

Policy, Planning, and Research

WORKING PAPERS

Office of the Vice President

Development Economics
The World Bank
September 1989
WPS 55

Background paper for the 1989 World Development Report

Financial Liberalization in Developing Countries

Bela Balassa

Higher real interest rates increase financial intermediation, which in turn raises the rate of economic growth in developing countries.

Policy, Planning, and Research

WORKING PAPERS

Office of the Vice President

McKinnon and Shaw define financial liberalization to mean the establishment of higher interest rates that equate the demand for, and the supply of, savings. The two authors express the view that higher interest rates will lead to increased savings and financial intermediation as well as to improvements in the efficiency of using savings.

In turn, van Wijnbergen and Taylor claim that higher interest rates on time deposits do not necessarily lead to increased financial intermediation because of shifts from curb markets, which are not subject to the reserve requirements that apply to time deposits. This means that the authors contrast distortions due to reserve requirements with distortions due to interest rate limitations on time deposits.

Abolishing excessive reserve requirements would eliminate distortions while prudential considerations point to the conclusion that reserves should be held against time deposits and against curb market liabilities as well. At the same time, substituting time deposits for unproductive assets — such as gold, cash, and commodity stocks — will increase the extent of financial intermediation. Increases in savings will have the same effect while increased efficiency in the use of savings will add to economic growth.

Bziassa summarizes available empirical evidence, indicating that higher real interest rates increase the extent of financial intermediation while increased financial intermediation raises the rate of economic growth in developing countries. Reference is also made to empirical

evidence on the effects of interest rates on savings cited in the author's "The Effects of Interest Rates on Savings in Developing Countries." Furthermore, evidence is provided on the effects of interest rates on investment efficiency and on economic growth.

The paper notes, however, that excessively high interest rates will have unfavorable economic effects. Such a situation can be avoided if the liberalization of the banking system takes place under appropriate conditions, including monetary stability and the government supervision of the banks. This would further the goal of establishing equilibrium interest rates.

Domestic financial liberalization may eventually be followed by the liberalization of the capital account. But this would have to be preceded by trade liberalization to avoid unnecessary resource shifts.

Domestic financial liberalization has been traditionally discussed in terms of interest rate levels whereas the liberalization of the capital account would lead to the equalization of domestic and foreign real interest rates, with allowance for exchange rate changes. But there are also other important issues relating to interest rates. These include flexibility over time, the avoidance of interest subsidies, an appropriate structure of rates according to maturity, and interest rate differentials reflecting risk.

More generally, there is need in most developing countries for improvements in the functioning of the financial sector.

This paper is a product of the Office of the Vice President, Development Economics. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact the World Development Report office, room S13-060, extension 31393 (26 pages).

The PPR Working Paper Series disseminates the findings of work under way in the Bank's Policy, Planning, and Research Complex. An objective of the series is to get these findings out quickly, even if presentations are less than fully polished. The findings, interpretations, and conclusions in these papers do not necessarily represent official policy of the Bank.

FINANCIAL LIBERALIZATION IN DEVELOPING COUNTRIES

Bela Balassa *

TABLE OF CONTENTS

	Page No.
I. The McKinnon-Shaw Analysis	1
II. Extensions and Criticisms of the McKinnon-Shaw Approach . . .	6
III. Interest Rates and Financial Intermediation	8
IV. Financial Intermediation and Economic Growth	12
V. Interest Rates and Economic Growth	15
VI. Domestic and External Financial Liberalization	18
VII. Conclusions	21

* The author is Professor of Political Economy at the Johns Hopkins University and Consultant to the World Bank. He prepared this paper as a background paper for the 1989 World Development Report. The author is indebted to Yoon Je Cho, Maxwell Fry, Alan Gelb, and Jacques Polak for helpful comments.

I. The McKinnon-Shaw Analysis

McKinnon and Shaw consider financial liberalization as a mainstay of economic reforms in developing countries. McKinnon goes as far as to "define 'economic development' as the reduction of the great dispersion in social rates of return to existing and new investments under domestic entrepreneurial control" (1973, p. 9). He adds: "Economic development so defined is necessary and sufficient to generate high rates of saving and investment (accurately reflecting social and private time preference), the adoption of best-practice technologies, and learning-by-doing" (Ibid). Shaw suggests that "the argument for liberalization in finance is that scarcity prices for savings increase rates of saving, improve savings allocation, induce some substitution of labor for capital equipment, and assist in income equalization" (1973, p. 121).

Both McKinnon and Shaw maintain that financial liberalization, involving the establishment of higher interest rates that equate the demand for and the supply of savings, will lead to increased savings. McKinnon suggests that savings will increase, reflecting social and private time preference (op. cit., p. 9). While recognizing that the income and substitution effects of increases in interest rates on savings are conflicting, Shaw expresses the view that "savers may ignore a possibly transitory increase from, say, 4 to 6 percent in rates of return, but they are less likely to maintain consumption-saving patterns when rates of return change, in a context of economic reform, from negative levels to positive 10 or 15 percent and more. Given the relative scarcity of wealth in the lagging

economies, the income effect of higher rates of return should not be expected to overwhelm the effects of substitution of more wealth for less consumption now" (op. cit., p. 73).

Shaw further suggests that "real growth in financial institutions provides more investors with access to borrowing and gives them incentive to save and to accumulate the equity that makes borrowing cheaper" (op. cit., p. 9). In turn, according to McKinnon's complementarity hypothesis, "the increased desirability of holding cash balances reduces the opportunity cost of saving internally for the eventual purchase of capital goods from outside the firm-household" (op. cit., p. 60).

