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THE ORDER OF LIBERALIZATION OF THE CURRENT AND CAPITAL ACCOUNTS OF THE BALANCE OF PAYMENTS: A SURVEY OF THE MAJOR ISSUES*

by

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1. Introduction

For many years economists have argued that developing countries should rely more heavily on the market mechanism. In particular it has been argued that liberalization processes, consisting of "freeing" domestic markets and opening up the economy to the rest of the world, should be implemented. A large amount of effort and resources have been devoted to the study of the relationship between the degree of market use, economic efficiency and economic growth. These studies have resulted in the accumulation of an impressive body of empirical evidence that indicates that liberalized and export-oriented economies outperform — both in terms of growth and equitable income distribution — repressed and closed economies.[1] However, despite this evidence, and the widespread belief among economists of the merits of liberalizing the LDC's economies, little serious efforts to that effect have been taken by these countries. Many times liberalization attempts are frustrated at different stages, with these economies reverting to repressed inward-looking developing strategies.

Why, then, if liberalization is so desirable don't we observe more (successful) liberalization attempts? There are a number of possible answers to this question. First, even if a liberalization process results in an overall (for the economy as a whole) welfare gain, there are sectors that will gain and sectors that will lose from it. Then, if losing sectors are politically powerful they may frustrate these liberalization efforts.[2] This aspect becomes more complicated once it is recognized that short-run winners

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[1]Harberger 1958; Little et al. 1970; Krueger 1978; Balassa 1978, 1982; Bhagwati 1978; Bhagwati and Srinivasan 1978; Krueger 1978, 1981.

[2]This statement, of course, assumes away the possibility of fully compensating the losers of the liberalization effort.

itself.

It is clear from this discussion that the dynamic aspects of liberalization episodes are extremely important. The transition between a repressed state and a liberalized economy should be implemented carefully, in order to avoid the abortion of the liberalization attempt itself. Among these dynamic aspects, those related to the speed and order of liberalization are particularly important. With respect to the former, the main question is how fast should an economy be liberalized? In analyzing this aspect of the problem, considerations related to (a) efficiency gains, (b) income distribution, (c) credibility of the liberalization reforms, and (d) feasibility of the attempt should be taken into account.[4] Regarding the order of liberalization, the main question is which markets should be liberalized first. This is a complicated question that has both micro (welfare) and macro implications. At the micro level typical second-best problems are present, while at the macro level, different orders of the liberalization process will imply different paths for the critical variables, including aggregate output and unemployment.

The present paper deals with a particular aspect of the order of economic liberalization: the order of liberalizing the current and capital account of the balance of payments. It has generally been considered that the opening of the economy to the rest of the world is an integral part of any economic reform aiming at increasing the role of markets in LDC's. Until recently, however, very little discussion had been devoted to the order in which the

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[4]On the speed of liberalization see Aizenman (1983), Leamer (1980), Pindyk (1982), Krueger (1983b), Mussa (1982).

borrowing or lending) in the presence of trade restrictions. This discussion provides a general multi-period framework useful for analyzing the welfare consequences of partial reforms. It is shown that the welfare effects of opening the capital account in the presence of trade distortions will depend critically on whether the foreign funds obtained from abroad are used to (directly) increase present consumption or if they are used to finance capital accumulation. In the former case welfare will always increase when the capital account is opened if prior to the reform the domestic consumption rate of interest exceeds the world rate of interest. However, if these funds are used to finance capital accumulation, welfare may decrease even if prior to the liberalization the domestic consumption rate of interest exceeds the world rate of interest. Finally, in Section 5 a summary and some concluding comments are presented. Also in this section some thoughts regarding future lines of research on the subject are presented.

large destabilizing capital flows.[7] If the capital account is opened at a stage where the domestic capital market is still repressed, with interest rates fixed at artifically low levels, massive capital outflows will take place. For this reason most, if not all authors that have discussed this issue have suggested that the capital account should only be opened after the domestic capital market has been liberalized, and domestic interest rates have been raised.[8] It is also generally accepted that in an inflationary environment the domestic financial market should only be liberalized after the fiscal deficit has been controlled.[9] The reason for this is that, as emphasized by McKinnon and Mathieson [1981], the existence of a large fiscal deficit, which is financed by an inflation tax, necessitates that reserve requirements are kept high and interest payments on deposits are kept low. In this way it is assured that the base on which the inflation tax is collected -- the stock of high powered money -- is not eroded.[10]

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[7]See, for example, McKinnon (1973, 1982), Dornbusch (1983), Corbo (1983), Arriazu (1983b), Little, Scitovsky and Scott (1970, Ch. 10, p. 365).

[8]Interestingly, in most of the literature on domestic financial markets liberalization authors have referred to "raising" interest rates rather than "freeing" them (see, for example, McKinnon's 1973 classical treatment of the subject).

[9]It should be noted that most of the discussion on the order of liberalization in the context of the southern cone countries has focused on the problem of liberalization with stabilization. The reason for this is, of course, that these countries attempted to liberalize and reduce extremely high inflation rates (up to 500% per year) simultaneously.

[10]See McKinnon (1982) and McKinnon and Mathieson (1981) for discussions on the subject. It has been suggested that the inability to control the fiscal deficit in Argentina was one of the major causes of the failure of the recent liberalization with stabilization attempted in that country. See, for example, Rodriguez (1983), Nogues (1983), Fernandez (1983), Sjaastad (1983), Arriazu (1983) and McKinnon (1982).

transition in the goods sector from a protective to a freer environment will become more difficult. The appreciation generated by the opening of the capital account will tend to squeeze profitability in the tradeable goods sector at a moment when this sector (or part of it in the import substitution industries) is going through a costly readjustment.[14] Consequently it has been suggested that the capital and current accounts should not be open simultaneously, and that during the transition period after trade has been liberalized, capital inflows should be tightly controlled. It is interesting to quote what McKinnon wrote on the subject in 1973, since the hypothetical situation described by him closely reflects some of the problems faced by the southern cone countries during their recent (late 1970s-early 1980s) liberalization efforts:

> ...unusually large inflows of foreign capital...inhibit the exchange rate to depreciate sufficiently....[P]reviously protected competing industries, which face a significant adjustment problem, could have their difficulties magnified....[H]ence the capital inflow could trigger a decline in overall domestic output.... (page 160).

McKinnon then goes on to recommend that an economy that liberalizes its foreign trade should "deliberately avoid an unusual or extraordinary injection of foreign capital" [1973, p. 161, emphasis added]. More recently this kind of reasoning has also been made by Dornbusch [1983], Arriazu [1983] and again by McKinnon [1982]. The general theme is that during the transition of a trade liberalization process capital inflows should be controlled, since otherwise the real exchange rate will appreciate producing harmful effects, and even destroying the liberalizing experiment. As Dornbusch [1983, p. 176]

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[14] That is an exchange rate deprotection, a la Corden (1982) will take place.

zero) amount of (net) capital inflow allowed by the economic authority in every period.[16] Clearly, if $\overline{\Delta K} < \Theta(D^* - D_{-1})$ the gap between desired and actual debt will increase through time. Once the restrictions on capital inflows are lifted, actual inflows will become equal to $\Theta(D^* - D_{-1})$. That means that immediately following the opening of the capital account capital flows will jump to a fraction Θ of the accumulated gap between the desired and actual debt. As this gap is closed, the level of capital inflows will slowly be reduced until they reach a new equilibrium level. For the case of a simple economy the behavior through time of capital flows that emerges from this formulation can be represented in Figure 2.1.

This sudden increase (i.e., overshooting) of capital inflows will produce a large current account deficit -- as was the case of Chile during 1980-1981.[17] As has been pointed out by McKinnon (1976) and Harberger (1982) among others, as long as a fraction of these flows are spent on non-tradeable goods, the absorption of these capital inflows will require an increase in the relative price of these goods and a real appreciation of domestic currency.[18]

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[16]The term $\Theta[D^* - D_{-1}]$ responds to the idea, advanced by Harberger (1982) for example, that there is a long-run equilibrium ratio of foreign debt to GDP. If GDP grows at $g\%$ per annum so will the stock of debt. If, on the other hand, the real interest rate on the foreign debt is r^*, net annual capital inflows will grow at a rate of $(g - r^*)$. Notice that a problem with this formulation is that it only looks at the phase where foreign debt is accumulated, and does not explicitly incorporate the existence of an intertemporal budget constraint. On the different phases of the accounts of the balance of payments see Fischer and Frenkel (1972).

[17]See Harberger (1982), Corbo (1983), Edwards (1984). See also Nogues (1983) and Rogriguez (1983) for a discussion of the Argentinian case.

[18]Harberger (1982) actually calculated that the increase in the level of capital inflows in Chile is capable of "explaining" a real appreciation of the peso of up to 25%.

Once the gap between desired and actual debt begins to close, the relative price of non-tradeables will slowly tend to decline towards its new long-run equilibrium. At this point of the adjustment process another problem may emerge if the country has fixed its exchange rate: If for some reason -- the existence of minimum wages, or of backward indexation, for example -- the nominal price of non-tradeables is inflexible downward, the decline of this relative price will not occur, and unemployment will result.

It is interesting to notice that the dynamic effect of a capital account liberalization on the relative price of nontradeable goods resembles that of the so-called Dutch-Disease, in that in order to adjust to a large increase in absorption a real appreciation of the domestic currency will have to take place.[19] Also, it should be pointed out that there are other reasons besides the "jump" in the level of capital flows discussed above, why the opening of the capital account could result in a short-run appreciation of the domestic currency that will exceed the long-run appreciation. One of such cases is related to the difference between short- and long-run elasticities of supply of the nontradeables goods sector.

