

FINANCIAL LIBERALIZATION IN LDC'S:

AN ITERATIVE APPROACH

BY PETER BLAIR HENRY*

This paper proposes an iterative procedure for analyzing the development of money and capital markets as a means of accelerating economic growth. Money and capital markets may augment investment by decreasing the cost of capital, but they should not be treated as a panacea for stagnant investment activity; there are a number of variables other than the lending rate that affect investment. For given target rates of capital formation and growth. Policies should focus on creating a sanguine investment climate and establishing efficient domestic money and capital markets before allowing foreigners free access.

**Graduate student: Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02139. I thank the Eastern Caribbean Central Bank and the National Science Foundation for financial support. I give special thanks to Wayne Sandiford, Gene Leon and Wendell Samuel for extensive comments. Carlton Augustine, Nathaniel Samuel and seminar participants at the Central Bank of Barbados and the Eastern Caribbean Central Bank also provided useful input.*

TABLE OF CONTENTS

I.	INTRODUCTION AND OVERVIEW	3
II.	POTENTIAL BENEFITS OF ASSET MARKETS	5
IIA.	The Cost of Capital	5
IIB.	Portfolio Diversification and Income Stabilization	8
III.	ANALYTICAL/THEORETICAL FRAMEWORK	9
IIIA.	The Model	10
IV.	MACROECONOMIC PREREQUISITES	12
IVA.	Fiscal Stability	12
IVB.	Price Stability	14
IVC.	Domestic Financial Stability	15
V.	THE ORDER OF INTRODUCTION OF MONEY AND CAPITAL MARKETS	17
VA.	The Sequencing Literature	17
VB.	The Algorithm	19
VC.	Sequencing vs Iteration	21
VI.	ASSET MARKET OPENING: IMPLICATIONS AND RELEVANCE OF APPLYING ITERATION	23
VIA.	Institutions	24
VIB.	Regulation	24
VIC.	Policy Effectiveness	26
VID.	Income Distribution	27
VIE.	Credibility	28
VII.	INTERNATIONAL CAPITAL FLOWS	29
VIIA.	Asymmetric Investment in International Equity Markets	30
VIIIB.	Money Markets and Capital Flows	38
VIII.	CONCLUSION	42
	REFERENCES	45

I. Introduction and Overview

The debt crisis of the 1980's focused attention on developing countries and their sources, or lack thereof, of external finance. The 1990's has seen the advent of a new round of capital flows from the industrialized world to the less developed countries. However, the recent flow of capital has been of a much different composition than the 1970's spate of financing which preceded the subsequent crisis. Whereas the 70's saw a stream of loans from large commercial banks, the new round of financing has a much higher content of portfolio equity, bonds and foreign direct investment. As emerging markets continue to attract attention, developing countries are seeking to modernize their financial sectors in an effort to take advantage of the continuing demand, by investors in the developed world, for new and profitable sources of investment. Decisions on these matters will have far reaching implications for the development process.

Much of the debate on financial liberalization has used the sequencing literature (see Dornbusch 1983, Edwards 1984 and 1987, McKinnon 1991) as a basis for analysis. While the sequencing literature is an useful frame of reference and a logical starting point for developing an approach to money and capital market development in LDC's, if used as a basis for macro-financial policy it has potentially damaging implications for small developing economies open to world trade. Applying a sequential approach to the development of money and capital markets would lead the developing country policy-maker to first stabilize the domestic macroeconomy and then, on grounds of efficiency, open money and capital markets-immediately allowing foreign investors full access. While the first part of the prescription is wise, the latter is not likely to constitute an optimal development strategy.

This paper analyzes the macroeconomic implications of introducing money and capital markets in developing countries as a means of promoting increased investment and proposes an iterative decision-making procedure as an alternative to the sequencing approach. While capital and money markets may facilitate higher rates of investment by increasing overall savings, they

will not perform their desired function in the absence of sound macroeconomic policy. Furthermore, money and capital markets may promote investment by decreasing the cost of capital, but they should not be looked to as a panacea for stagnant investment. Great emphasis should be placed on sound macroeconomic fundamentals and other structural and institutional details that affect investment. For a given target rate of investment, policy options should seek to attain efficient domestic money and capital markets as a means of encouraging investment before allowing free access to foreign investors, because unstable international capital flows can undermine the development process.

Section II begins by presenting the general arguments for the benefits of having money and capital markets. In section IIIA we outline a model of a small open economy considering introducing money and capital markets as a means of increasing real investment. Section IV enumerates the macroeconomic prerequisites for the effective introduction of money and capital markets. Section V addresses the order in which these markets should be introduced and develops a general approach for analyzing money and capital market development. Section VI presents the practical implications of using the analytical framework introduced in section V. Section VII looks at the implications of money and capital market development for international capital flows. We make some concluding remarks in section VII. Implicit in all arguments will be the notion that the introduction of new institutions and policies, financial or otherwise, should be directed at fostering economic growth and development. Furthermore, income distribution is also an important goal. In particular, I take the stance that growth which results in the worsening of income distribution is undesirable on several grounds, the least of which not being that continued and expanding socioeconomic inequality may eventually undermine the entire development process by generating political instability and other externalities associated with increasing inequity.

II. Potential Benefits of Asset Markets

IIA. The Cost of Capital

The introduction of money and capital markets can help increase investment in two primary ways. First of all, by providing additional incentives to save and thus increasing liquidity in the financial system, introduction of money markets may lower lending rates. Secondly, equity markets may augment investment by providing economic agents with an alternative source of funding real capital formation. If one believes that Investment drives growth and one also believes that investment is responsive to the interest rate, then lowering lending rates is one means of promoting economic growth. Therefore, if the ultimate goal of economic policy is to achieve satisfactory growth and income distribution, the vital question the developing country policy-maker must ask when thinking about introducing capital and money markets is the following. Will development of capital and money markets increase the supply of capital and thus lead to a lower cost of capital? However, before analyzing the impact of asset market introduction on lending rates, we explore how more sophisticated financial markets may also stimulate real investment by providing more suitable sources of finance for firms and entrepreneurs than are available in a system dominated by commercial banks.

The liability structure of banks is short term so that their asset structure must be in reasonably close alignment. Demand deposits are short-term liabilities for banks and as such their asset portfolios contain relatively few long-term loans. (assuming prudent banking behavior) Consequently, commercial bank lending is best suited to consumers and cash-abundant firms. Banks are less able to provide longer-term financing that is often required by firms and entrepreneurs who are just breaking into an industry and not immediately in a position to meet payment obligations. The introduction of capital markets would allow such entities an opportunity to finance their start-up and operating activities by issuing long-term debt or selling equity. Presumably these instruments would be purchased by those investors with a greater tolerance for risk; in return for helping finance risky ventures, investors would be rewarded with the possibility of earning higher returns.

Introducing capital and money markets into a developing economy can also promote investment by lowering the cost of capital. If the supply of savings in the banking system is low relative to the demand for loans - by this I mean a situation where given reserve requirements, the demand for loans is such that banks are in danger of violating the requirement standards, with the introduction of equities markets, commercial banks will have to compete against the stock market for the savings in the economy. In order for bank deposits to remain an attractive asset, nominal interest rates will have to rise. As nominal interest rates rise, so does the present cost of consumption; saving will increase.

If agents in the economy are sufficiently risk-averse so that total bank deposits increase-savings increases but some of savings will now go toward stocks which are risky assets, the lending rate should fall. Taking the demand for loans as given, the equilibrium lending rate will fall, because at every given lending rate there will now be a greater quantity of loanable funds. In other words, the loan supply schedule will shift to the right, resulting in a lower equilibrium lending rate.

Even if total bank deposits don't increase, overall savings will unequivocally rise, and, since a higher level of savings can support a higher level of investment, investment can increase without a fall in the lending rate. The intuition is the following. With the opening of a stock market, the savings diverted from the domestic banking system are used to purchase primary issues by firms and entrepreneurs who subsequently use the funds to finance real investment activity.