Both Shaw and McKinnon note that below equilibrium interest rates lead to capital flight, thereby reducing the availability of savings for domestic investment. According to Shaw, "because savings are mobile, evasion of interest rate ceilings is routine in lagging economies [resulting in] capital flight away from domestic asset markets ..." (op. cit., p. 94). McKinnon also notes that "financial reform ends the chronic dissipation of ... savings in low-return foreign investments" (op. cit., p. 162).

McKinnon adds that "the release of resources from inferior uses in the underdeveloped environment is as important as new net saving per se" (Ibid, p. 15). In fact, both McKinnon and Shaw give emphasis to increases in the efficiency of investment that result from financial liberalization. They consider a variety of avenues through which efficiency improvements can take place.

The two authors suggest that, in the absence of financial liberalization, self-investment will occur in the place of providing savings to more efficient uses through the financial system, owing to below-

equilibrium -- often negative -- real interest rates. According to Shaw, "in a repressed economy savings flow mainly to the saver's own investments: self-finance prevails" (op. cit., p. 10); according to McKinnon, "the bias toward self-finance is one common thread" (op. cit., p. 30). Savings may go into inventories (Shaw, 1973, pp. 71-72) or create excess capacity in plant and equipment (McKinnon, 1973, pp. 31-32). In this connection, McKinnon's statement deserves full quotation.

"If the real rate of return on holding money is low or negative, a significant proportion of the physical capital of the economy will be embodied in inventories of finished and semifinished goods that are not used directly for production or consumption. A small farmer may keep unduly large rice inventories as the embodiment of his savings -- a portion of which the rats eat every year. Alternatively, a wealthy member of some urban enclave may build an unusually elaborate house, which he hopes will also maintain its value under inflation. A businessman might deliberately 'overinvest' in plant capacity or in certain stocks of raw material, relative to his current operating needs" (Ibid, p. 63).

Now, "if inflation drives real rates of return in all financial assets to negative values, it is not difficult to imagine that some internal investments within 'surplus' industrial enterprises also would generate negative rates of return" (Ibid, p. 32). The 'surplus' refers here to a surplus of savings and the argument is applied to agriculture as well. At the same time, in the case of inventory accumulation, the rate of return will always be negative, because of the cost involved in storage and -- for agricultural products -- loss in storage, unless the real price of the commodity in question increases over time.

Financial liberalization, then, brings forth a shift of savings from lower-productivity self-investment to higher-productivity investment intermediated by the financial sector. The same result obtains as credit

rationing gives place to allocation by interest rates following financial liberalization.

As there is excess demand for funds at less-than-equilibrium interest rates, there is "credit rationing among borrowers, sometimes according to the dictates of monetary or other authority, sometimes according to the preferences of the [financial] intermediaries" (Shaw, 1973, p. 84). Lending by government authorities, or influenced by them, responds to governmental preferences while financial intermediaries focus on reducing risk. Thus, "effective low ceilings in real loan rates intensify risk aversion and liquidity preference on the part of intermediaries. Banks and others keep a privileged place in their portfolios for established borrowers, especially trading firms with a long record of stability. They have little incentive to explore new and less certain lending opportunities" (Ibid, p. 86). Also, "rationing is expensive to administer. It is vulnerable to corruption and conspiracy in dividing between borrowers and officers of the intermediary the monopoly rent that arises from the difference between low, regulated loan rate and the market-clearing rate" (Ibid).

Below-equilibrium interest rates also affect the capital-intensity of the investments actually undertaken (McKinnon, 1973, p. 9). This will occur both because capital-intensive projects are profitable and because the substitution of capital for labor is encouraged. "Investment flows to capital-intensive production even though capital is scarce and labor plentiful" (Shaw, 1973, p. 11). And, in the case of North and Northwest India, "loans on cheap terms have encouraged capital-intensive techniques by large enterprises ..." (Ibid, p. 124).

Interest rate controls further encourage overbuilding by banks as a form of competition. Thus, Shaw speaks of lavish financial buildings and numerous branches of financial institutions (Ibid, p. 85) and suggests that "some of the expensive layering of financial institutions in lagging economies is the direct consequence of controls on loan and deposit rates" (Ibid, p. 86). In turn, McKinnon refers to the opening of excessive numbers of bank branches in Brazil (op. cit., p. 84).

Shaw also speaks of the lengthening of maturities and diversification of the menu of financial assets in the event of financial liberalization (op. cit., p. 7). Thus, "monetary and other financial reform can be expected to extend capital-market horizons and divert savings into contracts at longer term" (Ibid, p. 127). Also, "in the liberalized economy savers are offered a wide menu of portfolio choices" (Ibid, p. 10).

Finally, McKinnon and Shaw consider the fact that increased financial intermediation represents, in part, a substitute for the curb market. Thus, Shaw notes that "the curb should have to face competition from deepening in the organized sector" (Ibid, p. 137). The importance of curb markets would decline following financial liberalization according to McKinnon (op. cit., p. 60).

At the same time, both authors consider the shift from curb markets to organized finance to be beneficial because of the greater efficiency associated with the latter. According to Shaw, the street markets are only imperfect substitutes for indirect financial assets (op. cit., p. 85). Furthermore, "financial growth permits unification of the capital market. It reduces interregional and interindustry differences in investment yields and increases mean yields" (Ibid, p. 74).