The conflicting movements of the real exchange rate as a result of opening the capital or current accounts (i.e., real appreciation and depreciation respectively) captures the fact that these policies will exercise pressures for resources to move in opposite directions. The opening of the capital account will generate (at least in the short-run) an expansion of the non-tradeable goods sector and a contraction of the importables and

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[19] On Dutch-Disease see, for example, Corden (1981, 1982), Corden and Neary (1982), Harberger (1982), Edwards and Aoki (1983), Van Winjbergen (1983, 1984).

costs might be implemented.[21] In particular a synchronization of the effects of opening the capital and current accounts, in the sense suggested by Frenkel [1982, 1983] might be called for. Frenkel has proposed that given the differential speeds at which the goods and capital markets adjust, this synchronization could be achieved by opening the current account first, and only after some time opening the capital account. In Section 3 below, a specific analysis of the effects of both types of liberlization, that spells out the difference between short- and long-run effects on resource movements is presented.

An alternative (but related) view has been recently presented by Deepak Lal [1982]. According to Lal, since exchange rate behavior is critical during the transition period from a protected towards a liberalized trade account, it is better not to let the government manipulate the nominal exchange rate during this transition. There have been plenty of cases, he argues, where exchange rate management has been inappropriate and has resulted in the trade reform being finally aborted (i.e., the recent experience of Argentina).[22] For this reason, then, Lal has proposed that a floating exchange rate system with full currency convertibility, should be implemented before the trade reform takes place. This, of course, means that the capital account should be

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[21] A critical question at this stage is why wouldn't the private sector take into account these considerations when making their decisions about production and resource movements.

[22] Other authors that discuss how to handle the exchange rate during the transition period after a trade reform include McKinnon (1973), Kapur (1983), Michaely (1982), Balassa (1982). One possible way to deal with the exchange rate problem during the transition is to adopt a dual system, with a fixed (or managed) rate for trade transactions, and a floating rate for financial transactions. The problem with this kind of system, however, is that it becomes very cumbersome and difficult to manage. On dual exchange rate systems see, for example, Meade (1951, p. 302); Flood (1978); Lainy (1975, Fleming (1974) and Dornbusch (1976).

[1973, p. 157], for example stated that "the liberalization [of] capital inflow[s]...increase[s] the basic distortion in the economy". Frenkel [1983], has expressed that

> when the trade account is opened first the cost of remaining distortion (i.e., the closed capital account)...is likely to be relatively small. On the other hand, when the capital account is opened up first the cost of the remaining distortion (i.e., the close trade account)...is likely to be very large. Thus a comparison of the costs of distortions...supports the proposition that the trade account should be opened first. [p. 167].

Krueger [1983] has stated that

> Since exchanges of assets are exchanges of capitalized values of income streams, income streams generated by distorted prices are probably the inappropriate ones at which to trade. It would then follow that capital account liberalization should not be undertaken unless both current account and domestic financial transaction are already liberalized. [p. 19].

In some sense this type of reasoning, which focuses on the welfare effects of opening the capital account in the presence of trade distortions, can be related to the immiserizing capital accumulation argument originally advanced by Harry Johnson [1967].[26] This argument points out that if there are tariffs and the importable goods is capital intensive, capital accumulation may be welfare reducing. The reason for this is that when capital is accumulated, production of the capital intensive (i.e., the importable) sector will increase, [Rybczynski 1955], and the effect of the pre-existing

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[26]Of course, immiserization represents an extreme case. However, the analytics of this case can be applied to more plausible results, where the increase in welfare resulting from capital accumulation is lower in the presence of trade distortion. See also Bertrand and Flatters (1971) and Martin (1978) for extensions on the welfare effects of the accumulation of capital.

valued at world prices, welfare will remain unaffected. Again, the main reason for this result lies on the fact that under our assumptions that the importable goods is capital intensive foreign investment -- or for that matter any form of capital accumulation -- will result in an increase in the production of the sector that already produces too much from a social perspective.

In general, the welfare effects of additional investment resulting from the liberalization of the capital account can be analyzed within the context of the emerging literature on factor trade.[29] If before the liberalization process the (private) domestic rate of return to capital exceeds the world rate of return, once foreign borrowing is allowed some of these funds will be used for the importation of machines. Analytically this is equivalent to allowing trade in machines (today), and thus can be analyzed within the factor trade framework.

The above discussion -- and, to some extent, the argument of McKinnon [1973], Frenkel [1982, 1983] and Krueger [1983] presented above -- focus exclusively on the case where, as a result of the liberalization of the capital account, the additional borrowing is used to increase investment. This, of course, needs not be the case. A fraction (possibly zero) of the new borrowing could be used to increase present consumption. Indeed that will happen as long as prior to the liberalization the domestic rate of time preferences exceeded the world rate of interest. It is easy to show that, under these circumstances, if all of the (new) foreign borrowing is used for additional present consumption (with the world rate of interest below the domestic rate of time preferences) welfare <u>cannot</u> deteriorate even if there

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[29] On factor trade see, for example, Grossman (1983), Bhagwati and Srinivasan (1983), Brecher and Findlay (1983), Brecher (1983), and Srinivasan (1983).

are circumstances under which this particular order of liberalization will result in some indirect negative welfare effects.[32] In principle, at a theoretical level, it is conceivable that some models might yield this kind of result. Specifically, if the restricitons in the capital account take the form of a tax on foreign borrowing that introduces a wedge between the world and domestic rates of interest, and the liberalization of the current account results in a reduction (i.e., leftward shift) of the demand for foreign borrowing, an indirect negative welfare effect could result. This case is illustrated in Figure 2.2 where the shaded rectangle represents this cost.

In practice, however, this case is quite implausible. First, it is unlikely that the reduction of tariffs will generate a reduction of the demand for foreign borrowing. The reason for this is that once tariffs are reduced the demand for importables will increase, with part of the increase in consumption of this type of goods being financed by additional foreign borrowing.[33] Second, in a large number of cases the distortions associated with capital account take the form of quantitative restrictions, where a given maximum amount of foreign borrowing is allowed. In this case then, there is no indirect welfare cost (i.e., welfare rectangle), in the borrowing market associated with the reduction of trade distortions. In general, these considerations constitute a part of the presumption that trade liberalization is welfare improving even if distortions in some other markets are maintained [Krueger 1983; Michaely 1982; Corbo and de Melo 1981].

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[32] A different, and more relevant question of course, is whether the total — direct plus indirect effects -- can be negative.

[33] There is an important problem, however, related to the speed of tariff reductions. It is conceivable that if a slow tariff reform schedule is announced today, borrowing will decrease, since the public will postpone consumption towards the future, when tariffs will be lower.

2.3 Adjustment Costs and Assistance

Some authors have postulated that in order to increase the probability of success (i.e., non-reversal) of a trade reform, the adjustment costs (unemployment and others) related to the tariffs reduction should be minimized [see for example Michaely, 1982].[34] It has then been argued that one way of reducing these adjustment costs is through the importation of foreign capital, which would be used to finance a smoother adjustment of the import competing industries. While some authors have phrased this argument in the form of obtaining foreign aid to help the adjustment process, it can be easily extended for the case of foreign loans.[35] According to this view then, the capital account should be opened first, or simultaneously with the trade account. This would increase the availability of "cheap" funds that could then be used to ease the adjustment process. Paul Clark [1982], for example, argues that the successful liberalization of the Egyptian economy in the 1970s was due, to a large extent, to the adjustment assistance provided by foreign sources: "Egypt's liberalization experience has taken place during a period in which external assistance first rose dramatically....[T]his has evidently accelerated growth, and facilitated liberalization policies..." [1982, p. 2]. Anne Krueger [1983a] on the other hand, while not agreeing with the order "capital account first and trade-account second", has also recognized the

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[34]Usually the idea of minimizing adjustment costs is translated into two forms of policy recommentations: (1) liberalization of trade should be done slowly [see Michaely 1982; Little, Scitovsky, Scott, 1970); and (b) adjustment assistance — usually in the form of foreign funds — should be provided.

[35]There might be, however, a crucial difference between aid and foreign lending. While aid could be allocated (by the donors or the government) to the "wrong" sector, the private sector will use the proceeds from foreign loans in the most (privately) productive way.

adjustment costs and resource reallocation will only take place slowly, and will possibly result in a short-run loss of output.[39] However, it is very important to clearly specify the nature of these adjustment costs before making inferences regarding the desirability of intervention. If these costs are related to the activity of moving resources between sectors, as in Mussa's [1978] model, and there are no externalities, there is no welfare-related reason to provide adjustment assistance.[40] If, on the other hand, adjustment costs arise from market imperfections -- like the existence of minimum wages for example -- there is some room for intervention. The first best policy, of course, is to try to eliminate the source of these market imperfections. If, for whatever reason, this first best policy is not available, second best solutions should be sought.

McKinnon [1973, 1982], however, has strongly opposed the idea of using foreign capital flows to assist the trade reform transition period. In fact, in his 1973 book he characterized aborted liberalization episodes as "partial liberalization with foreign capital" [1973, p. 155]. This view, which is of course consistent with his position of tightly controlling capital inflows throughout the trade liberalization, is based on the idea that short-term capital movements provide incorrect signals to the private sector. As he has recently stated:

> [T]rade liberalization should proceed without relying on unusual short-term inflows of private capital...Such capital inflows are

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[39]The most popular models with adjustment costs are of the Ricardo-Viner type. See for example Jones (1971), Mayer (1974), Mussa (1974, 1978, 1982), Neary (1978, 1982), and Dixit and Norman (1980).

