FINANCIAL SECTOR LIBERALIZATION: IMPACT ON ECONOMIC GROWTH OF BANGLADESH

By

KABIR Sarkar Humayun

THESIS

Submitted to
KDI School of Public Policy and Management
In partial fulfillment of the requirements
for the degree of

MASTER OF BUSINESS ADMINISTRATION

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ABSTRACT

Economic growth depends on the smooth and efficient functioning of macroeconomic variables in an economy. These macroeconomic variables, for example, inflation, real interest rate, GDP, foreign direct investment, volume of international trade, deposit rate, lending rate etc. provide different outcomes in different economies like, free, mixed, and controlled. Many developed, developing, and underdeveloped economies liberalized these variables to skim the best possible fruit to enhance their growth. In fact, the result of this liberalization was heterogeneous for undertaking countries depending on their state of economy. Some countries particularly developed achieved robust economic growth and most of the developing and underdeveloped countries got frustrated outcome.

This thesis depicts the efficacy of the financial liberalization of Bangladesh that was started in 1990. Various measures were undertaken by the government of Bangladesh step by step to liberalize the total financial system with a view to compete with other emerging economies. An econometric analysis with the data of the financial variables from Y1974 to Y2001 is done here in this paper to see the impact on the economic growth of Bangladesh. From this analysis it is observed that the result of the financial liberalization is not satisfactory due to improper time and dimension of the reforms. Contributions of some variables to the economic growth were even better before liberalization. This result is consistent with the same of other similar staged economies.

To

All my professors

And

My Parents

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CONTENTS

1. Introduction

Market oriented economic policies and growth oriented financial system can prudently manage the savings mobilization and efficient allocation of resources in productive sectors to earn the best possible rate of return. Fully liberalized financial system featured by least or no government control in the credit market, free entry and exit of financial institutions, bank autonomy, withdrawal of government shares from financial institutions, interest rate flexibility, free international capital movement—contributes most to the resources mobilization and allocation process in the economy (Williamson and Mahar, 1998). Conversely, financial repression is featured by controlled interest rate in the face of high and unstable inflation, controlled and directed credit to government favored sectors, and little or no competition in the financial markets. A repressed system can inhibit economic development in two ways. *First,* under this system savings mechanisms are underdeveloped and real returns are negative. The consequences are low savings rates, and savings flow into unproductive assets. Controlled lending rates lead banks to ration credit, which reduces productivity of investment. *Second*, private investment is discouraged due to lower and unstable return credited to poor financial policies. High and variable inflation, price controls, and overvalued exchange rates raise the risks of investing in productive assets. Moreover, rationing credit by the repressed system encourages rent seeking.

McKinnon (1973) and Shaw (1973), with their works and efforts in financial sector reforms, is the pioneer to illuminate the financially impounded economies and getting the economic units too valorous to break the chains of repression. Afterwards, many economies in the

world, developed, developing, and least developed went under the process of financial reforms by liberalizing their key economic variables and eventually gained kaleidoscopic experiences. Many countries fostered their economic growth and efficiency, at the same time; many others got frustrating results by facing financial crisis and halted economic growth. For example, East Asian economies faced a massive financial crisis following the process of financial liberalization in 1980s. Deregulation in the liberalized financial sector was the main reason behind the East Asian crisis that reflected its severity by linking together the currency crisis and financial sector crisis (Kaminsky and Reinhart, 1996). Not only East Asia but also many other developing countries experienced serious crisis adopting financial sector reforms. In the early 1980s Argentina and Chile incurred reform costs amounting more than half of its GDP (Caprio, 1996). By the same token, Venezuela and Hungary dealt with major banking crisis as a consequence of financial sector reforms (Caprio and Klingebiel, 1997).

The analysis of a vast volume of theoretical literature has revealed the scope of liberalized financial intermediation as a significant determinant of economic growth rate. Stiglitz (1994) pressed that the financial market in the brain and central locus of the entire economic system. Earlier literatures of many scholars like Patrick (1966), Cameron (1967), Goldsmith (1969), McKinnon (1973) and Shaw (1973), insisted and explained the role of financial institutions in the credit supply process in the economy. Their explanation was buttressed by the strong positive relationship between the extent of financial development and economic growth. Goldsmith pointed out how efficiency of investment contributes to