Another channel by which lending rates may fall with the introduction of money and capital markets is through competition by banks with the stock market for borrowers. After the introduction of equities markets, entrepreneurs and firms will have additional options for funding their desired investment activity; they can get loans from commercial banks, issue equity or possibly debt if there is a market for commercial paper. In order to make loans an attractive financing option relative to the issuance of equity or debentures, banks may have to lower their lending rates.

Encouraging investment as a means of spurring economic growth requires a sound understanding of what drives investment activity. The fact that there are a number of variables other than the interest rate which affect investment, has crucial implications for the strategy of using capital and money markets as an engine of growth. Acting as though interest rates exclusively drive investment when there are a number of other variables involved may lead to egregious policy conclusions.

To the myopic policy-maker stagnant investment may be viewed as an ailment requiring only lower lending rates. Suppose he successfully lowers interest rates by opening domestic money and capital markets, but investment activity remains unsatisfactory, our policy-maker will think investment is weak because lending rates are still too high, while in actuality poor consumer confidence, a prohibitive tax regime, or credit rationing by banks may be the cause. Clearly, there are any number of institutional and macroeconomic factors other than the interest rate which could be slowing investment activity.

Nonetheless, our policy-maker concludes that lending rates are too high because there is an insufficient pool of savings in the economy. Therefore, he decides to internationalize money and capital markets while ignoring the possible structural obstacles to investment. Real investment activity may increase as a result of foreign capital inflows or, it may not, this will largely depend on the aforementioned institutional factors. Regardless of whether or not real investment activity grows, the economy is now increasingly exposed to the volatility of international capital flows. Admittedly, exposure to capital flows and the concomitant losses of policy autonomy are somewhat inevitable for any open economy, but the argument is not that small developing countries should pursue autarkic policies; the operative word is prudence.

While a small open economy must have a fairly liberalized capital account to facilitate trade, it is not clear that increasing the volume and variability of capital flows by opening up domestic asset markets to international investors is a first-best development strategy. In fact, in the case that the pool of savings in the domestic economy prior to opening markets internationally was actually sufficient to fund a satisfactory level of investment activity, one has unnecessarily reduced policy autonomy.

Before increasing the exposure of the domestic economy to the potentially destabilizing forces of international capital flows, one needs to be reasonably certain that there is potential real investment in the economy that is not happening because of insufficient savings. It may be the case that sufficient domestic funds exist, but the channels necessary for transferring them to deficit units are not in place. (see earlier comments about the asset-liability structure of commercial banks) Alternatively, when both the funds and the channels are in place but investment is still sluggish, further lowering lending rates will have only marginal effects on investment activity. This was more or less the scenario in the United States during the early 1990's, interest rates fell substantially but credit markets were largely unresponsive. There is no need to open up financial markets internationally in this case. What is needed is not lower interest rates, but a better understanding of the macroeconomic variables that are contributing to a weak investment climate.

II.B. Portfolio Diversification & Income Stabilization

In addition to reducing the cost of capital and providing alternative means of financing, the introduction of more sophisticated financial instruments is desirable because it allows the saver to diversify his asset portfolio. Rather than placing all of their money in a bank deposit, with money and capital markets investors have an increased array of instruments to meet particular financial needs. While bank deposits may provide a modest but consistent return, the individual may be willing to give up some security for the possibility of higher future returns. The more developed the market for equity, the greater the latitude for diversifying one's portfolio and reducing the impact of poor performance of any individual stock in a given year.

The use of portfolio diversification to stabilize income across different states of nature is one of the primary benefits of asset markets. Consider the following example of an individual who earns their living by cultivating bananas. Her income in a given year depends heavily on the size of the harvest and the world price of bananas. Inclement weather, poor aggregate demand conditions, or favorable aggregate supply conditions will all negatively affect the

planter's income. However, if the farmer invests some of her savings in an enterprise that tends to do well during those states of nature that impact upon her negatively, she will essentially have an insurance policy against downturns in banana income.

III. Analytical/Theoretical Framework

In this section of the paper we outline a model of a small developing economy considering introducing capital and money markets. It is argued that within the context of such an economy, the basic macroeconomic prerequisites for introduction of capital and money markets are fiscal soundness, price stability and a sound domestic financial system. It is illustrated that the introduction of money and capital markets in the absence of sound macroeconomic fundamentals leads to systemic instability in the macroeconomy. Having shown the importance of macroeconomic fundamentals, we consider the implications of introducing money and capital markets from two perspectives. First we review the sequencing approach and then I outline an alternative, iterative decision-making procedure. The two approaches are compared, and I argue that the iterative procedure is a more suitable approach for analyzing macro-financial policy in small developing economies.

IIIA. The Model

The economy exists for $t = 0, 1, \dots, T$ periods. The economy begins with an initial endowment of capital and labor K_0 and L_0 respectively. Output for a given period is determined by a production function that is homogeneous of degree one

$$Y_t = F(K_t, L_t) \quad (1)$$

A fraction

$$\delta_t = \delta_t(r(D_t), A_t) \quad (2)$$

of national income is saved each year. D_t is a vector of variables indexing the extent of financial deepening in the economy, A_t is a vector of variables indexing the available range of financial instruments and r is the interest rate on loans. Investment demand is given by

$$I_t = I_t(r(D_t), V_t) \quad (3)$$

where V_t is a vector of variables other than the interest rate which affect investment.

Capital accumulation can be funded through domestic savings, attracting foreign savings or both. The savings available for capital accumulation at time t is given by $S_t = S_t^h + S_t^f$. Using (1) and (2) we see that

$$S_t = \delta_t Y_t + S_t^f(r(D_t), A_t, V_t) \quad (4)$$

where the S_t^h are home savings and foreign savings inflows respectively.

The labor supply grows at a constant rate.

Given that national income is Y_0 at $t = 0$, the policy-maker's problem is to achieve optimal income level Y^* by time T using the available policy tools $P = \{A_t, V_t\}$.

We make the following assumptions:

1. The hypothetical country we are considering is a small economy; changes in its macroeconomic conditions have negligible spillover effects on the rest of the world.
2. Our country is open with respect to the trade of goods and services.
3. Our country has capital account restrictions and a fixed exchange rate.
4. Our country has no secondary markets for equity or money.
5. If domestic money and capital markets are introduced all capital restrictions remain unchanged and the exchange rate stays fixed.
6. If money and capital markets are opened externally, all capital restrictions are lifted and the exchange rate is allowed to float.

By a restricted capital account we mean that the government is able to exercise effective controls over the allocation and use of foreign exchange. That is, all foreign exchange sales and purchases must be cleared by the central bank, and purchases and sales for speculative purposes are not permitted. Furthermore, we make the heroic assumption that the central bank is able to police the use of these funds in such a way that no false invoicing or other deceptions take place. While there is ample evidence that capital controls have limited effectiveness, we make this assumption here only to isolate the effects of certain macroeconomic variables on the analysis. It is important to emphasize the paper is not arguing for a closed capital account. Any open economy maintaining ties with world goods markets must maintain some degree of capital account openness.

Assumption (3) is made in order to disaggregate those capital movements that inevitably take place because of a fully open current account, and those that will occur if domestic asset markets are opened to international investors. Stating that the capital account is closed in the first instance ensures that capital movements which occur while domestic asset markets are closed to foreigners are due to real transactions. Therefore, when markets are opened internationally, we can safely assume that any additional capital movements are a result of financial transactions. Relaxing the capital account assumption only makes the analysis more

complicated but does not change its primary thrust. Thus, in our model the financial options initially available to a given agent in the economy are bank deposits and one-time purchases of shares offered by firms. Since there is no secondary market, these shares are quite illiquid. We now outline the macroeconomic prerequisites for successful introduction of capital and money markets in this economy.

IV. Macroeconomic Prerequisites

IVA. Fiscal Stability

The continual inability of a government to maintain a stable fiscal position is generally due to one, or a combination, of two factors. A general lack of fiscal discipline - populist policies in pre-election years, corrupt use of funds or generally poor and inefficient planning is one cause of persistent deficits. Another possibility is deficits that are induced by exogenous shocks to the economy - inclement weather conditions that result in poor harvests and decreased tax revenue, terms of trade shocks and the like. In these instances, especially in developing countries where the effects of reductions in legitimate social spending can be particularly acute, governments may be reluctant to curb spending and therefore incur budget deficits.

