

Financial Deregulation in Developing Countries

by P. DE GRAUWE*

I. INTRODUCTION

Following the pathbreaking work of McKinnon (1973) about the effects of financial repression in the developing countries, a broad consensus has emerged (among academic economists) about the importance of financial deregulation in the developing process of LDCs. This consensus starts from the observation that countries which have regulated the intermediation process between savings and investment have experienced important problems. First, by regulating interest rates paid on bank deposits, they have found it difficult to generate a sufficiently large pool of savings, needed in the development process. Second, by transferring the control of the allocation funds in the investment process from the market to the political system, they have found out how difficult it is to select the investment projects in an economically rational way. The political and the bureaucratic rules which in such a regulated environment take over from the market allocation rules are no guarantee that those investment projects will be selected which speed up the development process. On the contrary, it has become increasingly obvious that political and bureaucratic rules fail to detect the investment projects which will stimulate the long-term growth and development in these countries.

Whereas the need to liberalize financial markets in the LDCs is now recognized by a large number of economists, an equally broad

* Centrum voor Economische Studiën, K.U. Leuven.

consensus exists stressing that complete freedom in the financial markets and in the banking sectors of the LDCs is not in the interest of these countries. This view has been based on an analysis of market failures, which identifies a number of problems associated with free competition in the financial markets. In fact, this view used to be fashionable, and was used to rationalize large scale government intervention in the financial markets of the LDCs.

Thus, we are in a situation in which economists recognize the need to liberalize financial markets in the LDCs while at the same time stressing that this liberalization should not go all the way towards complete freedom. This leaves a whole gray area between the two extremes and a lot of controversy about the question of how far liberalization should go. Those economists stressing the importance of political failures in allocating savings towards investment projects, will be inclined to argue for a substantial movement towards liberalization. Others who put more emphasis on the market failures will argue that "one should not go too far" in this process of liberalization of the financial markets.

Today, as the LDCs have moved very far towards controlling the savings-investment process in their countries, the voices of those who stress the political failures are heard very loudly. If the LDCs take drastic steps towards liberalizing their financial markets, it can be expected that the themes stressed by the school of market failures will again become fashionable.

It is therefore important to analyze these themes, so as to be able to answer the question of how far deregulation in the financial markets can go. This will be done in the following sections. We will, first, discuss problems relating to financial market stability and to monetary control in a deregulated financial environment. Second we will analyze the issue of the optimal timing of liberalization of the financial markets in the LDCs. This problem has become an acute one since the late seventies when a number of Latin American countries started a process of liberalization, which ultimately failed.

II. DEREGULATION AND FINANCIAL STABILITY

In this section we analyze the question of how far one can go towards a liberalization of the financial markets and the banking sector, without endangering the stability of the financial system.

A. Liberalization and financial stability

The strongest arguments against financial liberalization have been made on the grounds that it would endanger the stability of the financial system. It is likely that these arguments will continue to weigh heavily in the discussion. Let us analyze the analytical basis of these arguments so as to see whether they are relevant for the LDCs.

There is now a widespread agreement that a complete deregulation of the financial markets and in particular of the banking sector, would be inimical to the stability of the system. In other words, it is now generally accepted that financial markets (and the banking sector) are fragile. Why? One can distinguish a number of reasons for this fragility. They all have to do with some form of market failure.

The first and best known source of fragility of the banking sector has to do with the occurrence of liquidity crises. In a fractional banking system, banks guarantee the convertibility of their deposits in cash. In a competitive environment, some banks will inevitably go bankrupt. Deposit holders of these banks will find it impossible to collect their claims. This solvency problem may degenerate into a liquidity problem in other banks. The reason is twofold. First, customers of banks face a problem in that they find it difficult to know with certainty whether a bank is solvent or not. As a result, unfavorable news may quickly change their evaluation of the soundness of the bank. Second, the claims of the deposit holders, are organized on an "first come first serve" basis. Thus, when the solvency of the bank is in doubt, deposit holders have a strong incentive to run to their banks in order to increase the probability of realizing their claim. This phenomenon can easily degenerate into a large scale liquidity crisis. Banks will be unable to satisfy the claims of all their customers because of the illiquidity of the largest part of their assets¹. In an unregulated environment such a liquidity crisis can lead to a collapse of the banking system. The history testifies that this is indeed a serious problem of a competitive banking system.

Few people will argue that governments have no responsibility in avoiding such liquidity crises. In fact in most if not all countries governments consider it to be their responsibility to stabilize the banking system. The major unresolved issue is what form, and how far government regulation should go to solve this problem.

It is now generally accepted that as a minimum the government (central bank) should be the lender of last resort. This means that

when a liquidity crisis arises, it should be willing to lend cash to banks in unlimited amounts. In many countries this lender of last resort function has been supplemented by a deposit insurance scheme guaranteed by the government. The knowledge that monetary authorities are committed to step in when a liquidity crisis arises has proven to be extraordinarily effective in avoiding the occurrence of these crises in most countries.

