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The Domestic Financial Market and the Trade Liberalization Outcome

The Evidence from Sri Lanka

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The main finding of the study is that the domestic financial market plays a very significant role in the success or failure of trade liberalization. This was found to be the case in Sri Lanka during 1977-87.

This paper — a product of the Trade, Finance, and Industry Division, Technical Department, Latin America and the Caribbean Regional Office — was undertaken as part of the World Bank's comparative study, *Macroeconomic Policies: Crisis and Growth in the Long Run*. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Margaret Kienzle, room I4-058, extension 30733 (55 pages).

Athukorala and Rajapatirana developed a framework for analyzing the relationship between domestic financial markets and the effects of trade liberalization and applied it to Sri Lanka's experience between 1977 and 1987. They found that the domestic financial market significantly affects the outcome of trade liberalization.

Because Sri Lanka deregulated its interest rates when it undertook the trade liberalization, this allowed those earning more from trade liberalization to hold financial assets rather than nontradables. The availability of savings and time deposits at attractive interest rates prevented the premature appreciation of the exchange rate, thus helping to maintain the competitiveness stimulated by trade liberalization. By reforming interest rates, removing credit ceilings, and increasing competition among banks, Sri Lanka helped increase private sector savings — which could be reallocated to the tradable sector.

Unlike earlier studies on financial reform in Sri Lanka, this one finds that financial reforms

have increased private savings in financial institutions, raised economywide financial intermediation ratios, and expanded credit to the private sector.

More important, Athukorala and Rajapatirana find a statistically significant relationship between the financial intermediation ratio and the real exchange rate.

Credit to the private sector had increased after reform of the financial sector, but its reallocation was inhibited by large fiscal deficits, inconsistent monetary policies, and increased intervention in the financial market. Through their negative effect on the real exchange rate, these interventions offset some of the gains in competitiveness achieved through trade liberalization.

Athukorala and Rajapatirana find no evidence of financial crowding out in Sri Lanka.

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1. Introduction

A sizable body of literature on the relationship between trade and development has appeared over the past two decades and has demonstrated that establishing a liberal trade regime is superior to a restrictive trade regime in achieving development objectives. This has led to a second wave of literature on trade liberalization--that is, on the issues involved in a shift away from a controlled (and hence, distorted) trade regime toward a more liberal one.

One such issue is the complementarity between trade reform and the operations of domestic financial markets. "Financial repression," meaning policy distortions that interfere with efficient domestic financial markets, is just as common in developing countries as policy distortions of the foreign trade regime. For many of these countries, "the liberalization of the foreign trade and financial sectors can be considered as two aspects of the same problem" (McKinnon 1981:366). An unawareness of this complementarity may be one reason why many countries have opted for trade liberalization while continuing to intervene in the operations of their domestic financial markets.

The present study has two objectives. First, it presents a framework for analyzing the impact of the domestic financial environment on trade reform. Second, using this analytical framework, it examines the role of the domestic financial market in determining the fate of trade policy reforms initiated in Sri Lanka in 1977. Although generalizing from a single case has its pitfalls, the insight gained from the study may be useful to policymakers in other countries in identifying critical issues that may crop up in the process of designing and implementing similar policy reforms.

Sri Lanka was chosen to explore the hypothesized relationships because of both the nature of the reforms carried out there and the controversy surrounding the extent to which financial market reform contribute to the sustainability of trade reform. Some authors argue that the half-hearted nature of financial reform in Sri Lanka, combined with macroeconomic instability, was a major factor in reversing the 1977 policy of trade liberalization. (Lal and Rajapatirana, 1989; Hiemenz and Langhammer, 1989). Other authors (e.g., Jayawardena et al., 1987; Roe, 1982) have pointed to the Sri Lankan experience as an illustration of the harmful long-run consequences of setting interest rates "too high." In light of what happened during the first two post-reform years, for instance, Roe (1982, p. 218) argued that

the high interest rate provides a useful anti-inflationary check in the short run and helps to moderate the speculative influences which could otherwise have been stimulated by Sri Lanka's trade liberalization. However, it is not a policy that should be looked to for significant long-term benefits. There is little evidence that the high interest rates are contributing to an improved allocation of capital funds.

Coats and Khatkhate (1984) and Khatkhate (1988) consider Roe's analysis to be a "quite convincing" demonstration that freeing interest rates without regard for the real rate of return on investment may jeopardize the complementary relationship between financial asset accumulation and capital formation.

This study confines itself to the relationship between the domestic financial market and trade reform. In other words, it does not deal with the relationship between the capital account in the balance of payments and the trade liberalization. This latter issue has been extensively studied in recent years, and a consensus seems to have emerged that liberalization of the current account in the balance of payments should precede liberalization of the capital account in most circumstances (e.g., Corbo, 1987; Edwards and Edwards, 1987; Frenkel, 1982; McKinnon, 1982).

Following established practice, the term "trade liberalization" as used here means "the process of removing, or reducing, the implicit premiums associated with quantitative restrictions (including rationing in the case of price controls) that prevent individuals from carrying out the transactions they wish to undertake at prevailing (world market) prices" (Krueger, 1985; see also Michaely et al., forthcoming; Choksi and Papageorgiou 1985). The term "financial liberalization" refers to any action to remove or reduce "financial repression" or "financial restriction." Financial repression occurs when the government orders interest rates to be set at rates well below those needed to balance the supply of financial savings with investment demand. Financial restriction occurs when explicit or implicit taxes (e.g., high reserve requirements, compulsory purchases of government securities, deposit taxes, prohibitions on lending to certain types of businesses, forced lending to bad risks) force banks to maintain a wide wedge between lending and borrowing, even if they are allowed to charge market rates (McKinnon, 1973; Shaw, 1973; Fry, 1988).

The rest of this paper is structured in the following manner. Section 2 surveys existing theory on how domestic financial market conditions affect the outcome of trade liberalization and delineates testable hypotheses. Section 3 outlines economic performance and financial development in the pre-reform Sri Lankan economy and describes the key elements of the 1977 trade policy reform. Section 4 attempts to sort out the ways in which financial market conditions affected Sri Lanka's economic adjustment following the trade liberalization. The implications of various policy initiatives in the financial arena as well as distortions which were left untouched in the process are analyzed in light of the earlier theoretical postulates. The final section gives a summary and the conclusions of the study.

2. Central Relationships

The object of trade liberalization is to realize gains that can be made from a better allocation of domestic resources. In particular, the restructuring of incentives under trade liberalization is done in the belief that total factor productivity will be improved by eliminating discrimination against exports and efficient import substituting activities, reducing the variance in production incentives across

industries, and encouraging a better allocation of resources to tradables. In coordination with trade liberalization, reform of domestic financial markets can play a crucial role on both the demand and supply sides. The demand side complementarity of the financial market involves appropriate adjustment of the real exchange rate (the relative price of traded to nontraded goods) following a trade liberalization. On the supply side, the domestic finance market influences factor mobility through its impact on both the volume and allocation of credit.

2.1 Demand Side Complementarity

The relative price adjustments which occur in an economy following trade liberalization can be expected to bring about a depreciation in the real exchange rate, thus encouraging a shift of resources to the production of tradables. Sustaining (and improving upon) this greater price competitiveness is necessary if the gains from liberalization are to be permanent.

Liberalization, however, usually will have favorable output and employment effects which may cause the real exchange rate to appreciate, thus counteracting the main goal of liberalization. That is, favorable expectations about income growth may be translated into greater perceived wealth, and greater perceived wealth may in turn be reflected in increased consumption if households change their savings levels with a view to achieving desired wealth targets in Metzlerian fashion. The level of investment may also increase, since liberalization generally raises the real return on investment. In the typical situation, this increase in aggregate demand will cause a deterioration of the current account and an appreciation in the real exchange rate.¹

A rise in domestic interest rates toward market clearing levels, when it is one part of a financial reform package, may be an effective means of preventing premature appreciation of the exchange rate (McKinnon, 1973; Kapur, 1986).² An increase in interest rates raises the demand for interest-bearing bank deposits and reduces domestic nontradable prices for a given rate of money expansion and inherited set of inflationary expectations. A rise in domestic interest rates has the added advantage that it will produce an immediate increase in the volume of bank credit and thus may facilitate supply side adjustments. The use of contractionary monetary policy as an alternative strategy for preventing a premature appreciation of the exchange rate may produce contractionary supply side

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1. Under the usual assumption that tradables and nontradables are both normal goods, a rise in aggregate demand raises the demand for both types of goods. Since the economy is a pricetaker in the world market, the increase in demand for tradables is simply reflected as a trade deficit without generating any price rise. By contrast, increased demand for nontradables push up their prices as the supply is not perfectly elastic.
 2. Here we of course assume that controls on the capital account are not relaxed.

effects, given that business firms depend heavily on bank credit for working capital.

Interest rate reform may also have a favorable impact on the real exchange rate through its impact on the composition of asset portfolios. In most developing countries, the typical saver's (investor's) portfolio is composed mainly of direct financial claims (cash and bank deposits) and physical assets (mostly real estate and related nontradables, and consumer durables). The market for indirect financial claims (such as bonds, common stocks, mortgages, commercial bills) is insignificant in most small country economies. Thus, if the financial regime remains repressed, the impact of an increase in income generated by trade liberalization will lead to stronger demand for physical assets, particularly nontradables. Real estate is a typical nontradable asset. Since property is in fixed supply, total holdings of financial assets and property are not altered by purchases of nontradables. The enhanced demand for physical assets will only stop when the price of property rises high enough to deter further purchases (Bevan et al., 1987). The outcome of this process will be an appreciation in the real exchange rate which reduce the incentive to increase production of tradables.

2.2 Supply Side Complementarity

The typical pre-liberalization economy is one in which a variety of domestic markets, as well as the foreign trade regime, are subject to controls. As well as incurring significant economic costs individually, these controls interact with one another in a synergistic fashion to magnify their total cost to the economy (Krueger, 1984). In such a context, the manner in which the economy reacts to trade liberalization depends on what happens in related markets. Government control of these markets may severely constrain factor mobility, both by limiting the volume of credit and preventing its efficient allocation, thus reducing the intended benefits of trade liberalization.

A well-known feature of a repressed financial regime is the maintenance of real interest rates which are much less than the sum of the real rate of return on capital and the real resource costs of financial intermediation. Consequently, financial deepening is reduced, leading to a shrinking in the volume of institutional credit. This problem may be compounded if the government siphons away an increased proportion of institutional credit to finance its own investments. If that happens, the quality of the nation's investment portfolio and the capacity of the economy to generate surpluses may be compromised. The value of financial liberalization is that it augments the availability of investable funds, particularly for the private sector, and thereby facilitates investment in the tradable sectors following trade liberalization.³ In a repressed financial regime, and owing to the resulting excess demand for institutional credit, credit is usually rationed on the basis of criteria unrelated to economic feasibility. Credit rationing usually means making room in credit queues for projects that would automatically be disqualified if an equilibrium

3. It is generally the case that tradable sectors in most developing countries are dominated by the private sector.

interest rate prevailed. The invariable outcome is the allocation of some of the available credit for suboptimal projects while a larger number of high-return projects are denied credit.

There is another relationship between trade liberalization and the financial markets that should be noted. One of the purposes of trade liberalization is to raise the return on investments in the tradable sector. However, the sectors or firms to which the government channels credit are not necessarily associated with trade strategy priorities. Moreover, the cost of borrowing in a financially repressed economy can differ from sector to sector and may do so in a way that reduces the efficiency of resource allocation. Consequently, if the financial market is repressed, the anticipated reallocation of resources that should follow trade liberalization may not take place or may take place in a less effective way.