In turn, McKinnon notes that "there appears to be no economical substitute for expanding the role of organized finance in small-scale lending to indigenous entrepreneurs in either rural or urban areas" (op. cit., p. 77). Also, he approvingly notes the conclusions of a study of Chilean curb markets, according to which "money lenders operate on a small scale and do not compete with each other [as they] do not have detailed knowledge of a broad market ..." (Ibid, p. 78). McKinnon further adds: "the main burden of ensuring that there is uniformity in borrowing rates and that competition is broadly based rests with direct bank lending" (Ibid).

All in all, there are various ways in which financial liberalization brings improvements in investment efficiency according to McKinnon and Shaw. They include decreases in self-investment at low and even negative real rates of return, rationing of loans by interest rates rather than by public authorities and banks, a shift away from excessively capital-intensive investments and techniques, the avoidance of overbuilding by banks, the lengthening of financial maturities, and the decreased importance of fragmented curb markets.

II. Extensions and Criticisms of the McKinnon-Shaw Approach

Extensions of the McKinnon-Shaw approach by Kapur (1976), Galbis (1977), Mathieson (1980), and Fry (1988) add little to the underlying ideas but rather formalize the McKinnon-Shaw models. Kapur and Mathieson limit the analysis by assuming the constancy of investment efficiency following financial liberalization while Galbis and Fry consider the case when efficiency increases.

In Kapur's model, increases in the deposit rate of interest raise real money demand and hence the real supply of bank credit, resulting in an

acceleration of economic growth. Similar conclusions are reached in Mathieson's model, which differs from Kapur's largely by assuming that fixed capital is fully utilized while it was assumed to be under-utilized by Kapur.

Galbis constructs a two sector model to analyze the effects of financial repression on the average efficiency of investment. In this model, financial liberalization will lead to higher efficiency by shifting savings from self-investment to uses with higher rates of return. Fry also puts emphasis on increases in investment efficiency following financial liberalization.

The principal critics of the McKinnon-Shaw approach are van Wijnbergen (1983) and Taylor (1983). They use Tobin's portfolio framework for household sector asset allocation. Households have three categories of assets: gold or currency, time deposits, and curb market loans. In response to increase in interest rates on time deposits, households will substitute these for gold or cash and curb market assets.

Van Wijnbergen contrasts his model to those of McKinnon and Kapur. He expresses the view that "the results obtained by McKinnon/Kapur depend crucially on one hidden assumption on asset market structure, an assumption that is never stated explicitly: all these authors assume that the portfolio shift into TD's [time deposits] is coming out of an 'unproductive' asset like gold, cash, commodity stocks etc." (1983, p. 434). He adds that "it is not at all obvious that TD's are closer substitutes to cash, gold etc. rather than to loans extended on the curb markets" (Ibid).

In fact, Taylor expects that the latter outcome will obtain (1983, p. 100). Also, in a study of Korea, van Wijnbergen concluded that "substitution between the curb market and time deposits is of more importance than

substitution between currency and time deposits" (van Wijnbergen, 1982, p. 156). Now, "in this case the total supply of funds to the business sector will decline as funds are shifted from the curb market which provides one for one intermediation (no reserve requirements) into the banking system which provides only partial intermediation: partial because a fraction is syphoned off into required and free reserves rather than passed on to firms" (van Wijnbergen, 1983, p. 439).

Expressed differently, van Wijnbergen and Taylor introduce a distortion into their model in the form of reserve requirements in the banking sector. However, they do not consider the effects of interest rate distortions on investment efficiency. Thus, they assume investment efficiency to be the same, irrespective of whether loans are financed by the banking sector or the curb market. As noted above, this was not the view of McKinnon and Shaw who did not neglect the curb market but considered this to lead to lower investment efficiency.

III. Interest Rates and Financial Intermediation

Having reviewed the McKinnon-Shaw analysis, its extensions, and critics, the next question concerns the empirical evidence on the economic effects of interest rates and financial intermediation. Available evidence will be presented on the relationship between interest rates and financial intermediation, between financial intermediation and economic growth, and between interest rates and economic growth.

Lanyi and Saracoglu (1983) provide evidence on the relationship between interest rates and the growth of the broad money supply (M2), measured as the real value of the sum of monetary and quasi-monetary deposits with the banking sector, in a cross-section relationship of 21 countries for the 1971-

80 period. Classifying countries according to whether they had positive real interest rates, moderately negative real interest rates, or severely negative real interest rates, the authors regress the rate of growth of the broad money supply on interest rates. The results show a high correlation between the two variables, with the regression coefficient of the interest rate variable being statistically significant at the 1 percent level (Ibid, p. 29).

The statistical relationship between interest rates and financial intermediation was also examined by Fry (1988). In a pooled time-series and cross-section estimate for 10 Asian developing countries for the 1962-72 period, Fry regressed the real stock of broad money on the national saving rate, per capita real expected income, the lagged value of broad money, and the 12 month time deposit rate of interest less the expected rate of inflation, when expected values were represented by polynomial distributed lags on current and past values. Fry found the coefficient of the real interest rate variable to be positive and statistically significant at the 1 percent level (Ibid, p. 146).

The relationship between interest rates and the broadly defined money supply was investigated for Thailand, Indonesia, and the Philippines by Chamley and Hussain (1988). The estimates for Thailand relate to the 1974-86 period, those for Indonesia to the 1972-85 period, and those for the Philippines to the 1972-87 period. ^{1/} The dependent variable in the regression analysis is the rate of change of the ratio of the broad money

^{1/} For two of the countries, Thailand and Indonesia, estimates have been made also for M1, the narrowly-defined money supply. These estimates are not reported because M2 rather than M1 represents the extent of financial intermediation.

supply to GDP; the explanatory variables are the ratio of the money supply to GDP in the preceding period, the interest rate (in its various forms), and the rate of inflation. In the following, the best equation is reported in each case.