In either case, the deficit problem is unlikely to be self-correcting. The introduction of money and capital markets in the face of fiscal imprudence can increase the likelihood of persistence of the deficit. Rather than finding ways of disciplining its spending to reduce the deficit, with the introduction of new financial instruments, the government may simply choose to finance the deficit by issuing public debt (i.e. bonds and T-bills). There is nothing inherently unsound about financing spending through the issuance of debt, assuming that the debt issue is sustainable in the sense that at some point in time the government reveals itself able to meet its payment obligations.

Consider now the following scenario. The government introduces money and capital markets in the face of a considerable deficit, and capitalizing on the initial euphoria surrounding the new development, the government puts together a campaign promoting the sale of debt instruments by promising fiscal reform, renewed prosperity etc. Given the initial level of investor excitement, the government is able to find takers for the entire amount of the debt. (For a convincing discussion on the prevalence of herd behavior and investment in government securities see Galbraith 1990).

If the government makes no fundamental change in its fiscal policy so that there is no visible demonstration to investors of the government's ability to meet its long-term payment obligations, as time unfolds, people will lose confidence in the government. Consequently, in order to get individuals to continue to purchase the debt, the government will have to offer a higher rate of return. As more time elapses and the government still has not redeemed its ways, it will have to offer even higher rates. Clearly, such a policy is unsustainable. With increased arrears, and an inability to finance through the issuance of debt, the government may be inclined to use the inflation tax as a means of deficit reduction, but seigniorage will tend to reduce real balances.

By assumption, once our small open economy internationalizes money and capital markets, it also completely liberalizes all capital controls. Therefore, if the money and capital markets introduced are international, then people will be able to escape the inflation tax by holding increasingly less domestic currency. As this occurs, in order to finance the deficit, the government will have to print money at an accelerating rate; this too is unsustainable since monetizing the debt will eventually lead to hyperinflation. If money and capital markets are domestic, then agents will not be able to flee the tax via currency substitution. In this case, individuals will try to maintain the value of their earnings by increasing purchases of durable and consumption goods; the introduction of money and capital markets will not increase saving.

IVB. Price Stability

Stability of the price level is an essential prerequisite for the introduction of money and capital markets. Since we have assumed that our small open economy has a liberalized domestic price system, we do not address in this section the need to remove distortions to the pricing mechanism prior to opening capital and money markets.

Defining price instability to be the situation where the amount by which domestic inflation exceeds world inflation is an increasing function of time, introducing money and capital markets in the face of price instability will be destabilizing to the macroeconomy. Given prices and the nominal exchange rate, suppose our country decides to introduce international money and capital markets in the face of domestic price instability. Since the domestic price level is increasing faster than the world price level, taking the nominal exchange rate as given, there will be secular appreciation of the real exchange rate. Without a policy change to bring domestic inflation in line with world inflation, there will be a tendency for the current account to deteriorate (Assuming here and henceforth that the Marshall-Lerner condition holds) and the traded goods sector will be hurt by the loss in competitiveness.

Rectifying price instability once international capital and money markets have been introduced will be problematic. An attempt to squeeze out inflation through a monetary contraction will push up interest rates and tend to make domestic money instruments such as time deposits more attractive to foreign investors. As the demand for domestic currency rises—foreign investors need domestic currency to buy the instruments, the nominal exchange rate will tend to appreciate, thus worsening the real exchange rate predicament. There will be a further loss in competitiveness and the current account position will worsen as well.

One might argue that as long as foreign capital is flowing in to finance the current account deficit there is no problem. But, while such an argument may hold in the short-run, we will see in section VII that this strategy is dynamically infeasible. The scenario just outlined is

not unlike what happened in the Southern Cone countries, particularly Chile, during their attempt at liberalization during the 1970's and early 1980's. (see Diaz-Alejandro 1985, The Economist 1993)

If instead of opening up internationally, we introduce domestic money and capital markets during a period of increasing inflation, the reforms will not foster the desired increase in investment activity. To see why this is so consider the following argument. Assume that the interest rate on bank deposits is indexed to inflation so that the real interest rate on bank deposits is constant over time. Then, as inflation increases, for firms to finance their activities through equity, the return on equity will also have to increase in a secular fashion. If the growth rate of inflation outpaces the growth rate of profits, the return required for investors to hold stocks may become prohibitively high, and issuing equity may no longer be a viable means of financing firm activity. Development of capital and money markets in this scenario will not facilitate increased investment. Clearly then, domestic price stability is a fundamental prerequisite for successful introduction of either international or domestic money and capital markets.

IVC. Domestic Financial Stability

In as much as sound macroeconomic fundamentals are desired within the domestic economy regardless of the extent of external openness, it is important that the domestic financial system function properly. The domestic financial system is like the central nervous system of the economy. While it is important that goods markets be undistorted so that individual agents can make decisions that allocate resources in an efficient manner, financial markets apportion those funds which will allow agents to act upon their economic decisions. A distortion in one sector of the goods market may or may not affect other sectors, but a malfunctioning financial system necessarily permeates the entire goods market. (See Stiglitz 1993)

Therefore, it is especially important that distortions not be present in the financial system and that investment decisions reflect the true cost of capital. Such reasoning might seem to imply that complete deregulation of the financial system is a desirable aim. This is not the case, however, as unbridled deregulation is potentially destabilizing. In the face of deregulation and the introduction of more sophisticated money market instruments, domestic banks may be tempted to raise interest rates on deposits to imprudent levels in an attempt to woo depositors away from their competitors. With a completely liberal capital account this may attract foreign funds. Excessive capital inflows could have deleterious effects on the real exchange rate and the financial sector. We discuss implications for the financial sector in the section of the paper that discusses the order of liberalization. (See Edwards 1993, World Bank 1993) We turn now to the effects of foreign capital surges on the real exchange rate.

Assuming interest rate differentials between domestic and foreign time deposits are sufficiently high so that given the expected rate of depreciation of the domestic currency, arbitrage opportunities exist for foreign investors, (these opportunities may persist since domestic and foreign assets are not perfect substitutes). Foreign funds will flow into the economy and there will be pressure on the nominal exchange rate to appreciate. This will, taking prices as given, result in a real exchange rate appreciation with the requisite implications for the current account balance and the traded goods sector.

The issues surrounding capital flows are addressed later in the paper, but briefly note here that if growth in the real sector is desired, an import surge financed by foreign capital inflows is probably not an optimal strategy. An argument can be made that the real appreciation could be used as an opportunity to increase imports of capital equipment needed for production in the traded goods sector, but we will say more about this in section VII.

V. The Order of Introduction of Money and Capital Markets

Once the macroeconomy is stabilized, a number of important decisions regarding the order of introduction of money and capital markets must be made. First of all, do we want to introduce capital and money markets at all? If it is decided that the development of money and capital markets is a desirable strategy, the policy-maker must still answer the following questions. Do we introduce money markets first or capital markets first? How many and what types of instruments should be made available? Given that the domestic economy was stable before introduction of new financial instruments, do we now need to change macroeconomic policy so that it is sound with respect to the new environment? Should the new instruments be available to domestic residents only or should they be available to the international investor?

In answering all of these questions it is essential to keep in mind that the ultimate aim of developing money and capital markets is to increase growth by augmenting real investment. The order in which money and capital markets are introduced will have implications for growth, income distribution, the possibility for maturity of the institutional and legal framework, and, in the case markets are opened internationally, the credibility of maintenance of an open capital account. Before looking at these issues in detail, it will be helpful to review what the sequencing literature has to say about the order of liberalization.

VA. The Sequencing Literature

The sequencing literature is concerned with the order in which a "repressed" economy should be liberalized. By a repressed economy we mean one in which domestic and external goods and financial markets are not allowed to operate freely. The sequencing literature says liberalization should proceed in the following order.

- I. First remove distortions in domestic goods and capital markets, attain fiscal order, and remove dependence on inflationary finance.
- II. After I has been accomplished, liberalize links with the rest of the world.
 - A. When liberalizing links with the rest of the world, first liberalize the current account; only liberalize the capital account in the last phase.