There are two ways in which a controlled financial regime can thwart the employment and income distribution effects of trade liberalization. Credit rationing at artificially low interest rates, together with real exchange rate overvaluation and the preferential treatment accorded to capital goods imports in a controlled trade regime, encourages capital-intensive activities at the expense of labor-intensive activities (Krueger 1983). Furthermore, credit rationing may squeeze out small borrowers who cannot pay the high costs of obtaining information, who lack adequate collateral, or who are not likely to achieve economies of scale. Small borrowers may also be denied credit because of the natural inclination of commercial private banks to favor only the largest and safest borrowers. (Gonzalez-Vega, 1984 and 1985). Reducing or eliminating credit rationing can therefore be expected to improve employment prospects and income distribution, since labor-intensive activity will benefit and a larger number of borrowers will have access to formal cr

2.3 Some Qualifications

The hypotheses above focus only on the operations of the organized (formal) money market (OMM). In most developing countries, however, there is also an active but unorganized money market (UMM) often referred to as the "curb market" or "informal market." The volume of the lending transacted on this market may be at least as great as, and perhaps many times greater than, that of the OMM.⁴ Because of this, it has been argued that "financial liberalization is an exceedingly chancy proposition" in terms of whether it will produce financial deepening (Buffie, 1984:318, see also van Wijnbergen, 1982 and 1983; Buffie, 1984; Taylor, 1983; and Edwards, 1988). Claims in the informal market may be an important alternative to holding transaction balances (cash) and time deposits with commercial banks. These claims are mostly in the form of direct borrowing by households and thus can be termed "100 percent intermediation."

By contrast, reserve requirements constitute a leakage in the financial intermediation done through commercial banks. (Because of official reserve

4. Ghate (1988) provides a comprehensive survey of the literature on this phenomenon.

requirements, bank lending based on household deposits implies a " $(1-\alpha)$ 100 percent intermediation" where " α " is the reserve deposit ratio.) Given this difference, so the argument goes, financial liberalization may reduce the overall degree of financial intermediation of the economy, provided bank deposits are better substitutes for UMM claims than for cash. Van Wijnbergen (1982) and Edwards (1988) have provided empirical support for this hypothesis (now popularly known as the "financial crowding-out hypothesis"), using data from South Korea (henceforth, Korea).

The analytical value of this hypothesis for developing countries as a whole is yet to be established, however. The evidence of other authors (Little et al., 1987; Ghate, 1988; Fernando, 1988), in fact, suggests that any generalizations based on the Korean experience may be misleading. In Korea, "the UMM is largely an urban phenomenon" (van Wijnbergen 1982:124) and is "intertwined closely with the banking system, as funds raised by dealers in that market often pass through the banking system" (Kim 1986:151). It is therefore not unrealistic to treat UMM claims and commercial bank deposits as close substitutes. In other developing countries [except perhaps in Taiwan (Koshaka, 1984)], there is no such thing as "the informal credit market." Rather, there are many informal credit markets (distinguished by such factors as geographic location, type of lender, and industry or service being financed) which operate independently of each other and with no links to the banking system. A significant portion of informal lending takes the form of noninterest-bearing loans made on the basis of kinship, friendship, or patron/client relationships. And, given the high risk involved in the informal markets, most interest-bearing loans are made at rates that may be 5 to 10 times higher than market rates. Moreover, surveys suggest that resorting to the informal markets for investment and working capital is not typical of entrepreneurs in most countries, however common it may be in Korea (Little et al., 1987). It therefore seems reasonable to conclude that financial market reform is not likely to trigger a significant shift of funds from the informal to the formal market.

Another objection to the crowding out argument is that it assumes that a choice is made by borrowers on the basis of monetary assets (cash, bank deposits, informal market claims) alone. Thus, the possibility of substitution of physical assets for financial assets, strongly emphasized by certain investigators (McKinnon, 1973; Galbis, 1977) is ignored. Given the nature of household asset holding behavior in developing countries, this substitution process may be of crucial importance in determining the outcome of financial market reform.

An increase in the volume of OMM transactions, even if it involves considerable crowding out of UMM activities, may be desirable on efficiency grounds. That is, a given quantity of savings mobilized via the formal financial sector may be more productive than the same quantity of savings mobilized through informal channels. Because the supply of credit in curb markets is limited, money lenders in these markets operate on a small scale and charge high interest rates. Consequently, borrowers use these funds mostly for short-term projects and for activities where the potential

competition for funding is low, as in the nontradable sector.⁵ Given the high degree of variability of interest rates across informal markets and among different types of lending, "the main burden of ensuring that there is uniformity in borrowing rates and that competition is broadly based rests with direct bank lending" (Shaw 1973:85).

3. The Sri Lankan Setting

After becoming an independent member of the British Commonwealth in 1948, Ceylon (as it was then commonly called) maintained an open trade regime and a generally free domestic economy, but subsequent government decisions had practically closed the economy to the free flow of imports by the mid-1960s.⁶ By then, the Bank of Ceylon had been nationalized for five years and a state-owned commercial bank (The People's Bank) had been established to meet the financial needs of Ceylon's rural areas. Aided by prohibitions on the opening of new branch offices by foreign banks, and the opening of new accounts in foreign banks by Ceylon's inhabitants, the two state-controlled banks had grown rapidly. The financial sector was extremely repressed, and there was little room for independent and efficient financial intermediation (Khatkhate, 1982). The insurance industry had been nationalized in 1963, and large and growing percentages of the industrial, trade, and agricultural sectors were owned by inefficient state enterprises. The currency was highly overvalued, and most prices were stringently controlled.

Despite the steep rise in government intervention in the economy during the 1960s, Ceylon's economic growth was fairly respectable. The average annual rate of GDP growth during the decade was 4.5 percent, while average annual growth in per capita income was 2.1 percent.

The period from 1970 to 1977 was marked by further government intervention in the economy and declining growth rates. In 1972 (the same year in which Ceylon was formally renamed Sri Lanka), the government consolidated its control over the mobilization of household savings by setting up a National Savings Bank. By the mid-1970s, almost 60 percent of the total credit extended by all financial market institutions was directly absorbed for budgetary purposes (Lee, 1987), and the balance was rationed in favor of preferred institutions (mostly public corporations). With the enlarged conscription of funds from the banking system to finance public sector activities, the government succumbed to the temptation to set interest rates at low levels. Given continuing inflation (which had begun in the late 1960s), this produced negative real interest rates (Table 4).

The stock market stayed in the doldrums during the first half of the 1970s, with total share turnover declining to 2.5 million Rs. in 1975, compared with 19.8 million in 1952. (Karunatilake 1986). Constraints on foreign exchange remittances dissuaded foreign-owned companies from buying

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5. One way of saying this is that the activities of the informal sector are less contestable as it is bereft of foreign competition.
 6. For details on Sri Lanka's trade and development policy since independence see Rajapatirana (1988) and the works cited therein.

or selling the shares they owned, while threats of nationalization prevented the incorporation of new companies. Meanwhile, about one in every five Sri Lankan workers was unemployed.

Pervasive restrictions on the financial system had produced a process of financial disintermediation. The degree of financial intermediation, as measured by the M2/GNP ratio, declined or remained stagnant in most years. In 1977, this ratio was well below the level recorded in the early 1960s (Khatkhate, 1982). In short, the financial sector was moribund, and the two major state-owned banks held 82 percent (in value) of all deposits in the banking system.

Average annual growth in GDP between 1970 and 1977 slumped to 3 percent (1.2 percent in per capita terms). By 1974, the share of GDP produced by the public sector had risen to 12.2 percent (from 5.7 percent in 1961), and nationalization of the tea, rubber, and coconut plantations had raised this above 20 percent by 1977. The country's legendary ability to give its people a higher standard of living was rapidly disappearing.

3.1 Key Elements of the 1977 Policy Reform⁷

Consternation over economic stagnation set the stage for market-oriented policy reform in 1977: trade liberalization, a significant exchange rate realignment, new incentives for foreign investors, overhaul of financial markets, limits on public sector participation in the economy, and the removal of price controls and government monopolies in domestic trade. Half-heartedness and inconsistencies characterized the implementation of the new policies, but their mere existence marked a clear departure from the conventional wisdom of the closed economy era.

Trade Policy Reform

Trade policy reform was the key element in 1977. Sri Lanka's quantitative restrictions on imports were supplanted by a revised system of tariffs, and this far-reaching change was accompanied by the removal of most of the price controls on domestic trade. While many of the tariff changes involved a gazetted increase in the rate, the degree of protection provided previously by way of licensing was significantly reduced. Some 280 items⁸ remained under license, but for the most part licenses were issued freely. Subsequent measures in this area were of a corrective kind. A few items whose free importation had a "damaging" impact on public enterprises were returned to the licensing list, and certain tariff rates were increased from time to time to increase revenues. The average effective rate of protection for the manufacturing sector increased

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7. Elements of the 1977 policy reform package and its implementation, particularly the trade reform and its consequences, have been examined in detail elsewhere (Lal and Rajapatirana 1989; Cuthbertson and Athukorala 1990).
 8. These items together accounted for about 8 percent of import value in 1980 (a "normal" year following liberalization) (Cuthbertson and Athukorala, 1990).

marginally (by 3 percent) between 1978 and 1984, but at the same time the average degree of dispersion of sectoral protection declined by about 6 percent.

The opening up of the economy was limited to current account transactions. While restrictions on remitting investment income or the proceeds of sales of assets by foreign firms were removed, the prohibition on overseas capital transactions by Sri Lankan citizens remained intact.

To supplement import liberalization, the dual exchange rate system introduced in 1968 was abolished, and the new unified rate was placed under a managed float. This resulted in an initial devaluation of almost 100 percent. The cumulative effect of trade and exchange rate reform was quickly reflected in a significant improvement in the overall profitability of tradable production (Table 3).

Financial Market Reforms

The major emphasis in financial market reform involved interest rate policy. The bank rate was raised from 8.5 percent to 10 percent, and this was followed by a sharp increase in interest rates on deposits at the government-owned National Saving Bank (NSB). Commercial banks followed suit (Table 4). By 1980, due to rising inflation, real interest rates again became negative.

The government responded by increasing NSB rates once more, thus triggering a second round of increases by the commercial banks. Interest rates on deposits have been freely determined since then, with the Treasury bill rate serving as the lower limit and the deposit rates of the National Development Bank the upper limit.⁹ There is no direct interference by authorities in the determination of lending rates, however.

In the area of institutional reform, the prohibition on new foreign bank branch offices, which had been in place since 1961 was relaxed in 1979. By mid-1980, 14 foreign banks had opened branches in Colombo, bringing the total number of foreign banks operating in the country to 21 (Table 1). Another institutional measure authorized all commercial banks to operate Foreign Currency Banking Units (FCBUs). An FCBU is permitted to undertake offshore banking services (accepting deposits and granting loans in designated foreign currencies) to nonresidents, commercial banks, free trade zone enterprises, and other residents approved by the Central Bank.

These developments in banking, and rapid expansion by finance companies, set the stage for some competition in deposit mobilization and interest rates. An active interbank market also emerged. However, these

9. The rates paid by major commercial banks have continued to be lower than NDB rates. Some of the newly opened foreign banks and almost all finance companies (privately owned deposit-taking institutions involved mainly in hire-purchase and leasing financing), however, pay rates higher than these rates. Major commercial banks are able to pay lower rates because they provide additional services to customers.

developments reduced the preeminence of the two state-owned banks only marginally (Tables 1 and 2).

The most important policy initiative in the sphere of credit allocation was the termination of the Comprehensive Rural Credit Scheme, under which the Central Bank offered an interest rate subsidy and a 75 percent defaultage guarantee to commercial banks (mostly to the two state-owned banks) on cheap loans provided to the agricultural sector. It was expected that ending the program would encourage commercial banks to become active in granting agricultural credit (Sanderatne, 1989).¹⁰

These actions notwithstanding, initiatives on the credit supply side generally meant an intensification of government intervention rather than liberalization. Following the interest rate reform, for example, the Central Bank intensified its intervention in credit allocation. The Medium and Long Term Credit Fund, a little-used 1963 scheme to refinance loans maturing in 3 to 15 years by commercial banks and development finance institutions (DFIs), was revised in 1979 with a view to directing resources into priority areas. Prior to this, the program had only two categories: development of agriculture, and "other." Under the revision, agricultural development was divided into four subcategories, and export-oriented projects were accorded priority. More elaborate operational procedures were set up, while final approval of each individual project was retained by the Central Bank. Refinancing allowed the lending bank a final margin of 4 percent, a lending rate below the market interest rate for similar loans.