Whereas the principle of the lender of last resort function (supplemented or not by the deposit insurance scheme) is simple enough, the regulatory implications of such a government guarantee to the banking sector are far from obvious. There are good reasons for this. First, the fact that the government extends a guarantee to the banking system leads to a moral hazard problem. Banks will be tempted to finance more risky projects, when they know that the government will bail them out in a time of crisis. This problem is especially important with deposit insurance schemes. It should not arise with the lender of last resort function, which is only geared towards solving liquidity problems of sound banks and not bailing out insolvent banks. In practice, however, it turns out to be very difficult to distinguish between liquidity and solvency problems. As a result, the lender of last resort function is now commonly interpreted as including a responsibility of bailing out the large banks, whether their problems are due to insolvency or illiquidity². The latest example is the rescue effort of the Continental Illinois by the US monetary authorities, which clearly started as a solvency problem, but escalated into a liquidity problem.

Thus, both the lender of last resort function of the central bank and the deposit insurance schemes lead to similar problems of moral hazard. As a result, these government guarantees will call for a monitoring of the activities of the banks. It is precisely here that the controversy arises about how much bank regulation is needed. Bagehot, who laid the theoretical foundation of the lender of last resort function of the central bank, argued that it would suffice to impose a penalty interest rate when banks turned to the central bank in times of crisis. It is now generally felt that this is insufficient, because the use of a penalty rate may not be a credible deterrent for banks. This lack of credibility in turn has to do with the fact that in time of crisis the use of a penalty rate at which commercial banks can borrow from the central bank increases the solvency problems of the banks.

The central bank may then decide that the penalty rate will not be applied³.

From the preceding, one can conclude that the lender of last resort guarantee provided by central banks can only work satisfactorily if it is accompanied by a monitoring of the banks' activities (prudential control). The recent experiences of the liberalization process in Chile give dramatic evidence to support this point. In 1979 the Chilean banks were liberated from most prudential regulations, although there was an implicit understanding that the Chilean central bank would continue to extend its lender of last resort guarantee. It is now felt that the combination of complete deregulation and government guarantees led to an important moral hazard problem: it induced commercial banks in that country to take on excessive risk, and contributed to the subsequent large scale banking failures (see McKinnon (1986) and Tybout (1985) on this point).

One can summarize the preceding analysis as follows. Liquidity crises which are inherent in a competitive banking system can be solved by entrusting on the government the task of extending its guarantee (lender of last resort, deposit insurance schemes) to banks and deposit holders. These guarantees, however, lead to new problems (moral hazard) and require prudential control. How far should one go in subjecting banks to these controls? Some countries have gone very far in regulating their banking system. In fact, a great part of the banking systems of the developing countries are under the complete control of the government authorities. The experience of the industrial countries suggests that one does not need nationalized banking sectors to solve the problem generated by liquidity crises.

B. The political economy of financial regulations

It is now becoming clear that excessive government control over the banking sector may lead to new problems of financial instability. These arise because the incentives for governments to use the banking system to finance spending, increases with the degree of government control exerted over the banks. It is more likely that in an environment where most decisions in the banking sector are made or dictated by government authorities, the latter will be tempted to turn to the same banks to finance budget deficits. This may then lead to more inflation and occasionally to inflationary processes that run out of control.

One additional factor which may help to understand why overregu-

lation may lead to new forms of financial instability has to do with external convertibility. Overregulation of banks will almost naturally be accompanied by exchange controls (see Black (1984)) for an analysis of the link between domestic control and exchange controls). A failure to control capital movements will undermine the effectiveness of the controls on banking activities. As a result, heavily regulated banking systems are also systems where exchange controls will be substantial. The existence of exchange controls then provides an additional incentive for countries to abuse money for budgetary purposes. This will lead on average to higher inflation.

Put differently, free capital mobility provides a check on the domestic authorities in their temptation to use money for financing budgetary deficits. Monetary financing will quickly lead to large scale conversion of the domestic currency into foreign currencies, forcing the monetary authorities to resort to more orthodox financing. Exchange controls, however, eliminate this external discipline, and therefore will lead to more frequent abuse of the banking sector to finance budget deficits, and to more inflation.

Table 1 gives some evidence concerning this effect. We represent the average yearly inflation rates together with their standard deviations, in two groups of countries. The first group consists of those countries which allow free capital mobility. The second group restricts capital mobility⁴. In general, countries which allow free capital mobility have a relatively liberal banking sector, whereas countries which restrict capital movements also tend to impose more regulations on their banking system.

The evidence of table 1 lends itself to the following interpretation. Countries which have closed off their domestic financial markets from the rest of the world have on average experienced an inflation rate which was twice as high as in those countries which allowed free capital mobility. In addition, the yearly variability of these inflation rates was substantially higher in the former group of countries than in the latter. The small size of the standard errors also indicates that these differences between the two groups of countries are statistically significant. Thus, the evidence is consistent with the political economy hypothesis formulated here. That is, the closing off of domestic financial markets from outside influences, gives an incentive to domestic authorities to follow more inflationary policies.

One can conclude that a liberalization of the overregulated banking sectors of many LDCs may be a good instrument to achieve more

TABLE 1

*Average inflation and inflation variability in regulated and unregulated countries
(1971-84)*

| | Inflation | Variability of Inflation |
|--------------------------------------|---------------|--------------------------|
| Countries with free capital mobility | 8.5 (0.9) | 5.5 (1.0) |
| Countries with capital controls | 15.8 (1.9) | 10.6 (1.6) |

Note: (1) Computed using the classification of IMF, Annual Report on Exchange Restrictions. Inflation is the yearly percentage change in the CPI; As a measure of yearly variability the standard deviation was selected. The sample contains 82 countries. The first group contains these countries which had free capital mobility *during the whole 1971-84 period*; the second group contains countries with capital controls *during the whole 1971-84 period*. There are about ten countries which changed the regulatory environment during the period. These countries are not in the sample.