financial development whereas, Mckinnon and Shaw asserted the role, contribution, and functioning of financial reforms in achieving savings and investment growth. Jappelli and Pagano (1992), Roubini and Sala-I-Martin (1992), De Gregorio and Guidotti (1992) stated that the achievement of high rates of economic growth in developing economies mainly depends on the functioning of efficient financial sectors. According to World Bank (1989), allocation of resources to the highest yielding activities is the most crucial function of an efficient financial intermediation system. Greenwood and Jovanovic (1989), and Bencivenga and Smith (1991), in their studies, argued that financial intermediaries reshape their savings composition for greater capital accumulation thereby nourishing and raising economic growth. Effects of financial variables such as real interest rate and other monetary aggregates on economic growth was explored by some other studies using different models by Agarwala (1983), Anderson (1987), Khatekhate (1988), Gelb (1989), Gallagher (1991), Odedokun (1992), and Sundararajan (1985 and 1987). Most of these studies tried to find out contribution of financial liberalization and relationship between economic variables and growth by taking into account the ratio of either money or credit to GDP or the real interest rate as the proxy of financial sector development and hence, economic growth. In reality, financial sector development is multidimensional and can be influenced by different variables in different ways. Moreover, these studies ignored the direct role of multidimensional financial reforms on economic growth and efficiency. Analyzing the relationship between various economic variables and real sector growth at a complex level is essentially required in designing financial sector reforms to obtain maximum benefit at the lowest cost. Galbis (1994) and Johnston (1997) pointed out that

shifting from financial repression to liberalization incurs costs as interest rate, exchange rate, and financial flow are adversely shocked.

The studies done in the context of Bangladesh financial sector are very limited in scope as most of them focus on the performance of the economy and the financial institutions. The well understood part, among others, is increase in financial deepening (Khalily *et al*., 2001), credit expansion (Hoque, 2002; Khalily *et al*., 2001), productivity of the banking sector (Hoque and Khan, 2001) and the structural changes in deposit behavior as a result of financial liberalization (Hoque and Mamun, 2001). However, no study has been done which addresses interest rate liberalization and the status of financial market that is whether it is still fragmented or not. Also, there is no study regarding the impact of financial liberalization upon growth and efficiency of Bangladesh financial system, which is the topic of current study. The financial sector is assumed to affect economic growth and efficiency through different channels, which are proxied by the real interest rate (RIR), inflation rate, foreign direct investment (FDI), the volume of intermediation, and so on. To examine the effects of financial liberalization, analysis in this paper are conducted in two periods, one is prereform period, 1974 to 1989, and reform period, 1990 to 2001.

The paper is divided into seven sections. The next section outline Bangladesh economy and financial sector. Sources and causes of financial structural weakness in Bangladesh are depicted in section three. Section four describes the process of financial sector liberalization in Bangladesh. A framework for empirical analysis has been developed in

section five. Section six reports the results from econometric analysis. Finally, policy implication and concluding remarks have been set in section seven.

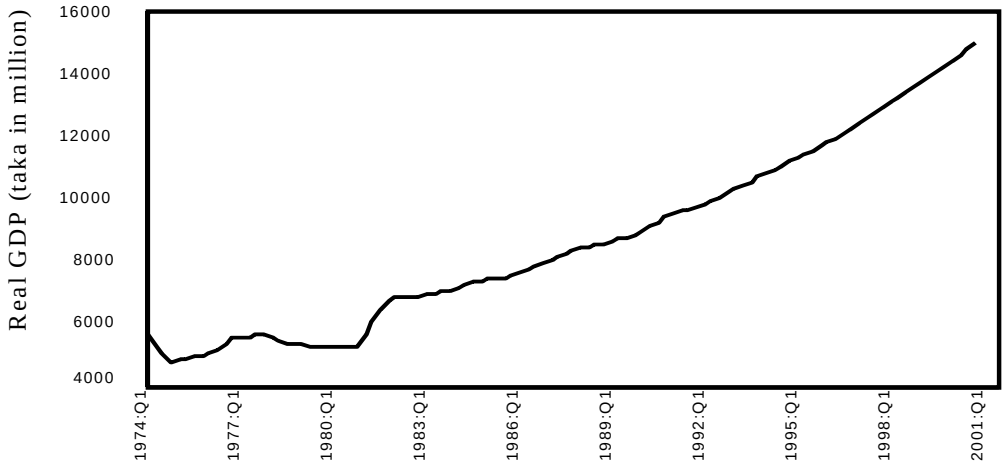
2. An Overview of Bangladesh Economy and Financial Sector

Bangladesh economy is mainly dependent on agricultural products and from mid-eighties the export sector start a significant contribution in the GDP of the country. Almost 80 percent of the total population live in 70000 villages and more than half of them have no land resources to earn income and regarded as landless for whom daily wage labor and occasionally some off-farm works are the main sources of income. It is estimated that approximately, at least 50 million people of rural Bangladesh suffer from underdevelopment such as, malnutrition, food poverty, illiteracy, and high rate of child mortality, poor housing, health and sanitation.