Then, a National Development Bank was established by the government to provide project finance, equity funding, and refinancing to public and private enterprises in priority areas. The Central Bank plays a supportive role in the operation of the NDB by guaranteeing repayment of loans provided by NDB under a Small and Medium Industry loan scheme (SMI).

In 1985, the Central Bank launched a scheme to establish Regional Rural Development Banks (RRDBs) (which essentially took the form of regional outlets providing cheap credit). The goal was "to build a sound rural credit structure because the existing commercial banks in the country were not granting an appropriate amount of credit to the rural sector" (Central Bank, 1985).

A National Credit Plan had been introduced in 1981 as a way to monitor the expansion of credit to the private sector and to direct credit to priority areas.¹¹ Under this plan, the Central Bank allocated credit

10. Credit provided under this scheme accounted for about 7 percent of total bank credit to the private sector by the mid-1970s. The default rate had climbed close to 80 percent.

11. There seems to have been a significant "external" influence behind these policy initiatives of the Central Bank. The RRDB scheme was modeled after a similar scheme in India, under the advice of an expert from the Reserve Bank of India (Malhotra, 1984 and 1982 (published in 1989)). The external influence can also be identified in the designing (continued on next page)

among the banks by negotiation. There were no penalties for noncompliance, but the Central Bank tried to bring banks into line through "moral persuasion."

No attempt was made, however, to reduce the government's absorption of financial savings mobilized through the "captive" financial institutions. About 90 percent of the NDB's loan portfolio continued to take the form of investment in government securities,¹² and a similar pattern was observable in the operations of the government-managed provident fund (EPF) and insurance corporations.

Accompanying Policies

A major setback to the implementation of policy reform occurred in the areas of exchange rate management, export promotion, and public sector enterprises. After about 1981, the Central Bank gradually intensified its intervention in the foreign exchange market to support the exchange rate of the rupee. The rupee then gradually appreciated in real terms, with adverse implications for tradable production (Table 3). The newly established Export Development Board then had little success in restoring incentive levels, since the financial incentives it could provide to exporters were miniscule compared with the massive disincentive of currency appreciation.

While a few loss-making public enterprises were either shifted to the private sector or closed down, many others continued to operate despite dismal performance and ongoing dependence on budgetary transfers. Further, a number of corporations continued to receive preferential treatment, including high tariffs and quota protection (Cuthbertson and Athukorala, 1990). During the period 1977-85, almost 25 percent of total annual budgetary expenditures took the form of transfers to public enterprises. The comparable figure for the period 1970-76 was only 10 percent.

The chief constraint to the realization of gains from economic liberalization, however, was the macroeconomic instability generated by a massive public investment program that included a billion-dollar multipurpose irrigation project (the Mahaweli Development Program, or MDP), a large public housing program, and an urban development program.

Between 1978 and 1982, these three projects absorbed about 75 percent of public investment, the Mahaweli project alone accounting for 45 percent. The imports needed for the projects were largely financed by aid donors, but the pressure on the government budget to provide counterpart funds was substantial. Thus, the projects put pressure on the government's ability

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of the Export Credit Insurance Corporation and various export-credit schemes of the Central Bank.

12. Investment in government securities carried an interest rate of about 10 percent as compared with the NSB deposit rates of 11 to 18 percent. The loss to the NSB resulted from this difference was covered by a subsidy from the treasury.

to maintain macroeconomic stability. The direct expenditure effects of the projects, coupled with inflationary pressure that originated in deficit financing, contributed to an appreciation of the real exchange rate with adverse implications for the tradable goods sector. Macroeconomic instability then compelled the government to take some policy steps which ran counter to the 1977 reforms. For instance, import duties were increased from time to time for revenue purposes, with adverse protective effects. Credit ceilings, and higher reserve requirement ratios on commercial bank deposits, produced a credit crunch which negated the anticipated favorable supply side effects of financial reform. Finally, inflationary pressures generated by the public investment program shriveled eroded real interest rates, with adverse implications for savings mobilization.

4. Empirical Analysis

To set the stage in applying the above framework, it is necessary to assess the impact of reform on financial deepening. Then, an attempt is made to trace the connection between the new financial regime and the outcome of trade liberalization. This is followed by an examination of the impact of financial policies on the availability and distribution of loanable funds, with emphasis on the implications for private-sector investment. In particular, changes in the interest rate structure and sectoral allocation of credit are examined with a view to identifying the implications of the financial regime on expected efficiency gains from trade liberalization. Finally, the findings of the previous sections are reconsidered in light of the neo-structuralist emphasis on the crowding out effect of financial reform on the curb market.

4.1 Financial Deepening and Savings Mobilization

Basic indicators of the financial depth of the economy are presented in Table 6. It is evident that interest rate reform in 1977 was followed by a remarkable improvement in financial intermediation. The M3/GDP ratio rose from an average level of 29 percent in the 1970-77 period to 34 percent in 1978 and stabilized at around 40 percent in the 1980-87 period. While M1 continued to increase in real terms, its ratio to GDP declined. This pattern suggests a shift in household asset portfolios from cash holdings to saving and time deposits (STDs) in response to favorable interest rates. To examine the role of interest rate changes in determining the pattern of financial intermediation, we estimated demand functions for M1 and STD. The explanatory variables used in each equation were real GDP (to represent the wealth effect), the weighted-average savings and time deposit rate (RSTD), to represent own rate of return on STD or the opportunity cost of holding M1, and the rate of inflation with one-period lag, PE (=minus the real rate of return on cash balances). The equations were estimated using the ordinary least squares method, with all variables expressed in logarithms. In each equation, dummy variables (an intercept dummy and slope dummies for all explanatory variables) were included to test the stability of regression coefficients between the pre- and post-reform periods. The dummy variables retained in the final regressions were determined by using the analysis of covariance F -test (F -test) for variable deletion. The results are reported in Table 7. The two regressions pass the F -test for overall significance and Ramsey's RESET test for

appropriateness of functional form. (The basic assumptions relating to the OLS error process were amply supported by various test statistics.)

The result for the RSTD variable in both equations suggests that individual financial asset-holding behavior strongly depends on the rate of return on bank deposits. For the post-reform period (1978-87), a one percent increase in RSTD seems to have been associated with a 0.8 percent decline in real cash holdings and a 4.2 percent increase in real RSTD. The equation for STD showed a significant wealth effect operating upon financial savings behavior; a one-percent change in GDP was associated with a 1.5 percent change in STD. This effect on demand for M1 was also statistically significant, but much smaller (0.5 percent). In sum, portfolio shifts (both from cash balances and other assets) triggered by interest rate policy were behind the surge in bank deposits (and hence the degree of financial intermediation), while the wealth effect generated by liberalization-led income growth seems to have played an important but secondary role.

Was the growth of financial savings reflected in an increase in the level of total domestic savings? According to the McKinnon-Shaw thesis, a positive link between interest rates and financial savings also implies a positive link between the former and total domestic savings (investment), for at least two reasons. First, according to McKinnon's "complementarity hypothesis" in a developing country context, a decision to accumulate financial savings is coterminous with a decision to acquire physical capital. Second, given limited portfolio choices, the savings process in these countries tends to be highly "money intensive" (McKinnon, 1976). A contrary view is expressed by the neo-structuralists, who argue that while raising the rate of return on bank deposits is likely to induce a portfolio shift in favor of that asset, such a response need not reflect more savings but simply a decline in other assets (Taylor, 1988).

Jayawardena et al. (1987) interpret the Sri Lankan experience as supportive of the neo-structuralist position. Despite the impressive growth of bank deposits, there was "little evidence of any significant mobilization of domestic savings" (p. 27). But the data reported in Table 8 suggest that this observation, based on an analysis of data on total domestic savings, is misleading. During this period, public sector savings performance did not show any improvement, indicating the country's heavy dependence on foreign aid. Nonetheless, the behavior of private savings was an impressive improvement over the pre-reform period. For instance, the average propensity to save (the private savings to private income ratio, or PRS/YPR) increased from 14.4 percent in the 1970-76 period to 20.2 percent in the 1977-84 period. Econometric work (Athukorala and Jayasuriya, 1989) lends support to the view that interest rate reform was laid behind this improvement. These estimates suggest an interest rate elasticity of 0.98 percent and an income elasticity of 1.22 percent for private savings. In sum, when the analysis is appropriately focused on private savings behavior, the Sri Lankan experience provides ample support for the McKinnon-Shaw view point.¹³

13. The evidence on interest elasticity of saving in developing countries, which come from numerous multi-country cross-section studies, is far (continued on next page)

4.2 Financial Liberalization and the Real Exchange Rate

In section 2, we presented the theoretical case for expecting complementarity, operating via the real exchange rate, between financial liberalization and the outcome of trade liberalization. In particular, it was postulated that financial deepening would help sustain depreciation in the real exchange rate by containing aggregate demand pressure and by tilting household asset demand away from nontradable assets and towards interest-bearing bank deposits.

The empirical evidence presented in the previous section showed that both financial savings and total private savings responded favorably to interest rate reform. This evidence, in turn, supports the view that interest rate reform was instrumental in dampening the impact on nontraded goods prices of the surge in private income (expenditure) triggered by trade reform. In the absence of high interest rates, the expansion of domestic demand would have been stronger, and thus would have created greater pressure to push the real exchange rate upward.

Any attempt to make a detailed analysis of the impact of interest rate policy on household asset-holding behavior was hampered by an absence of time series data. Nevertheless, data from the Consumer Finances Survey of the Central Bank provide some support for our hypothesis (Table 9). Bank deposits as a share of household asset portfolios reached 33 percent in 1981-82, as compared with a historical figure of less than 10 percent.¹⁴

(continued from previous page)

from clear. (see Fry, 1989, Gonzales-Arrieta, 1988 for surveys of this literature). While some studies come down against any interest rate effect on savings, the others find a positive but rather small interest elasticity (around 0.1 percentage point) which is "not large enough to warrant great policy significance" (Fry, 1989, p.20). The appropriateness of the multi-country cross-section approach (which implicitly assume that the observations are drawn from a "homogenous universe") to measure the average saving propensity for a diverse group of countries is, however, highly questionable. The few available country studies (eg. Onis and Riedel 1989, Yusuf and Kyle-Peters, 1984) have, in fact, produced interest elasticity estimates which are similar in magnitude to our estimate for Sri Lanka.

14. The mild decline in this share in 1978-79 as reflected in the survey data is somewhat puzzling. The Central Bank ascribes this decline to consumers' rush to satisfy their pent-up demand (accumulated over a long period of import restrictions) for durable consumer goods, following the trade liberalization (Central Bank, Consumer Finances Survey 1978/79, Part 1, p. 171).

To ascertain the cumulative impact of financial deepening on the real exchange rate, we developed the following model and then used annual data for the period 1970-87:

$$\text{RER} = f(\text{FIR}, \text{NFC}, \text{GEXP}, \text{BMP}, \text{TOT})$$

$$f_1 > 1; f_2, f_3, f_4, f_5 < 0$$

Where,

RER = the real exchange rate, defined as the relative price of traded goods to nontraded goods,

FIR = the financial/intermediation ratio (M3/GDP),

NFC = net foreign capital as a ratio of GDP,

GEXP = government expenditures measured as a proportion of GDP,

BMP = the black market premium on the official exchange rate measured as $(\text{BER}-\text{ER})/\text{ER}$ where BER and ER represent the black market and the official exchange rates, defined as rupees per US dollar, and

TOT = terms of trade (1980 = 1.0).

Because of the difficulties involved in directly measuring the prices of traded and nontraded goods, the real exchange rate is usually proxied by the nominal exchange rate, adjusted for change in the weighted average of the wholesale price indexes of trading partners relative to the domestic consumer price index (e.g., Edwards, 1988; Favaro and Spiller, 1989; Cottani and Garcia, 1989). This proxy measure is based on the [rather restrictive] "law of one price" assumption (Warr, 1986). In this study we measured the RER using implicit deflators derived directly from the national income accounts for tradable and nontradable production.