(2) Figures in parentheses are the standard errors of the estimated sample means.

stable financial systems. The recent liberalization attempts in Southern Cone countries, however, also makes clear that such liberalization attempts can lead to problems. The case of Chile was already referred to. Another problem has to do with the timing of the financial liberalization. This problem will be discussed in section V.

III. FINANCIAL DEREGULATION AND MONETARY CONTROL

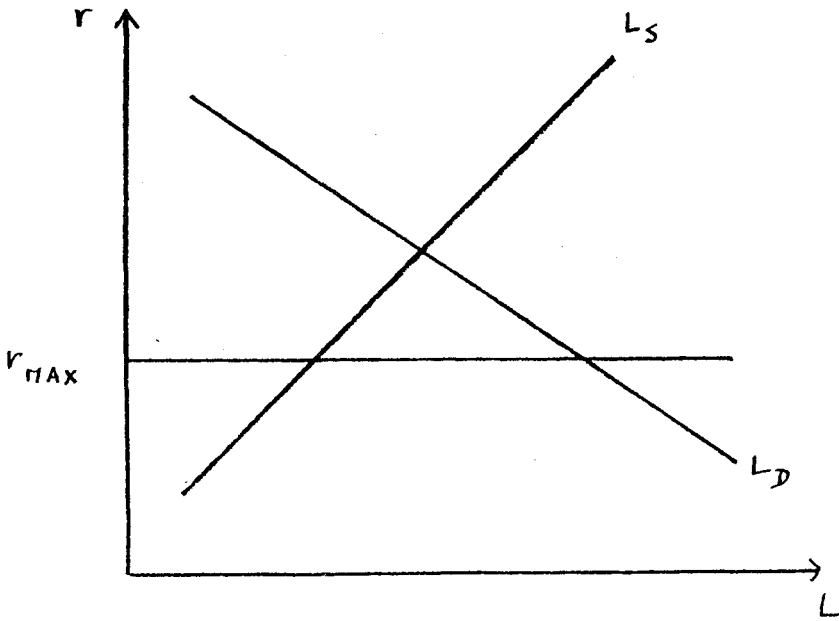
The question we try to answer in this section is the following: does liberalization of the financial markets reduce the scope for domestic monetary control? If the answer is positive we have an argument for limiting the process of financial liberalization in LDCs. It should be stressed that in this section, we study issues relating to government control of *macroeconomic* variables, not issues relating to government control of the allocation of credit, which is outside the scope of the present article⁵.

In the previous section it was pointed out that regulation of domestic financial markets and controls on capital movements (exchange controls) usually come together. Put differently, domestic controls cannot work effectively if they are not accompanied by controls on capital

movements. This point is made clear in figure 1. We represent the loan market by a demand and supply schedule. The demand for loans L_d is a negative function of the domestic interest rate (r). The supply of loans by banks is a positive function of the domestic interest rate⁶. The equilibrium loan rate is r_E .

Suppose, the authorities introduce a ceiling on the interest rate equal to r_{MAX} . As a result, there is excess demand for loans, so that the domestic loan market will have to be rationed. If capital is free to move between the domestic and the foreign countries, the excess demand will spill over to the rest of the world. Domestic economic agents who have been rationed out will obtain loans from foreign banks. As a result, the whole system of interest and credit controls will be undermined. It also follows that the logic of credit controls leads inevitably to controls on capital movements⁷.

FIGURE 1
The loan market with interest rate ceiling

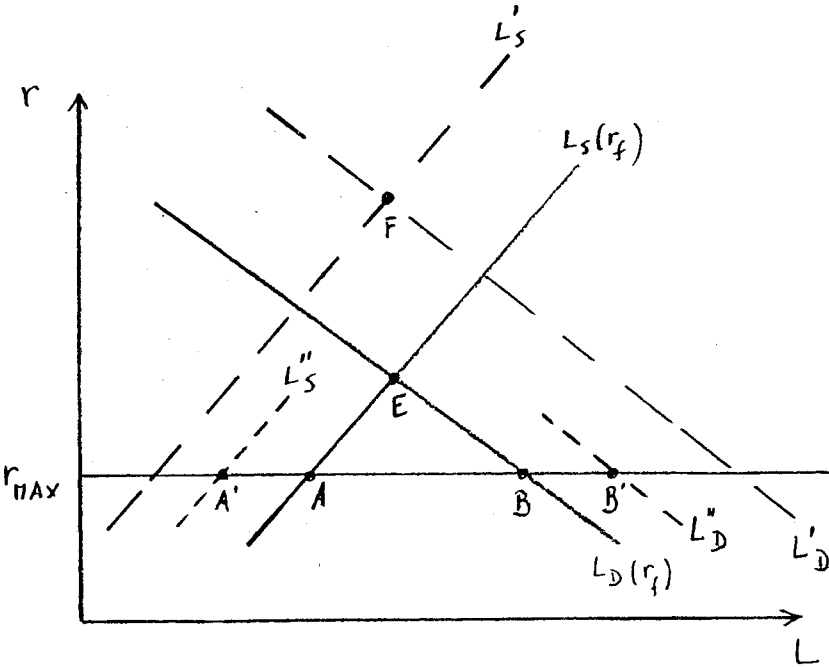


The question we now want to address is the extent to which such a controlled system is better able to stabilize the domestic economy. We will analyze this question in the tradition of Poole (1970). That

is, we ask the question of how stochastic disturbances affect domestic macroeconomic variables (in particular domestic output) under different policy regimes. We will consider different disturbances, the first one being a disturbance in the foreign interest rate. We assume fixed exchange rates and no expectation of exchange rate changes.