Khan (1995) pointed out that Bangladesh had a growth rate of GDP between1950 and 1970 of 3.2 percent per year. This Pre-independence growth rate implies a 0.66 percent annual growth rate in per capita GDP because population in those decades was growing at an average annual rate of 2.52 percent. For a period after independence, the rate of population growth was even higher – 2.7 percent per year in the second half of the 1970s – but then it began to decline to reach an average of 1.9 percent during the early 1990s. For the three fiscal years 1996 to 1997 GDP at market prices increased at an annual average rate of 5.6 percent. According to Bangladesh Bureau of Statistics estimates of GDP for 1999, a year of widespread flooding and crop damage is 3.8 percent, breaking the succession of more than

5 percent rate of growth. So, from mid-eighties the average real GDP growth rate is roughly 5% till 2001 (figure-1). Structural changes are also important in Bangladesh economy under which the proportion of GDP contributed by agriculture declined by 17.7 percentage points since the war of independence in 1971. On the contrary, the overall proportion of output contributed by industry and modern services increased very little during the same period.

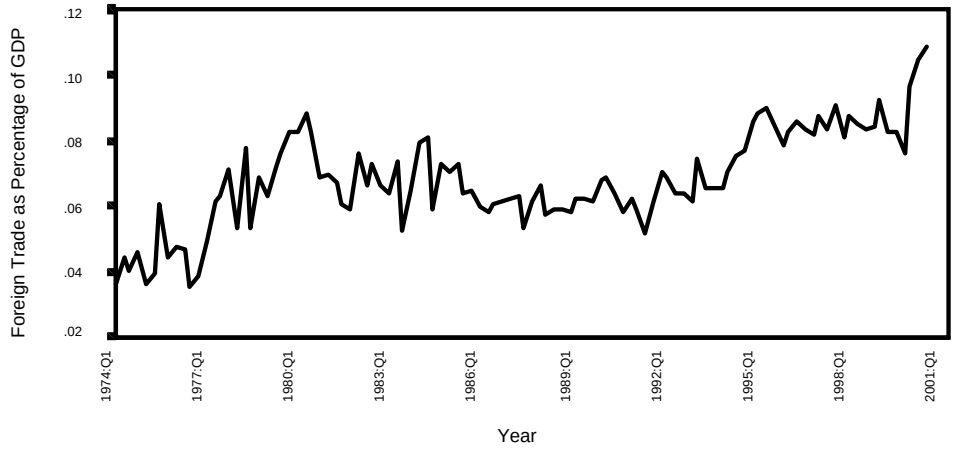
Figure-1: Growth of Real GDP in Bangladesh



Foreign trade as a percentage of GDP has increased from 4% in 1974 to nearly 10% in 1980. After that it slowed down little bit and it started boosted again in 1996 until it reached to 12% in 2001 (figure-3). Merchandise exports as a proportion of GDP has increased rapidly, from 2.4 percent in 1975 and 5.6 percent in 1980 to 12.2 percent in 1997. Ready-made garments (including knitwear) contributed most in such rapid increase in merchandise exports, from an insignificant level in the second half of the 1970s to nearly

70 percent of the merchandise exports in the early 1990s. (Khan and Hossain, 1989). Much of these exports have thrived under the protection of country-specific import quotas, especially in the U.S. market. According to Asian Development Bank Report (1994,1996,1997) and World Bank report (1993a) Bangladesh achieved per annum export growth of 17.1 percent during 1991-96 period as compared to 3.1 percent during 1971-80 period. Export, as a percentage of GDP was 12.0 percent in 1995. On the contrary, growth of imports increased from –2.4 percent per annum during 1971-80 period to 9.5 percent during 1991-96 period with the GDP share of 18.5 percent per annum. It reveals that during the same period, volume of imports increased at a faster rate in comparison to the same of exports.

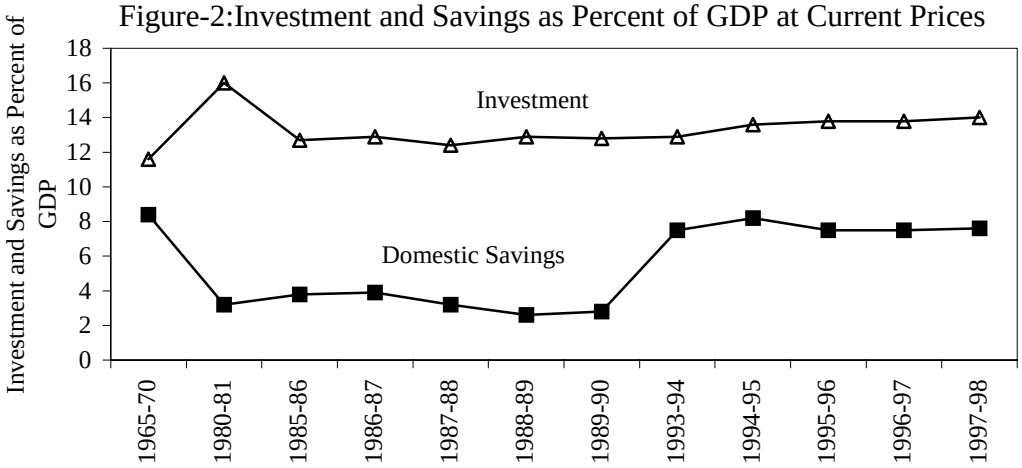
Figure-3: Foreign Trade as Percentage of GDP