[40]However, adjustment assistance might be called for other reasons, like income distribution considerations. See Leamer (1981).

> As a consequence of the lack of credibility on the continuity of the economic program, many firms -- which would have disappeared due to the tariff reductions -- decided to get into debt in order to remain operating while waiting for a change in the economic strategy. [p. 28, emphasis added]

Also, if agents believe that the trade reform will be reversed, they will tend to borrow heavily today, in order to finance a higher present consumption. This, of course, is a perfectly rational strategy if it is expected that (importable) goods in the future will be more expensive, due to the perceived hike of tariffs. This optimal behavior from a private perspective, however, may result in excessive (i.e., non-optimal) borrowing from the social point of view.

It is clear from the above discussion that depending on the degree of credibilty a larger availability of foreign funds may either help the adjustment process — by making it politically more pallatable as Krueger suggests — or may frustrate the whole experience. However, the degree of credibility — which is critical for the analysis of the order of liberalization — should not be viewed as a completely exogenous variable. On the contrary, the strategy followed during the liberalization process will tend to affect this degree of credibility. If the economic reforms are pursued in a way such that credibility is low, agents will not make the required adjustments and the likelihood of failure of the economic reform will be high. In that sense, a fundamental and critical aspect of establishing credibility is related to the internal consistency of the policies being pursued.[42] In that respect, for example, the inconsistency of the Argentinian fiscal policy — which maintained a very large fiscal deficit -- and the pre-announced exchange

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[42] On problems of credibility in the context of anti-inflationary policy see Schelling (1982), Taylor (1982) and Fellner (1982).

number of specific policy measures to achieve this objective have been proposed.[44] The problem that a number of authors -- in particular McKinnon -- have pointed out is that an opening of the capital account will result in destabilizing capital inflows which will frustrate the "required" real depreciation and would jeopardize the whole liberalization effort. Consequently, it has been argued, during the transition that follows the tariffs reduction capital inflows should be tightly controlled.

Deepak Lal [1982], however, has suggested that the most appropriate way to handle the macroeconomic and exchange rate problems during the transition following trade liberalization is to have a freely floating exchange rate. This policy would require, according to Lal, that the capital account be liberalized first. Only when the floating system is working should the trade account be open. An obvious problem with this proposition is that for a floating system to work appropriately, countries require a set of institutional infrastructure, usually lacking in LDC's.[45]

An interesting policy question related to the order of liberalization advocated by McKinnon, Frenkel and others -- "current account first" -- stems from the recent Chilean experience. Chile followed almost exactly the McKinnon-Frenkel order, liberalizing the trade account first and only after tariffs had reached their final goal of 10%, partially opening the capital

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[44]McKinnon (1973) for example recommended a slowly moving peg. Michaely (1982) has suggested a large devaluation, that would preceed the tariff reduction. McKinnon (1982) has suggested in his recent writings to maintain fiscal surpluses during the transition. Lal (1982) has suggested a floating exchange rates system. See also Kapur (1983), Harberger (1976), and Balassa (1982).

[45]See also Krueger (1983) for a discussion on the possibilities of adopting a floating system during the liberalization episode.

attempt is much more difficult than what it has been thought. Also, this case confirms the central role of expectations and credibility in any major economic reform. If credibility is low, and there are expectations of policy reversal, it will be very difficult for the reform to succeed. Since, as it was argued above, expectations and credibility are largely endogenous, one of the considerations that should be taken into account when formulating the reform policy is to set the speed and ordering of the liberalization in a way such that these expectations of reversal will be low.[49] In that sense, in the case of Chile, the stubborn maintenance of a fixed rate at the light of an obviously overvalued currency only fueled the expectations of policy reversal.

The second line of argument found in the literature on the ordering of liberalization refers to welfare effects of alternative orders. The idea here is based on a straightforward application of the second best theorem: If the theoretically first best policy — reducing all distortions simultaneously and instantaneously — is not available, a second best solution, which minimizes indirect welfare costs (i.e., "rectangles") should be found. It has then been argued that the welfare costs of reducing one distortion first will be larger if the remaining distortions are trade impediments. Consequently, the argument continues, the second-best solution dictates that the current account should be liberalized first [Frenkel 1982, 1983].

While theoretically the welfare effects of reducing one distortion only could go in any direction, the conjecture that liberalizing trade first is more desirable turns out to be is correct, given a set of plausible

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[49] Of course, this is more easily said than done. The role of policy credibility is clearly one of the more important topics of macroeconomic research at the moment. Some early and promising contributions on the subject include

indebtedness resulting from the opening process.[51] The main question here is to what extent can a liberalization of the capital account result in a foreign debt crisis because the private sector over-borrows? In principle, it could be argued that this is unlikely, since the private sector, which now faces the "correct" signals, will take loans only if the marginal return obtained from those funds exceeds the cost of the loans. Theoretically, in the simplest class of models, the free interaction between the private domestic sector and the foreign banks will result in an optimal borrowing/lending strategy. From a practical point of view and in more sophisticated models, however, there are a number of reasons to believe that this will not be the case. First, as the recent experience of some Latin-American countries has shown, the distinction between private and public foreign debt is highly artificial. Once a country's private sector runs into debt problems, the government takes over (or is forced to take over) this private debt.[52] This means that to the extent that the private sector knows that it will be bailed out by the government, the possibility of moral hazard type of behavior becomes highly likely. Under these circumstances, there will be an important difference between socially and privately optimal borrowing strategies, with a tendency on behalf of the private sector to over-borrow.[53] Second, contrary to the textbook case, even small countries cannot borrow infinite amounts at "the" given world rate of interest. Quite the contrary, even small countries face (up to a certain point) upward sloping supplies of foreign funds, where the

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[51]McKinnon (1973), however, briefly mentions this problem in his taxonomy of the successful and unsuccessful liberalization attempts.

[52]See, for example, Diaz-Alejandro (1983) and Edwards (1983).

[53]On optimal borrowing see, for example, Hanson (1974), Harberger (1976), Martin and Selowsky (1984) and Dornbush (1983b).

3. Prices and Resource Movements During Capital and Current Account Liberalization

The purpose of this section is to set up an analytical framework for analyzing the process of economic liberalization in a small economy. The discussion will focus on two different aspects of economic liberalization: (a) the liberalization of foreign trade, and (b) the liberalization of capital flows (i.e., allowing foreign borrowing), and will emphasize price and resource movements during the liberalization episode. The analysis presented here is largely positive (as opposed to normative), and develops a model of a simplified economy, with three goods and two factors. The discussion traces in detail how both reforms will affect prices, resource movements and production in the short and long-run. [The analysis is largely based on the extension of the Viner-Ricardo model for the case of three goods as presented by Corden and Neary (1982).] The model used also assumed that there is no capital accumulation. For this reason, the analysis of the effects of opening the capital account is somewhat simplified, since it assumes that all funds obtained from abroad are used to increase present consumption. However, the framework presented here can be easily used to deal with the more general case where capital accumulation is also allowed.[57]

The main objective of the analysis presented here is to provide a clear picture of the real consequences of the process of economic liberalization, including changes in production and in income distribution. At the risk of being repetitive, the analysis proceeds slowly and with great care, trying to make clear every important step in the chain of events that follows a

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[57] In Section 4, however, a more general model that allows for foreign funds to be used both to increase present consumption and to accumulate capital is presented.

3.4 combines the effects of trade and capital account liberalization, trying to establish the effect of different possible orders of these two reforms.

4.1 The Economy Under Consideration

Assume the case of a small country that produces three goods: exportables (X), importables (M) and non-tradeables (N). Production is carried out using capital and labor. Production functions have the conventional properties and it is assumed that in the short-run capital is sector-specific, with labor being perfectly mobile between the three sectors.[59]

Imports are initially subject to a tariff, and external borrowing is not allowed. With respect to the labor market, it will generally be assumed that it is free of distortions. However, the consequences of assuming the existence of an economy wide minimum wage, which is binding in the short-run, will also be investigated. The domestic capital market is free of distortions, with the rental rates of capital being equalized in the long-run, across sectors. Regarding factor intensity, it will be assumed that importables have the highest capital/labor ratio. With respect to exportables and non-tradeables, alternative assumptions regarding factor intensities will be investigated in sub-section 3.2.1.

It is assumed that there is no capital accumulation and, consequently, once international borrowing is allowed, the proceeds of foreign loans are

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[59] On sector-specific models see, for example, Jones 1971; Mayer 1974; Mussa 1974, 1978, 1982; Neary 1978a,b, 1982.

distribution) and production. It is assumed that while all prices are flexible in the long-run, some of them (i.e., wages) may be rigid in the short-run.

3.2.1 Long-Run Effects of Trade Liberalization

In this class of models of a small economy with three goods (importables, exportables and non-tradeables), two factors (capital and labor), and the usual competition assumptions, long-run domestic prices are fully determined (under non-specialization) by world prices, technology and tariffs. Equilibrium can be described in the following way: world prices of exportables and importables (plus the tariff) determine the rewards to both factors of production; these rewards, on their turn and under the assumption of competition, determine the price of non-tradeables. Demand considerations for non-tradeables determine total output of non-tradeables and total factors used in their production. This leaves a certain amount of factors that is used in the production of exportables and importables in a traditional Hecksher-Ohlin (H-O) fashion.