Figure 2 shows the domestic loan market. We now recognize that the demand and the supply of loans is also a function of the foreign interest rate⁸. That is, when the foreign interest rate increases, the supply of domestic loans by banks is reduced, as banks seek to extend loans to foreign residents. Similarly, when the foreign interest rate increases residents will reduce their demand for loans supplied by foreign banks. Thus, an increase in the foreign interest rate shifts the loan supply schedule L_s to the left, and the loan demand schedule L_d to the right. This is shown in figure 2 by the new loan supply and demand schedules L'_s and L'_d .

FIGURE 2



Let us now consider the effects of this increase in the foreign interest rate when the domestic credit market is left free. The new equilibrium point will be in point F. The domestic interest rate increases. This increase in the interest rate will exert a deflationary effect on domestic output.

In a controlled system the effects of the foreign disturbance will be quite different, and will depend on the degree of tightness of the capital controls. If capital movements can be eliminated completely, the demand and supply of loan schedules do not shift following the foreign interest rate increase. As a result, the domestic loan market is completely insulated from the foreign shock. The controlled interest rate r_{MAX} and the excess demand is unaffected.

It is likely, however, that a completely effective control on capital movements is difficult to achieve. In a system where capital controls are not completely tight the foreign interest rate increase will lead to an upward shift of the loan supply and demand schedules, as shown in figure 2 by the lines L_s'' and L_d'' . As a result, the excess demand for loans increases from AB to $A'B'$. At the unchanged domestic interest rate r_{MAX} , the supply of domestic credit declines. The system of credit rationing will have to be tightened.

Thus, when one compares the two systems, one can see that the liberal credit market will fully reflect the foreign interest rate increase. The regulated system is able to insulate the domestic credit market, to the extent that the capital control system can be made to work effectively. If this control is incomplete, however, the foreign interest rate increase will be reflected in a reduction of the availability of credit.

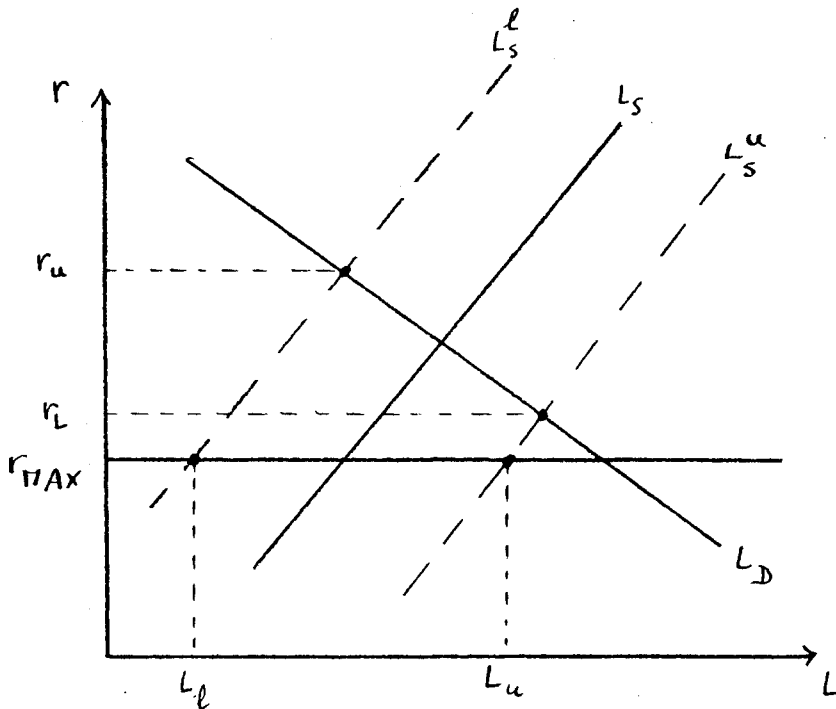
Both the domestic interest rate increase and the reduction of the availability of credit will negatively affect domestic economic activity. Which of the two effects will be more deflationary is difficult to predict a priori. It depends on the way the output market reacts to an increase in the interest rate and to a reduction in the availability of credit. We conclude that if the capital controls are completely tight, the domestic monetary authorities can insulate the domestic economy from the deflationary effects of an increase in the foreign interest rate. If capital movements cannot be fully controlled, such an interest rate increase will have a deflationary effect on the domestic economy via a reduction of the availability of credit.

In the previous paragraphs we analyzed how foreign shocks affect the domestic economy. It is also important to analyze the effects of domestic disturbances. Are the monetary authorities better able to

stabilize the economy when the financial markets are regulated than when they are left free? We concentrate here also on banking regulations, and in particular on the regulation of the loan rate.