Before independence, during 1965-70, gross investment amounted to an average of 11.6 percent of GDP of which 8.4 percent of GDP was contributed by domestic savings and the remaining 3.2 percent of GDP was made up of net capital inflow (Khan and Hossain, 1989). Proportion of gross investment to GDP reached at its peak rate of 16 percent in 1980-81

and since the mid-1980s it stayed just under 13 percent of GDP until recovering a little in the mid 1990s. It was only 14 percent of GDP in 1997-98, a lower rate than the peak reached nearly two decades back. Domestic savings rate was significantly higher in the early 1990s than that of in 1970s and 1980s. This higher savings rate was despondently lower in comparison to international standards. Even the national savings[1] rate – 12.1 percent of GDP – was substantially lower than the South Asian average of approximately 17 percent of GDP.

Figure-2:Investment and Savings as Percent of GDP at Current Prices

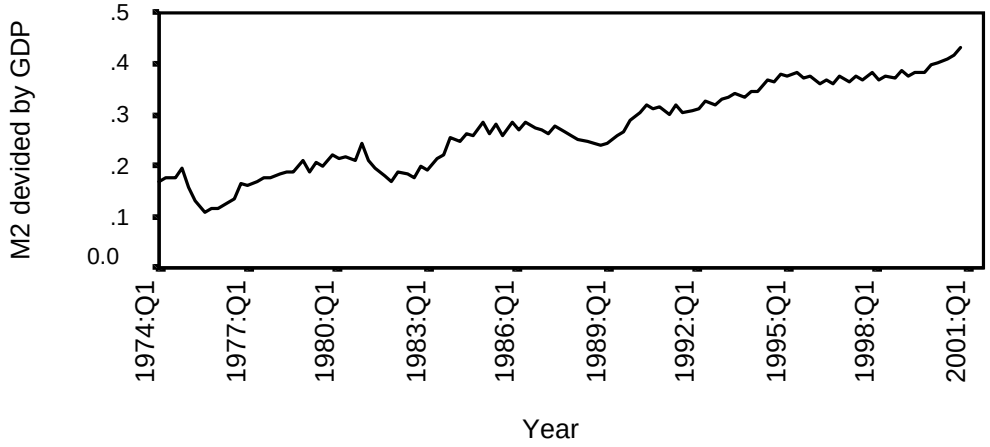


Financial deepening (defined as a ratio of M2 to GDP) is a robust indicator of financial development. The figure shows that financial deepening in Bangladesh has increased in decade 1990 compared to 1980. It was around 18% in year 1974 and went down to 10% in 1975 for famine in that period and after that it steadily increased except few downs due to

[1] This "national savings" is somewhat crude in so far as it excludes other sources of net factor income received from abroad. This however is of insignificant consequence in view of the very low levels of these flows in Bangladesh.

natural calamities in the country. From 1990 and onwards it achieves a real momentum and reached to nearly 40% in year 2001. Increased financial deepening is due to the increased banking network in the country.

Figure-4: Financial Deepening in Bangladesh



An efficient financial sector has been increasingly recognized as one of the preconditions for the achievement of high rates of growth in the developing countries (Collier and Mayer, 1989; Fry, 1989; King and Levine, 1993). The financial system is also instrumental in the mobilization of domestic savings, and performs the critical functions of risk pooling and risk transfer, as well as intertemporal transformation through which streams of short term deposits can be utilized to fund longer term loans (Zahler, 1993; Hossain and Chowdhury, 1995). The Bangladesh Financial sector is comprised of the central bank (Bangladesh Bank), deposit money banks and other financial institutions and two stock exchanges, one in Dhaka and another in Chittagong. There is only one public sector merchant bank, Investment Corporation of Bangladesh. Moreover, Bangladesh Bank issued merchant

banking licenses to 27 private sector merchant banks to boost up slumbering capital market in Bangladesh.

3. Sources and causes of financial structural weakness in Bangladesh

In 1972, adopting the centrally planned economic policies, the government of Bangladesh nationalized most of the major banks and financial institutions. During that period, government played the key role in the financial market by credit allocation and fixing interest rates. It happened due to the existence of frivolous, shattered, shallow, and almost monopolized financial market in Bangladesh that was incapable of operating and allocating financial resources to the fullest degree of efficiency. Looking at other South Asian economies, up to mid 1980, all most all of them apart from Sri Lanka, had been dominated by the socialist economic policies that was fully reflected in the high degree of government direction and control over the financial sectors. Government of these economies was happy with the socialist economic policies to control the financial sectors they could use the financial resources to achieve their political and social aspirations. Considering their political and social blueprint, they neglected the commercial profitability by providing facilitated credit to priority sectors. This type of special credit was coupled with negative real interest rates distorting the efficient allocation of financial resources (Goldsbrough et al., 1996). Non-priority sectors, according to government view, were deprived of government's special credit facilities.