The degree of financial intermediation (the key regressor in the model) was represented by the M3/GDP ratio. The black market premium was included to capture the impact of government intervention on the real exchange rate. The expected effect of an overvalued exchange rate, of course, is that it tends to suppress the prices of tradables. Thus, we would expect a negative sign for the coefficient of this variable. The use of the other three variables is now standard procedure in determining the real exchange rate.

The model was estimated using the ordinary least squares method. As in the case of estimating money demand functions (Table 7), a dummy variable technique was employed to detect any structural break in the hypothesized relationships that might have followed the 1977 reforms. Only the slope dummy for FIR was found to be important. There was high collinearity between TOT, and NFC and GEXP, and exclusion of the former improved the statistical significance of the coefficients of the latter two variables. The results are reported in Table 10.

The coefficient of FIR was not statistically significant for the period 1970-77. But it was highly significant with the expected sign for the postreform period (1978-87), supporting our hypothesis that greater financial intermediation (achieved through financial reform) contributed to improvement in the competitiveness of tradable production. We suspect that the failure of our model to detect a significant relationship between RER

and FIR during the pre-reform period was due to purely statistical reasons. First, our RER series might not have been a satisfactory indicator of real exchange rate behavior in an economy characterized by quantitative restrictions (QRs). In the presence of QRs, the distinction between traded and nontraded goods becomes blurred; commodities subject to QRs are usually priced not on the basis of the prices of competitive imports but on the basis of domestic demand and supply (as in the case of nontradables) (Corden, 1987). Second, the degree of year-to-year variability of both data series was rather small. Given this "insufficient" variability, our regression exercise may have failed to distinguish the effect of the FIR on the RER from other random effects on the latter. As we expected, both net foreign capital inflow (NFC) and government expenditures (GEXP) seem to have exerted significant downward pressure on the real exchange rate. By contrast, the coefficient of BMP was not statistically different from zero. This result supports the view that the real exchange rate is determined by real variables, and that therefore the nominal exchange rate has little influence upon it (Brock and Tower, 1986).

To sum up, our regression exercise provided a useful framework for understanding the behavior of the real exchange rate in Sri Lanka following the 1977 reforms. While interest rate reform had a notably salutary effect on the real exchange rate, this effect was crowded out by the much stronger combined negative effect of massive capital inflows and uncontrolled public expenditures. Consequently, the significant improvement in the country's international competitiveness achieved through trade liberalization was short-lived (Table 3). Had it not been for the favorable impact of increased financial deepening, the squeeze on the profitability of tradable production during the ensuing period would have been much sharper.

4.3 Volume of Credit and Private Investment

The increase in financial intermediation after reform (section 4.1) was reflected in a massive increase in the volume of institutional lending. Total real credit recorded a three-fold increase from Rs. 15,361 million in 1977 to Rs. 47,798 million in 1985 (Table 11). There was also a major shift in the allocation of credit in favor of the private sector. That sector's share increased from 28 percent in 1977 to 60 percent in 1985, at the expense of the combined share of the government and public sector corporations. As noted above (section 3.2), financial reform did not include any measure to allow greater freedom for the portfolio decisions of government-owned nonbank financial institutions. Instead, these institutions continued to function as "captive sources" of budgetary finance. The increase in private sector credit therefore came predominantly from commercial banks. Reflecting the government's emphasis on guided credit to priority sectors, credit extended by the development finance institutions (DFIs) did increase (Table 13), but their share of total institutional credit allocated to the private sector increased to only 7 percent by 1985. In that year, commercial banks accounted for 85

percent of such credit, with the balance coming mostly from finance companies.¹⁵

Expansion of institutional credit was undoubtedly a factor in the expansion of private sector investment in the postreform economy. Private fixed investment as a share of GDP increased from an average level of 8.5 percent in the early 1970s to 18 percent in 1978-82 (Table 15). Between these two periods, the share of fixed investment in private-sector income rose from 10 percent to 18 percent.

To delineate the link between institutional credit and private fixed investment (PRW), an investment function was estimated using annual data for the period 1960-82.¹⁶ The explanatory variables were total real (1980) institutional credit to the private sector (ICP), the real GDP growth rate estimated in terms of logarithmic differences (YR), real public sector fixed investment (PBIV), an index of rental cost of capital (RC),¹⁷ and PRIV with a one-year lag (PRIV(-1)). The inclusion of YR as an explanatory variable implied an accelerator-type relationship between the level of domestic economic activity and capital formation. PBIV was chosen as an explanatory variable in light of the debate on the crowding out effect (Blejer and Khan, 1984). PRIV(-1) was included as a regressor on grounds that the adjustment of actual investment to the desired level is not completed within a single period.

The estimated investment function is,

$$\begin{aligned} \ln \text{PRIV} = & - 0.33 + 0.63 \ln \text{ICP} - 0.34 \ln \text{PBIV}(-1) \\ & (0.25) \quad (3.52)* \quad (2.26)** \\ & + 0.05 \ln (1+\text{YR}) - 0.07 \ln \text{RC} + 0.71 \ln \text{PRIV} (-1) \\ & (3.14)* \quad (1.17) \quad (4.73)* \end{aligned}$$

$$R^2 = 0.92 \quad F = 49.3 \quad LM = 0.02$$

$$\text{RESET2} = 0.03 \quad \text{JB} = 0.96 \quad \text{WH} = 0.85$$

15. Estimated using figures obtained from, Central Bank, Review of the Economy. Figures used in the remainder of this paper, unless otherwise stated, come from this source.

16. The Central Bank has stopped publishing a separate private investment series since 1983.

17. This index is constructed as $RC = [PIM * (1 + NLR)/P] 100$

where PIM = [price of investment goods proxied by the import price index of investment goods (1980 = 100) (adjusted for the dual exchange rate (FECC) premium for the period 1968-77), NLR = nominal one-year (maximum) lending rate of commercial banks and P = implicit GDP deflator (1980=100) for non-service activities.

Notes

- (1) t-ratios are given in parentheses, with level of significance denoted as * = 1% and ** = 5%.
- (2) For definitions of test statistics, see note 1 to Table 7.

According to the regression results, the short-run (one-year) elasticity of real private investment with respect to loanable funds was 0.63. This figure, when combined with the coefficient of the lagged dependent variable, yields a long-run elasticity estimate of 2.17. Thus, the hypothesis that private investment depends crucially on the availability of credit is supported overwhelmingly. The results also support the hypotheses on the positive impact of income growth and the negative impact (the crowding out effect) of public sector investment on private investment. But these influences seem much less important in magnitude as compared with the impact of credit availability. The coefficient of RC is not statistically different from zero. From the use of the available data, there is no statistical support for the statement that "higher interest rates and the high cost of investment appear to have inhibited private investment activity" (Jayawardena et al., 1987:29; see also Roe, 1982). Ideally, one would have compared the rate of interest and the marginal efficiency of capital to test whether high interest rates inhibited investment. But in the absence of estimates for the marginal efficiency of capital it was necessary to estimate the specific investment function.

Commenting on the Sri Lankan finance market liberalization from a neo-structuralist perspective, Roe (1982:248) noted that deposit interest rates were much higher "than the underlying productivity of the economy's capital will allow." But the regression results reported above do not accord with that view, which can also be disputed on other grounds. First, the empirical basis for Roe's view came from estimates of return on capital (which vary from 5 to 10 percent) for public sector corporations. Our estimates of profitability for a sample of public limited liability companies in the private sector, however, present an entirely different picture (Table 16). Second, it is inappropriate in any case to make a judgment about the desirable interest rate on the basis of a profitability estimate coming from the previous controlled trade regime, since the forces set in motion by liberalization would be expected to improve the profitability of investment. According to both macro-level and firm-level data (Tables 3 and 16), the profitability of private sector production improved remarkably following the trade reforms. As has been discussed in detail elsewhere (Cuthbertson and Athukorala, 1990), it was inconsistencies in the overall policy package which caused the improvement in profitability (particularly that of traded goods) to deteriorate afterwards. Third, as the experience of the ensuing years clearly indicates, the increase in the cost of credit cannot be ascribed entirely to higher deposit rates. The interest rate spread tended to widen in the early 1980s (Table 4), reflecting the impact of other factors, including the increased

restrictiveness in monetary policy,¹⁸ high inflation, a new business turnover tax on interbank transactions, and the mounting operational costs of government-owned banks (see Lindren et al., 1986, and Datta, 1983, for details). Finally, as noted above, even though total credit to the private sector increased considerably, the government continued to utilize well over a third of total institutional savings through its authority over nonbank financial institutions. The interest rate outcome would have been different if measures had been taken to redress this compartmentalization in the financial markets.

4.4 Efficiency of Credit Allocation

The analysis in the previous section provides empirical support for the view that financial reform, by augmenting the volume of institutional credit, played an important role in facilitating supply-side adjustment in the economy. This section extends that analysis by focusing on the pattern of credit allocation. In light of the theoretical discussion in section 2, we focus on two aspects of the credit allocation process, namely, borrowers' access to institutional credit and the degree of dispersion in the cost of credit for various types of borrowing.

There are no time series data on the distribution of institutional credit at the firm level. The available survey-based evidence, however, points to an increase in the number of recipients of credit from the banking system. For instance, in a comparison of the financial structure of small-scale enterprises in 1977 and 1986, Islam and Romijn (1988) found that the percentage of firms which had obtained financial support during the period from the banking system increased from 13 percent to 24 percent. The findings of the Consumer Finances Survey of the Central Bank relating to the distribution of household borrowing by source are consistent with this pattern (Table 17). According to this source, the institutional share in total household borrowing increased from 20.2 percent in 1973 to 25.3 percent in 1978-79 and 40.1 percent in 1981-2. This overall increase occurred despite the shrinking of subsidized institutional lending to the agricultural sector following the termination of the comprehensive credit scheme.¹⁹ At the disaggregated level, the sharpest increase occurred in borrowing for industrial activities. There does not seem to have been a rapid increase, as is popularly alleged, in borrowing for consumption. As theory predicts, various elements of financial reform, such as the greater availability of loanable funds, removal of credit rationing, and a more flexible interest rate structure might have contributed to the increased availability of institutional credit. Whatever the underlying reason may

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18. The level of statutory reserve requirement on commercial bank deposit was increased in mid-1981 and again in November 1983, in response to aggravating macroeconomic imbalance in the economy. As a result, the weighted average of reserve requirement on all deposits increased from 7.4% to 8.1% in 1981 and 10.5% in 1984.
 19. Following this step the share of agricultural credit in total bank credit to private sector declined from 15.2 percent in 1977 to 8.2 in 1982.

be, the broadening of the credit base may have been instrumental in improving employment prospects and income distribution.

Did financial reform, by reducing the degree of dispersion in the cost of credit, contribute to greater neutrality in the incentive structure of the economy? An in-depth analysis of this question is not possible, given the nature of the data base. There are no time-series data on lending rates or cost of credit on a sectoral basis. The only available data are those relating to the lowest and the highest lending rates of commercial banks and DFIs (Table 18). These data show that disparities in borrowing rates increased substantially (or else, the credit allocation in the economy became less efficient) after 1977. But it could also be that interest rate deregulation made it easier for less desirable borrowers to get institutional credit.

The lower rate for commercial bank lending, as well as all rates of the DEF and NDB, were usually those applicable to loans to sectors accorded priority under the "directed" credit policy. Given an annual inflation rate of 5 to 12 percent during this period, these rates implied a negative real cost of capital to preferred borrowers. By contrast, the upper (market-determined) rates remained highly positive. The structure of lending rates therefore introduced credit market distortions and ran counter to the primary objective of trade liberalization--realizing gains from better allocation of resources.

A major explanation for the wide gap between lending at favored or nonfavored rates seems to lie in the nature of the banking system itself. The opening of the banking system to foreign competition had only a marginal impact on the dominance of the two state-owned banks, in terms of both volume of transactions and extent of lending activities (Tables 1 and 2). The "old" foreign banks and the locally-owned private banks showed little interest in extending their operations beyond their traditional domain of trade financing, while the "new" foreign banks, were not eager to do business with purely domestic clients. The provision of long and medium-term finance for industry and agriculture continued to be the role of the state-owned banks. Given the compartmentalized nature of lending, there was little competition in loan rates. Added to this, the state-owned banks continued to be under pressure to set lending priorities and interest lending rates with the government's policy priorities. Since these banks were also expected to be profit-making institutions, relatively low (and at times negative) interest rates for priority clients usually implied excessively high rates for on non-priority borrowers.