Many different domestic shocks can be analyzed. We concentrate on just a few. Suppose, first, that there are stochastic disturbances in the demand for bank deposits. Such disturbances translate themselves into disturbances in the supply of bank loans⁹. This is represented in figure 3 by the lines L_s^l and L_s^u between which the supply of bank loans fluctuates. In a liberal banking system these disturbances lead to fluctuations in the loan rate (represented by the range r_l and r_u between which the loan rate will fluctuate). In a regulated bank loan market, these disturbances lead to fluctuations of the availability of credit (represented by the range between L_l and L_u in figure 3). Again it is unclear, a priori, in which system the domestic good market will be more affected by these financial disturbances.

FIGURE 3



Shocks can also occur in the demand for loans. (See figure 2, where we consider only the shifts in the L_d -curve). These disturbances lead, in an unregulated system, to movements in the interest rate. These interest rate movements have the effect of accommodating the supply of loans. Thus, when the demand for loans increases, the interest rate increase leads to an increase in the supply of loans. In a regulated system, this accommodation is absent, so that the increased demand for loans only increases the excess demand in the loan market. As a result, the rationing system will be put under increasing pressure, leading to increased evasion of the regulation. Thus, only if the authorities have a tight control over the loan rate can they avoid that the movements in the demand for loans affects the total supply (availability) of credit.

We arrive at the following conclusion. Shocks in the foreign interest rate and in the demand for loans put the regulatory regime under pressure. Only if the regulations can be enforced very tightly, will these shocks have no further effects on the availability of credit, and on the goods market. Movements of the supply of loans (due to disturbances in the demand for deposits) lead to fluctuations in the availability of credit in a regulated environment. From this analysis one can conclude that the task of stabilizing the economy following financial disturbances is not necessarily made easier in an environment in which bank credit is regulated. In general, the theory does not allow us to conclude that the domestic authorities can stabilize the economy better when the domestic banking sector is subjected to interest rate regulations. In fact this proposition can be generalized to most bank regulations. That is, there is no theoretical presumption that regulations on banking activities make it possible for the authorities to better stabilize the economy¹⁰.

IV. MONETARY CONTROL AND FINANCIAL REGULATIONS: SOME EMPIRICAL TESTS

In this section we give some empirical evidence for the proposition derived in the previous section. We ask the question whether countries which have regulated their financial markets have been better able to stabilize their economies. The way we go about testing this proposition is very much like in the previous section. We classify countries according to the degree to which they have insulated their financial

markets from foreign markets. We then compute the average and the standard deviations of the growth rates of GDP during 1971-84. The results are presented in table 2.

TABLE 2
Average growth of GDP and its yearly variability in regulated and unregulated countries (1971-84)

| | Growth of GDP | Variability of GDP growth |
|--------------------------------------|---------------|---------------------------|
| Countries with free capital mobility | 4.3 (1.3) | 5.8 (1.8) |
| Countries with capital controls | 3.7 (0.4) | 4.2 (0.4) |

Note: (1) Computed using the classification of IMF, Annual Report on Exchange Restrictions. Inflation is the yearly percentage change in the CPI; As a measure of yearly variability the standard deviation was selected. The sample contains 82 countries. The first group contains these countries which had free capital mobility during the whole 1971-84 period; the second group contains countries with capital controls during the whole 1971-84 period. There are about ten countries which changed the regulatory environment during the period. These countries are not in the sample.

(2) Figures in parentheses are the standard errors of the estimated sample means.

The countries with free capital mobility experienced a somewhat higher growth rate of output and a higher standard deviation than the countries with capital controls. From the size of the standard errors of these estimates, however, one can see that these differences between the two groups of countries are too small to be significant. Thus, one can conclude that the evidence is consistent with the hypothesis that countries with capital controls have not been better able to stabilize output than countries with free capital mobility.

The evidence provided here, of course, is not conclusive. One could always argue that, for some unknown reason, the group of countries with capital controls would have experienced a higher output variability without the controls.

V. THE TIMING OF FINANCIAL LIBERALIZATION

Prior to the liberalization attempts of Southern Cone countries during the second half of the seventies, economists attached little importance

to the issue of the timing of these attempts. With the benefit of hindsight we now know that an incorrect timing of the liberalization process often leads to its failure. Recently, therefore, important research has been done which aims at deriving general conclusions about the optimal timing of the liberalization. Here we will discuss two issues which have loomed large in the liberalization process of the Southern Cone countries. First, there is the issue whether financial liberalization should wait until macroeconomic stability is achieved, or whether, on the contrary, financial liberalization can be used as an instrument of macroeconomic stabilization. The second issue has to do with the question whether the capital account should be liberalized before or after the liberalization of the current account.

A. Financial liberalization and macroeconomic stability

The evidence presented in the previous two sections suggests that countries that have had relatively free capital mobility during a long period of time (1971-84) also have experienced more macroeconomic stability (i.e. a low and less variable inflation with comparable growth performance) than those countries which have closed off their financial markets from the rest of the world. Does this mean that financial liberalization can be used as an instrument to bring about more stability in the macroeconomic environment? The governments of the Southern Cone countries which started the liberalization process during the seventies have considered financial liberalization as one of the instruments in a program aimed at reducing the macroeconomic instability in their countries (see Edwards and Edwards (1987)). We can now say that this has not worked, and that financial liberalization failed in these countries because it was introduced in a situation of extreme macroeconomic instability. What is more, we know from the experience of these countries that when financial liberalization is introduced in an environment of extreme macroeconomic instability, it is likely to increase this instability.