The key distinction between sectors in determining the order of sequencing is the basic assumption that goods markets clear slowly, while asset markets adjust quickly. Asset markets are more sensitive to future expectations, and new information that alters expectations is reflected in asset prices much faster than in the prices of goods and services. Opening the current account first allows policy makers to observe the reaction of markets and correct any errors. Opening the capital account does not allow a grace period- reactions to capital account opening will be quick and huge.

Opening the current account first is also desirable because it is easier and less costly to society to reverse wrong portfolio decisions than it is to do so in the case of real investment. One should remove distortions in domestic commodity and financial markets, then open up the trade account so that real investment decisions can be made in a distortion free environment. Therefore, once the capital account is opened, capital flow will be more consistent with long run patterns of real investment. (See Dornbusch 1983)

The sequencing literature provides valuable insight into some of the issues concerning liberalization and is thus a useful departure point for posing the theoretical implications of introducing capital and money markets in our small open economy model. However, as will soon be argued, there is a fundamental aspect of the sequential approach that is patently flawed.

An iterative procedure for analyzing the introduction of money and capital markets that will highlight the deficiency of sequencing as a procedure for analyzing the introduction of money and capital markets is now outlined.

VB. The Algorithm

Bearing in mind that the majority of all investment is financed by domestic saving, (See The Economist 1993) and that there are other factors besides the interest rate which drive investment, we now outline an algorithm for analyzing the development of money and capital markets. Once we identify the factors, which we will call investment variables, other than the interest rate which affect investment, we can then say for a given level of depth and maturity of the domestic financial system, prior to the introduction of capital and money markets, how does changing the investment variables change the level of investment in the economy. If one can induce a desirable level of investment without introducing more financial instruments, then one may want to do so. Although, for purposes of income redistribution which we will discuss later and stabilizing of income across various states of nature, which was looked at in section IIB., more domestic financial instruments may still be desirable.

If the desired level of investment can not be induced by manipulating the investment variables and it is believed that the interest rate affects investment, introducing more domestic financial instruments is a logical next step in trying to augment investment. As argued previously, increasing the range of the range of financial instruments will tend to lower lending rates and create alternative sources of investment financing. However, in the developing country setting, one needs to pay particular attention to the "structure" of the economy; historical and institutional rigidities may exist so that lending rates will not be competitively determined or, due to informational problems, firms and entrepreneurs may be reluctant to make use of the new financial instruments.

Once domestic money and capital markets have been introduced, if the desired level of investment is still not being achieved, given that a more extensive domestic financial system is now in place, changing the investment variables again may induce the desired level of investment activity. If it is determined that even with a more sophisticated domestic financial system, no amount of manipulation of the investment variables (given the policy tools available) will

induce the target level of investment, then one may conclude that given the endowment of the economy and the range of policies available to manipulate the investment variables, the desired level of investment is not attainable.

It is at this stage of the liberalization process that one may want to ask if opening up financial markets internationally will help achieve the target level of investment. If the answer is yes, the macroeconomic fundamentals are right, and the risks of exposing the economy to destabilizing capital flows have been addressed, (see section VII) then the policy-maker may want to open up markets internationally. Opening prior to that stage is premature and imprudent.

The iterative approach to opening markets can be summarized as follows. Investment demand is a function of the lending rate and a vector of investment variables. If the current rate of investment is sufficient to generate the desired growth rate then nothing else needs to be done for the time being. If the rate of investment is insufficient for generating the desired growth rate then proceed to the next step of the program; introduce measures to change the investment variables. If this measure is sufficient do nothing else at present. If it is not sufficient, develop domestic money and capital markets and see if investment responds as desired. If domestic capital and money markets are sufficient to achieve a desired level of investment then let the markets run and simply monitor and regulate as needed.

If domestic markets are not sufficient for generating a satisfactory level of investment then proceed to the next step of the program. Given that we now have a deeper financial system, changing the investment variables again may lift the economy onto the desired growth path. If changing the investment variables, given that we now have domestic money and capital markets, is sufficient for generating the desired level of investment activity, then there is no need to open up capital and money markets to the international market. However, if introduction of domestic capital and money markets along with other policy changes is still not sufficient to generate the desired rate of investment, then at this stage the policy-maker may consider opening domestic financial markets to the rest of the world.

Policy Conclusion 1 (PC1)

Suppose the developing country policy-maker wants to achieve a target rate of investment. She should first establish sound macroeconomic fundamentals and then introduce domestic money and capital markets as a means of increasing the rate of investment. Opening money and capital markets to the international market should only be considered as a policy option if the maximum investment rate attainable, given the domestic endowment, by manipulating the investment variables and introducing financial market reforms, falls short of the target level.

VC. Sequencing vs. Iteration

Taking a sequential approach to the subject of money and capital market development, one is implicitly led to the conclusion that external financial market liberalization is desirable. The sequencing literature maintains that it is desirable at some stage to have a fully open capital account but that capital account opening should take place in proper order, that is, after an appropriate sequence of previous reforms. In our model, opening domestic money and capital markets would mean that the capital account is open only for the purposes of real transactions while opening international money and capital markets would mean that the capital account is open for both real and financial transactions. Since we have already argued that domestic money and capital markets should be introduced only after the real and financial sectors of the economy have been stabilized, in the context of our model, a sequencing analysis would imply that money and capital markets should immediately be opened internationally.

The crucial flaw in the sequential logic is the failure to distinguish between "fundamental" and speculative capital account transactions. Fundamental capital transactions are those that take place in order to finance real activity such as the exchange of goods and services, and those financial transactions which are driven by alterations in expectations about the profitability of assets because of changes in monetary and fiscal policy, the state of technology and private real investment. By construction, all non-fundamental capital transactions are speculative.

Since fundamental capital flows will be driven by macroeconomic policy, completely liberalizing fundamental capital account transactions need not be a problem so long as domestic economic policy is sound. On the other hand, speculative activity is unpredictable, and if the capital account is fully open with regards to both fundamental and speculative financial transactions, excessive speculation in asset markets could result in large destabilizing capital flows.

The magnitude of capital flows relative to the size of the economy being the relevant factor, an inordinate amount of speculation is not needed for the resulting capital flows to have harmful effects on a small developing economy. It is now clear why the model assumes that the capital account remains closed if money and capital market development is domestic only. There is a need to distinguish between capital account transactions that are fundamental and capital transactions that are speculative in nature. Although the model does not distinguish between fundamental and speculative domestic financial transactions, this is a separate issue and, as will be argued later in the paper, financial speculation is not as vexing a problem if the resulting capital gains remain in the domestic economy.

The argument is not that small developing countries should have closed capital accounts, but because behavior in financial markets tends to be more speculative than fundamental, it may be best to limit such behavior by keeping markets closed to international investors. The primary purpose of introducing a stock market in developing countries should be to enhance real investment activity by lowering lending rates and providing firms and entrepreneurs with alternative sources of financing. While some speculation is inevitable, the volume of speculative activity will only increase if markets are opened internationally. If caution is not employed, stock markets in small developing countries could easily become financial playgrounds for international speculators.

Speculators do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise becomes the bubble on a whirlpool of speculation (Keynes 1936). The sequencing approach says because external financial market liberalization can increase volatility

in the real economy it should be done last; the iterative procedure says external financial liberalization may or may not be desirable for that very reason. This lacuna in the sequencing logic is the critical departure point between applying a sequential approach to the analysis of money and capital market development and using the iterative method. Having argued on theoretical grounds that the iterative framework is more appropriate for analyzing the macroeconomic implications of introducing money and capital markets than is a sequencing approach, the paper now articulates the implications and relevance of the iterative procedure.

VI. Asset Market Opening: Implications and Relevance of Applying Iteration

Money and capital markets should be opened to domestic residents before they are opened to foreigners. Initially limiting access to domestic residents

1. Allows time for the development and maturity of the institutional and legal framework of the markets.
2. Allows time for policy-makers to develop an appropriate regulatory system and observe what changes need to be made.
3. Allows you to observe how the introduction of markets is affecting your economy in a more controlled environment.
4. Gives you a chance to allow your populus to adjust to the use of new instruments and have first opportunity at purchasing them. This has ramifications for income distribution.
5. Gives the market time to "mature" under domestic ownership thereby increasing the credibility of maintaining an open capital account if and when foreign investors are allowed access to the market.