Administered priority lending was based on the premise that "high" market-determined rates might deter long-term investment in the tradable sector and thus jeopardize the sustainability of trade liberalization.²⁰ In practice, however, apart from introducing a significant element of distortion into the economy, this guided credit policy achieved little. By 1983, refinanced credit accounted for less than 5 percent of the total domestic loans of commercial banks, and about two-thirds of this lending

20. This has been a recurrent theme in the annual financial-sector review in the Review of the Economy of the Central Bank.

represented pre-export credit extended at a rate below the Treasury bill rate.

Despite policy rhetoric, the share of commercial bank credit allotted to the tradable sector relative to credit for the nontradable sector declined from about 1978 (Table 12). Accompanying this was a gradual decline in the combined share of medium and long-term credit in total bank lending.

The operation of DFIs was lackluster. An inspection of their lending records shows that they were not successful in allocating resources to priority sectors, particularly export-oriented industries. Their lending continued to be limited mainly to meeting the credit needs of a handful of established business groups with diversified interests.²¹ This suggests that a large part of the credit subsidy was diverted into nonpriority sectors.

The failure of Sri Lanka's directed credit policy in the context of trade liberalization is a subject which needs further study.²² However, the evidence considered so far supports the view that a directed credit policy is unlikely to be successful when the overall climate of incentives is moving in a different direction.

4.5 Financial Liberalization and the Informal Credit Market: Some Observations

So far, we have examined the implications of financial reform with respect to the formal money market (OMM). In this section we briefly consider whether our basic conclusions need to be qualified in light of the neo-structuralist crowding-out argument against financial liberalization (Section 2.3). A formal test of the crowding-out hypothesis is precluded by the absence of required time-series data. However, there is a

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21. In a comparison of lists of client companies of NDB and DFC for 1984 we were able to detect 30 instances of the same client appearing in both lists. Most of these are well established import-substituting manufacturing firms with a long history of operation. Moreover, the DFC's sublist of large-scale clients for 1984 is not much different from a similar list for the mid-1970s. On the basis of a list of exporters (for 1984) prepared by the Export Development Board, we were able to identify only about 10-15 percent of the client companies of DFC and NDB as exporters.
 22. This issue is of particular interest given the recent concern about the need, in the context of the typical developing economy where there is no well developed equity market, for achieving a proper balance between the conflicting objectives of maintaining market clearing interest rates that would ensure efficient allocation of resources and pursuing a "growth-promoting" credit policy (Che, 1984; Koshaka, 1984; McKinnon, 1988; Collier and Mayer, 1989).

substantial body of survey-based evidence on informal credit markets in Sri Lanka²³ which permits us to draw some inferences.

In Sri Lanka, as in many other developing countries (Ghate, 1988), the informal money market has continued to play a more important role than the formal market in the provision of credit.²⁴ In 1981-82, for instance, almost 60 percent of the household borrowing in Sri Lanka (which includes borrowing by informal businesses and cottage industries) was provided by the UMM (Table 17). According to a mid-1970s survey of the informal sector in Colombo, over 75 percent of the credit granted to informal businesses came from informal sources (Marga Institute, 1978 and 1981). Informal sources of credit are by no means confined to households and small businesses. The Pettah Money Market (the informal money market in Colombo) is believed to handle very large volumes of funds (Sanderatne, 1989; Datta, 1983). However, the mere existence of a sizable UMM does not necessarily imply significant crowding-out following reforms in the OMM. This will occur only if the UMM is "competitive and agile" (Taylor, 1983), and if it is closely linked with the OMM so that bank deposits are a better substitute for UMM claims than cash or other assets. As argued in Section 2.3, such a characterization may be incorrect in the typical developing country. In fact, the competition and agility is restricted to limited areas and groups. The evidence from Sri Lanka further illustrates this point.

One of the important facts shown by this evidence is that "informal lending consists of a wide range of sources and arrangements, in contrast to the general tendency to think of informal credit as synonymous with pure money lending" (Sanderatne, 1989:22). The share of pure money lenders in the total informal borrowing of households seems to be only about 24 percent (Table 17). A larger share (31 percent) comes from friends and relatives in the form of reciprocal transactions. The rest (55 percent) is mostly a part of land tenure relations and the systems of produce marketing and consumer credit. Under these credit arrangements, the lender usually has a vested interest in the borrower's economic activity which extends beyond interest income.

The view that the informal financial market is segmented, noncompetitive, and not well integrated with the formal market, is further supported by data on the interest rate structure of informal credit (Table 19). According to the data, nearly 50 percent of such credit is granted either free of interest or at interest rates which are much lower than those of institutional credit. Given the absence of directly observable interest rates in kinship and patron-client relationships, it is difficult to compare the terms of credit in the informal market with those of institutional credit. However, the bulk (over 85 percent) of the credit supplied by moneylenders is extended at very high interest rates. It therefore seems unlikely that even a drastic change in institutional

23. Fernando (1988) and Sanderatne (1988 and 1989) provide useful syntheses of this literature.

24. The relative importance of UMM has of course declined as institutional lending increased (Table 17).

interest rates has an impact on the volume of informal credit. This is perhaps because the financial technologies to serve different clients also vary very much.

In the informal financial system, moneylenders rarely act as intermediaries between savers and investors (Sanderatne, 1989; Bouman, 1984). Moneylending has been characterized as unsocial and exploitative in Sri Lanka. Hence, the activity of moneylenders is often clandestine and restricted to known persons. Moneylenders usually operate with their own funds, and the average saver rarely considers them an alternative source of saving.

Data relating to the purpose-wise distribution of informal lending also indicate that it is predominantly obtained for so-called nonproductive purposes, such as family ceremonies and emergencies. Formal sector financial institutions seldom are willing to make loans for these purposes. On the other hand, the bulk of the credit used for agricultural, industrial, and other productive activities does come from formal sources. For instance, according to a Central Bank survey of planned investment in the corporate sector, "other sources" (which includes informal borrowing) contributed less than 5 percent of the total financial needs of the corporate sector in 1983/85 (Central Bank, 1986). The Marga Institute survey cited above found that moneylenders provided only 1.3 percent of the total borrowings of informal sector businesses in Colombo.

In summary, Sri Lanka offers no evidence that funds flow freely and swiftly between formal and informal markets in response to interest rate differentials. It is therefore unlikely that the substitution from UMM would have been of significant magnitude to counterbalance the significant increase in institutional savings/lending that resulted from the substitution of bank deposits for currency holdings and real assets supplemented with the wealth effect on demand for financial assets following the 1977 reforms.

5. Summary and Conclusions

The analytical framework

An analytical framework to assess the role of the domestic financial market in the outcome of trade liberalization outcome was developed and then applied to Sri Lanka's 1977 trade reform. At that time the domestic financial market was also reformed, reducing financial repression. The main finding of the study is that the domestic financial market plays a very significant role in the success of a trade liberalization.

In Sri Lanka's case, financial sector reform helped to some extent to sustain the greater competitiveness of the tradable sector achieved through the trade liberalization. Financial reform, however, did not go far enough, and its implementation remained somewhat ambiguous. The emergence of large fiscal imbalances after 1982 then weakened the impetus for trade liberalization.

On the demand side, the domestic financial market made its impact on trade liberalization by way of the real exchange rate. A domestic financial market that offers financial assets with attractive rates of return affords an alternative to the spending of increased income from trade liberalization on nontradables. Premature appreciation of the exchange rate is thus averted. But high rates of return on financial assets can only be found in a nonrepressed domestic financial market. Moreover, market determined interest rates will influence overall savings/investment decisions and restrain aggregate demand. This too will prevent premature appreciation of the exchange rate by channeling increased real savings into investment and thus avoid the need to provide investment funds through money creation.

On the supply side, a nonrepressed domestic financial market can complement trade liberalization by facilitating increased investment in the tradable sector. Such a market will also lead to better channeling of credit for the increased production of tradables induced by a trade liberalization.

The Sri Lanka Case

There were several reasons why the application of our theoretical framework to Sri Lanka made good sense. First, the 1977 trade liberalization replaced nearly all the quantitative restrictions on imports with tariffs which reduced the level of and the variance in protection, and was accompanied by a strong devaluation. Second, there was a sharp contrast in the effectiveness of the trade regime between the pre-reform period (1970-77) and the post-reform period (1978-87). This helped us to identify key changes in the trade regime. Third, the fact that the capital account in the balance of payments remained virtually closed to private transactions allowed us to trace the role of the domestic financial market in relation to trade liberalization. Fourth, trade liberalization occurred at the same time that the Sri Lankan government deregulated the interest rates, reduced directed credit, and allowed new banks to enter the domestic financial market. Thus, the shift from a highly repressed financial regime

to a less repressed system enabled us to identify changes in the domestic financial market. Finally, the reliable and adequate data needed to perform econometric tests on the hypotheses suggested by the analytical framework was available.

The Empirical Evidence

Empirical analysis of trade liberalization and financial market reform yielded a number of interesting results.

First, as described above, trade liberalization is facilitated when financial intermediation becomes more extensive. More institutional credit becomes available to finance the desired expansion of the tradable sector. In Sri Lanka, the M3/GDP ratio rose from 29% in the 1970-77 period to 34% in the 1980-87 period. The M1/GDP ratio declined after 1977, indicating a shift from cash to savings and time deposits in household asset portfolios. Econometric tests (using an OLS regression model) confirm a positive relationship between time and savings deposits and the interest rates paid on such deposits. Similarly, a negative relationship was found between interest rates and real cash holdings. For example, a one percent increase in savings and time deposits was associated with an 8% decline in real cash holdings and a 4.2% increase in the real interest rates paid on the deposits. The regressions also indicated a wealth effect. A one percent increase in real GDP was associated with a 1.5% increase in savings and time deposits. As hypothesized, a nonrepressed financial system led to a higher rate of domestic asset accumulation. That helped the trade liberalization by increasing the availability of institutional credit.

Second, there was also ample evidence to show that private savings responded positively to the increased real interest rates. There was an impressive improvement in the ratio of private savings to private income, from 14.4% in the 1970-76 period to 20.2% in the 1977-84 period. This increase in private savings can be interpreted as the response to a change in permanent income and the real interest rate. Econometric estimates suggest an interest elasticity of 0.98% and an income elasticity of 1.22% for private savings. These results stand in contrast to the earlier work of others, which found no relationship between total domestic savings and interest rates. This is not surprising, since public sector savings are seldom correlated with interest rate changes. Besides, the large inflows of foreign capital to the public sector following the 1977 reforms implied negative public savings. Thus, to the extent that savings responded to interest rates, more noninflationary finance was available for investment.

Third, a relationship exists between the trade reform and the domestic financial market through the real exchange rate. To the extent that households increased their demand for domestic financial assets rather than nontradables because of the increase in income from trade liberalization, appreciation of the real exchange rate was retarded. Thus, in the absence of attractive domestic financial assets and restrictions on holding foreign assets, the exchange rate would appreciate more. Evidence from the Consumer Finance and Socioeconomic Survey in Sri Lanka indicates that household portfolios did shift toward bank deposits, the most attractive financial asset at the time, the share of bank deposits in household asset portfolios rising from a historical ratio of 10% to 33% in 1981-82.

Econometric tests were performed to investigate the cumulative effect of financial deepening on the real exchange rate. A regression model was estimated with the real exchange rate as the dependent variable; the model used the financial intermediation ratio and a number of other explanatory variables. The results indicate that the financial intermediation ratio was a highly significant determinant of the real exchange rate and showed the expected sign for the postreform period. The tests, however, failed to show such a relationship during the pre-reform period. This is perhaps to be expected, given that the real exchange rate could have been contaminated by the presence of import quotas. Moreover, the financial intermediation ratio remained low and constant over a long period up to 1977, reflecting a high degree of financial repression.