Table 3 gives some data on inflation and monetary policies prior and after the liberalization policies in Chile and Argentina. It can be seen that in the period preceding the liberalization attempts (1976-78) inflation and the growth rates of the money stock were extremely high in these two countries. Thus the liberalization attempts which started around 1979 in both countries were done in an environment of uncommon macroeconomic instability. During the liberalization

phases, inflation and the growth rates of the money stock tended to decline. When these liberalization programs were discarded these two variables started to increase again.

TABLE 3
*Inflation and Growth of Money Stock in Argentina and Chile
during 1976-83 (in percent per year)*

| INFLATION | | |
|-----------------------|-----------|-------|
| | Argentina | Chile |
| 1976 | 443 | 212 |
| 1977 | 176 | 92 |
| 1978 | 175 | 40 |
| 1979 | 159 | 33 |
| 1980 | 101 | 35 |
| 1981 | 104 | 20 |
| 1982 | 165 | 10 |
| 1983 | 344 | 27 |
| GROWTH OF MONEY STOCK | | |
| | Argentina | Chile |
| 1976 | 310 | 216 |
| 1977 | 144 | 157 |
| 1978 | 146 | 81 |
| 1979 | 131 | 60 |
| 1980 | 116 | 63 |
| 1981 | 54 | 23 |
| 1982 | 196 | -5 |
| 1983 | 288 | 28 |

Source: IMF, International Financial Statistics.

Note: Inflation relates to the consumer price; money is defined as M1 (line 34 in IFS).

It is important to analyze the reasons why financial liberalization has failed when it was introduced in an unstable macroeconomic environment¹¹. At a very general level one can formulate the following hypothesis. High inflation generally leads to large differences in sectoral inflation rates (see Fischer (1982) where it is shown that the shocks in relative prices increase with the level of inflation). Such a differential development of prices in different sectors also implies that the rates of return on investment projects will tend to diverge signifi-

cantly. In a liberal financial system these large differences in rates of return will be a natural breeding ground for speculative activities. The reason is that economic agents are able to freely borrow at an interest rate which is equal to the foreign interest rate plus the expected rate of depreciation (appreciation) of the domestic currency. In certain sectors of the economy, however, the expected rates of return will be substantially higher than this borrowing cost. As a result, the willingness to take on debt will be high. This effect, and the willingness to become a large debtor, increases when the variance of the rates of return across projects increases. Since the variance goes up with the rate of inflation, one can conclude that in a liberalized financial market the incentives to take on debt (including foreign debt) increases with the rate of inflation¹².

This phenomenon of speculative frenzy took place in countries like Chile and Argentina during the late seventies. In Chile in particular, a very large differential price development occurred between the non-traded and the traded goods sector. This followed from the attempts to reduce the high rate of inflation by pegging the exchange rate to the dollar. The effect of this policy was to slow down the rate of inflation in the traded goods sector. In the non-traded goods sector, however, it turned out to be very difficult to reduce the high rate of price increases¹³. As a result, the profitability of projects in the non-traded goods sector (especially in the construction industry) was unusually high. In order to profit from these extreme profit opportunities economic agents were led to increase their (foreign) indebtedness in substantial amounts.

This speculative frenzy was exacerbated in the Chilean case by the fact that, after having abolished all controls on banking (including prudential controls), the monetary authorities continued to provide lender of last resort and deposit insurance facilities. As argued earlier, this led to a moral hazard problem, and reinforced the tendency of banks for excessive risk taking.

The upshot of all this is that high and variable inflation leads to excessive debt accumulation. The financial system then becomes vulnerable to a sudden turn-around in relative prices. When this happens (e.g. when as in the Chilean case the relative price of non-tradables declines following a devaluation of the peso) many projects suddenly become unprofitable. As a result, economic agents with high debt exposure are driven into bankruptcy. A debt deflation process (as described by Fisher in 1933¹⁴) can be set in motion, during which a

large number of economic agents are driven into bankruptcy, leading to a depression of economic activity. In most cases these large disturbances lead to strong forces pushing towards a re-regulation of the financial markets. In some of the Southern Cone countries the government renationalized a large part of the banking sector.

In conclusion one can say that in order for financial liberalization to be introduced successfully one needs a stable domestic macroeconomic environment. In addition, as was pointed out in earlier sections, it should take into account the need for continuing prudential supervision of banking activities. Both ideas were disregarded in the Southern Cone countries. The positive experience of Korea, with its limited financial liberalization, suggests that when these two ideas are taken into account financial liberalization can be successful (see McKinnon (1986)).

All this leaves us with an uneasy paradox. It appears from the evidence that in the long run macroeconomic stability (low inflation) is more likely to be observed in countries which keep their financial markets open to the rest of the world. On the other hand, the evidence also suggests that in order for a country to successfully move from a closed towards an open financial system a pre-existing macroeconomic stability is required. Put differently, a liberal financial system and free capital movements help countries in maintaining a stable macroeconomic environment. They do not, however, help countries who want to move from a high level of macroeconomic volatility to more stable conditions. These countries should first stabilize their economies before introducing programs of financial liberalization.