In the rest of the analysis the price of exportables will be taken to be the numeraire (i.e., $P_X = 1$). Consider now the effect of a reduction (elimination) of the level of the import tariff on the relative prices of final goods and on factors rewards. This effect will basically depend on the assumptions made regarding factor intensities. Two cases will be considered here: Case 1 assumes $(K/L)_X < (K/L)_N < (K/L)_M$; while Case 2 assumes $(K/L)_N < (K/L)_X < (K/L)_M$.[61]

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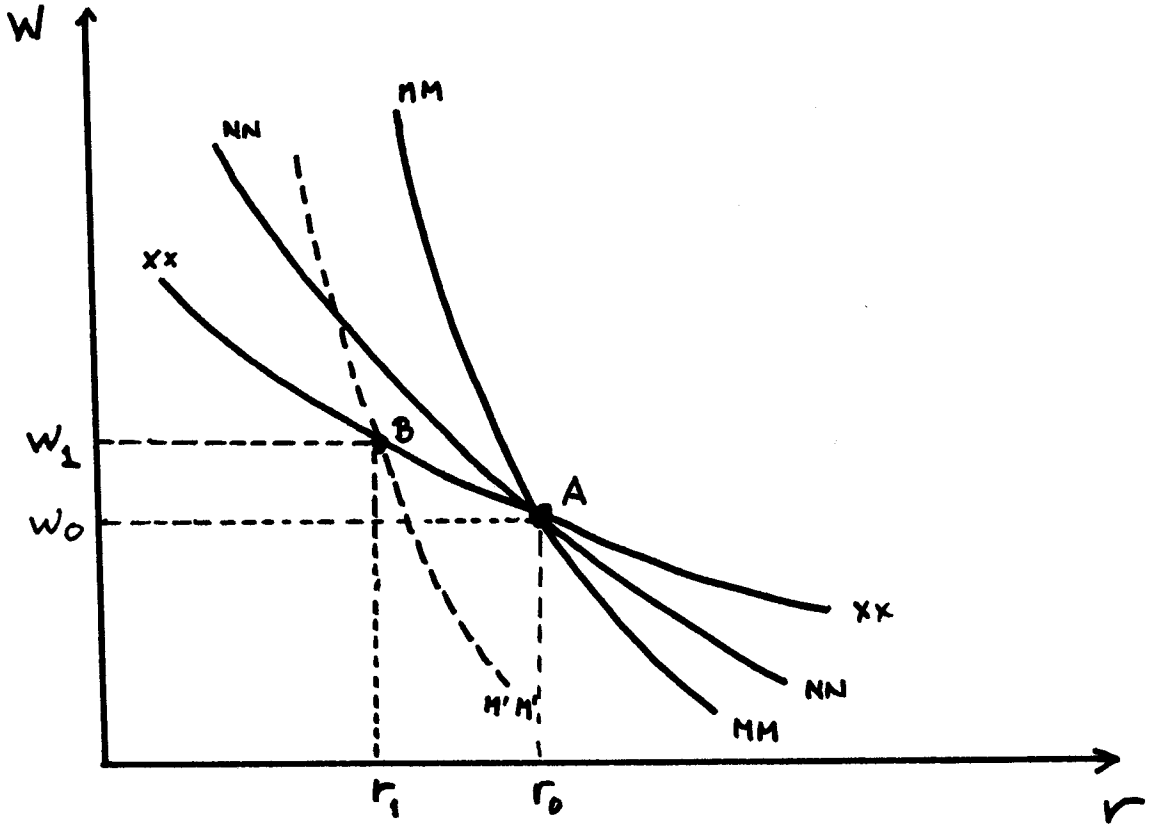
[61] Of course there are other possible orderings of capital-labor intensities. However, it seems appropriate to assume that in the case of a developing country imports have the highest capital/labor ratio.

Figure 3.1



non-tradeables sector their relative price will have to increase.[62] In order to simplify the discussion, through the rest of this paper we will focus on Case 1, $[(K/L)_x < (K/L)_y < (K/L)_M]$.

While the long-run (relative) price of non-tradeables is completely determined by technological considerations, the amount produced of this type of goods will also depend on the demand side. In particular, production of N will be such that, at the prevailing prices, the non-tradeables market clears. The production side of the model can be analyzed using a three goods Edgeworth-Bowley box as developed by Melvin (1968). Figure 3.3 illustrates Case 1, where exportables are the most labor intensive good. [See Corden and Neary (1982) for an application of this diagram to a Dutch-disease type of analysis.] In this diagram non-tradeables isoquants are drawn from origin O_N. At the initial prices the non-tradeable goods market clears at a level of production given by isoquant NN_0. The capital-labor ratio in non-tradeables production is given by the slope of $O_N O_M$. Production of exportables is measured from O_X, and that of importables by distance $O_M R$. In equilibrium the slope of NN_0 isoquant at O_M equals the slopes of the corresponding isoquants for exportables and importables, which are tangent at R.

The discussion regarding factor rewards and relative prices (Figure 3.1) showed that the reduction of the tariff will generate, in the long-run, an increase in the wage rate relative to the rental rate. That means that all three sectors will now become more capital intensive. This is shown in Figure 3.4, where the dashed rays depict the new (after tariff reduction) capital/labor ratios. However, in order to determine the new equilibrium it

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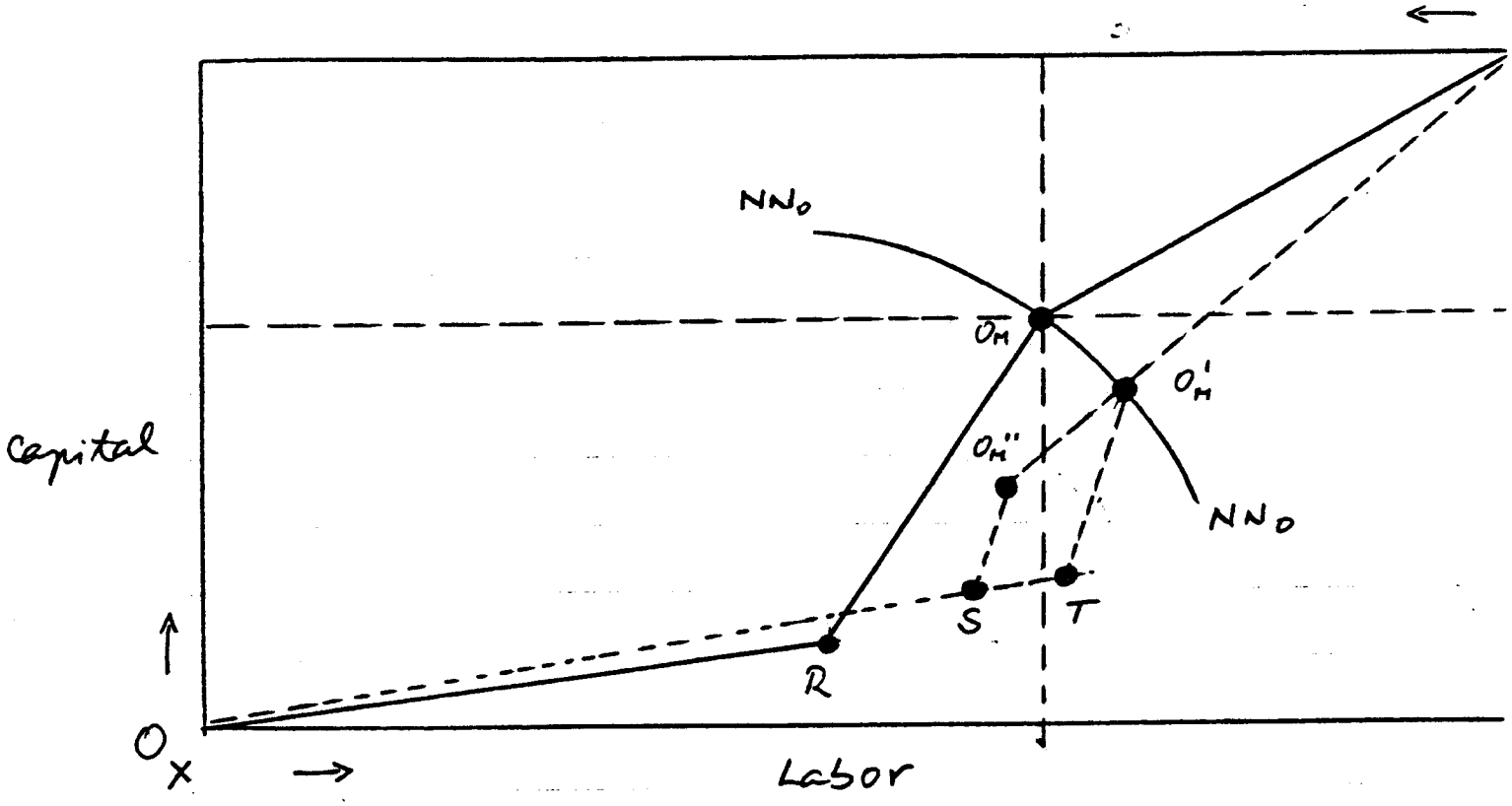
[62] Notice then that theoretically depending on the assumptions regarding capital-labor intensity the real-exchange rate, defined is the domestic relative price of tradeables to non-tradeables may either increase or decline.