Following other South Asian economies, during 1980's, most of the nationalized commercial banks in Bangladesh channeled large volume of facilitated credit, sometimes at

lower than cost of fund, to the priority sectors, especially in agriculture. Unfortunately, in most of the cases, proper credit evaluation was not possible due to robust political affiliation of the borrowers. Real farmers were dropped out from the special credit program by the influence of the fake borrowers with their political faces. Consequently, recovery of these loans was below the mark that made the banks unprofitable and insolvent though these banks showed sufficient paper profit by virtue of the accounting charisma. Nationalized banks in Bangladesh funded state owned enterprises and the overall budget deficit to fulfill fiscal objectives (Mackenzie and Stella, 1996). Excessive regulatory controls, lack in proper loan supervision, lack in competition, increase in default loans, overstaffing, thin productivity, heavy influence of political patronize labor unions were the other major setbacks in Bangladesh financial sector before the liberalization programs were undertaken. Not only state owned banks but also many of the private banks in Bangladesh fueled the non-performing loan problem due to their inefficient loan portfolio constructed mostly by the bank directors to fulfill their personal dreams by depositor's money.

Domestic private banks in Bangladesh captured a satisfactory volume of market shares following the financial deregulation but their financial performance became bleak within a short period of time due to their high volume of non-performing loans. Methodical and planned failures to select bonafide borrowers and insider lending were like plague in the operation of the financial system of Bangladesh (Aoki, 1995). Undue political pressure, ineptitude, capacity constraint, and fulfilling self aspiration of the directors prevented the regulatory bodies to eradicate the problems of private commercial banks at earlier stage.

Often banks could detect the problems but were unable to correct it in presence of conventional and cosmetic regulations (Sundarajan and Balino, 1991). Weak internal controls coupled with extreme unwillingness and cumbersome legal procedures deterred to take effective action to recover granted loans (World Bank, 1996). The problems of Bangladesh banking sector along with the emergence of new preferential business groups accecentuated serious default culture problem in Bangladesh economy. Banks granted under-collateralized and uncollateralized loans to preferred borrowers that weaken their bargaining capacity with borrowers. Consequently, borrowers used the bank's money for different unproductive and conspicuous purposes.

The higher the debt equity ratio of a project, the higher the creditors expected rate of return from that project. In reality, the opposite happened in Bangladesh, i.e. most of the high-risk project loans were funneled to relatively sick and financially unsound projects with little or zero equity by over invoicing machinery imports and project costs. Consequently, sick projects became sicker and creditors lost their loan principal let alone even minimum return (Ahmed, 1988). Subsequently, most of the banks faced serious systematic risks that jeopardized even their mediatory roles. This systematic risk was caused by severe deterioration of bank's balance sheets and other already mentioned problems. This unfortunate situation of the financial market hindered the flow of fresh loans by raising the interest rates by the creditors. Banker's required higher yields to compensate the lost return from the non-performing loans. During early 1990's, Bangladesh, India, and Sri Lanka increased the interest margins around 9 percent due to the mentioned reasons (Goldsbrough

et al., 1996). This turmoil in the financial market was more deteriorated when bankers started to refinance the bad loans to avoid increased volume of loan write-offs and lent mostly to the bad debtors at a higher rate. Bad debtors, unlike the genuine borrowers, did not care about the interest rate as they thought that loan repayment is trivial rather getting loans is more important (Hinds, 1988).

The following comment on rents from financial repression in Korea and Taiwan can be applied equally to South Asia, particularly, in Bangladesh and explains the rationale for reform:

"The power to allocate credit on preferential terms and to determine who receives the rents creates the potential for abuse, one type of moral hazard. It is not coincidental that in all financially repressed economies, recipients of rationed credit are major financial supporters of the party in power" (Patrick, 1994: 337-8).

Most of the banks suffered from faulty loan classification system that allowed accrual basis rather than cash basis income due to severe deficiencies in practiced accounting systems in the banks. As the essence of the above discussion, the following factors can be forwarded as the reasons of the loan default problem:

- Selective process of priority sector lending.
- Inefficient legal system to confiscate and liquidate the borrowers personal asset's to recover the defaulted loan.
- Over valuation of collateral.
- Extensive loan waiver facility that deteriorated loan discipline.

- Haphazard lending to inexperienced entrepreneurs and sick projects that diverted loans to short-term benefit yielding projects.
- Unwise lending based on fixed debt-equity ratio that increased the project's financial leverage.
- Lack of proper loan supervision despite overstaffing in banks.