B. Liberalization of the capital and the current accounts

One of the issues which has arisen in the context of financial liberalization is the question whether the current account should be liberalized prior to the capital account. This issue has propped up in every country engaged in these liberalization attempts. Chile opened the current account first, while Argentina and Uruguay decided to liberalize the capital account first¹⁵. Countries like Korea have had to face up to the same problem.

Following the first analysis of the problem by McKinnon (1973), a consensus has now emerged suggesting that the current account should be liberalized before the capital account¹⁶. Without going into the full detail of the arguments one can summarize these as follows. Liberali-

zation of trade (e.g. a reduction of import tariffs) leads to a reallocation of factors of production away from the import substituting industries towards the export sector. As a result both imports and exports will increase. The timing of this process, however, is such that the import surge is likely to precede the boost in exports. The reason is that the import substituting industries are likely to disappear before the new export potential is put into place. Thus, the trade liberalization is likely to produce a temporary trade deficit. In the absence of capital movements this will lead to a depreciation of the currency¹⁷. Such a depreciation is also desirable because it gives an additional stimulus to the export industries while protecting temporarily the import competing industries. In other words, the depreciation of the currency allows for a smoother adjustment process.

If, however, capital is liberalized simultaneously with the trade liberalization, this depreciation of the currency is less likely to occur. The argument is as follows. In LDCs the rate of return on investment projects is usually higher than in the industrialized world. Therefore, the liberalization of capital movements will lead to a capital inflow, which by itself tends to appreciate the currency. In fact, we can expect that this appreciation occurs very quickly because financial markets react faster than goods markets. Thus, a simultaneous opening of the current and capital account leads most probably to a quick appreciation of the currency. The depreciation will occur only later because of the slow adjustments in the goods markets. It follows that the liberalization of the capital account will make the domestic adjustment to free trade more costly. The appreciated currency will hurt the export sector while speeding up the elimination of the import substituting industries. As a result, this trade liberalization process is likely to produce a higher rate of temporary unemployment than if it is introduced without the liberalization of the capital account.

The general conclusion one can derive from this analysis is that LDCs who want to liberalize trade are well advised to wait with the liberalization of the capital account until the domestic adjustment to freer trade is well under way. A simultaneous liberalization of the trade and capital accounts is likely to jeopardize the whole liberalization attempt, because it exacerbates the adjustment costs of the trade liberalization process.

It should be stressed here that the preceding analysis is tailored to the situation of the LDCs, so that the conclusion about the optimal order of the liberalization may not hold for other countries with dif-

ferent economic structure. More precisely, the conclusion that the liberalization of capital flows will lead to an appreciation of the domestic currency does not hold generally. Countries with a low domestic rate of return (mostly developed ones) will more likely experience a depreciation of their currency when capital is allowed to move freely. Thus, in these countries the optimal order of the liberalization of the current and the capital account may have to be reversed.

VI. CONCLUSION

In this paper we have surveyed different macroeconomic issues concerning the liberalization of financial markets in the LDCs. We found that countries which have allowed open financial markets have experienced significantly lower and less variable rates of inflation during 1971-84. This gain was not offset by unfavorable growth rates of output. Our interpretation is that the openness of financial markets to the rest of the world acts as a disciplining device on the behavior of the domestic financial authorities.

Although there are clear gains in the long run of financial deregulation, there are also important problems relating to the timing of the liberalization process. These problems have received a lot of attention in the recent literature, as a result of the spectacular failures in some Southern Cone countries.

We are left with a paradoxical situation. Open financial markets help countries to maintain a low and relatively stable inflation rate. However, once a country experiences high inflation rates in a controlled environment, financial deregulation does not seem to be an appropriate strategy to disinflate the economy. In this paper we attempted to interpret this paradox.

NOTES

1. In a sense it can be said that this is a form of market failure. In perfect capital markets, it should be possible to quickly sell assets for cash, so that banks can satisfy their customers. See Baltensperger and Dermine (1987) on this issue.
2. This interpretation is disputed. See Humphrey and Keheler (1984), where it is argued that the lender of last resort function is a responsibility of the central bank to avoid a collapse of the money stock during a liquidity crisis. This can be done even if one allows a large number of banks to go bankrupt. It should be said that this is a minority view among economists.

3. This is the same as saying that the announcement of unlimited borrowing facilities at a penalty rate is time inconsistent. During a crisis, it is not optimal for the central bank to stick to the announced high interest rate. The knowledge that the central bank will likely change the rule is sufficient to induce banks to take more risky loans in their portfolio.
4. This classification of countries is based on the International Monetary Fund, Annual Report on Exchange Restrictions.
5. Another macroeconomic issue which is not discussed here is whether the price level is determinate in the absence of banking regulations (such as reserve requirements and interest ceilings). The consensus now is that no problems of price indeterminacy arise in a deregulated banking system. See Fama (1980) and (1983) and McCallum (1985).
6. We make abstraction here of the problem mentioned earlier when the interest rate increases so much that banks reduce the supply of loans.
7. Note that the problem is the same as price controls. For example, the institution of minimum prices inevitably leads to import controls. A good example of this is the EEC agricultural policies.
8. Strictly speaking we should make a distinction between the foreign deposit and loan rate. We make abstraction of this complication here. See De Grauwe (1982) for such an analysis.
9. This follows from the balance sheet constraint of the banks.
10. For a similar conclusion see Baltensperger and Dermine (1987).
11. See McKinnon (1986a) and 1986b), Corbo (1985), Tybout (1985) and Corbo, de Melo and Tybout (1986) on these issues.
12. Very interesting discussions of the speculative frenzies in hyperinflationary periods can be found in Bresciani-Turroni (1937). See also Minsky (1986) who for years has been arguing that this kind of speculative activity makes the financial markets of capitalist systems very fragile.
13. See Edwards and Edwards (1987) for analysis of this period. It is made clear there that one of the reasons was the maintenance of wage indexing, which led to a lot of inertia in the wage increases.
14. See Fisher (1933).
15. The Argentinian experience is discussed by McKinnon (1982) and Fernandez (1985); the Uruguayan experience by Hanson and de Melo (1985).
16. See Frenkel (1983), Khan and Zahler (1985), Krueger (1983), Edwards (1984) and (1986) and Edwards and van Wijnbergen (1986).
17. Many complications can be introduced into the reasoning leading to a less clearcut conclusion about the effects of trade liberalization and the real exchange rate. For a further analysis see Johnson (1969), Corden (1971) and Edwards (1987).

