real exchange rate was unsustainably low, and where suddenly in late 1981 and 1982 the flow of new credits was sharply reduced. This called for a sharp rise in the real exchange rate --something that came about only sluggishly and at great social cost.

One final thing and quite in the spirit of everything that I have said. This is something that I have been saying for years. Back in the days when, in the United States, we were having double-digit inflation and 20% interest rates, I said to a number of friends --unfortunately I did not publish what I said-- that my favorite rule would have been to have the Federal Reserve System announce

/that it

that it was going to reduce the quantity of high powered money at the rate of 1.5% per month, into the indefinite future (i.e., until the underlying situation had changed markedly). Now, the purpose of that was that people all over the world were fleeing from the dollar; the exchange rate was going through the roof (i.e., the dollar was tremendously depreciated). A Deutschmark cost 60 American cents; the Swiss franc cost 70 cents (on the futures market, anyway). That, I believe, is a clear case of the exchange rate being out of line, when policy makers ought to think of doing something to pull it back into line. And a sensible thing too, since dollars were in such plethora. By contrast, it seems to me that at present the signals are such that it would not be a bad idea to give the world a few more dollars and get that exchange rate into the bigger tunnel, with the mark at, say, 40 to 50 cents. Certainly, the first tentative move, to see what you could do to make the Deutschmark go from 37 to 38 cents of a dollar, the first steps to be taken in that direction ought not to be bound by a monetary rule.

Somebody was saying that, in our monetary thinking, we have not yet learned to live in an open economy. I think that the things I am trying to say here represent at least a partial passage to how a big country's monetary policy ought to behave in an open economy. We do have problems. There is wide consensus that, on the fiscal side, the United States is not helping the world capital market by what we are doing, but that is yet another story.

I will stop here. I do feel that, in the case of exchange rates and maybe in the case of fiscal deficits, the United States is pushing toward the wall of that tunnel, and that the time has come when proven policies ought to be used to attempt to contain the principal macro-variables of the economy within the very wide band that I have called a tunnel.

Mr. Williamson:

Thank you, I would like to say a few things if I might. The first is that, when I came here, I thought that an important and interesting question was that of the sequencing of liberalization. If one is to liberalize both trade and financing, the question is the order in which they shall come. The more I listen to discussions, the less convinced have I become that this is a particularly important question. I do not think we have heard any particularly convincing argument in favour of one or the other. It does not matter really very much.

What seems to have been called into question is whether financial liberalization is a good idea at all. At least, for a country which is overwhelmingly in debt, I find it is very difficult to understand what is the thought of people who see welfare gains from close integration to the world capital market. It seems to me that the overwhelming source of welfare gains in that sort of country is the possibility of being able to borrow net, so as to stimulate domestic capital formation. However, in fact, that is not what happened in the Southern Cone; on the contrary, in Chile, borrowing resulted in a diminution of the savings rate, rather than an increase in investment. Again, in Argentina, borrowing did not contribute to stepping up investment rates.

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It is very difficult to believe that there were any welfare gains which came from borrowing, and I have not heard any analysis which has persuaded me that liberalization was a benefit. Indeed, as the discussion goes on, the more I wonder whether liberalized financial markets really are going to work. In some markets, it would be absolutely crazy to think of controlling them; fish markets, for instance, would not function efficiently. It is absolutely clear that, if one attempted to allocate fish by quotas, rather than by price, because demand and supply are known to the participants, that market would fail.

We come to the financial market. I listened to Jacob talking about Israel, and Argentina, and Brazil, and Rudi, and it seems to me that one is not in that type of situation at all. Instead, people have to take a view of the future. Economic models assume that people take a view of the future on the assumption of rational expectations. This means that they take a long-period view and only engage in transactions which are part of self-fulfilling and consistent plans, and assume that everybody else will act the same way. This is not the way things happen; rational expectations, quite clearly, did not materialize in the case of the bank shares in Israel, to take one example. I was totally unfamiliar with that situation until two weeks ago, and did not understand what was happening until I heard Jacob's illuminating discussion.

There seems to be a very generalized myopia, which makes everyone assume that they are going to be able to get out in time, or else that people will be bailed out. In that situation, perhaps, one should maintain much more control; either, one should try to design some aspects of markets which would ensure that they do not function in that way, the sort of suggestion that Al Harberger was making just now, or else one should not liberalize until one has some real assurance that the market is going to function in a forward looking and not in a myopic way. I am much more skeptical about financial liberalization (and, I guess, I was never particularly convinced by it). Trade liberalization, on the other hand, according to the models I use, is an excellent idea that comes much closer to the fish market type of context, even though I think imperfect substitutability is a normal case; not your homogeneous primary commodities that face the law of one price, but instead your heterogeneous commodities sold in imperfectly competitive markets with imperfect substitution. I think we ought to think of that as normal, even for developing countries. Even so, there is a strong presumption that trade liberalization is a good idea.