In spite of these serious problems, Bangladesh did not face any sort of acute financial crises, as depositors were very much sanguine of government's steps to bailout such problems. Moreover, bleak alternative investment opportunity in slumbering capital market and lion share of bad loans accounted by the major state-owned banks added to the causes of not facing the financial crises. Moreover, greater care of these problems and political consensus gained favorable environment in Bangladesh after 1990's to efficiently undertake major financial restructuring and reforms.

4. The process of financial sector liberalization in Bangladesh:

To rescue the financially troubled economy from financial repression all major South Asian economies have undertaken successive process of financial sector reforms. These reform policies to a greater extent reflected in the shifting of the economic strategies adopted in these countries (Bhagwati, 1994; Joshi and Little, 1996). These reform policies basically focused on privatizing economic activities relinquishing government intervention and control in the development process and strategies that required a sound market-oriented financial system. It was also apparent that the efficiency and scope of financial system had to be widened by liberalizing and restructuring the economic activities as domestic savings provided the larger share of resources for investment to achieve faster economic growth (Schmidt-Hebbel et al., 1996). A national commission on money, banking, and credit that was formed by the government in 1986 suggested several recommendations as the outcome of their extensive research on overall structure of banking system, capital adequacy requirements of nationalized commercial banks (NCBs) and Development Financial Institutions (DFI's), monetary management of the central bank, issues of overdue loans, foreign exchange management of the central bank, legal framework affecting financial institutions, agricultural and rural credit, supervision and inspection of the financial institutions by the central bank (Choudhury et al., 1995). A World Bank study of the financial sector followed by the National Commission study and recommendations

suggested various reforms measures concerning (i) interest rate fixation of deposits and advances, (ii) Capital restructuring of NCBs and Privatized Commercial Banks (PCBs), (iii) classification of overdue credits, (iv) market orientation of banking transactions (Report of the Task Forces on Bangladesh Development Strategies, 1991). Bangladesh Bank, the central bank of Bangladesh, commenced various institutional and legal reform measures in the financial sector in accordance with the previous studies and recommendations in 1989-90.

In January, 1990, Bangladesh Bank introduced flexible market oriented interest rate, abolished concessional financing facility preferential sectors. Again in 1992, Bangladesh bank accelerated the interest rate flexibility by eroding interest rate bands in all sectors with the exception of small industries, exports, and agriculture. Moreover, deposit rate bands were determined according to expected rate of inflation and positive real return for the surplus units and lending rate bands were determined an the basis of shadow lending rates (Raquib, 1999). Basle Committee recommended to raise the capital adequacy standards above 8 percent of risky assets of banks to reduce the incentives of excessive risk taking by the banks (World Bank, 1997). Accordingly, Bangladesh bank imposed uniform capital adequacy requirements of 6 percent that was further raised to 8 percent of risk-weighted assets in early 1996 under the financial sector reform program.

Bangladesh Bank introduced new accounting policies with respect to loan classification, provisioning and interest suspense in 1989 with a view to attaining international standards over a period of time. A Revised policy for loan classification and provisioning was introduced from 1st January, 1999.The Revised policy calls for an independent assessment

of each loan on the basis of qualitative factors and objective criteria. Each loan is branded with the worst level of classification resulting from these independent assessments. If a Continuous Credit or a Demand Loan remains non-performing for 6 months or more it is classified as Sub-standard. It is classified as Doubtful if it remains non-performing for 9 months and classified as Bad loan if non-performing for 12 months or more. In the case of a Term Loan**,** which is repayable within a maximum period of 5 years, if any installment is not repaid within the specified period and if the time-equivalent of such unadjusted balance is 6 months, it is classified as Sub-standard. A Term loan is classified as Doubtful and Loss if the time-equivalent of unadjusted balance is 12 months and 18 months respectively. Agricultural Loan and Micro-Credit is classified Sub-standard if non-performing for 12 months, Doubtful if non-performing for 36 months and Loss if non-performing for more than 60 months. Under the existing system scheduled banks are required to maintain provisions against unclassified and substandard loans in addition to doubtful and loss loans. They are allowed to recon interest against classified loans only on cash basis. Whether a credit is classified or not under the objective criteria, it is subjected to classification under qualitative judgment if any doubt arises regarding repayment of loan.