Figure 3.4



In summary, under Case 1 capital intensity assumptions, the long-run effects of a tariff reduction will be:

(i) Prices of non-tradeables, relative to exportables will fall.

(ii) Wages, relative to all goods, will increase.

(iii) The rental rate of capital, relative to all goods, will decrease.

(iv) Production of exportables will expand.

(v) Production of non-tradeables will expand.

(vi) Production of importables will decline.

3.2.2 Short-Run Effects

This section investigates the short-run effects of a tariff reduction under the Case 1 assumptions about capital labor intensity. It is assumed that in the short-run capital is sector specific, while labor can move freely across sections. The representation used in this model, then, is an adaptation for a three goods case of the Viner-Ricardo models of Jones (1971), Mayer (1974) and Mussa (1974). [See the paper by Corden and Neary 1982, for an application of this kind of model.]

The initial equilibrium situation can be illustrated using Figure 3.5, which is adapted from Mussa (1974) for the case of the three goods. In this figure, the horizontal axis measures total labor available in the economy, while the vertical axis depicts the wage rate in terms of exportables. L_T is the demand for labor by the tradeable goods sectors and is equal to the (horizontal) sum of the demand for labor by the exportable sector (which is given by L_X in this figure) and the demand for labor of the importables sector. L_N on the other hand is the demand for labor of the non-tradeable goods sector. The initial equilibrium is characterized, then, by a wage rate equal to W_o, with $O_T L_A$ labor used in the production of exportables, $L_A L_B$ labor used in the production of importables and OL_B used in the

production of non-tradeables.

There are several differences between this short-run model and the long-run model discussed in the previous sub-section. First, since capital is now sector specific, the direct link between tradeable goods prices and factors rewards is broken. For this reason Stolper-Samuelson theorem does not hold (in the short-run), and the price of non-tradeables will be determined by the intersection of the demand and supply schedules for these kind of goods. The strategy is now to analyze the short-run effects of trade liberalization on prices, production, resource movements and income distribution, (i.e., factor rewards). This analysis is then combined with the long-run results already discussed in the previous section to find out the characteristics of the transition, in a way similar to that proposed by Peter Neary (1978).

In the short-run, the reduction of the tariff, under the assumption of sector-specific factors, will generate changes both in the (relative) price of importables and non-tradeables (see, for example, Dornbusch 1974). While the price of improtables will unambiguously fall, the behavior of the price of non-tradeables will depend on the assumption regarding substitutability and the magnitude of the income effects. Assuming that the three goods are gross substitutes in consumption and production, and that the income effect does not exceed the substitution effect, it can be shown that as a result of the reduction of the tariff the price of non-tradeables will fall relative to that of exportables and increase relative to that of importables.[64]

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[64]Formally $D_N = \underset{(-)(+)(+)}{f(P_N,P_M,y)}$ and $S_N = \underset{(+)(+)}{g(P_N,P_M)}$. In equilibrium $D_N = S_N$. Taking logarithmic differentials we find that $\hat{P}_N = (\frac{\eta_{NM}-\varepsilon_{NM}}{\varepsilon_{NN}-\eta_{NN}})\hat{P}_M + \eta_y\hat{y}$, where the η's and the ε's are demand and supply elasticities respectively.

Figure 3.6

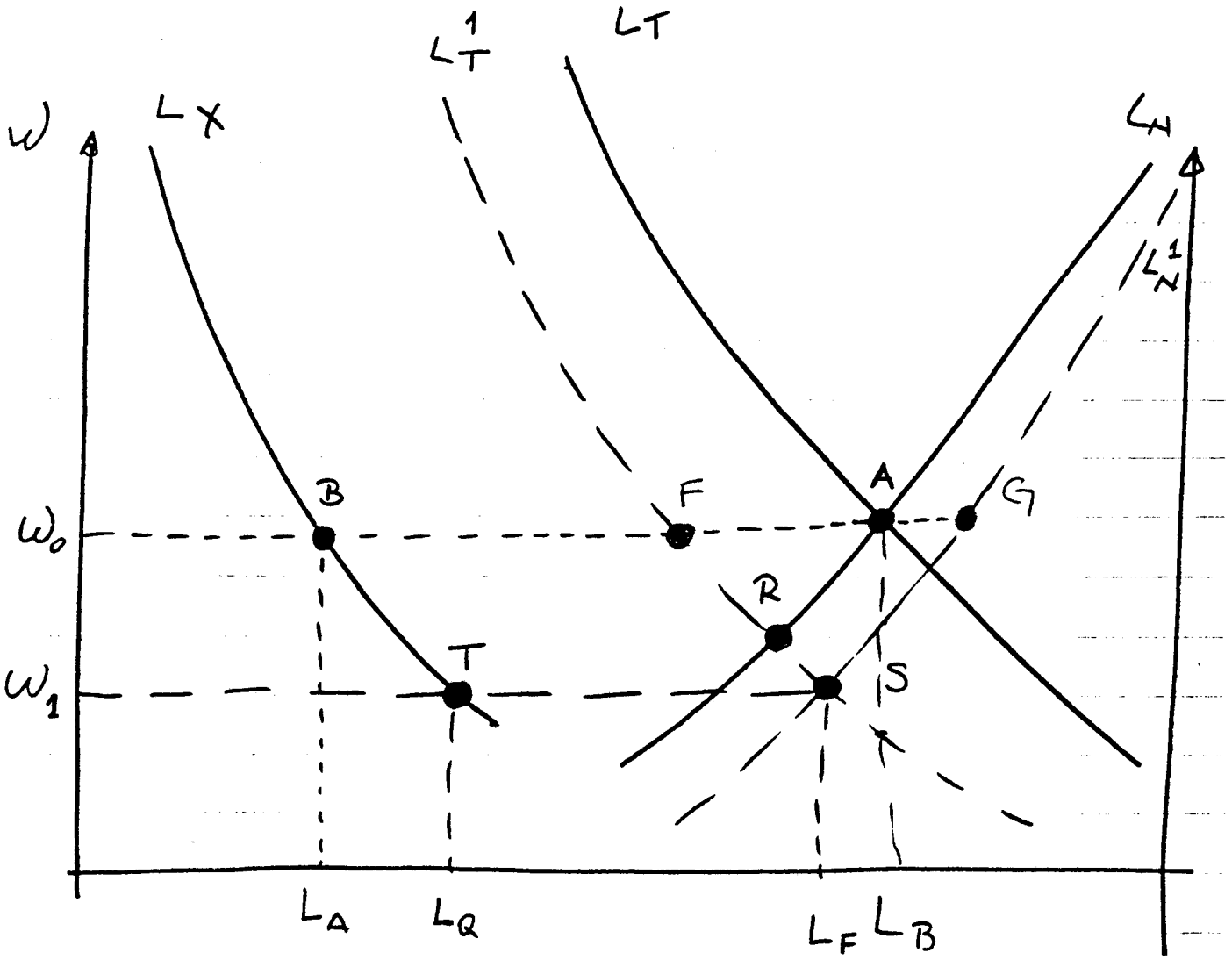
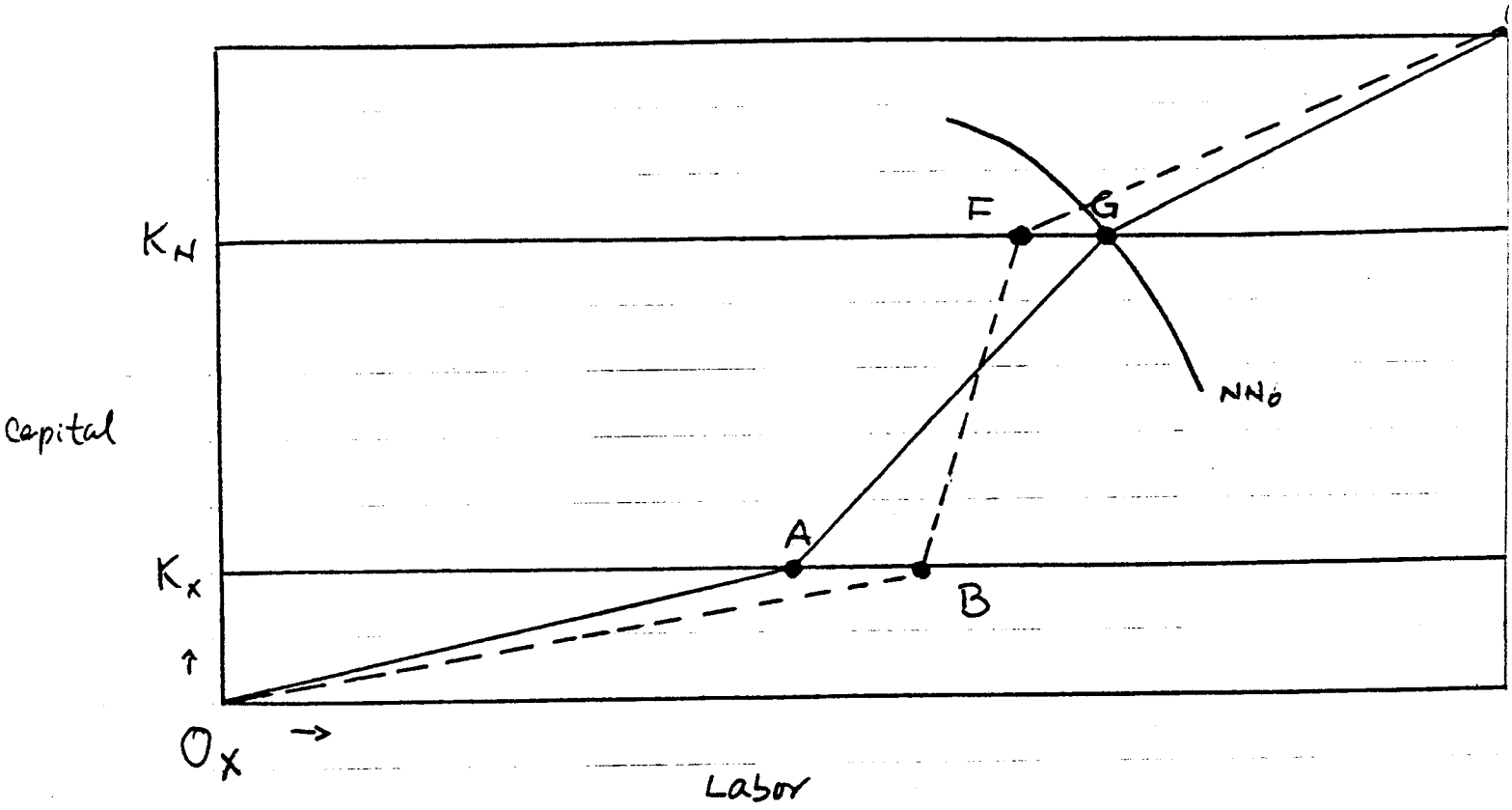