The results for Thailand show that the rate of change of the broad money supply is positively correlated with the time deposit rate and negatively correlated with the money market rate, both of which are statistically significant at the 1 percent level. The results indicate that the extent of financial intermediation will rise if the time deposit rate increases relative to the money market rate (Ibid, p. 16).

The results for Indonesia show that the rate of change of the broad money supply is positively correlated with the real time deposit rate. The regression coefficient of the interest rate variable is statistically significant at the 1 percent level (Ibid, p. 29).

The results for the Philippines also show that the rate of change of the broad money supply is positively correlated with the real time deposit rate. The regression coefficient of the interest rate variable is statistically significant at the 1 percent level (Ibid, p. 41).

Finally, Gelb (1989) examined the effects of interest rates on the ratio of the broad money supply to gross domestic savings by combining time series data for the 1965-73 and 1974-85 periods for 34 developing countries. In the estimating equation, the real deposit rate was statistically significant at the 1 percent level while the other variables (the ratio of savings to GDP, the rate of inflation, the level of GDP per head, and a shift variable for the post-1973 years) were not significant statistically (Ibid, p. 29).

While the econometric results indicate the effects of interest rates on the extent of financial intermediation, the question remains where the increased financial intermediation originates. In the case of Korea, van Wijnbergen found that substitution between the curb market and time deposits is of greater importance than substitution between currency and time deposits (1982, p. 156). But, this neglects substitution between physical assets and time deposits as well as increases in time deposits due to higher savings in response to the rise of interest rates.

As to the former, van Wijnbergen admits that there is substitution against "unproductive" assets, such as gold and commodity stocks, to which unproductive self-investments should be added. At the same time, he suggests that it is not at all obvious that time deposits are closer substitutes for these assets than for loans on the curb market (1983, p. 434). One should not count, however, the substitution of time deposits for curb market loans but only the incremental reserves against time deposits as a loss.

Assume, for example, that time deposits increase by 400 pesos, with 100 pesos coming from unproductive assets and 300 pesos from the curb market, while there are reserve requirements of 20 percent against time deposits and none against curb market liabilities. Now, there will be a net increase in financial intermediation of 20 (400-80-300) pesos, even though the decline in curb market loans was three times that of unproductive assets.

At the same time, it can hardly be assumed that no reserves would be held against curb market liabilities. Rather, due to greater uncertainty, larger reserves may be held against curb market liabilities than against time deposits. The relevant comparison is, then, between reserves held against curb market liabilities and compulsory reserve requirements against time

deposits. As long as the former exceeds the latter, substitution of time deposits for curb market loans will not reduce but increase the extent of financial intermediation.

The possible effects of interest rates on savings were reviewed in another paper by the author (Balassa, 1988). It has been shown that there is some evidence on the favorable effects of increases in interest rates on domestic savings. The amount available for domestic investment will increase further as higher interest rates reduce the incentive for capital flight.

IV. Financial Intermediation and Economic Growth

The next question concerns the relationship between the extent of financial intermediation and economic growth. In the study referred to above, Lanyi and Saracoglu found a high degree of correlation between the rate of growth of GDP and the rate of growth of the broad money supply, with the latter variable being statistically significant at the 1 percent level (1983, p. 29).

Earlier, Jao examined the relationship between the rate of growth of per capita GDP, on the one hand, and the rate of growth of per capita real balances and the ratio of the broad money supply to GDP, on the other (1976).
1/ He found that the two variables, representing the extent of financial intermediation, were highly significant statistically in a cross-section regression for 67 developed and developing countries in the 1967-72 period (Ibid, p. 52). The level of significance was 1 percent for the former variable and 5 percent for the latter. However, in regression analysis

1/ Estimates were also made for the narrowly-defined money supply; for reasons noted earlier, these are not reported in the following.

limited to the developing countries alone only the former variable was statistically significant (at the 1 percent level).

In turn, Tun Wai (1980) found a positive relationship between real GDP and the real supply of domestic credit in a study of thirteen developing countries. In a time series investigation, the credit variable was statistically significant at the 1 percent level in the case of each of the countries (Ibid, p. 426).

Finally, in the study referred to above, Gelb regressed the rate of growth of GDP on the ratio of the real increase in broad money to gross domestic savings, the ratio of savings to GDP, and a shift variable for the years after 1973. The financial intermediation variable had a positive and significant coefficient at the 1 percent level while the other variables were not significant statistically (Gelb, 1988, p. 23).

Following McKinnon (1973) and Shaw (1977), the above authors made estimates on the assumption that the causation goes from financial intermediation to economic growth or a "supply-leading" relationship. But, the causation may also run from economic growth to financial intermediation as growth creates demand for financial services. Such a "demand-following" relationship was postulated by Goldsmith (1969).

In turn, Patrick (1966) suggested that the direction of causality changes in the course of economic development. In his view, financial development is necessary for sustained economic growth to take place but "as the process of real growth occurs, the supply-leading impetus gradually becomes less important, and the demand-following financial response becomes dominant" (Ibid, p. 174).

Fritz (1984) employed a Granger-test to examine the direction of causality between financial intermediation and economic development. He used factor analysis to define both financial intermediation and economic development as composite sets of variables. The results, obtained for the Philippines, support Patrick's hypothesis that financial intermediation "causes" economic growth at an early stage of development and the causation is reversed at a later stage (Ibid, p. 109).