Disclosing financial information to depositors was another major reform measures whereby depositors could make the choice among banks. Recapitalization of public financial institutions was another important reform measure. Special interest bearing bonds were issued in 1989 amounting Tk. 17.3 billion, about 5.5 percent of GDP, that was increased by adding additional Tk.14.6 billion in 1993. In Bangladesh, new financing instruments like on-lending funds for industrial development through the foreign private banks were

developed in lieu of recapitalizing the poor performing and reform dissident institutions such as, Development Finance Institutions (DFIs). Establishment of new private banks including foreign banks encouraged in reform measures to accelerate the pace of financial resource mobilization and economic growth. First private bank in Bangladesh was established in 1978 followed by the present status of 30 private banks including 4 Islamic banks, 11 foreign banks, 4 nationalized banks, and 5 Development Finance Institutions, and 3 Cooperative Institutions as on June 30, 2002. A Credit Information Bureau (CIB) was established in Bangladesh Bank in 1992, and started operation since 1993 to restore credit discipline and to supply adequate reliable credit information to the banks to accelerate the process of loan sanctioning. The on-site and off-site inspection departments of Bangladesh Bank faced major reform by introducing CAMEL RATING, a device for evaluating bank's performances by judging five major factors of banks on a scale of 1 to 5 in ascending order of performance deficiency: capital adequacy, asset quality, management, earnings, and liquidity.

Bangladesh Bank has started active open market operation by issuing its own securities, such as, 90-days, 30-days Bangladesh Bank bill, 28-days, 90-days, 180-days, and 1-year maturity Treasury Bills with active participation by commercial banks in weekly held auction. Banks are now at their liberty to fix foreign exchange rates. Bangladesh Bank only transacts spot for large transactions in the US dollar to promote the spot and forward market in Bangladesh. Not only forward but also the bankers to hedge the foreign exchange risks involved in international trade extensively use foreign currency swap. Reform measures made the Bangladeshi Taka fully convertible for current account transactions

with the objectives of creating confidence in domestic currency and economic management, facilitating international trade and supporting trade liberalization, and linking the economy with international markets particularly the international financial market (Alam, 1994).

It is recognized that credit rationing may take place lending to distortions in resource allocation and rent-seeking behavior even with relatively competitive credit markets in presence of asymmetric information (Stiglitz and Weiss, 1992). Higher interest rate may not allocate resources efficiently due to portfolio deterioration with given weakness in regulation (Joshi and Little, 1996). Moreover, moral hazard problem may exist if the bankers tend to lend to riskier projects with higher returns.

Under reform measures, loan recovery procedures have been improved and expedited to ensure the bank's resources. Prohibition of directorship has been imposed on bank directors who have defaulted loans from their own and other institutions. Now a days, as part of the reform measure, the government actively considering the issue to select directors even from the depositors of banks. Rigid loan sanctioning criteria has been practiced in cases of defaults on rescheduled bank loans, and greater cares have been taken to ensure the viability and competition of the projects.

Under legal reforms, in Bangladesh, Bank Companies Act.1991, Financial Institutions Act., 1993, and Bankruptcy Act., 1997 were enacted and two bankruptcy courts have been set up in the commercial areas of two major cities, Dhaka and Chittagong, to expedite the loan recovery process.

A number of reform measures has been undertaken to promote the growth of capital market and Merchant Banking, which include fiscal incentives, regulatory controls, updating and rationalizing Securities and Exchange Commission (SEC), establishing the SEC as a regulatory body, encouraging private mutual funds, issuing licenses to 27 Merchant Banks, taking measures to start functioning asset securitization and factoring in private sector, exempting tax on capital gains of bank's shares.

In Bangladesh, sometimes and in some cases it is difficult to properly implement reform measures due to poor designing, poor implementation process, insufficient bank legislation and regulation, excessive risk-taking incentive structures, large fiscal deficits, macroeconomic instability, above all, the initial stage of the reform measures. Poorly performed financial institutions received the benefits of reforms when in 1980s, in US, Savings and Loan association faced a massive crisis. These benefits of poorly performed financial institutions significantly rose the ultimate bailing out cost (Fries, 1992). Likewise, Bangladesh has been receiving benefits, often at a higher costs from the above discussed reform measures.

5. Framework for Empirical Analysis

Financial sector reform typically involves a set of measures such as (1) withdrawal of ceilings on deposit and lending rates (2) no restrictions on the quantity of credit (3) reducing reserve requirements on deposit (4) no restrictions on the entry into banking and encouraging private ownership of banks and (5) no restrictions on capital transactions with foreigners. Though the above measures is not exhaustive but includes the major dimensions of reform measures that had been adopted by the policy makers or governments of various countries to allow the market forces for determining the optimum price and quantity of credit for achieving higher economic growth. In combination, liberalization has been characterized by greater scope being granted to market forces in determining interest rates and in allocating credit (Caprio, Atiyas and Hanson, 1994). The measures of financial liberalization has its effect on the economic growth through a number of channels, including the cost of capital; the volume of savings and investment funds; distribution of funds and project selection. Cross-country evidence on impact of financial liberalization on growth and efficiency is not same because financial liberalization is a multidimensional and sequential process, which largely depends on the policy and institutional framework of the particular country. The policies adopted for a particular economy may not be suitable for another economy because of difference in financial structure, institutional base and differences in international linkages. As Bangladesh, being the hesitant reformer, the channels through which financial liberalization affects growth and efficiency, has not been addressed by others. In this paper these issues will be analyzed.