VIA. Institutions

The introduction of more complex monetary instruments and, in particular, the introduction of equity and bond markets raises important legal and institutional questions. Stocks are attractive investments, among other reasons, because of their liquidity. In order for people to entrust their money to an equity market they must be able to recoup their capital in a quick and efficient manner upon sale. Payment arrangements such as clearinghouses need to be organized and rules of ownership and exchange must be established; people will not participate in the new markets if rules of ownership and exchange are not well-defined public information.

Presumably, the task of developing an adequate legal and institutional framework would be considerably less complicated in a domestic context since the flow of funds would be smaller and all transactions would be between domestic citizens. With the introduction of foreign ownership and an increased volume of trading, one needs to make sure that mechanisms of exchange are already operating smoothly and efficiently. Also, with foreign residents in the market there will be an additional set of legal questions regarding ownership transfer, that of exchange between foreigners and between domestic residents and foreigners.

VIB. Regulation

A related question is that of regulation. The acquisition and processing of information on investment projects is a fundamental role of capital markets. When making assessments about whether or not to invest in a particular firm, investors would like to seek out information until the marginal cost of acquiring information is equal to the marginal benefit of doing so. However, information is a public good and therefore financial markets will tend to produce less of it than is socially desirable. Knowing the difficulty of monitoring, financial institutions will tend to act less prudently than in the perfect information setting.

Aware of this moral hazard problem, the public will tend to entrust a smaller volume of resources to financial institutions than if information were perfect. If the purpose of introducing money and capital markets is to increase the flow of savings to the financial system then there is a role for government in regulating financial markets and making sure that information about companies is revealed in a timely and forthright fashion (See Stiglitz 1993). The rub lies in designing regulation that maximizes information revelation and minimizes imprudent behavior, without distorting financial markets' ability to identify entrepreneurs that have the greatest potential to innovate and increase productivity and growth.

Once again, development of the appropriate regulatory framework will be more easily accomplished if markets are initially opened up to domestic residents only. The aforementioned difficulties surrounding regulation only become more complicated when an international component is added. If the banking system is not properly regulated, banks may raise deposit rates to imprudent levels. (See Diaz-Alejandro 1985, Edwards 1993)

As rates on time deposits rise, the rates charged on lending must also rise to maintain banks' profitability. As interest rates on loans increase, borrowers with low-risk, low-return projects will be forced out of the market. Thus banks will tend to be left with high risk borrowers. These borrowers will tend to have higher default rates and banks will be tempted to raise rates even higher in an effort to make up for the losses on bad loans. (as long as there is explicit or implicit deposit insurance) This familiar adverse selection/moral hazard story (See Stiglitz and Weiss 1981) could easily threaten the stability of the entire financial system. One has to look no further than the savings and loan crisis in the U.S. to realize that this is potentially a very costly problem. This was also a major source of financial instability in Chile during their liberalization experience in the late 1970's and early 1980's. (See Diaz-Alejandro 1985)

The problem of moral hazard/adverse selection in banking does not come about because of the introduction of money and capital markets. The argument here is that opening up international money markets without proper regulation of the domestic financial system can

exacerbate the moral hazard/adverse selection problem. It is difficult to design a proper regulatory framework when policy instruments are not hamstrung by international linkages. Attempting to impose a suitable regulatory framework after yielding some policy autonomy may prove intractable.

The position is not that domestic money markets should never be opened to international investors, as foreign depositors can be an important source of savings for deficit units in the economy. The point is that stabilizing the domestic financial system before allowing access to foreigners is of crucial importance, because exposing the system to international capital flows will add further complexities to the problem of financial regulation. It is better to get an idea of what the issues and possible complications surrounding regulation are when there is a small flow of funds from more easily identifiable sources, institute an appropriate regulatory framework, and then think about how monitoring financial transactions in an international context is going to alter your regulatory requirements.

VIC. Policy Effectiveness

Another advantage of opening capital and money markets to domestic residents before allowing foreigners access, is that policy-makers get a chance to see how the introduction of these markets is affecting the real economy in a controlled setting. With a limited number of investors in the domestic economy, it may be fairly easy to track exactly where the resources are coming from. Knowing the source of the funds may be of some help in assessing whether the funds are being driven by speculative or real investment opportunities. This assertion is discussed in section VII. While some amount of speculative investment is inevitable, the goal of capital and money markets is to spur real investment. The ability to assess whether or not financial markets are achieving this aim is a desirable objective that is made more attainable by first opening markets to domestic residents. Initially limiting markets to domestic residents makes it easier to assess whether or not money and capital markets are having the desired effect.

The crucial point here is the following. It is much easier to efficiently mobilize and allocate the capital which is already in the domestic economy and then, if it is insufficient, augment it by looking to the international macroeconomy than it is to invite an insurge of foreign capital, realize that there's too much in the system and try to get it to leave. The policy measures you may have to take to rid yourself of the excess capital may be extremely costly in terms of credibility as well as their direct effect on the macroeconomy. Or, if you decide to live with the capital, the effects of having too much may also be harmful. We will talk more in section VII of the paper about what to do in the wake of capital insurges.

VID. Income Distribution

In developing countries, one of the goals of introducing money and capital markets should be improved income distribution. By offering shares of companies for sale on the stock market it is possible to increase the breadth of ownership of the means of production. It is in this sense that money and capital markets can improve income distribution. However, income distribution will only be improved if the poorer strata of society actively participate in the acquisition of financial assets. Although they may lack the resources to do substantial investing on an individual basis, by pooling funds via such institutions as credit unions and unit trusts, the poor may be able to increase their share of ownership.

Such an argument requires, of course, that the poor are aware of these investment opportunities. In other words, there is a need for extensive educational programs that develop individuals' financial literacy. People will not readily divert money from the safety of bank deposits to some unknown entity, regardless of the opportunities for higher returns, if they are uncomfortable with the newly introduced financial markets. People are by nature uncomfortable with unknown entities and particularly so where it concerns their finances. One way to overcome this discomfort is through education, and it is also necessary to educate people to reduce the possibility and incidence of financial fraud.

Given that the lower socioeconomic strata of society also tends to be the least educated, the urgency and the magnitude of such an educational effort should not be taken lightly, all the more reason for limiting ownership of financial assets to domestic residents at first. The educational process will take time; if markets are open to foreigners as well as domestic residents from the outset, then it is quite likely that assets will be taken up by foreigners and wealthy domestic investors, leaving little opportunity for the less well endowed. Such an outcome, while perhaps Pareto optimal in a static setting does not achieve the desired redistributive goals and, is in fact, likely to further skew income distribution; one of the fundamental tenets of this paper is that vast inequality is undesirable in a static setting and diverging inequity is dynamically unsustainable.

VIE. Credibility

In undertaking any program of economic reform, and the opening of capital and money markets certainly falls under this rubric, credibility is essential. Even if our iterative analysis indicates that money and capital markets ought to be introduced, these reforms will only have their desired effect if investors have faith in asset markets. Secondary markets for government bonds are null and void if nobody is willing to hold government debt, and equity markets will be of no use to firms if the institutional and legal framework does not protect the investor; investors will not place their hard-earned money in the stock market if they feel the company's managers will simply abscond with the funds and there is no avenue for legal recourse.

Although there is little by way of a science of market psychology, one aspect is clear; financial markets do poorly in unstable environments. Once governments pick a course of action they would do well to stay with it, constant policy shifts introduce unwanted volatility. (unwanted from a macroeconomist's perspective - harmful to the real investment environment. It may be desirable for the speculator). The consequences of ephemeral policy-making will as a rule tend to be more severe the greater the international linkages via the asset market. Therefore, it is best to settle as many institutional details as possible before opening asset markets to international investors. We now turn to the topic of international capital flows.