I have been very happy with the general tone of the discussion about macroeconomic management. I found that much more congenial. There does seem to be a general agreement that it is necessary to watch, not just inflation and the fiscal deficit, but also the level of output, the current trade balance and those three key macroeconomic prices, and I can only say that I have been quite delighted to witness the amount of agreement on that.

I am sorry that Ricardo Arriazu is not here, because I certainly take his point, that these are not policy variables, that one cannot simply say that you have to keep the real exchange rate in line. There are circumstances in which a nominal devaluation is not an effective tool for changing the real exchange rate, for example. The point is that when a case like that arises, then you should ask

/yourself, why?

yourself, why? What is the source of the problem? Is it indexation of a disequilibrium level of real wages, or what is it which is behind that disequilibrium?

Again, Al Harberger was making the same point. When you see these astronomical real interest rates, you should ask yourself, what is it which leads to them? At least, that is going to put you on the track, looking for solutions before the whole thing blows up. There does come a point when it is very difficult to see what is the right set of measures to be adopted. I am usually too willing to dispense advice to anyone who is interested in listening about what they should be doing in their country, but when an Argentinian asked me just what should be done, I had not many answers. There are circumstances in which the situation gets so out of hand that it becomes very difficult to see what can be done, at least without a complete change in the political climate, which may make possible what is not possible under existing circumstances.

One other point where one has to agree with Ricardo is the question of vulnerability to external shocks. The more open the economy, the more vulnerable; the greater the initial impact of external shocks. There is no question in my mind but that the external shocks that have affected countries in this part of the world (and, indeed in most other countries) in recent years have been enormous, and quite beyond the range of ordinary experience. It is not surprising that the pain is great when you suffer external shocks of that type. Some of us have been trying to get the message to the United States that it is not a closed economy and has a responsibility to act as a world leader. It cannot simply run its own macroeconomic policy on that false philosophy of the mid-1970s, that if each country looked after its own affairs, then the world would look after itself. I can simply say that I completely agree and sympathize with that idea, and at least some of us are trying to do something to bring home that realization in the United States. However, I think one should add, on that question, that there is a certain amount of evidence, assiduously collected by Balassa, in particular, which suggests that open economies, while shocks impinging on them are greater than in more closed economies, are more adaptable and, hence, are better able to overcome external shocks than economies which are more closed.

Mr. Harberger:

On the fact that our import substitutes are not homogeneous with our imports, it seems to me that it poses no serious policy problems. Certainly, it makes us more isolated, because the effects of a shock on the import side will be weaker on the quantity of non-homogeneous substitutes than it would be on the quantity of homogeneous substitutes.

There is another area in which non-homogeneity between foreign and domestic tradeables comes into play. While there is no reason to think that the foreign supply curve of Chile's imports would be upward sloping, there is good reason to believe that the non-homogeneity of many of Chile's exports would give rise to a modestly declining foreign demand curve for them. This raises the possibility of Chile's trying to exploit the modest monopoly power that would be implied.

/But it



But it would not make sense, in my opinion, to try to apply fancy rules to 29 different monopoly products at one time and to attempt to find an "optimal" package of them. I certainly do not detect that spirit in this audience. But I do believe that there is enough modest monopoly power scattered around on the export side as to make a good case (using the Lerner theorem) for something like a 10 to 20% uniform tariff. Certainly that would be a very good thing compared with most tariff structures we see in most low and middle income countries today.

Mr. Williamson:

I agree, I do not think that the non-homogeneity of products creates a case for a difference in commercial policy. Where I think it did lead to erroneous argument was in the notion that the law of one price could put a stop to inflation without creating distortions in the economy; that domestic prices would be disciplined in an efficient way by import prices. That is where I see this as being a terribly important issue, and not in regard to trade liberalization.

Mr. Massad:

Thank you, John.

Jacob, do you want to participate too?

Mr. Frenkel:

Just a remark about John Williamson's point on the sequencing. Yes, I think I agree with you, John, that indeed the emphasis on the difference between opening first one account or another, is being much diminished here during this conference and it may be that the starting point was the specific simulation that we saw. Still, I tend to believe that to the extent that one has to make a decision in regard to opening up one account first, and the other account, second, a trade account first would show a little more prudence and a greater degree of freedom for policy-making. However, if one speaks about sequencing, of what I am now more convinced after hearing about the various experiences, is that the key distinction is between first, bringing into order your domestic economy, and then, opening-up to the external market, or the other way round; namely, should we develop a strategy of entering in competition with the rest of the world and the world financial markets disciplining us or should we discipline ourselves and then open up to the rest of the world.