Figure 3.7



3.2.3 The Transition Period After a Trade Liberalization

According to our model the main difference between short- and long-run effects of a trade liberalization is that in the short-run capital is locked into its sector of origin. As time passes, however, capital will (slowly) move between sectors. In the present model, and in order to simplify the exposition, we assume that the movement of capital does not require the use of resources. However, the analysis could be modified by introducing a "moving industry", which uses labor and some specific factor, as in Mussa [1978].

The transition period, then, will be basically characterized by factors (both capital and labor) moving between sectors, until the new long-run equilibrium (i.e., post-liberalization) capital-labor ratios and levels of production are attained. As discussed in Section 3.2.1, and as may be seen from Figure 3.4, in the final long-run equilibrium all sectors will be more capital-intensive, with the exportable sector using more capital, in absolute terms; and with the importable sector using less capital in absolute terms than prior to the trade reform. As may be also seen from Figure 3.4, the non-tradeable goods sector could use either a larger or small absolute amount of capital than before the tariffs reduction. The nature of factors movements during the transition period can be seen in Figure 3.8, which combines Figures 3.4 and 3.7. Initial (i.e., pre-liberalization) equilibrium is given by points A and G. Short-run equilibrium is given by points B and F; while long-run equilibrium will be attained in points H and C. In order to avoid cluttering the diagram, only the post-liberalization capital-labor ratios have been drawn. The arrows between points B and C and F and H, respectively, show the way resources will move during the transition. As may be seen in Figure 3.8, for the particular case considered here, the transition will be characterized by:

(i) Capital and labor will move out of the importable goods sector;

(ii) Capital and labor will move into the exportable goods sector;

(iii) Capital will move into the nontradeable goods sector, and labor will move out of the nontradeable goods sector.

Table 3.1 summarizes the movement of resources that follows a trade liberalization. Column (1) depicts the movement of resources in the short-run. Column (2) shows how resources move in the long-run, when compared with the initial situation. This column is a summary of the situation described in the Melvin-Edgeworth-Bowly box in Figure 3.4. Finally, in column (3) the movement of resources during the transition period is presented.

An important question that has not been discussed yet is related to the timing of these prices and resources movements. Broadly speaking, it would be expected that following a tariff reduction some time would pass before goods arbitrage will result in relative prices adjustments. In that sense, then, the initial effect of tariff reductions on resource movements will not be instantaneous.[68] On the other hand, it is difficult to know a priori, how fast the adjustment process between the short- and long-run will take. This is largely an empirical question whose answer will require country-specific analyses.

3.3 The Liberalization of the Capital Account

In this sub-section the model presented above is used to investigate how the opening of the capital account (only) will affect relative prices, income distribution, production and resource movements. The analysis assumes that

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[68] From a practical point of view there are a number of considerations, like the creation of the required infrastructure to increase imports, that tend to indicate that the actual reduction in domestic prices will take more time.

the importables sector is subject to a tariff and that the world relative price of exportables and importables is constant, so that these two goods can be aggregated into a single tradeable good.

It is clear that the framework used in this section (a 3 goods-2 factors model) is not the most appropriate one to deal with intertemporal problems related to the financial sector, as those generated by the opening of the capital account. However, this model is still rich enough to allow us to investigate how the opening of the capital account will affect the real side of the economy.[69] In order to do this, an approach similar to that suggested by McKinnon [1976] for analyzing a transfer related adjustment is used. It is assumed that prior to the opening of the capital account the domestic rate of time preferences exceeds the world rate of interest. This means that once the capital account is opened, domestic agents will borrow from abroad in order to increase present consumption. It is further assumed that all of the foreign funds obtained, once the capital account is opened are used to increase present consumption.[70] The discussion will then focus on the adjustment problem created by the inflow of foreign capital that will follow the opening of the capital account.

The analysis presented in this section assumes that once the capital account is opened, foreign capital will flow into the domestic economy at a stable rate for some time. This means that during a certain period of time

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[69]Ideally one would want a fully specified multi-period general equilibrium model of both the real and financial sectors of the economy. Clearly, however, a model of this kind is not analytically tractable. An alternative way to tackle the problem of the opening of the capital account is to use a simulation framework as in Khan and Zahler (1983).

[70]We abstract, then, from the issues related to welfare reducing investment discussed in Section 2.2. See, however, Section 4.

level of capital inflows (for example, Korea 1965; Chile 1980; Argentina 1978; Uruguay 1979).

3.3.1 Long-Run Effects

In the long-run -- when capital can move between sectors -- relative prices of the three goods are completely given by world prices, technology and the tariff [see the discussion in Section 4.2].[74] For this reason, in the present model the opening of the capital account will have no long-run effect on relative prices of goods or factors. However, to the extent that a fraction of the new funds obtained from abroad are used to finance a higher consumption of non-tradeables, the production of these goods will increase. Since a higher production of N, requires an increase in the amount of resources used in that sector, production of the two tradeable goods will have to decline. The long-run effects of the opening of the capital account on production can be summarized in Figure 3.9, which is a by-now familiar Melvin-Edgeworth-Bowley box. The initial equilibrium conditions are summarized by points G and A. Since in the long-run the opening of the capital account has no effect on relative prices or factors rewards, the original capital-labor ratios are not altered. The increase in the demand for nontradeables, however, requires a higher production of this type of goods. The expansion of the nontradeable goods sector will then take place along the original capital labor ratio $O_N G$, with new (after liberalization) production of nontradeables proportional to distance $O_N G_1^1$, and given by isoquant NN_1; new production of exportables will be proportional to distance $X_X A'$; and new production of importables will be proportional to distance $G'A'$. It can then be seen that

[74] However, as will be discussed below, in the short-run there will be changes on relative prices, generated by demand effects.

the long-run effects of opening the capital account will be the

(i) Production of nontradeables will increase, with capital and labor moving into this sector.

(ii) Production of importables will decrease, with capital and labor moving out of this sector.

(iii) Production of exportables will decrease, with capital and labor moving out of this sector.

(iv) Prices of goods and factors will not be altered.

3.3.2 The Short-Run Effects

In the short-run, however, capital will be sector-specific, and the increase in the demand for nontradeable goods will be reflected in an increase of their relative price.[75] The short-run effects of a capital inflow on production can be summarized in a Salter-type diagram, as used by McKinnon [1976] in his analysis of transfers and the adjustment problem. In Figure 3.10, taken from McKinnon [1976], the importable and exportable goods have been aggregated into a composite tradeables good. TT is the (short-run) production possibilities curve between tradeables and nontradeables and has been constructed under the assumption that when relative prices change only labor can move between sectors.[76] Initial equilibrium is attained at point Q, with the trade account being equal to zero, and the nontradeable goods market in equilibrium. The inflow of capital that takes place after the opening of the capital account has the property of allowing the consumption possibilities schedule to exceed the production possibilities frontier. The

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[75]Remember that we are assuming that the magnitude of the current account deficit is the same in the short- and long-run. See sub-section 3.3.3, however, for a brief analysis of the case where there is an overshooting of the level of capital inflows.

[76]See Meyer (1974) for a discussion on the production possibilities curve under these circumstances.

new consumption possibilities schedule is equal to NT, which exceeds TT by the amount of the capital inflow, measured in terms of tradeables [see McKinnon 1976, and Datta 1983].

After the opening of the capital account, and assuming that OE is the income-expenditure path corresponding to the initial relative price, consumption will tend to move to S, while production will remain at Q. However, at this point there will be an excess demand for nontradeables goods. As a result of this, then, the relative price of nontradeables will increase until a new equilibrium situation, characterized by points R (consumption) and T (production) is attained. In this new equilibrium there is a current account deficit, and the non-tradeable goods market is in equilibrium. We can see, then, that in the short-run the opening of the capital account will result in an increase of the relative price of nontradeables relative to tradeables -- this is the real appreciation effect of opening the capital account pointed out by several authors, and discussed in Section 2.1.[77] The production of nontradeables will increase from N_o to N_1, and the production of tradeables will decline from T_o to T_1 in Figure 4.10.