VII. International Capital Flows

In this section of the paper we explore how speculative international capital flows can destabilize the domestic economy. This topic is analyzed in two contexts, the introduction of an international stock market and the opening of money markets to foreign investors. By extending the simple open economy model developed earlier, I illustrate how allowing international investors access to the domestic stock market can actually reduce the overall level of savings in the economy. Following this analysis is a discussion of the possibility of large and unsustainable capital inflows due to the introduction of international money markets.

As regards the market for equities, particular emphasis is placed on the distinction between speculative capital flows, and capital flows that are aimed at reaping the long-term benefits of investing in the domestic economy. It will emerge from the analysis that the potential for depletion of domestic savings by international investors depends crucially on asymmetric opportunities for speculation and the nature of the capital flows. This conclusion is closely linked with the need for macroeconomic stability. In general, the more unstable is the macroeconomy, the more likely are capital flows to be speculative in nature and thus the greater the potential pitfalls for the domestic economy if money and capital markets are opened up internationally in the face of macroeconomic instability.

The economic rationale for the internationalization of money and capital markets is simply a cross-border generalization of the argument for domestic money and capital markets. Allowing capital to flow unrestricted from country to country allows investors to send funds to areas where the rates of return are highest. In its simplest form the argument can be presented as follows. For each country in the world, assume an aggregate production function $F(K,L)$ that is homogeneous of degree one. Let the world interest rate be r^* . Taking the state of technology as given, the efficient use of capital in the production process is characterized by the use of a quantity of capital such that the marginal product of capital evaluated at that level of capital and labor usage is equal to r^* .

Assuming that labor is immobile between countries, (and this is a realistic assumption if one thinks of labor as being immobile relative to capital; in today's highly automated world capital can be transferred far more quickly than labor) if the marginal product of capital evaluated at the current level of capital and labor employed is less than r^* , capital will tend to flow out of that country, and if the marginal product of capital is greater than r^* capital will tend to flow in. Given that their level of capital employment is in general quite low relative to the rest of the world, opening their financial markets internationally will cause capital to flow into developing countries.

This line of analysis may be correct when international capital movements are generated by long-term investment opportunities, but the fact that the volume of international capital flows regularly outpaces the volume of international trade is evidence to the contrary. (See Akyuz 1990) It is not clear that international capital flows are in response to macroeconomic fundamentals. If capital flows are speculative in nature then ascertaining their stability could prove to be quite difficult.

Speculation is by definition volatile and unpredictable; it is not always clear what drives speculative behavior and in what direction it will be driven. It may be unclear as to why capital flows in and why it flows out if it is not driven by economic fundamentals. In this case it may be difficult and unadvisable to center long-term development strategies around investment funded by foreign capital.

VIIA. Asymmetric Investment in International Equity Markets

We now recall the small open economy model from section III and use it to analyze the potential pitfalls of opening equity markets to the international investor. We employ a partial equilibrium analysis to illustrate the main points. Imagine that the economy consists of three classes- capitalists, rentiers and workers.

There is one firm that is owned entirely by the capitalist which produces both traded and non-traded goods through the use of domestic labor and capital equipment imported from abroad. The production process is defined by a standard Cobb-Douglas production function $F(K,L)$.

The rentier owns land which the capitalist rents so that he can operate his factory. The rentier also owns and operates a commercial bank which the capitalist uses to deposit his profits and borrow money to finance the purchase of new machinery from abroad.

The workers in the economy work for the capitalist who pays them a wage. They use part of their wage income for consumption and whatever they save, they deposit with the rentier. A government exists as in the previous model for the purpose of introducing policy changes, but in the present analysis, we assume the government does not tax, save, invest or consume.

Suppose the government wants to promote investment and attempts to do so by establishing a primary and secondary domestic market for shares of the capitalist's firm. The government believes that the increased avenues for financing will encourage the firm to build up a greater capital stock. Before the introduction of capital markets the capitalist had to finance all his investment activity by going to the rentier and getting loans. Now that he can sell equity in his firm, he has another financing option; the firm may now finance its activity by issuing shares on the primary market.

Let total domestic saving prior to introduction of the equity market be \$150. After the introduction of the equity market, the rentier reduces his present consumption. Given the opportunity to own a portion of the means of production and lay claim to a fraction of the firm's future earnings, the rentier is willing to save an additional \$100 out of his rental income. We assume here that the rentier continues to place the same amount of his rental income in his bank deposit. (i.e. the money he will use to purchase shares of the firm will not come from his bank deposit; he simply consumes less)

Initially, the workers do not reduce their consumption. During the first period of analysis the workers are unwilling to invest in the equity market because they are leery about using a fraction of their wages to directly help the capitalist finance his investment. They may be wary about giving their money to a new and unfamiliar source. Thus even if equity investment has an extremely high expected rate of return relative to commercial bank deposits, in period one, the workers do not buy any shares.

Suppose the capitalist offers ten shares of his company for sale on the primary market and that for a price of \$10 per share the rentier is willing to buy all ten shares of stock. The price the rentier is willing to pay is based upon her expectation about both the future price of the company's stock and the value of its dividend stream, given that the company is going to use the \$100 primary issue to buy a new piece of machinery. We may summarize the rentier's expectations as follows. The rentier believes that in time the workers will follow her lead and reduce their consumption in order to purchase equity in a later period; once they understand the potential hazards and benefits of purchasing the firm's stock, the workers will want to enter the secondary market.

Given that there is a fixed amount of stock, (we assume that the firm issues the stock in period one, buys the machinery in period 2, and implements the use of the machinery in the production process in period three so that there is no need to issue more stock in period two or three) there will be excess demand for the shares at the time the workers decide they want to purchase equity. Thus, the price of equity will be bid up and the rentier will realize a capital gain on her investment. Furthermore, with an increase in the capital stock, the firm's output will rise and its profitability will increase. (assuming that for a given interest rate the firm's profit function is increasing in capital) Higher profits may induce the firm to pay out greater dividends. The combination of expected future price and dividend increases is what convinces the rentier to purchase all of the primary issue.

There was no need for the government to open up the market to international investors, because the firm's initial issue was fully subscribed. If the firm had been unable to fill the issue

because of insufficient domestic demand then a case might be made that foreign investors are needed to help fund real domestic investment. However, one can imagine a scenario where the government gives foreigners access to the market because of political pressure from abroad or cajoling by international financial institutions, or, the government might believe that demand for domestic stocks by international investors will give their developing economy a much needed boost. While it is true that a buoyant stockmarket can be propped up still further by an inflow of foreign capital and this may boost the economy in the short run, we will see, by way of a simple numerical example, that this may not constitute a sustainable development strategy.

If upon opening the stock market internationally in period two, the total demand by foreign investors is for five shares, since there are only ten shares available, at the current price, there will be excess demand for the stock. The rentier will require a higher price than \$10 a share to relinquish 5 shares of her stock. If the foreign investor bids up the price to \$15 per share, the rentier subsequently sells him five shares and then places the \$75 into her bank account, the domestic economy has attracted \$75 of foreign savings. Thus, as a result of capital market introduction, domestic savings has increased to \$175- the \$100 that was initially spent by the rentier on the primary offering plus the \$75 spent on shares by the foreigner.

The problem with this scenario is that with the opening of an international equity market there is no guarantee that the capital which flows into the country will stay. Thus the \$75 inflow may be available to fund investment ex-ante, but it may disappear ex-post, because the foreign capital is free to leave at any time. In fact, speculation may do more than just withdraw the quantity of money which came into the country, it may actually reduce domestic savings.

Suppose that in period three workers are aware of the occurrences in the equity market and that they get over their mistrust of the system so that they now demand to hold shares of the company. Assuming that there is no new issue, so that when workers demand to hold shares of the company there is excess demand, the price of equity must rise. Suppose demand is sufficient to boost the price of equity to \$40 per share and that at this price workers demand a total of 5 shares. The foreign investor is willing to sell five shares, and the rentier continues

to hold her five shares. The foreign investor receives \$200 of revenue which we assume he withdraws from the economy and goes home. Thus the foreign investor effectively induces \$200 worth of domestic dissaving that more than offsets the initial \$175 increase in savings brought about by introducing an equity market. The net result of introducing an international equity market has been to draw down domestic savings by \$25. Although some of the dissaving induced by the speculator will be tempered by the increase in profits and wages so that the overall effect on domestic savings may be ambiguous, the potential danger to the economy is clear.