REFERENCES

- Baltensperger, E., and Dermine, J., 1987, Banking Deregulation in Europe, *Economic policy*.
- Black, S., 1984, The Relationship between Exchange Rate Policy and Monetary Policy in Ten Industrial Countries, in Bilson, J. and Marston, R.C., *Exchange Rate Theory and Practice*, Chicago, 499-511.
- Bresciani-Turroni, C., 1937, *The Economics of Inflation* (Allen & Unwin).

- Corbo, V., 1985, "Chilean Economic Policy and International Economic Relations Since 1970," in Walton, G. M. (ed.), *The National Economic Policies of Chile* (Greenwich CT: JAI Press).
- Corbo, V., de Melo, J., and Tybout, J., 1986, What Went Wrong With the Financial Reforms in the Southern Cone?, *Economic Development and Cultural Change*, 34, 607-640.
- Corden, W. M., 1971, *The Theory of Protection* (Oxford University Press).
- De Grauwe, P., 1982, The Exchange Rate in a Portfolio Balance Model with a Banking Sector, *Journal of International Money and Finance*, 1, 225-239.
- Edwards, S., 1984, "The Order of Liberalization of the External Sector," *Princeton Essays on International Finance*, No 156.
- Edwards, S., 1987, "Tariffs, Terms of Trade and Real Exchange Rate in an Inter-temporal Model of the Current Account" (NBER Working Paper).
- Edwards, S., and Edwards, A., 1987, *Monetarism and Liberalization: The Chilean Experiment* (Ballinger).
- Edwards, S., and van Wijnbergen, S., 1986, "The Welfare Effects of Trade and Capital Market Liberalization", *International Economic review*, 27, 141-148.
- Fama, E., 1980, Banking in the Theory of Finance, *Journal of Monetary Economics*, 6.
- Fama, E., 1983, Financial Intermediation and Price Level Control, *Journal of Monetary Economics*, 12, 7-28.
- Fischer, I., 1933, *The Debt-Deflation Theory of Great Depressions*, *Econometrica*.
- Fischer, S., 1982, Relative Price Variability and Inflation in the US and Germany, *European Economic review*, 18, 171-196.
- Hanson, J., and de Melo, J., 1985, "External Shocks, Financial Reform and Liberalization Attempts in Uruguay," *World Development*, 13, 917-939..
- Humphrey, T., and Keheler, R., 1984, The Lender of Last Resort: A Historical Perspective, *The Cato Journal*, 4, 275-318.
- Johnson, H. G., 1966, "A model of Protection and the Exchange Rate," *Review of Economic Studies*, 33 n° 94, 152-163.
- Khan, M., and Zahr, R., 1985, "Trade and Financial Liberalization in the Context of External Shocks and Inconsistent Domestic Policies," *IMF Staff Papers*, 32, 22-55.
- Krueger, A. O., 1983, *Trade and Employment in Developing Countries* (University of Chicago Press).
- McCallum, B. T., 1985, Bank Deregulation, Accounting Systems of Exchange and the Unit of Account: a Critical Review, *Journal of Monetary Economics*.
- McKinnon, R. I., 1973, *Money and Capital in Economic Development* (Brookings Institution, Washington, D.C.).
- McKinnon, R. I., 1986a, *Financial Liberalization in retrospect: interest rate policies in LDC's* (Stanford University).
- McKinnon, R. I., 1986b, *Monetary Stabilization in LDC's and the International Capital Market*, Stanford University, Center for Research in Economic Growth, Memorandum nr. 269.
- Minsky, H., 1986, *Stabilizing an Unstable Economy* (Yale University Press).
- Poole, W., 1970, Optimal Choice of Monetary Policy Instruments in a Stochastic Macromodel, *Quarterly Journal of Economics*, 84, 197-216.
- Tybout, J. R., 1985, A firm-level chronicle of financial crises in the southern cone (The World Bank, Discussion Paper).
- Tybout, J. R., 1983, Credit Rationing and Investment Behavior in a Developing Country, *The Review of Economics and Statistics*, 65, 598-607.
- Tybout, J. R., 1984, Interest Controls and Credit Allocation in Developing Countries, *Journal of Money, Credit and Banking*, 16, 474-481.