The Granger technique was used more recently by Jung (1986) to test the causation between financial intermediation and economic growth. Jung used the ratio of M1 to GNP, denoted the currency ratio, and the ratio of M2 to GNP, denoted the monetization variable, to represent the extent of financial intermediation while economic growth was measured by the growth of per capita GNP. The investigation covered 19 developed and 37 developing countries; 15 annual observations were used for each.

The results, obtained by combining time series and cross-section data, "indicate a moderate support for the supply-leading phenomenon in LDCs. The causal direction, both unidirectional and simple, running from financial development to economic growth is more frequently observed than the reverse" (Ibid, p. 341).

Jung also examined the Patrick hypothesis as between developing and developed countries. He found that "when the currency ratio is used as a measure of financial development, a supply-leading and then demand-following causality pattern is moderately supported by the data. Thus, LDCs are characterized by the causal direction running from financial to economic development, and DCs by the reverse causal direction, regardless of which causality concept is employed. On the other hand, the monetization variable

does not appear to distinguish DCs from LDCs in terms of causality directions" (Ibid, p. 344); causation runs from financial intermediation to economic growth for both developing and developed countries.

V. Interest Rates and Economic Growth

The next question concerns the relationship between interest rates and economic growth. Such a relationship may obtain as increases in interest rates are associated with higher domestic investment and with higher efficiency of investment. At the same time, the problem of causation, discussed in the previous section of the paper, does not arise in this case.

We have referred above to the results obtained in regard to the effects of higher interest rates on domestic savings and investment. In turn, the effects of interest rates on investment efficiency were investigated in an Asian Development Bank study of nine Asian countries (1985), in a study of Turkey by Fry (1988), and in the Gelb study referred to above.

The study of the Asian Development Bank combined time-series observations for India, Korea, Malaysia, Nepal, Pakistan, Singapore, Taiwan, and Thailand. It found that the incremental output-capital ratio was positively associated with the real deposit rate, with the latter variable being statistically significant at the 5 percent level (1985, p. 48). The same result was obtained for Turkey by Fry, with the real deposit rate variable being statistically significant at the 1 percent level (1988, p. 148).

In turn, Gelb regressed the incremental output-capital ratio on the real time deposit rate and a shift variable for the post-1973 period. The former variable had a positive, the latter a negative sign; both were statistically significant at the 1 percent level (1989, p. 24).

As to the relationship between interest rates and economic growth, Khatkhate did not observe a difference in average growth rates between countries having below-average and above-average real interest rates in a sample of 64 developing countries (1988, p. 584). This is not an appropriate test, however, since differences within the two groups of countries are disregarded.

In turn, Gupta obtained conflicting results in a cross-section study (1984) and in a study of India and Korea (1986). In both instances, dynamic multiplier analysis was used to examine the long-term effects of changes in nominal interest rates and inflation rates on economic growth.

The first estimate pertains to 25 Asian and Latin American countries and involved combining time series statistics for periods of different length, depending on data availability. It shows an unfavorable effect of higher interest rates on economic growth (1984, p. 41).

However, the long-term multiplier shows the beneficial effect of raising interest rates on economic growth in Korea and India. In the case of India, the best results are obtained if the nominal rate of interest rises and the expected rate of inflation remains the same. In the case of Korea, a decline in the expected rate of inflation, with the nominal interest rate remaining constant, gives the best results (1986, p. 60).

One can only speculate about the reasons for the differences in the results of the two studies. A possible explanation is the distortions introduced by combining countries with different structures. In fact, in another paper Gupta criticized Giovannini for combining data for several regions in investigating the effects of the real interest rates of savings (1987, pp. 307-08).

The positive results obtained by Gupta for India and Korea are confirmed by the cross-section study of Lanyi and Saracoglu (1983), two cross-section studies by Fry (1988), and a cross-section study by Gelb (1989). The Lanyi-Saracoglu and Gelb studies were referred to earlier; the Fry study pertains to seven and fourteen Asian developing countries, respectively.

The Lanyi-Saracoglu study shows a positive correlation between the rate of growth of GDP and the interest rate variable as defined above. The latter variable is statistically significant at the 1 percent level (Ibid, p. 29). The two studies by Fry pooled time series data for the countries concerned. They indicate that the rate of growth of GDP is positively correlated with the real time deposit rate, with the latter being statistically significant at the 1 percent level in the first study and at the 5 percent level in the second. The results suggest that a one percent increase in the real time deposit rate towards its competitive free-market equilibrium level is associated with a rise in the rate of economic growth by about one-half of one percentage point (1988, pp. 151-52). These results have been confirmed by Arrieta (1988).

Furthermore, Polak (1989, pp. 66-69) regressed the rate of economic growth on the median rate of interest in a 40 country sample covering the period 1965-85. He obtained a strong correlation, and the statistical significance of the results is not affected if the investment share and the export growth rate are introduced as additional variables. At the same time, the introduction of the export growth rate increases the explanatory power of the regression equation to a considerable extent.

Finally, Gelb regressed the rate of growth of GDP on the real deposit rate and on a shift variable for the post-1973 years. The former variable had

a positive, the latter a negative coefficient; both were statistically significant at the 1 percent level (1989, p. 24).