Although the firm is able to carry out its initial investment plan since the original \$100 of savings from the rentier went toward this end, there may be less savings in the economy than there was at the outset to help fund future real investment. Looking only for speculative gains, the foreign investor pulled his money out as soon as there was the possibility of a capital gain, the result is a possible net outflow of savings. While the capital gain need not be so large that the outflow of capital to foreign speculators completely erodes any gain in savings due to the introduction of capital and money markets, any capital gain on the part of foreigners that is completely withdrawn will deplete domestic savings. However, because the firm's profits and the workers' wages have risen, residents' savings will increase so that in general it may be ambiguous as to whether the internationalization of markets has resulted in an overall higher or lower level of domestic savings.

It is important to realize that the potential depletion of domestic savings by foreign investors is not limited to speculation in the secondary market for stocks. A common argument for opening equity markets to international investors is that developing markets are thin- there is not sufficient domestic demand for a stock market to be a viable means for companies to finance their investment activities. If markets were opened internationally, this would increase the demand.

While this may be true, one can imagine a slight alteration in the previous scenario where the market is open to foreign investors from the outset and initially the only demand for equity

is from the foreign investor. In this case the entire purchase of new machinery by the firm would be financed by the foreign investor. If at some future date domestic residents desire to hold the stock and bid up the price so that foreign investors sell all ten shares to domestic residents, then if the foreigners withdraw the capital gains effective domestic dissaving will again have been induced.

The initial inflow of foreign capital will have successfully financed the firm's activity, but the subsequent capital outflow reduces the amount of potential investment ex-post. The question of sustainable development inevitably comes to mind. What is desired in developing countries is not simply a one-time burst in investment and growth. The aim of policy-makers is a higher but stable path of investment and growth. If international capital flows place the economy on a higher investment path today, but tomorrow render it on a lower path than it was on to begin with, then financing growth with foreign capital may not be optimal. It is even less clear that relying on speculative capital flows as a major source of investment funding is a desirable strategy when one considers the inherent uncertainty in economic decision-making. Given that there is already uncertainty in economic decision-making, one may not want to introduce the added uncertainty of international capital flows - especially if international capital is not really needed to finance investment.

The two implicit assumptions that drive this story are the asymmetry of investment flows, the fact that capital gains made by foreign speculators in the home economy are not tempered by capital gains made by domestic speculators abroad, and the speculative nature of the foreign capital inflow. First we address the asymmetry of the financial investment and follow it with a discussion of speculative capital flows.

Whenever foreign investors withdraw their original investment funds and capital gains, there is no reciprocal inflow to buffer the effects of foreign profit-taking in the domestic market. There is a unilateral movement of capital away from the home economy. As long as there is asymmetry in the holdings of equity, the possibility of massive outflows exists. The likelihood of such an asymmetry existing is high in the developing country context. Given that we are

talking about a small LDC, the potential pool of resources for investment in foreign equities markets will surely be smaller than the potential pool of foreign resources for investment in the domestic equities market. Furthermore, there are institutional rigidities- a general lack of awareness as to how equity markets function and thus a reluctance to invest in them, high information costs and limited funds, that would make it difficult to invest abroad.

In the scenario we sketched, the decision by the foreign investor to exit the domestic equity market was not motivated by a change in expectations concerning the company's future profitability. The decision to exit was merely speculative; the investor was not interested in the prospects for healthy long-term returns. He merely capitalized on the euphoric investment climate and got out, drawing down domestic savings in the process. The lesson to be learned from this story is not that development strategies should avoid foreign capital entirely. The emphasis here is on caution and prudence. If the investor had held onto his domestic stocks or deposited his money in a domestic bank, then the funds would have been available as a future source of investment funding.

Similar reasoning applies in the case where the foreign investor is the only purchaser of primary equity and then sells some or all of his shares in the secondary market. If the investor repatriates his earnings with domestic financial institutions then the economy has in fact benefitted two-fold. The foreign-investor has not only helped finance the firm's investment outlay by purchasing the primary issue and created interest in the equities market, but by repatriating his capital gains, the foreign investor is also helping fund future investment.

The crucial point emerging from the analysis is that the stability of foreign equity investment is crucial. If foreign investors will simply engage in "Short-term financial round-trip excursions" (Tobin 1978) then it may be sensible to make stock markets available to domestic residents only. On the other hand, if it can be ascertained that investors are coming for long-term earnings considerations, then foreign capital may be a valuable source of investment funding. Of course, the complication lies in the fact that foreign equity investment does not come with a label marked "real" or "speculative." Therefore, in practice it may be quite difficult to surmise the nature of foreign interest in the domestic stock market.

There are some steps that can be taken, however, to both assess the nature of potential capital flows and increase the probability of them being stable. One possibility is looking at foreign interest in primary issues versus interest in the secondary market. Given that primary issues convey information about a company's planned future activities, current earnings, and projected future profitability, interest in purchasing shares on the primary market may convey a genuine interest in the long-term prospects of the company. This is particularly true in the case of introducing a stockmarket since potential buyers will have no means of determining the market's assessment of the firm.

Normally, prices contain all relevant information about the market's assessment of a firm's worth, but if the stockmarket is just opening there will be no prices available. Purchasing primary shares from a firm may be based solely on fundamentals, that is, the investors belief about the firm's prospects for future growth and profitability. In the case where a firm already has shares that are trading on the secondary market, but is now issuing new shares on the primary market, then a potential buyer's assessment will be both speculative (i.e. based on the market's assessment of the firm) and real. (i.e. based on the firm's future production plans, projected earnings etc.)

Since secondary market purchases tend to reflect both individuals' assessment of the psychology of the market, which might be more accurately (or appropriately) called speculation, and fundamentals, exclusive foreign interest in secondary market purchases may augur of potentially unstable capital flows. Seen in this context, the amount of foreign interest in primary shares relative to interest in secondary shares might serve as a litmus test of the real versus speculative nature of potential capital flows.

While it is difficult to determine whether capital flows are real or speculative in nature, it is fairly clear that unsound macroeconomic policy will increase the amount and volatility of both types. In the first instance, unsound policies will increase the volatility of real flows because policies which undermine the fundamentals of the economy such as price stability, fiscal soundness and domestic financial stability will as a rule change expectations about the future

profitability of firms. In the event of imprudent macroeconomic policy, investments that were previously promising may no longer be feasible and capital that came for long-term purposes may leave because the real investment opportunities that were previously present have been eroded. Furthermore, macroeconomic instability opens up a host of opportunities for speculators.

VII B. Money Markets and Capital Flows

Earlier, the paper discussed how the introduction of international money markets could lead to destabilizing capital flows. The primary concern was that unbridled competition in the domestic financial sector could lead to unrealistically high rates of return on certificates of deposit and other short term monetary instruments. (see Edwards 1993) Wide divergences between domestic and international interest rates may in turn lead to insurges of foreign capital and an incipient appreciation of the nominal exchange rate. It was argued that this will tend to worsen the current account and dampen production in the traded goods sector, but there is an additional problem.

Opening up domestic money markets to foreigners may lower the cost of capital by increasing the pool of savings in the domestic banking system, but for reasons outlined earlier, investment may not be particularly responsive to the lending rate. In the case that investment is not responsive to the interest rate, there will not be a demand (in terms of loan demand) for the new funds and banks will have to seek other avenues of earning a return on their liabilities.

The higher are interest rates on money market funds, the more risky ventures banks will have to take to match their liabilities. In section VIB it was illustrated how such a scenario could threaten the stability of the financial system. There are two critical issues here. First of all, before opening up money markets internationally, the developing country policy-maker needs to ascertain that a primary cause of stagnant investment is high lending rates. Secondly, before opening up, policy-makers need to determine whether or not attracting foreign funds is likely

to lower lending rates. This calls for studies of the degree of competitiveness of the domestic banking system.