I think that some of the discussions here suggest bringing ourselves first to order, whether it is on the budget or in terms of liberalizing our own financial system, and then opening to the rest of the world, rather than vice versa.

/Mr. Ffrench-Davis

Mr. French-Davis:

I want to refer to a point in relation to product heterogeneity.. Apart from the implications of an efficient exchange-rate policy, let us say, a policy within the family of crawling peg as opposed to fixed nominal exchange rate policies, I think that there emerge several implications for trade, industrial, and investment policies. If we have imperfect substitutability related to product heterogeneity, for LDCs it turns to be much more difficult to design and implement the specialization of product output. We have a form of segmentation of markets, I follow what Joe said before, where competition works more by non-price devices than through the price mechanism. In this sense, it is very difficult for a manufacturing industry, in a medium or small-sized economy, to defend itself from "free trade", as opposed to the case where we have products homogeneity. I think this is one point that supports the sort of trade policies that countries like Korea and other successful LDCs follow in this area. What they have done in the consumption sphere with imports, is not only to apply policies geared to save foreign currency or to defend domestic savings, but also to support the specialization of local industry. There is evidence in many cases where countries gained comparative advantages in exports only after they were able to integrate domestic demand in a limited number of varieties of a given product. In contrast, if they allow free imports, with imperfect substitutes, it is very difficult to compete for newcomers in the given line of production, because it cannot be done solely by price and domestic demand becomes segmented; there emerge several interconnected, but not totally connected, demand schedules for the different varieties. So I think there are important implications for industrial policy of import policies in countries that want to push for a dynamic and efficient manufacturing sector. A need for selective trade policies is the outcome as opposed to uniform indiscriminate trade policies.

Mr. Massad:

We have finished our meeting for today, Some of us will work tomorrow morning drafting a summary of our discussions and the lessons that can be drawn from country experiences. This summary is not a consensus document, it will have the character of a Chairman's summary. However, I would like to have your reactions to it to make sure that no important aspects are missing and no misunderstandings slip into its final version.

Thank you.

/Notes

### Notes

- 1/ The appendices of this document are included in this volume.
- 2/ A new version of this document "Trade and financial liberalization in the context of external shocks and inconsistent policies", 18 September 1984 is included in this volume.
- 3/ This document was later revised and published as "External Financing in Latin America: Developments, Problems and Options", United States-Latin America Relations in the 1980's Contending Perspectives on a Decade of Crisis, ed. Kevin J. Middlebrook and Carlos F. Rico (University of Pittsburgh Press, 1985).
- 4/ See Harberger (1982). Recent papers by Edwards (1982) and Díaz-Alejandro (1983) contain an interesting sampling of quotations from the financial press on this issue.
- 5/ An interesting recent attempt to analyse these types of welfare-related questions is contained in Edwards and van Wijnbergen (1983).
- 6/ 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.
- 7/ See, for example, Dornbusch (1984).
- 8/ 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.
- 9/ See Massad (1983) and Zahler (1983).
- 10/ 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.
- 11/ 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).
- 12/ 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.,
$$rrf = (rf - DXP) / (1 + DXP)$$
- 13/ The empirical evidence on the relationship between high real international interest rates and prices of primary commodities is discussed by Gotur (1983).
- 14/ See Massad and Zahler (1984).
- 15/ See IMF (1984), page 51.
- 16/ See Khan and Knight (1982), (1983).
- 17/ 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.
- 18/ We can include in this group the models of Blejer (1977), Blejer and Fernández (1980) and Khan and Knight (1981).
- 19/ Since the resource endowment is fixed we do not allow for any net investment or savings.

20/ 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.

21/ Assuming that the exchange rate and the tariff level remain unchanged.

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

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

24/ This is generally not possible in the larger computational general equilibrium models.

25/ Following Khan and Zahler (1983) it is assumed here that non-tradeable goods substitute with each of the tradeable 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.

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

27/ See Blejer (1978).

28/ In general a change in relative prices would change production of non-tradeable 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.

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

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

31/ 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.

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

33/ This would hold, for example, if domestic and foreign savings were perfect substitutes.

34/ 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).

35/ 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.

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

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

38/ The model assumes a "normal" rate of unemployment of 5%.

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

40/ For these values see Khan and Zahler (1983), appendix II.

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

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

43/ Of course nominal depreciation of the currency would entail certain costs, particularly with respect to inflation.

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

45/ 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.

46/ 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.

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

48/ 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.

49/ As the period of analysis does not correspond strictly to a full long-run situation, it was not deemed necessary to set  $\lambda_7 = 1$ .

50/ The results of these additional exercises are available from Mr. Khan, whose address is Research Department, International Monetary Fund, Washington, D.C., 20431.