The cited studies relate interest rates directly to economic growth. A positive relationship between the two variables is also shown if we combine the results obtained for the relationship between interest rates and financial intermediation and that between financial intermediation and economic growth or combine the relationship between interest rates and domestic investment and that between interest rates and the efficiency of investment (Fry, 1988, p. 151 and Gelb, 1989, p. 25).

VI. Domestic and External Financial Liberalization

We have seen that raising real interest rates can have favorable effects on financial intermediation and on economic growth. However, excessively high real interest rates have adverse economic effects. They will not permit the financing of various investment projects that otherwise have a good economic rationale and will favor projects that have a high risk. The latter problem has become known as that of "adverse risk selection" on the assumption that the risk tends to rise with the rate of return (Stiglitz and Weiss, 1981).

Excessively high real interest rates were observed in the countries of the Southern Cone of Latin America (Corbo, de Melo, and Tybout, 1985, Table 1). On a quarterly basis, ex post real interest rates reached 53.3 percent in Argentina (1979-4), 54.6 percent in Chile (1982-1), and 44.0 percent in Uruguay (1982-4).

Excessively high real interest rates in the countries of the Southern Cone have been attributed to the breakdown of proper financial supervision. As McKinnon noted, "neither officials in the commercial banks themselves, nor

government regulatory authorities, adequately monitored the creditworthiness of a broad spectrum of industrial and agricultural borrowers" (McKinnon, 1988, pp. 399-400). The result was the proliferation of bad loans that were rolled over, creating what Harberger calls a 'false' demand for credit (Harberger, 1985, p. 237).

A contributing factor was the problem of moral hazard as banks expected to be bailed out by government. They apparently made highly risky investments on the presumption that in the event of losses these would be covered by governments while gains would accrue to the banks themselves.

The problems encountered in the Southern Cone of Latin America indicate that certain conditions need to be fulfilled before the operation of the banking system can be liberalized. First of all, inflation has to be brought under control since high and variable interest rates make borrowers as well as the banks highly vulnerable. Also, government supervision is needed to ensure that banks do not undertake unduly risky investments. In particular, there is need to set appropriate capital and reserve requirements, to limit the proportion of the banks' portfolio that can be lent to any one borrower, and to make detailed inspection of the quality of the banks' portfolio.

The discussion so far dealt with domestic financial liberalization without any consideration given to external liberalization (the liberalization of the capital account). This represents an appropriate sequence since domestic financial liberalization should be accomplished before external liberalization is undertaken. This is both to generate expertise and to establish domestic banks that can withstand the rigors of international competition.

We have here the traditional infant industry argument that has been applied to financial liberalization in a number of developing economies, including Korea and Taiwan. It has also been applied in European countries, such as France and Italy.

A further question is the order of liberalization as far as the trade account and the capital account are concerned. If the adjustment is equally rapid in the two markets, trade and capital accounts should be liberalized simultaneously. This is not the case, however, as shifts in the capital account occur more rapidly than in the trade account. Correspondingly, resource shifts would occur in response to capital account liberalization that will be undone once the trade account adjusts (Edwards, 1986, pp. 207-08).

It may be assumed that, prior to the opening of the capital account, the domestic rate of interest exceeds the international rate of interest. In this eventuality domestic agents will borrow abroad once the capital account is opened. This will then lead to an appreciation of the exchange rate, with adverse effects on the tradeables sector. In turn, a depreciation will occur in response to the freeing of the trade account.

Thus, resources will flow first to the nontradeable sector and, subsequently, to the tradeable sector. Such switches of reserves are undesirable because of the adjustment costs they entail. Correspondingly, it will be appropriate to liberalize the trade account first and the capital account afterwards, with a view to ensure the simultaneity of adjustment in the two.

The countries of the Southern Cone of Latin American provide cases where the liberalization of the capital account led to large inflows of capital, resulting in a substantial appreciation of the exchange rate. In

Argentina and Uruguay, the capital account was liberalized without appreciable changes in the trade account; in Chile, capital account liberalization occurred while the domestic financial system was in disarray.

In turn, there have been successful cases of capital account liberalization. There is full freedom of capital movements in Hong Kong and Singapore and virtual freedom in Malaysia and Thailand. Also, a study of the relationship between domestic and U.S. interest rates has shown that there is de facto considerable opening of the capital markets in Colombia (Edwards and Khan, 1985).

VII. Conclusions

McKinnon and Shaw define financial liberalization to mean the establishment of higher interest rates that equate the demand for, and the supply of, savings. The two authors express the view that higher interest rates will lead to increased savings and financial intermediation as well as to improvements in the efficiency of using savings.

In turn, van Wijnbergen and Taylor claim that higher interest rates on time deposits do not necessarily lead to increased financial intermediation because of shifts from curb markets, which are not subject to the reserve requirements that apply to time deposits. This means that the authors contrast distortions due to reserve requirements with distortions due to interest rate limitations on time deposits.

Abolishing excessive reserve requirements would eliminate distortions while prudential considerations point to the conclusion that reserves should be held against time deposits and against curb market liabilities as well. At the same time, substituting time deposits for unproductive assets, such as gold, cash, and commodity stocks, will increase the extent of financial

intermediation. Increases in savings will have the same effect while increased efficiency in the use of savings will add to economic growth.

The paper summarizes available empirical evidence, indicating that higher real interest rates increase the extent of financial intermediation while increased financial intermediation raises the rate of economic growth in developing countries. Reference is also made to empirical evidence on the effects of interest rates on savings cited in the author's "The Effects of Interest Rates on Savings in Developing Countries." Furthermore, evidence is provided on the effects of interest rates on investment efficiency and on economic growth.