The other variables used in the regression model, such as the exchange rate premium, government expenditures and terms of trade variations seem to have controlled the real exchange rate in the prereform period. Thus, the evidence confirmed the hypothesis that in the absence of financial reform, the 1977 trade liberalization would have been thwarted by an earlier and larger appreciation of the exchange rate. Financial reform helped to maintain the competitiveness gained from trade liberalization by providing attractive financial assets as an alternative to the purchase of nontradables.

Fourth, following the financial reform and the resulting rise in the financial intermediation ratio, real credit to the private sector increased threefold during the 1977-85 period. Given that the private sector produces and consumes relatively more tradables than the public sector, this may also have helped to delay appreciation of the exchange rate. This is because increased expenditure on tradables has no impact on the real exchange rate. Moreover, with the increase in real credit, private fixed investment rose from 8.5% of GDP in the early 1970s to 18% in 1978-82. Regression results showed the elasticity of private direct investment with respect to real loanable funds to be 0.63% in the short term and 2.17% in the long run. Private investment in the tradable sectors became more profitable after the trade liberalization, and this investment in turn was facilitated by the financial sector reforms that increased the availability of real loanable funds.

Finally, as indicated in the theoretical framework, an interest determined credit allocation enhances the shift of resources to the tradable sector following a trade liberalization and improve resource allocation. Conversely, the presence of directed credit in a repressed financial system stands in the way of credit flows to finance the expansion of the tradable sector. To the extent that directed credit would have favored large firms producing for the domestic market under a repressed financial system, increases in the allocation of credit to small-scale enterprises would provide some support for the view that credit allocation improved following the reforms. Following the financial reforms, the amount of credit flowing to small enterprises in Sri Lanka doubled between 1977 and 1986. However, evidence for improved credit allocation because of the dispersion of interest rates remains ambiguous. The dispersion of interest rates increased following the trade and financial sector reforms, contrary to what is predicted by theory. But some factors could help to explain the increased dispersion. The financial market reform may have

given risky borrowers a better opportunity to obtain credit. On the other hand, the Central Bank continued to maintain differential discount rates and to subsidize credit for some purposes. This in turn tended to impede the competitiveness of the tradable sector gained through the 1977 trade liberalization.

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Data Appendix

The data series used in this study, unless otherwise stated in the text and notes to tables, have been directly obtained or compiled from the following publications of the Central Bank of Sri Lanka:

1. Monthly Bulletin of Statistics
2. Annual Report of the Monetary Board (to the Minister of Finance)
3. Review of the Economy

Data on the organized financial sector is commonly considered as the most reliable of national economic statistics of Sri Lanka.

In the selection and transformation of most of the required data series, we have simply followed established practices in this field of research. However, the choice of the price index for measuring the real return of money, real income variable and the construction of gross domestic saving series need some explanation.

McKinnon (1973: 96-7; 1989: 35) has forcefully argued that, in measuring the real return on money, the wholesale price index (WPI), which represents claims on a broad basket of tradable goods, is a better deflator than the consumer price index (CPI), which has a large service component. Tangible goods including inventories of commodities of all kinds is the principal alternative asset open to savers, which may be either substitutable or complementary to real money balances. Pure services cannot be "held" in asset portfolios; even households that save with the ultimate intention of consuming services in the distant future must hold those savings in the form of either goods or financial assets.

The WPI of Sri Lanka (compiled by the Central Bank) dates only from 1974 and, therefore, does not cover the full sample period used for the empirical analysis of this study. We therefore choose to use the implicit deflator for the commodity production sectors of the economy derived from national accounts as our price index. This is the best available indicator of tradable-goods prices covering the whole sample period.

The aggregate income variable we used is GDP as measured from the expenditure side. For the period since about 1982 there is a considerable and widening (and yet unexplained) difference between the GDP series derived from the expenditure side and that derived from the production side. We use the former series because there are reasons to suspect that the latter may have overstated the level of economic activity (Jayawardena et al 1987:4). As a part of a major revision into national accounts (following the trade liberalization reforms) in 1978, estimates dating back to 1970 were adjusted for exchange rate changes and changes in subsidized prices of certain commodities (see Central Bank, Review of the Economy-1978, pp. 22-23 for details). We adjusted the national expenditure series back to 1960 following the same procedure.

In the absence of direct estimates, we estimated gross domestic savings by subtracting foreign saving (proxied by the balance in the goods and services account in the balance of payments) from gross domestic investment. A major limitation involved in this procedure is that

inaccuracies in either series may lead to measurement errors in the saving estimate. However, if the biases are consistent over time and the errors are random, the use of this series in the analysis of saving behavior need not necessarily yield misleading results. In any case, the gross domestic savings series is not central to the empirical analysis of this study.

Table 1

Distribution of Bank Branches and Deposits

| | 1965 | 1970 | 1977 | 1979 | 1981 | 1984 |
|---|-------|-------|-------|-------|--------|--------|
| Sri Lankan Banks^a | | | | | | |
| a. number of branches | 81 | 152 | 707 | 779 | 915 | 623 |
| b. share of total deposits ^b | 66 | 76 | 88 | 89 | 84 | 77 |
| | (56) | (72) | (82) | (81) | (72) | (68) |
| Foreign Banks^c | | | | | | |
| a. number of branches | 16 | 13 | 8 | 11 | 21 | 25 |
| | | | | | (13) | (15) |
| b. share of total deposits | 34 | 24 | 12 | 11 | 16 | 23 |
| | | | | | (9) | (13) |
| Total | | | | | | |
| a. number of branches | 97 | 165 | 715 | 810 | 936 | 648 |
| b. total deposits (Rs. Mn.) | 1,564 | 2,394 | 6,793 | 2,343 | 21,403 | 39,938 |

Notes: a. Excluding Agricultural Service Centre branches.

b. Total deposit share of state-owned banks in parentheses.

c. Figures in parentheses relate to banks established after 1976.

Source: Central Bank, Annual Report and Review of the Economy (various issues)

Table 2

Financial Market Institutions: Percentage Distribution of Assets

| | 1965 | 1970 | 1977 | 1981 | 1984 |
|--|-------|-------|--------|--------|--------|
| 1. Commercial Banks ^a | 48.7 | 51.5 | 58.8 | 62.4 | 57.3 |
| 2. Other Deposit Taking Institutions | 18.4 | 21.5 | 17.8 | 16.4 | 21.3 |
| FCBUs | - | - | - | 3.1 | 4.6 |
| National Savings Bank | 18.4 | 19.3 | 16.0 | 11.6 | 13.0 |
| Finance Companies ^b | n.a. | 2.2 | 1.9 | 1.7 | 3.7 |
| 3. Development Finance Institutions | 2.8 | 1.3 | 3.1 | 3.1 | |
| National Development Bank ^c | - | - | - | 0.4 | 0.6 |
| Development Finance Corporation | 0.8 | 1.0 | 0.7 | 1.9 | 1.7 |
| 4. Nonbank Financial Institutions | 29.2 | 24.2 | 22.1 | 18.1 | 18.3 |
| State-owned provident funds | 18.9 | 17.6 | 15.2 | 12.2 | 12.4 |
| State-owned insurance companies | 0.9 | 1.2 | 2.3 | 1.98 | 1.2 |
| 5. Total | 100 | 100 | 100 | 100 | 100 |
| (Rs. Million) | 3,718 | 6,112 | 17,217 | 50,598 | 95,901 |

- Notes:
- Excluding Foreign Currency Banking Units (FCBUs).
 - This figure relates to only those companies which report their assets to the Central Banks.
 - Figures for 1965 and 1970 show the combined deposits of Post Office Savings Bank, Ceylon Savings Bank and the Savings Certificate Fund which were amalgamated in 1973 to form the NSB.

Source: Khatkhate (1980) supplemented with various issues of Central Bank, Monthly Bulletin of Statistics.

Table 3

Real Exchange Rate Index^a, 1965-83

(1980=100)

Exportables

| | Total | Non-traditional | Importables |
|----------------------|-------|-----------------|-------------|
| 1965-69 ^b | 48 | 29 | |
| 1970-75 ^b | 52 | 48 | |
| 76 | 66 | 62 | |
| 77 | 82 | 81 | 72 |
| 78 | 94 | 80 | 84 |
| 79 | 97 | 84 | 91 |
| 80 | 100 | 100 | 100 |
| 81 | 95 | 100 | 98 |
| 82 | 85 | 81 | 95 |
| 83 | 86 | 78 | 99 |

- Notes:
- a. Export/import unit value index in rupees (adjusted for trade taxes and subsidies) deflated by the implicit GDP deflator for nontradable (construction and services) sectors.
 - b. Not available
 - c. Annual averages

Source: Cuthbertson and Athukorala (1988)

Table 4

Interest Rates, 1965-87

| | NSB Deposit Rate | Commercial Bank Deposit Rate | Commercial Bank Lending Rate |
|---------|------------------|---------------------------------|---------------------------------|
| 1965-70 | 3.7 (- 2.4) | 3.7 (- 2.4) | 9.0 (- 2.9) |
| 1971-76 | 7.2 (- 8.4) | 5.0 (- 11.1) | 8.5 (- 7.1) |
| 1977-83 | 14.9 (1.3) | 13.8 (0.2) | 16.3 (2.5) |
| 1984-87 | 14.2 (5.2) | 9.8 (0.1) | 20.2 (12.9) |
| 1977 | 11.1 (8.1) | 10.6 (7.7) | 11.3 (8.4) |
| 1978 | 12.6 (2.3) | 11.4 (1.1) | 12.8 (1.5) |
| 1979 | 12.1 (- 5.1) | 11.8 (- 5.3) | 13.8 (- 3.2) |
| 1980 | 17.0 (2.3) | 17.5 (2.9) | 17.2 (2.6) |
| 1981 | 17.2 (0.3) | 17.8 (1.0) | 8.4 (1.6) |
| 1982 | 17.8 (- 5.1) | 13.6 (- 9.3) | 20.0 (- 2.9) |
| 1983 | 16.5 (5.1) | 14.1 (2.7) | 20.6 (9.2) |
| 1984 | 16.7 (4.6) | 12.6 (0.5) | 20.5 (8.4) |
| 1985 | 14.3 (3.3) | 11.2 (0.2) | 20.1 (9.1) |
| 1986 | 12.8 (8.1) | 7.5 (0.3) | 20.3 (13.1) |
| 1987 | 12.8 (4.8) | 7.4 (- 0.5) | 19.8 (11.9) |

- Notes: a. In each column, the first figure indicates the nominal rate and the second (bracketed) figure the real rate. Deposit rate is the weighted average of savings deposit and 1-year fixed deposit rates. Lending rate is the weighted average rates of loans classified by securities. Real rate is the difference between the current nominal rate and the inflation rate as measured by the GDP deflator (non-services) for the previous year.
- b. Annual average

Source: Columns 1 and 2: compiled using data from Central Bank, Review of the Economy. Column 3, Central Bank, Bulletin.

Table 5

Gross Domestic Product: Sectoral Composition and Growth Rates^a
 at Constant (1970) Factor Costs (annual averages), 1970-85

| | 1970-77 | 1980-83 | 1984-85 |
|---------------------------------|-----------------|---------------|---------------|
| <u>Sector</u> | | | |
| Primary products | 36.6 (2.1) | 24.8 (4.1) | 28.2 (4.8) |
| export agriculture ^b | 17.0 (- 1.7) | 10.2 (0.5) | 9.3 (1.3) |
| domestic agriculture | 17.5 (3.5) | 11.8 (5.3) | 14.7 (9.5) |
| Industry | 16.5 (1.0) | 19.0 (4.2) | 21.2 |
| construction | 4.9 (- 2.6) | 4.8 (8.8) | 5.8 (1.3) |
| manufacturing ^c | 9.1 (2.3) | 9.7 (6.4) | 12.2 (7.8) |
| Services | 46.7 (3.7) | 56.2 (7.2) | 50.6 (5.5) |
| Total GDP | 100 (2.9) | 100 (6.0) | 100 (5.1) |

Source: Central Bank, Review of the Economy (various issues).