We can now translate the short-run effects of opening the capital account into a Melvin-Edgeworth-Bowley box. This will prove to be useful for the analysis of the transition. Figure 3.11 summarizes the short-run effects of opening the capital account. Initial equilibrium conditions are given by points G and A. Once the capital account is opened, expenditure will exceed income, with production of nontradeables increasing and that of importables and exportables decreasing. New (short-run) equilibrium is

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[77]See McKinnon (1973, 1976, 1982), Harberger (1982), Diaz-Alejandro (1981), Harberger and Edwards (1982), Cline (1983), Edwards (1984).

attained at points H and G, which, by definition, are characterized by the fact that the same amount of capital is used in each sector as prior to the liberalization process. However in order to increase its output, the non-tradeables sector becomes more labor intensive; while both tradeables sectors become more capital intensive.

What happens, in the short-run, to factors rewards? The wage rate increase in terms of both tradeable goods and declines in terms of non-tradeables. The return to capital specific to the non-tradeables sector goes up in terms of all goods, while the return to capital in the two non-tradeable goods declines.[78]

In summary, the short-run effects of the opening of the capital account are the following:

(i) Relative price of nontradeables increases in terms of both tradeable goods.

(ii) Production of nontradeables increases.

(iii) Production of both nontradeables decline.

(iv) The wage rate increases in terms of both nontradeables and declines in terms of the nontradeable.

(v) The rental rate of capital in both tradeable goods sectors declines, in terms of all goods.

(vi) The return to capital in the nontradeable goods sector goes up in terms of all goods.

3.3.3 Transition

As in the case of the trade liberalization, the transition will be characterized by resources moving from their short-run equilibrium (Figure 3.11) towards their long-run equilibrium (Figure 3.9). As before, the best

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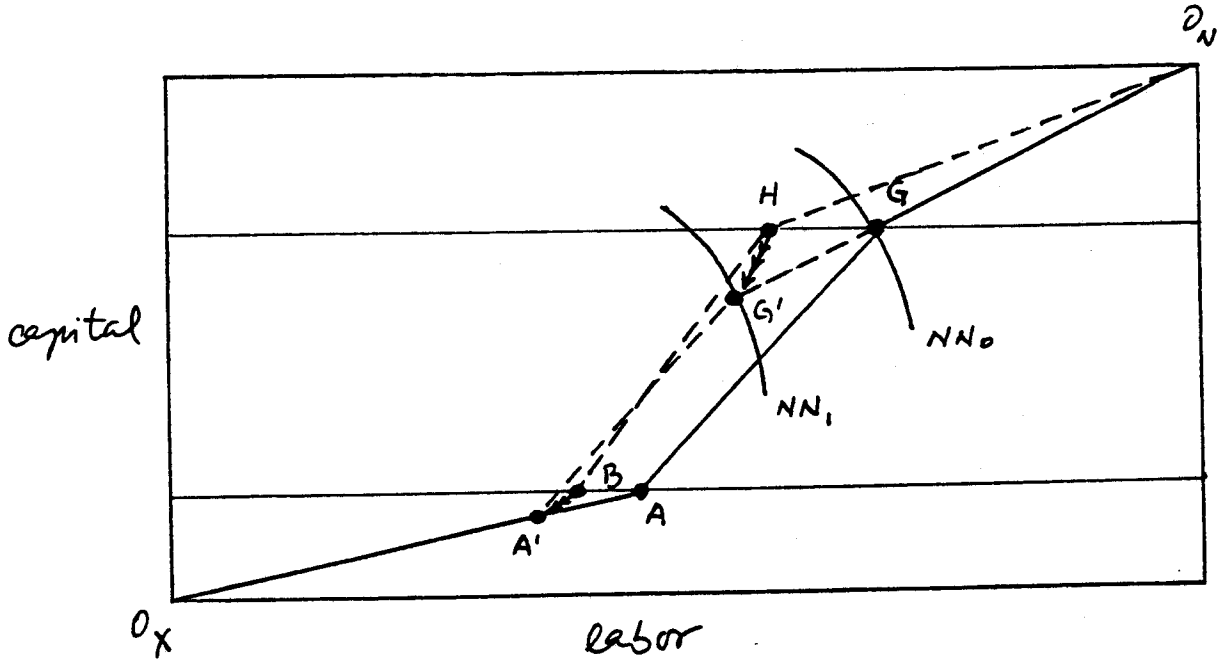
[78]This can be seen by following an analysis similar to that presented in Figure 3.6.

Figure 3.12



This table is equivalent to Table 3.1 constructed for the case of the trade reform only. A comparison of both tables clearly shows that both reforms, on their own, will tend to generate opposite movement of resources. This fact, of course, is reflected by the fact that the real exchange rate will tend to move in opposite directions under each reform.

At this point, it is important to recall some of the critical assumptions that have been made for this exercise. First, it was assumed that as a consequence of the opening of the capital account, capital would flow into the domestic country, allowing absorption to exceed income. It was further assumed that this situation was sustainable for a (fairly) long period of time. In that sense, then, in this section the time horizon of the analysis was broken into three distinct lengths. The short-run, characterized by a positive foreign borrowing (absorption > income), and by capital being sector specific. The long-run, where there also is positive borrowing (absorption > income) but where capital can move between sectors; and the long-long-run when the foreign debt has to be paid. It was assumed that the long-long-run takes place in the (distant) future, and was not analyzed.

A second important assumption made here is that once the capital account is opened a stable inflow of foreign capital takes place. In that sense, the possibility of an overshooting of the level of capital flows was ignored. This is not an innocent simplification, since, as has been mentioned, the stylized facts indicate that generally following the opening of the capital account there is an initial jump in the level of capital inflows. If such a behavior of capital flows was allowed, the analysis presented here will change with more resources moving into the nontradeable goods sector into the short-run. This case is presented in Figure 3.13, where short-run production of non-tradeables -- given by isoquant NN_2 -- exceeds long-run production of

this kind of goods (given by isoquant NN_1). In this case the transition will differ from our previous analysis. As may be seen in Figure 3.13, in this case while capital will move into the non-tradeable sector, labor will move out of the non-tradeable goods sector during the transition.

A critical question related to he effects of opening the capital account of the balance of payments has to do with the speed at which these price and resource movements will take place. In general — and as has been emphasized by Frenkel [1982, 1983] — it is expected that the inflow of capital following the opening of the capital account will be fast. In that case then, it is expected that the short-run consequences of liberalizing this account of the balance of payments — in particular the increase of the relative price of N and the tendency for labor to move into this sector — will be felt quickly. In fact, as will be argued below, and has been suggested by Frenkel [1983], the difference in the speed of adjustment of the capital and current account suggests that an appropriate order will consider opening the current account first. It will also be argued that the capital account should be opened slowly, following a multi-stage procedure.

4.4 Summary

This section has presented a three-goods two-factors model to analyze the real effects — i.e., production and income distribution effects — of the liberalization of the current and capital account of the balance of payments. The analysis presented provided details on the characteristics of these processes, comfirming prior conjectures: each reform on its own will result in opposite effects on resource movements and income distribution.

Abandoning the sphere of positive analysis, a critical question at this stage is if there is anything to be learned regarding the appropriate order of

effects will tend to dominate. If the capital account adjusts faster,[81] the avoidance of "unnecessary" adjustment costs, and the synchronization of both effects would be obtained following the order of liberalization suggested by Jacob Frenkel (1982, 1983): the current account should be opened first, and only when this is open should restrictions on capital movements be lifted.

[81] In terms of this model a faster adjustment of the capital account means that interest arbitrage is faster than good arbitrage, and that immediately following the opening of the capital account resources will be borrowed and absorption will exceed absorption. On the other hand, following trade reform some time will pass before goods arbitrage will result in resource investment.

An important question regarding this line of argument is the following: Why would the resources borrowed from abroad be used to accumulate capital, if society's welfare will be reduced? The answer is that, while socially capital accumulation might be immiserizing (since it increases a pre-existing distortion), privately it may be profitable. Indeed this will be the case since, under the assumptions of capital intensive importables, due to the presence of tariffs the marginal product of capital in the domestic country will exceed the world marginal product of capital [Stolper and Samuelson 1943]. It is also possible to show that if shadow prices are used to make investment decisions the opening of the capital account can never result in welfare reductions [Edwards and van Wijnbergen, 1983].

4.1 The Model

The model assumes a two-period world where total welfare depends on the levels of utility obtained in periods 1 and 2 respectively. If foreign borrowing is not allowed, in each period the budget constraint has to hold, with total expenditures being equal to total revenues. In this section a general version of the model (with trade distortions) is presented. In Section 4.2 the welfare effects of opening the capital account (i.e., allowing a small amount of foreign borrowing) is investigated under the simplifying assumption of no-trade distortions. In Section 4.3 the assumption of trade distortions are reintroduced into the analysis.[84]

It is assumed that there are two goods in the economy (X and Y). Good X is taken to be the numeraire and is assumed to be the exportable

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[84] In some sense the effects of opening the capital account can be analyzed as a two-way transfer, where the domestic country receives a transfer in the first period and gives a (larger) transfer in the second period.

homotheticity assumptions of U^1 and U^2, the underlying expenditure functions for each period E^1 and E^2 can be written as equation (4.3), where Π^1 and Π^2 [equations (4.4) and (4.6)] are "exact" price indexes and are equal to unitary expenditure functions.[86] Equation (5.6) establishes that the domestic relative price of the importable (P_y) is equal to the world price (P_y^*) plus a tariff τ [remember that the exportable is taken to be the numeraire]. Notice that by (4.6) we are assuming that prices do not change between periods 1 and 2. Even though this assumption greatly simplifies the exposition, it is not essential for the results obtained [see Edwards and Van Wijnbergen 1983, for a similar discussion where the domestic price P_y declines in period 2 due to the reduction of the level of the tariff.] Equation (4.7) is the budget constraint for periods 1 and 2 respectively. This equation captures the assumption of a closed capital account, since it indicates that total revenues — given by the revenue function R plus tariff collection τM — has to equal total expenditure <u>in each period</u>. If on the other hand a fully open capital account is assumed equations (4.7) would be replaced by a single intertemporal budget constraint.[87] Equation (4.8) defines the level of imports in every period. Total imports are equal to the difference between the quantities demanded and supplied of good y in each period.