If financial borrowing costs are not likely to fall, due to imperfections in the market, then the domestic financial system needs to be reformed before opening it up. Furthermore, if the domestic financial system is such that rates are not likely to fall in the advent of a flow of foreign funds, (i.e. it is highly oligopolistic) then it may be that prohibitively high capital costs are not due to insufficient savings but rather to non-competitive behavior on the part of banks.

If it is determined that investment in the economy is responsive to interest rates and the domestic banking system is reformed so that lending rates are competitively determined then, in the face of stagnant investment, it may be decided that money markets need to be opened to international investors. The flow of funds from abroad would increase liquidity within the system and thereby help decrease the interest rate on loans. Of course, in seeking increased liquidity as a means of lowering the cost of capital we are implicitly assuming here that financial repression is not a viable option. Otherwise, one could simply reduce lending rates by edict. Although using mild financial repression as a means of increasing investment has been successful in some selected Asian countries (see World Bank 1993) we do not consider it as a policy option here.

In the event that money markets are opened internationally, proper regulation of the domestic banking system will become vitally important. Imprudently high rates will generate massive and unsustainable capital inflows as investors try to capitalize on arbitrage opportunities. This was largely the Southern Cone countries' experience during the mid and late 1970's. The unsustainability of capital flows that are due to speculative behavior in domestic money markets is due to both moral hazard/adverse selection problems and exchange rate difficulties. A previous section of the paper outlined why the moral hazard problem in banking is complicated by the presence of international capital flows. The focus here is on exchange rate difficulties.

If interest rate differentials between domestic and foreign money instruments are sufficiently large, the economy may attract a large inflow of foreign funds. Taking the foreign and domestic price level as fixed for the moment, this spate of capital will precipitate an appreciation in the country's real exchange rate. What should a government do in the face of such capital inflows? One possibility is to use both the inflow of funds and the favorable exchange rate position to finance investment in the traded goods sector. If capital goods are needed to enhance the production of traded goods, as is likely to be the case in many LDC's, then the favorable exchange rate position will make the purchase of capital goods from the developed world relatively less expensive. The climate could be quite favorable for capital investment in the traded goods sector. But, as always, there are a couple of caveats. The exchange rate will not go on appreciating forever and there is no guarantee that borrowers will use the newly available funds and favorable exchange rate position to invest.

Consider the following informal argument for why investment can not forever be funded in this manner. Presumably, capitalists in the traded goods sector increase investment in capital goods so that they can boost production. A desire to increase production on the part of suppliers requires an expectation of the ability to sell the additional output at some point in the future. (even inventory is accumulated with the expectation that it will one day be sold). As these capitalists deal in traded goods, a major source of the demand for their goods is the foreign market, and an appreciating real exchange rate will tend to reduce their ability to sell traded goods. Capitalists will only invest heavily in future production if they expect that at some point the exchange rate will depreciate thus increasing the quantity demanded of their traded goods.

Thus, either the exchange rate is expected to appreciate continuously, in which case entrepreneurs will not invest, or, capitalists in the traded goods sector import machinery to augment production of future output which they expect they will be able to sell when the exchange rate begins to depreciate. These outcomes are mutually exclusive and the probability of the latter is much higher than that of the first. When a large enough quantity of people expect that a depreciation will take place, the currency will in fact depreciate. Depositors will withdraw their money from domestic banks, domestic savings will fall and new means of financing investment will have to be found.

Besides the fact that investment in the traded goods sector can not be continuously funded by capital flows generated by speculation on interest rate differentials and exchange rate movements, there is the following additional problem. Economic actors may not use the favorable liquidity and exchange rate position to invest in the traded goods sector. An equally strong argument can be made that individuals will use the opportunity to increase imports.

If instead of using the flood of foreign capital to invest in productive activity, agents simply increase consumption, the current account will deteriorate. While there might be a positive short run effect on aggregate demand for non-tradables, which could stimulate investment in the non-traded goods sector, a surge in consumption financed by foreign capital inflows will not in general enhance domestic economic growth. The foreign-financed consumption boom can not last forever.

Banks will have to make interest payments on their newly acquired deposits which means that borrowers will have to repay their loans. Repayment of loans requires that borrowers either find some source of income that allows them to meet payments on their loans, which may not happen if the consumption boom does not spur any new productive activity, or, they will require new loans to meet their debt obligations. It is not possible to continually satisfy arrears by incurring new debt; this Ponzi-type scheme is unsustainable. In the present context, depositors will come to realize that banks are making questionable loans and will demand their money. As deposits dwindle, so will the source of new loans. Borrowers will begin to default and the stability of the domestic financial system will be threatened.

VIII. Conclusion

Increased capital formation is fundamental to generating higher growth rates, but increased investment can not take place without increased savings. If the rate of investment is to increase, then either domestic savings must increase or foreign savings must be attracted. The evidence seems to indicate that financial deepening is to some extent an engine of economic growth so that increasing the level of financial intermediation may be an important first step in increasing the savings rate of developing countries. However, a legitimate concern of developing country policy-makers is that income may simply not be high enough to accommodate higher saving rates or, even with increased saving, income may not be sufficient to generate a substantial level of savings.

Thus, the development of money and capital markets can in theory play a significant role in the development process. In addition to its appeal as a means of increasing domestic saving, money and capital markets are ostensibly promising as a potential means of attracting foreign capital. Using foreign portfolio funds to finance investment is a more appealing way of augmenting domestic savings than relying on loans from foreign banks. In many ways, portfolio financing of development is much more tractable since payments to equity holders will be correlated with economic performance.

However, much care needs to be taken in using finance as a leading variable in development. Looking to money and capital markets as a potential engine of growth requires careful analysis and prudent policy. Equities markets require particularly close attention. Firms must use stock markets as a significant source of financing if they are to play a major role in promoting development. If the issuing of primary shares is a relatively infrequent phenomenon and the market is mainly used as a secondary instrument, while this may serve the risk-return needs of agents in the economy, it is not clear that a stock market in this case will be particularly helpful in promoting growth. For example, a great deal of financial deepening took place in the so-called high performing Asian economies between 1970 and 1990, but with the

exception of Korea and Taiwan, China, stock markets played a relatively small role in the mobilization of capital. (World Bank 1993) Therefore, in looking to use equities markets as a means of increasing investment, continued attention needs to be focused on real versus purely financial activity. Furthermore, foreign portfolio investment may be unstable and therefore an unreliable source of investment financing.

All of this discussion presupposes that there is incentive for firms and entrepreneurs to engage in capital formation. Increasing domestic savings and or attracting foreign savings will be of little use in augmenting growth if the funds are not used to finance investment. If regulations are obstructive, tax regimes oppressive, or political climates volatile, then there can be little hope that increased saving will translate into higher investment rates. In an inimical environment investment will remain stagnant, the funds, which are available for increased capital formation ex-ante, will simply be allocated in the form of consumer loans ex-post. If bank liabilities increase in an environment where firms and entrepreneurs are reluctant to invest, the result will simply be an intertemporal redistribution of consumption from savers to borrowers. Furthermore, if foreign funds are only used to finance consumption and there is no significant increase in investment, then the net result will be a future deterioration in the balance of payments. The following point is crucial. Under the assumption that investment is a function of the interest rate, policies aimed at increasing saving are ultimately measures directed at increasing liquidity and thereby lowering lending rates. However, in an environment of low lending rates and low investor confidence banks will simply increase the number of consumer loans on the asset side of their balance sheet. The interest rate is just one of many variables that affect investment activity.

Instituting money and capital markets can play a fundamental role in economic development but further work needs to be done on the process of implementation. While the sequencing literature on economic reforms provides a useful starting point for discussion, it is problematic. The sequencing approach to introducing money and capital markets is not well-suited to small, developing countries that are particularly vulnerable to unstable capital flows. An iterative approach to opening markets is better from a theoretical and a practical standpoint.

Iteration is preferable to sequencing because it highlights the need to be continually aware of the fact that investment is a function of both the level of financial intermediation in the economy and the general investment climate, and the danger of exposing a small developing economy to speculative capital flows. Ignoring the non-financial variables which affect investment could lead developing countries to prematurely and unnecessarily open asset markets to the rest of the world, an inadvisable course of action.

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