Table 6

**The Behavior of the Financial Sector:
Selected Indicators, 1960-87**

| | M1* | M2* | M3* | M1/GDP | M2/GDP | M3/GDP |
|------|----------|----------|----------|--------|--------|--------|
| | 1980=100 | 1980=100 | 1980=100 | % | % | % |
| 1960 | 61 | 37 | 37 | 17 | 22 | 29 |
| 1965 | 87 | 55 | 53 | 20 | 26 | 33 |
| 1970 | 83 | 65 | 62 | 14 | 22 | 29 |
| 1975 | 59 | 43 | 47 | 12 | 17 | 25 |
| 1977 | 69 | 54 | 55 | 15 | 24 | 32 |
| 1978 | 82 | 71 | 73 | 14 | 26 | 34 |
| 1979 | 94 | 87 | 89 | 15 | 29 | 38 |
| 1980 | 100 | 100 | 100 | 14 | 30 | 38 |
| 1981 | 96 | 109 | 108 | 12 | 31 | 40 |
| 1982 | 107 | 131 | 133 | 12 | 31 | 40 |
| 1983 | 116 | 137 | 141 | 12 | 31 | 40 |
| 1984 | 113 | 138 | 145 | 10 | 28 | 38 |
| 1985 | 127 | 154 | 165 | 12 | 30 | 41 |
| 1986 | 136 | 154 | 168 | 12 | 28 | 40 |
| 1987 | 146 | 161 | 174 | 13 | 30 | 41 |

* At constant (1980) prices

Source and method of compilation: see Data Appendix

Table 7

Demand for Financial Assets: Regression Results, 1960-1987

| | M1 | STD |
|------------------------|--------------------|--------------------|
| Constant | 2.74* (7.29) | - 3.39** (2.78) |
| GDP | 0.45** (4.71) | 1.55** (4.59) |
| (1 + RSTD) | - 2.08** (2.45) | 6.13* (2.23) |
| D*(1 + RSTD) | 1.32 (1.79) | -1.99 (0.83) |
| (1 + PE) | - 4.18** (3.69) | 5.84 (1.59) |
| D*(1 + PE) | 2.65** (3.14) | -0.45 (0.16) |
| <u>Test Statistics</u> | | |
| \bar{R}^2 | 0.77 | 0.84 |
| F | 18.43 | 30.22 |
| DW | 1.61 | 1.60 |
| LM | 2.21# | 0.73# |
| RESET2 | 0.88# | 3.46## |
| JB | 1.54# | 0.85# |
| WH | 0.08# | 0.15# |

Variables: M1 = currency and demand deposits (real) held by the non-bank private sector; STD = savings and time deposits (real) held by the non-bank private sector; GDP = real GDP; RSTD = weighted average real interest rate on savings and time deposits; PE = rate of inflation with a one-year lag; D = trade liberalization dummy (1 for 1978-87 and zero for other years)

Notes: t- ratios of coefficients are given in parentheses with the level of significance denoted as, ** = significant at the one percent level, and * = significant at the five percent level.

LM Lagrange multiplier test of serial correlation, F version.
 RESET2 Ramsey's RESET test for functional form misspecification using the square of the fitted values, F version.
 JB Jarque-Bera test for the normality of residuals.
 WH White's heteroscedasticity test, F version.
 ## Null hypothesis is not rejected at the five percent level.
 # Null hypothesis is not rejected at the one percent level.

Data sources and the methodology used in constructing the data series are discussed in the Data Appendix.

Table 8

Gross Domestic Saving, 1965-1984

| | TDS/GDP (%) | PRS/GDP (%) | PRS/YPR (%) |
|---------|----------------|----------------|----------------|
| 1965-69 | 11.2 | 11.9 | 14.8 |
| 1970-76 | 13.6 | 12.5 | 14.4 |
| 1977 | 13.8 | 14.2 | 21.1 |
| 1978 | 15.2 | 16.5 | 23.4 |
| 1979 | 13.7 | 13.4 | 18.7 |
| 1980 | 11.1 | 14.8 | 22.7 |
| 1981 | 11.7 | 13.4 | 18.1 |
| 1982 | 11.8 | 12.2 | 18.1 |
| 1983 | 13.8 | 13.7 | 18.1 |
| 1984 | 19.9 | 16.1 | 21.4 |

TDS = gross domestic saving

PRS = gross domestic private saving

YPR = private-sector income (proxied, GDP + (government revenue - transfers to private sector current accounts)).

Source and method of compilation: see Data Appendix

Table 9

Composition of Net Assets of Households, 1973, 1978/79 and 1981/82

(percentage shares of total)

| | 1966/70 | 1972/73 | 1978/79 | 1981/82 |
|---|---------|---------|---------|---------|
| Financial Assets | 23.8 | 29.4 | 34.2 | 54.3 |
| Bank deposits ^a | 9.6 | 9.3 | 5.7 | 33.2 |
| Other claims ^b | 15.2 | 20.1 | 28.4 | 21.1 |
| Physical Assets | 76.2 | 70.4 | 65.8 | 45.7 |
| Land and buildings | 49.2 | 46.5 | 34.5 | 27.4 |
| Business and industrial ventures ^c | 27.0 | 23.9 | 31.3 | 18.3 |
| | 100 | 100 | 100 | 100 |

Notes: a. Does not include current account balances, but includes government bonds, securities and shares. In 1981/82 the latter three items together accounted for less than one percent of total financial assets.

b. Contributions to provident funds, loans given and contributions to informal saving schemes (Cheetus).

c. Including purchase of machinery and equipment and business vehicles.

Source: Saito (1976) (estimates for 1966/70) and Central Bank, Consumer Finance and Socio-economic Survey, 1973, 1978-79 and 1981-2.

Table 10

Determinants of Real Exchange Rate (RER): Regression Results, 1970-1987

| | (1) | (2) |
|------------------------|--------------------|---|
| Constant | 1.32 (5.67) | 1.29 (5.46) |
| TOT | - 0.03 (0.32) | |
| NFC | - 0.68 (1.43) | - 0.76* (2.10) |
| GEXP | - 1.21* (2.10) | - 1.26* (2.37) |
| FIR | - 0.41 (1.40) | 0.35 (0.63) |
| D*FIR | 1.08** (3.45) | 1.09** (3.67) |
| BMP | 0.05 (1.01) | 0.05 (1.21) |
| <u>Test Statistics</u> | | |
| - | | |
| R | 0.69 | 0.57 |
| F | 9.41 | 6.58 |
| DW | 2.07 | 1.62 |
| LM | 0.15 [#] | 0.10 [#] |
| RESET2 | 1.68 [#] | 2.42 [#] |
| JB | 0.14 [#] | 0.12 [#] |
| WH | 0.004 [#] | 0.004 [#] |
| Variables: | TOT | terms of trade (1980 = 1.0) |
| | NFC | net foreign capital inflow as a ratio of GNP |
| | GEXP | total government expenditure as a ratio of gross national expenditure |
| | FIR | financial intermediation ratio (M3/GNP) |
| | D*FIR | slope dummy for FIR where D takes 1 for 1978-87 and 0 otherwise |
| | BMP | black market premium on the official exchange rate |

Notes: t-ratios of coefficients are given in parentheses with the level of significance denoted as ** = one percent level and * = five percent level. For definitions of test statistics see Table 7.

Data sources and method of compilation of data series are explained in the Data Appendix.

Table 11

Total Credit Extended by Financial Institutions, 1977^a-85

| | 1977 | 1979 | 1981 | 1983 | 1985 |
|---|-------|-------|-------|-------|-------|
| 1. Total Credit Rs. mnb | 15361 | 25669 | 33990 | 43963 | 47798 |
| 1.1 Government, net (%) | 49.1 | 40.7 | 33.0 | 32.5 | 32.0 |
| 1.2 Public Corporations (%) | 13.4 | 15.1 | 12.3 | 7.3 | 6.0 |
| 1.3 Co-operatives (%) | 10.0 | 8.7 | 3.5 | 3.1 | 1.8 |
| 1.4 Private Sector (%) | 27.5 | 35.5 | 51.2 | 57.1 | 60.2 |
| | 100 | 100 | 100 | 100 | 100 |
| 2. Credit to Government, net, Rs. m ^b | 7426 | 10465 | 11241 | 14331 | 15291 |
| Commercial Banks (%) | 0.7 | -2.3 | 0.5 | -0.9 | -1.9 |
| National Savings Bank (%) | 40.9 | 46.7 | 44.7 | 51.7 | 57.9 |
| Employee Provident Fund (%) | 40.7 | 43.1 | 46.2 | 45.8 | 56.7 |
| Insurance Companies (%) | 16.6 | 14.6 | 12.2 | 7.0 | 6.2 |
| | -1.1 | -2.1 | -3.6 | -3.6 | -16.9 |

Notes: a. Other than the Central Bank.

b. At 1980 prices.

Source: Central Bank, Review of the Economy, (various issues).

Table 12

Commercial Bank Lending^a, 1970-85

| | 1970 | 1975 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|
| Total loans | 6226 | 6341 | 7222 | 11491 | 13769 | 17136 | 18916 | 21780 | 23273 | 22241 | 24476 |
| Rs.mm ^b | 36 | 37 | 42 | 67 | 80 | 100 | 110 | 127 | 136 | 130 | 143 |
| Index (1980=100) | | | | | | | | | | | |
| Distribution by Sector(%) | | | | | | | | | | | |
| Tradable Sectors | 40.0 | 36.5 | 40.6 | 43.1 | 40.7 | 35.6 | 35.2 | 36.6 | 36.5 | 33.8 | 31.0 |
| Agriculture | 13.1 | 14.1 | 17.2 | 16.0 | 14.8 | 13.2 | 13.2 | 12.1 | 10.9 | 9.2 | 8.3 |
| Industry ^c | 26.9 | 22.4 | 23.4 | 27.1 | 25.9 | 22.4 | 22.0 | 24.5 | 25.6 | 24.6 | 22.7 |
| | (21.6) | (18.6) | (21.1) | (24.3) | (22.3) | (18.4) | (17.6) | (19.3) | (20.7) | 19.8 | (18.6) |
| Non-Tradable Sectors ^d | 60.0 | 63.5 | 59.4 | 59.4 | 59.3 | 64.4 | 64.8 | 63.4 | 63.5 | 66.2 | 67.0 |
| Maturity Structure (%) | | | | | | | | | | | |
| Short Term | 58.9 | 74.6 | 77.5 | 74.0 | 75.0 | 70.2 | 68.4 | 68.9 | 71.0 | 72.2 | 70.6 |
| Medium Term | 28.7 | 19.3 | 16.5 | 20.4 | 19.4 | 21.2 | 20.4 | 22.2 | 20.4 | 18.6 | 19.4 |
| Long Term | 12.3 | 6.1 | 6.0 | 5.5 | 5.6 | 8.6 | 10.2 | 8.9 | 8.6 | 9.2 | 10.0 |

Notes: a. Loans to private sector and public corporations
b. at 1980 prices
c. percentage of loans to manufacturing (ISIC 3) are given in parenthesis.
d. Sum of loans for commercial, financial, housing and consumption.

Source: Central Bank, Monthly Bulletins of Statistics (various issues)

Table 13

Medium and Long Term Credit Extended by
Commercial Banks and Development Finance Institutions (DFI)

| | <u>Total Loans*</u> | | DFI Share in total (%) |
|------|---------------------|-------------------|---------------------------|
| | Rs. mn | Index 1980=100 | |
| 1970 | 2979 | 52 | 9.6 |
| 1975 | 1885 | 33 | 18.6 |
| 1977 | 1967 | 34 | 15.4 |
| 1978 | 3477 | 61 | 11.5 |
| 1979 | 4125 | 72 | 15.5 |
| 1980 | 5727 | 100 | 10.7 |
| 1981 | 7012 | 122 | 13.9 |
| 1982 | 7551 | 132 | 16.2 |
| 1983 | 8249 | 144 | 15.9 |
| 1984 | 7935 | 139 | 19.7 |
| 1985 | 9636 | 168 | 22.6 |

Notes: *At 1980 prices.