The paper notes, however, that excessively high interest rates will have unfavorable economic effects. Such a situation can be avoided if the liberalization of the banking system takes place under appropriate conditions, including monetary stability and the government supervision of the banks. This would further the goal of establishing equilibrium interest rates.

Domestic financial liberalization may eventually be followed by the liberalization of the capital account. But, this would have to be preceded by trade liberalization in order to avoid unnecessary resource shifts.

Domestic financial liberalization has been traditionally discussed in terms of interest rate levels whereas the liberalization of the capital account would lead to the equalization of domestic and foreign real interest rates, with allowance made for exchange rate changes. However, there are also other important issues relating to interest rates. These include flexibility over time, the avoidance of interest subsidies, an appropriate structure of rates according to maturity, and interest rate differentials reflecting risk.

More generally, in most developing countries there is need for improvements in the functioning of the financial sector. As noted in the Bank's "Review of Financial Sector Work," such improvements should encompass "the provision of a means of payment, the mobilization and allocation of capital, and the transformation and distribution of risk" (Long, 1985, p. 6). These issues, however, fall outside the scope of this paper.

References

- Arrieta, Gerard M. Gonzales, "Interest Rates, Savings, and Growth in LDCs: An Assessment of Recent Empirical Research" World Development, May 1989, pp. 589-603.
- Asian Development Bank, Improving Domestic Resource Mobilization through Financial Development, Manila, Asian Development Bank Economic Office, September 1985.
- Balassa, Bela, "The Effects of Interest Rates on Savings in Developing Countries" Washington, D.C., World Bank, August 1988, mimeo.
- Chamley, Cristophe and Quairaz Hussain, "The Removal of Taxes on Financial Assets in Thailand, Indonesia, and the Philippines: A Quantitative Evaluation," Washington, D.C., June 1988 (mimeo).
- Cho, Yoon Je, "The Effect of Financial Liberalization on the Efficiency of Credit Allocation: Some Evidence from Korea," Journal of Development Economics, July 1988, pp. 101-10.
- Corbo, Vittorio, Jaime de Melo, and James Tybout, "What Went Wrong with the Recent Reforms in the Southern Cone," Development Research Department Discussion Paper No. 128, Washington, D.C., World Bank, July 1985.
- Edwards, Sebastian, "The Order of Liberalization of the Current and Capital Accounts of the Balance of Payments," in Armeane M. Choksi and Demetrios Papageorgiou, eds., Economic Liberalization in Developing Countries, New York, Basil Blackwell, 1986, pp. 185-216.
- Edwards, Sebastian and Mohsin S. Khan, "Interest Rate Letermination in Developing Countries: A Conceptual Framework," International Monetary Fund Staff Papers, September 1985, pp. 377-403.
- Fritz, Richard G., "Time Series Evidence of the Causal Relationship between Financial Deepening and Economic Development," Journal of Economic Development, July 1984, pp. 91-112.
- Fry, Maxwell J., Money, Interest, and Banking in Economic Development, Baltimore, The Johns Hopkins University Press, 1988.
- Galbis, Vicente, "Financial Intermediation and Economic Growth in Less-Developed Countries: A Theoretical Approach," Journal of Development Studies, January 1977, pp. 58-72.
- Gelb, Alan, "A Cross Section Analysis of Financial Policies, Efficiency, and Growth" PPR Working Paper No. 202, Washington, D.C., World Bank, 1989.
- Goldsmith, Raymond W., Financial Structure and Development, New Haven, Yale University Press, 1969.

- Gupta, Kanhaya L., "Financial Liberalization and Economic Growth: Some Simulation Results," Journal of Economic Development, December 1984, pp. 25-44.
- Gupta, Kanhaya L., "Financial Development and Economic Growth in India and South Korea," Journal of Economic Development, December 1986, pp. 41-62.
- Gupta, Kanhaya L., "Aggregate Savings, Financial Intermediation, and Interest Rates," Review of Economics and Statistics, May 1987, pp. 303-19.
- Harberger, Arnold C., "Lessons for Debtor Country Managers and Policy Makers," in G. W. Smith and John Cuddington, eds., International Debt and the Developing Countries, Washington, D.C., World Bank, 1985.
- Jao, Y. C., "Financial Deepening and Economic Growth: A Cross-Section Analysis," Malayan Economic Review, April 1976, pp. 47-58.
- Jung, Woo S., "Financial Development and Economic Growth: International Evidence," Economic Development and Cultural Change, January 1986, pp. 333-46.
- Kapur, Basant K., "Alternative Stabilization Policies for Less-Developed Economies," Journal of Political Economy, August 1976, pp. 777-95.
- Khatkhate, Deena R., "Assessing the Impact of Interest Rates in Less Developed Countries," World Development, May 1988, pp. 577-88.
- Lanyi, Anthony and RÜsdü Saracoglu, "Interest Rate Policies in Developing Countries," Occasional Paper 22, Washington, D.C., International Monetary Fund, October 1983.
- Long, Millard, "Review of Financial Sector Work," Washington, D.C., World Bank, 1985.
- McKinnon, Ronald I., Money & Capital in Economic Development, Washington, D.C., The Brookings Institution, 1973.
- McKinnon, Ronald I., "Financial Liberalization in Retrospect: Interest Rate Policies in LDCs" in Gustav Ranis and T. Paul Schultz, eds. The State of Development Economics: Progress and Perspectives, Oxford, Basil Blackwell, 1988, pp. 386,410.
- Mathieson, Ronald J., "Financial Reform and Stabilization Policy in a Developing Economy," Journal of Development Economics, September 1980, pp. 359-95.
- Patrick, Hugh T., "Financial Development and Economic Growth in Underdeveloped Countries," Economic Development and Cultural Change, January 1966, pp. 174-89.