One of the simplifying assumptions of the model is that prior to the opening of the capital account there is no capital accumulation in the economy

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[86] See Dixit and Norman (1980) for the properties of an expenditure function. On exact price indexes see Svensson and Razin (1983) and van Wijnbergen (1984).

[87] See van Wijnbergen (1984) for example, and Edwards and van Wijnbergen (1983).

is fully used to increase present consumption, and where r^* is the world rate of interest.

$$dU^1 = (1/E^1_{U^1})\, dB > 0 \tag{4.9}$$

and

$$dU^2 = -\,[(1+r^*)/E^2_{U^2}]\, dB < 0 \tag{4.10}$$

The total effect on welfare of allowing (some) foreign borrowing is then obtained by totally differentiating equation (4.1), and by using (4.3), (4.9), and (4.10).

$$dW = [1 - (1+r^*)\lambda]\ (\partial W/\Pi_1 \partial U^1)\, dB \tag{4.11}$$

where

$$\lambda = \frac{(\partial W/\Pi^2 \partial U^2)}{(\partial W/\Pi^1 \partial U^1)}$$

is equal to the inverse of one <u>plus</u> the consumption rate of interest in the domestic country $(1 + CRI)$.[89] Under the assumption of closed capital account, assuming that intertemporal substitutions is not allowed, the consumption rate of interest will <u>exceed</u> the world rate of interest r^*. Consequenmtly, $(1 + r^*)\lambda < 1$ and in equation (4.11)

$$\frac{dW}{dB} > 0 \tag{4.11'}$$

The opening of the capital account will be welfare improving. Of course, if prior to the opening of the capital account present consumption was "too

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[89] See, for example the discussion in Svensson and Razin (1983, p. 109-110). See also Van Wijnbergen (1984).

capital — will be welfare improving (i.e., $dW/dK > 0$). The main difference between (4.12) and (4.11) is that instead of dB we now have $R_K dK$. This last term, of course, represents the increase in national income in period 1, in terms of the numeraire good, resulting from an increase in the stock of capital equal to dK. From the comparison of (4.11) and (4.12) it follows that to the extent that the price of machines in terms of the numeraire good, (i.e., Tobin's "q") is equal to $(1/R_K)$ it is indifferent whether once foreign borrowing is allowed the resources obtained from abroad are used to add one machine to the stock of capital or directly to increase present consumption.[92] As will be shown in Section 4.3 below this is not the case once trade distortions are allowed into the picture. the reason for this is that, while in the presence of trade distortions, the private price of machines is still $(1/R_K)$, from a social perspective this price is lower and could even be negative.[93]

4.3 The Opening of the Capital Account in the Presence of Trade Distortions

In this section it is assumed that there is a tariff on the import of good y (i.e., $\tau > 0$), and the welfare effect of opening the capital account is investigated. Following last section's strategy it is first assumed that the proceeds from the foreign loan are used exclusively to increase present consumption.

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[92] Of course, this price of capital $(1/R_K)$ can be used to formulate the present problem in a way such that the loan is paid in the form of goods, and not of machines. The results, however, are exactly the same as those presented here.

[93] This corresponds to Bhagwati's et al. case of negative shadow prices.

$1/(1-\tau d_{Ey})$ in (4.15). Since this term exceeds one, it turns out that the increase in welfare resulting from opening the capital account will be greater if there are trade restrictions. That is,

$$\left(\frac{dW}{dB}\right)_{\tau>0} > \left(\frac{dW}{dB}\right)_{\tau=0} \tag{4.16}$$

The reason for this result is simple. The opening of the capital account allows the substitution of consumption across time, and under our assumptions will result in an increase in present consumption. That means that in period 1 there will be an increase in the consumption of a good initial level of consumption was too low (due to the tariff), and a positive welfare effect will result.

Assume now that the private sector uses the proceeds of the foreign loans to increase its stock of capital. That would be the case if the (world) price of a machine, in terms of the numeraire good is equal or lower than $(1/R_K)$. Assume in order to simplify the exposition that this price is exactly equal to $(1/R_K)$. In this case the welfare effect of opening the capital account, under the assumption that the loan is also paid in the form of machines, will be given by equation (4.17):

$$dW = [1 - (1+r^*)\lambda]\ (\partial W/\Pi^1 \partial U^1)\ (R_K - \tau R_{P_y K})\ [1/(1-\tau d_{Ey})]\ dK \tag{4.17}$$

where $R_{P_y k}$ is a Rybczynski term that captures the effect of capital accumulation on the production of the importable good. Given our assumption regarding factors proportions — the importable good y is capital intensive in our developing economy — $R_{P_y K} > 0$.

5. Summary and Concluding Remarks

In this paper I have surveyed some of the most important issues related to the order of liberalization of the current and capital accounts of the balance of payments. This topic has recently attracted considerable attention both from academic and policy-oriented circles. From a theoretical point of view the question of the appropriate order of liberalization is only relevant in a world with some kind of adjustment costs, market imperfections and/or externalities. If, on the contrary, a textbook economy free of imperfections is assumed, the answer to this question becomes trivial: both accounts of the balance of payments should be liberalized simultaneously and instantaneously. However, there are a number of reasons, both economic and political, why a simultaneous and instantaneous liberalization might not be feasible. In this context, then, the question regarding the order of liberalization becomes important.

The problem of the order of liberalization of the current and capital accounts of the balance of payments has become more interesting in light of the recent experience of a group of countries from the Cone of South America (Argentina, Chile and Uruguay). These countries followed opposite orders -- Argentina and Uruguay opened the capital account first, while Chile opened the current account first— with a common fate in the early 1980s: deep economic recession and (partial) reversal of the liberalization attempt. This Southern-Cone experience has triggered greater concern on the issue of the adequate order of liberalization. At the present time there are no definite answers regarding these experiences and more research on the subject should be encouraged.

The present paper has focused exclusively on the analysis of some aspects of the order of liberalization of the capital and current accounts of the

liberalization at the same time as a stabilization program is on its way, should be further investigated. And, fourth, the order of liberalization (i.e., which market should be liberalized first) is also important. There is generalized agreement among experts about some aspects of the order of liberalization. There is agreement, for example, that the capital account should only be opened after the domestic capital market is freed, and that this can only happen after the fiscal deficit has been substantially reduced. There has been less agreement, however, on the order of liberalization of the capital and current accounts. This is the topic that has been discussed in the present paper.

In Section 2 of the present paper the existing literature on the order of liberalization of the capital and current accounts of the balance of payments was critically reviewed, and some interpretations were suggested. The existing arguments were grouped in three broad categories for this discussion. The first line of argument is concerned with real exchange rate behavior and macroeconomic stability during the liberalization effort. Some authors have argued that to the extent that the opening of the capital account will generate destabilizing capital flows, the real exchange rate will be highly volatile after this account is liberalized. For this reason, the reasoning goes, the capital account should only be opened after the trade reform has been completed, and the new structure of production is "consolidated". Other authors, however, have argued that the best way to avoid undesired ral exchange rate movements is by having a freely floating exchange rate with full convertibility. This exchange rate system, they argue, should be implemented before the trade reform. Consequently, according to this view the capital account should be liberalized first. The second line of argument that appears in the literature is related to welfare effects of

depend on two key variables. First the relationship, prior to the liberalization reform, between the domestic consumption rate of interest and "the" world interest rate will be critical. If the domestic consumption interest rate exceeds the world rate of interest the opening of the capital account will result in an importation of capital and welfare will improve. Second, the social welfare consequences of opening the capital account in the presence of tariffs will depend on whether the additional funds obtained from abroad are used for capital accumulation or for consumption. It was shown that if funds are used to increase present consumption welfare will always improve. Moreover it is shown that under these assumptions the welfare increase will be greater in the presence of tariffs. If, however, these funds are used to increase investment in the presence of tariffs welfare may be reduced as a consequence of the capital account liberalization. This welfare reduction will not take place, however, if shadow prices are used to guide investment decisions.

The purpose of this paper has been to survey the major issues related to he order of libralization, presenting the different aspects of this problem in an organized fashion. While the analysis has not yielded a strong theorem regarding the appropriate order for liberalizing the current and capital accounts of the balance of payments, both the historical evidence and the theoretical considerations discussed suggest that a more prudent strategy would be based on liberalizing the current account first. It is my opinion that the strongest case for this ordering is based on the relation between capital inflows and the real exchange rate. The experience with destabilizing capital flows immediately following a capital account liberalization has generally been negative -- consider, for example Korea 1964, Argentina 1978, Chile 1980 — and has jeopardized other aspects of the reform package. Some

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