Source: Central Bank, Monthly Bulletin of Statistics, (various issues).

Table 14

Commercial Bank Credit to Manufacturing by ISIC
Subdivisions, 1973-85 (percentage distribution)*

| | 1973 | 1977 | 1980 | 1983 | 1985 |
|--|----------------|----------------|----------------|----------------|--------------|
| (1) Food, beverages and tobacco | 2.7 (0.2) | 4.4 (2.3) | 9.5 (1.4) | 8.9 (2.4) | 7.5 (0.3) |
| (2) Textiles (4.5) | 18.2 (11.9) | 25.5 (13.3) | 25.8 (2.7) | 28.9 (10.5) | 29.3 |
| (3) Wearing apparel and leather | 5.8 (1.5) | 5.8 (0.3) | 15.1 (1.1) | 3.7 (0.7) | 4.5 (1.4) |
| (4) Wood and wood products | 2.9 (2.4) | 0.7 (0.2) | 0.7 (0.1) | 0.9 (-) | 1.4 (0.5) |
| (5) Paper and paper products | 5.1 (3.6) | 3.3 (1.7) | 3.1 (0.9) | 2.8 (0.2) | 3.9 (-) |
| (6) Rubber and plastic products | 4.7 (0.5) | 1.8 (-) | 4.6 (0.1) | 3.9 (-) | 4.3 (-) |
| (7) Chemical, petroleum and coal | 8.7 (4.0) | 32.7 (31.1) | 6.3 (2.7) | 5.6 (0.4) | 5.4 (1.5) |
| (8) Non-metallic mineral products | 1.1 (0.1) | 3.1 (1.3) | 3.7 (1.8) | 5.4 (2.6) | 3.7 (2.4) |
| (9) Basic metal products | 6.0 (3.2) | 7.1 (5.3) | 8.0 (3.1) | 7.1 (2.0) | 3.4 (1.6) |
| (10) Fabricated metal products, machinery and transport equipment | 3.4 (0.9) | 2.2 (-) | 6.0 (1.3) | 2.2 (0.1) | 2.3 (-) |
| (11) Other (25.1) | 41.2 (1.9) | 13.3 (2.2) | 17.1 (18.4) | 30.9 (13.7) | 34.2 |
| Total (Rs. mn) (481) | 390 (700) | 1253 (890) | 3163 (1930) | 6509 (1738) | 7239 |
| Public-sector share in total credit | 46.1 | 55.9 | 28.1 | 29.7 | 24.0 |

Notes: * Figures in parentheses relate to credit to public-sector manufacturing ventures.
- Denotes figures less than 0.05.

Source: Compiled using data from Central Bank of Sri Lanka, Monthly Bulletin (various issues).

Table 15

Gross Domestic Fixed Capital Formation

| | TFC* | PFC* | TFC | /GDP | PFC/GDP | PFC/ | YPR |
|---------|------------|------------|-----|------|---------|------|------|
| | (1980=100) | (1980=100) | | | | | |
| 1965-69 | 29 | 37 | | 14.1 | 7.4 | | 9.5 |
| 1970-76 | 45 | 62 | | 15.5 | 8.6 | | 10.2 |
| 1977 | 29 | 46 | | 13.8 | 7.2 | | 8.5 |
| 1978 | 43 | 52 | | 19.9 | 8.9 | | 12.6 |
| 1979 | 73 | 92 | | 25.2 | 13.1 | | 18.4 |
| 1980 | 100 | 100 | | 31.2 | 13.7 | | 21.0 |
| 1981 | 101 | 113 | | 27.3 | 13.0 | | 17.5 |
| 1982 | 126 | 145 | | 31.9 | 14.7 | | 20.0 |
| 1983 | 125 | n.a. | | 31.0 | n.a. | | n.a. |
| 1984 | 120 | n.a. | | 28.3 | n.a. | | n.a. |
| 1985 | 118 | n.a. | | 25.9 | n.a. | | n.a. |
| 1986 | 123 | n.a. | | 25.8 | n.a. | | n.a. |
| 1987 | 121 | n.a. | | 25.2 | n.a. | | n.a. |

* at 1980 prices.

TFC gross domestic fixed capital formation.

PFC private-sector gross fixed capital formation.

YPR private-sector income (as defined in Table 8).

Source and Method of Compilation: see Data appendix.

Table 16

Return on Capital in the Private Corporate Sector, 1974-83^a

| Firm Type ^b | 1974-77 | 1978/79 | 1979/80 | 1980/81 | 1981/82 | 1982/83 |
|-------------------------------------|---------|---------|---------|---------|---------|---------|
| 1. Manufacturing(14) | 28.4 | 74.4 | 31.3 | 33.4 | 26.4 | 28.1 |
| 1.1 Import-substituting(10) | 21.0 | 79.8 | 56.8 | 48.4 | 40.3 | 32.4 |
| 1.2 Export-oriented(4) ^c | 32.5 | 47.7 | 20.8 | 24.2 | 22.1 | 14.7 |
| 2. Trading(10) | 7.2 | 48.5 | 39.5 | 48.7 | 52.6 | 57.3 |
| 3. Tourist Hotels and Travel(5) | 12.0 | 48.8 | 33.3 | 28.7 | 24.6 | 23.2 |
| 4. Total sample(29) | 19.3 | 56.6 | 34.4 | 30.9 | 29.1 | 25.8 |

- Notes: a. Return on capital is measured as the ratio of pre-tax profits to total estimates related. 29 public limited liability companies are representative of large corporate sector only.
- b. Number of firms included in each category are shown in brackets.
- c. Firms with an export share in turnover of more than 50 percent or more. Data for 1974-77 and 1978/79 relate to two firms only.

Source: Compiled using data from Colombo Brokers Association, Hand Book of Rupee Companies, Colombo (various issues).

Table 17

Distribution of Household Borrowing by

Purpose and Source (%), 1973, 1978/9 and 1981/82^a

| Purpose of Borrowing | | Informal (curb market) Sources | | | | Total (5) |
|----------------------|--------|----------------------------------|-------------------------|---|---|---------------|
| | | Financial Institutions (1) | Money Lenders (2) | Other, with interest ^c (3) | Without interest ^d (4) | |
| | | | | | | |
| Agricultural | 1973 | - (-) | - (-) | - (-) | - (-) | 100 (21.7) |
| | 1978/9 | 61.5 (29.4) | 21.3 (12.8) | 1.8 (0.7) | 15.4 (7.2) | 100 (12.1) |
| | 1981/2 | 61.2 (28.1) | 22.2 (19.7) | 5.2 (8.0) | 11.4 (7.7) | 100 (18.5) |
| Industrial | 1973 | - | - | - | - | - |
| | 1978/9 | 55.6 (1.9) | 8.2 (2.8) | 4.5 (0.3) | 31.7 (4.6) | 100 (1.9) |
| | 1981/2 | 82.8 (24.8) | 8.7 (5.0) | 0.8 (1.2) | 7.7 (3.4) | 100 (12.1) |
| Housing | 1973 | - (-) | - (-) | - (-) | - (-) | - (-) |
| | 1978/9 | 48.8 (44.9) | 31.3 (36.3) | 9.8 (7.9) | 10.1 (9.1) | 100 (23.2) |
| | 1981/2 | 45.5 (13.6) | 15.5 (9.0) | 14.7 (14.8) | 24.3 (10.9) | 100 (12.2) |
| Trade | 1973 | - (-) | - (-) | - (-) | - (-) | - (8.5) |
| | 1978/9 | 15.2 (2.3) | 33.5 (6.4) | 4.0 (0.5) | 47.3 (7.1) | 100 (3.9) |
| | 1981/2 | 37.8 (11.8) | 22.8 (15.1) | 8.7 (9.9) | 30.7 (15.7) | 100 (13.7) |
| Other ^b | 1973 | - (-) | - (-) | - (-) | - (-) | 100 (67.7) |
| | 1978/9 | 9.1 (21.5) | 24.8 (41.7) | 44.5 (90.6) | 11.6 (72.0) | 100 (58.9) |
| | 1981/2 | 4.1 (21.7) | 50.2 (51.2) | 37.8 (66.1) | 7.9 (62.3) | 100 (43.5) |
| Total | 1973 | 20.2 (-) | 37.3 (-) | 13.0 (-) | 29.4 (-) | 100 (100) |
| | 1978/9 | 25.3 (100) | 20.1 (100) | 29.1 (100) | 25.5 (100) | 100 (100) |
| | 1981/2 | 40.1 (100.0) | 20.8 (100) | 12.1 (100) | 27.0 (100) | 100 (100) |

Table 17 continued

- Notes: a Non-bracketed figures relate to percentage distribution of loans by source. Percentage distribution by purpose is shown by the bracketed figures. " - " denotes figures which are not available.
- b Borrowing for consumption, ceremonies, settlement of debt and other unclassified borrowings.
- c Mainly from boutiques, and employers.
- d Mainly from friends and relatives.
- e Includes housing loans.

Source: Compiled from Central Bank of Ceylon, Survey of Sri Lanka's Consumer Finances 1973 (Part II), and Report on Consumer Finances and Socioeconomic Survey 1978/79 and 1981/82 (Part II).

Table 18

Institutional Lending Rates (%)

| | Commercial Banks | | DFC ^b | NDB ^c |
|------|-------------------------------|--------------------|------------------|------------------|
| | Secured loans ^a | Unsecured loans | | |
| 1970 | 6.5-12 | 8.5-12 | 9.5-12 | -- |
| 1975 | 8.5-12 | 9.5-14 | 9.5-12.5 | -- |
| 1976 | 8.5-14 | 9.5-14 | 9.5-12.5 | -- |
| 1977 | 13.0-19 | 18.0-20 | 9.5-13 | -- |
| 1978 | 13.0-19 | 18.0-21 | 10.5-16 | -- |
| 1979 | 13.0-19 | 18.0-21 | 10.5-17 | 10-12 |
| 1980 | 13.0-28 | 19.0-30 | 13.0-17 | 10-17 |
| 1981 | 13.0-28 | 19.0-32 | 12.0-17 | 10-17 |
| 1982 | 16.0-30 | 14.0-30 | 11.0-14 | 10-17 |
| 1983 | 18.0-28 | 11.0-33 | 11.0-14 | 9-14 |
| 1984 | 16.0-30 | 14.0-33 | 11.0-14 | 7-14 |
| 1985 | 11.0-30 | 13.0-30 | 14.0-21 | 7-14 |
| 1986 | 12.0-30 | 10.0-30 | 14.0-28 | 7-14 |

Notes: a. These rates relates to loans secured by immoveable property. Lending rate for loans based on other types of securites show a similar pattern.

b. Development Finance Corporation.

c. National Development Bank.

Source: Central Bank, Review of the Economy (various issues).

Table 19

Household Borrowing by Source and Rate of Interest

| Rate of Interest per annum | Institutional sources | Informal sources | | | Total |
|-------------------------------|-----------------------|------------------|------------------|-------|-------|
| | | Money | Other lenders | Total | |
| 0 | 0 | 0 | 70.5 | 44.9 | 27.8 |
| .1-10 | 9.0 | 1.4 | 3.1 | 2.5 | 4.9 |
| 11-20 | 22.2 | 4.1 | 23.6 | 16.5 | 18.7 |
| 21-30 | 40.5 | 16.0 | 1.5 | 6.8 | 19.6 |
| 31-40 | 24.8 | 4.2 | 0.2 | 1.7 | 20.5 |
| 41-50 | 0.2 | 3.4 | 0 | 1.2 | 0.8 |
| 51-60 | 3.3 | 5.1 | 0.5 | 2.2 | 1.2 |
| 61-100 | 0 | 6.2 | 0.3 | 2.5 | 1.6 |
| over 101 | 0 | 59.6 | 0.3 | 21.7 | 14.9 |
| | 100 | 100 | 100 | 100 | 100 |

Source: Central Bank, Report on Consumer Finances and Socioeconomic Survey 1981/82, Part 1 Colombo, Table 7.18.

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