- Polak, Jacques J., Financial Policies and Development, Paris, Development Centre of the Organization for Economic Co-operation and Development, 1989.
- Shaw, Edward S., Financial Deepening in Economic Development New York, Oxford University Press, 1973.
- Stiglitz, Joseph and Andrew Weiss, "Credit Rationing in Markets with Imperfect Information," American Economic Review, June 1981, pp. 393-410.
- Taylor, Lance, Structural Macroeconomics: Applicable Models for the Third World, New York, Basic Books, 1987.
- Tun Wai, U., Economic Essays on Developing Countries, Rockville, Md., Sijthoff & Noordhoff, 1980.
- Wijnbergen, Sweder van, "Stagflationary Effects of Monetary Stabilization Policies: A Quantitative Analysis of South Korea," Journal of Development Economics, April 1982, pp. 133-70.
- Wijnbergen, Sweder van, "Interest Rate Management in LDCs" Journal of Monetary Economics, 1983, pp. 433-52.

PPR Working Paper Series

	<u>Title</u>	<u>Author</u>	<u>Date</u>	<u>Contact for paper</u>
WPS31	Public Finance and Economic Development	Bela Balassa	August 1988	N. Campbell 33769
WPS32	Municipal Development Funds and Intermediaries	Kenneth Davey	July 1988	R. Blade-Charest 33754
WPS33	Fiscal Policy in Commodity-Exporting LDCs	John Cuddington	July 1988	R. Blade-Charest 33754
WPS34	Fiscal Issues in Macroeconomic Stabilization	Lance Taylor	September 1988	R. Blade-Charest 33754
WPS35	Improving the Allocation and Management of Public Spending	Stephen Lister	August 1988	R. Blade-Charest 33754
WPS36	Social Security Finance in Developing Countries	Douglas J. Puffert	August 1988	R. Blade-Charest 33754
WPS37	Black Market Premia, Exchange Rate Unification, and Inflation in Sub-Saharan Africa	Brian Pinto	July 1988	R. Blade-Charest 33754
WPS38	Intergovernmental Grants in Developing Countries	Larry Schroeder	September 1988	R. Blade-Charest 33754
WPS39	Fiscal Policy in Low-Income Africa	Stephen A. O'Connell	July 1988	R. Blade-Charest 33754
WPS40	Financial Deregulation and the Globalization of Capital Markets	Eugene L. Versluysen	August 1988	R. Blade-Charest 33754
WPS41	Urban Property Taxation in Developing Countries	William Dillinger	August 1988	R. Blade-Charest 33754
WPS42	Government Pay and Employment Policies and Government Performance in Developing Economies	David L. Lindauer	August 1988	R. Blade-Charest 33754
WPS43	Tax Administration in Developing Countries: Strategies and Tools of Implementation	Tax Administration Division, IMF Fiscal Affairs Department	August 1989	WDR Office 31393
WPS44	The Size and Growth of Government Spending	David L. Lindauer	September 1988	R. Blade-Charest 33754
WPS45	How Much Do State-Owned Enterprises Contribute to Public Sector Deficits in Developing Countries -- and Why?	Govindan Nair Anastasios Filippides	December 1988	L. Mattheisen 33757

PPR Working Paper Series

	<u>Title</u>	<u>Author</u>	<u>Date</u>	<u>Contact for paper</u>
WPS46	The Management of Public Expenditures: An Evolving Bank Approach	Robert Lacey	January 1989	L. Mattheisen 33757
WPS47	Considerations for the Development of Tax Policy When Capital is Internationally Mobile	Robert F. Conrad	March 1989	L. Mattheisen 33757
WPS48	Do Taxes Matter? A Review of the Effect of Taxation on Economic Behavior and Output	Johnathan Skinner	August 1989	WDR Office 31393
WPS49	Public Sector Pricing Policies: A Review of Bank Policy and Practice	DeAnne Julius Adelacio P. Alicbusan	April 1989	L. Mattheisen 33757
WPS50	Fiscal Policy and Stabilization in Brazil	Celso Luiz Martone	July 1989	L. Mattheisen 33757
WPS51	On Participating in the International Capital Market	V. V. Bhatt	August 1989	WDR Office 31393
WPS52	Financial Innovation and Credit Market Development	V. V. Bhatt	August 1989	WDR Office 31393
WPS53	Venture Capital and Entrepreneurial Development	Fernan Ibanez	August 1989	WDR Office 31393
WPS54	Bank Restructuring in Malaysia, 1985-88	Andrew Sheng	September 1989	WDR Office 31393
WPS55	Financial Liberalization in Developing Countries	Bela Balassa	September 1989	WDR Office 31393
WPS56	The Effects of Interest Rates on Savings in Developing Countries	Bela Balassa	September 1989	WDR Office 31393
WPS 57- WPS60-	Assigned to WDR			
WPS61	Student Performance and School Costs in the Philippines' High Schools	Emmanuel Jimenez Vicente Paqueo Ma. Lourdes de Vera	August 1988	T. Hawkins 33678
WPS62	Universities in Arab Countries	George I. Za'rour	September 1988	C. Christobal 33640
WPS63	Does Japan Import Less Than It Should?	Kenji Takeuchi	July 1988	J. Epps 33710