The channels through which the financial sector affects the growth and efficiency are not readily observable, and hence, it is necessary to rely on a number of proxies or indicators of financial development. This paper concentrated on the impact of three proxies of financial development: (1) the level of real interest rate (2) the volume of intermediation and (3) measure of financial sector efficiency by following Johnston and Pazarbastoglu (Johnston and Pazarbastoglu, 1995). The above mentioned financial reform measures are likely to affect these three proxies of financial development. For example, real interest rate should reflect capital scarcity, and thus interest rate ceilings reduce the efficiency of capital allocation and with it quality of investment. By reducing the scope for risk premia, loan rate ceilings discourage risk-taking by financial institutions. A large proportion of potentially high-yielding investment are being rationed out of the market. So interest rate liberalization could affect the real interest rate, the volume of credit and the efficiency of financial intermediaries. Bivariate analysis may produce misleading results due to omitted variable bias (Lutkepohl, 1982). So by entering all three proxies simultaneously into the equations for economic growth and efficiency it would be possible to differentiate the importance of the different channels. Thus, including the volume of intermediation as a measure of financial depth, the real interest rate as a measure of the market determined price of scarce capital and spread as a measure of efficiency of financial intermediation may make the compelling case for analyzing the channels through which financial reform affects economic growth and efficiency.

The consequences of financial sector reform would be observed partly through the movements in the proxies. Financial sector reform is also a process, which necessarily stimulates structural and institutional changes over time. Financial reform typically comprises several key phases, often separated by several years. Reform measures are introduced in a number of different dimensions: interest rates, credit allocation, bank ownership, prudential regulations, securities market and openness of capital account. There have been frequent debates as to the best sequencing of these various elements. In practice, reform has not been a monotonic process – in some cases there have been setbacks involving temporary policy reversals. A through analysis of the impact of such a process must take into account of its gradual and reversible nature. Analysis of the historical measures of reform adopted in Bangladesh financial sector is concidered to examine the impacts of financial sector reform upon the growth and efficiency of real sector. Though some of the reform measures has started from mid-eighties but the full extent liberalization measures started from 1990. Under this scenario we split the total sample into two halves – one is prereform period, from 1974:Q1 to 1989:Q4 and another is reform period, from 1990:Q1 to 2001:Q1. So, this approach allows us to study the impact of different channels through which the financial sector affects the growth and efficiency of real sector under the conditions of financial repression and during the reform period.

5.1 Earlier Studies

After the seminal works of McKinnon (1973) and Shaw (1973) a wave of liberalization of financial markets has swept over much of the developing world. Since then financial liberalization and or reform is an issue which attracts much importance by the researchers and policymakers. A voluminous literature exists about different aspects and dimensions of financial reform. However, some of the earlier empirical works will be reviewed for this study purpose. Barro (1991) studied the endogenous growth approach that examines the determinants of growth by regressing average per capita growth on a set of relevant variables using cross-section data of about 100 countries during the 1960-85 period. These variables include proxies for capital accumulation, the macroeconomic environment, government spending, degree of openness and terms of trade. This approach has been helpful in highlighting the factors that affect growth, although the estimation of semi-reduced forms may create problems of an endogenous nature and misdirect the interpretation of coefficient estimates. Levine and Renelt (1992) provide a detailed study of the sensitivity of cross-country regressions of growth. Among the earlier studies that have added variables of financial development to Barro's basic cross-country regressions, Roubini and Sala-i-Martin (1992) incorporated an indicator variable for financial repression. The variable takes the value 1 when real interest rates are positive, 2 when the real interest rates are negative but above –5 percent, and 3 when real interest rates are below –5 percent. They find this dummy variable has a negative and significant coefficient implying that a higher degree of financial repression leads to lower economic growth. As an alternative

approach, they use the reserve requirement ratio as a proxy for financial repression and conclude that high required reserves lead to a lowering of economic growth. De Gregorio and Guidotti (1992) added the ratio of domestic credit granted to the private sector by the central bank and the commercial banks to GDP (CREDIT) as a proxy for the degree of financial intermediation. They find a significant positive effect of this variable on long-run growth of real per capita GDP. However, when De Gregorio and Guidotti use a panel data set for 12 Latin American countries for the period 1950-85, they find a significant correlation between CREDIT and economic growth. They interpret these result as evidence that more financial intermediation may be associated with lower efficiency of investment where the financial liberalization was unsustainable due to inadequate regulation.

Odedokun (1992) examines the effect of selected policies on economic efficiency measured by the incremental output capital ratio (the ratio of the change in GDP to investment) in 81 developing countries using panel data over various periods between 1961-90. He emphasized that that ideally output to capital ratio as opposed to incremental capital output ratio should be used as the appropriate index. However, due to lack of appropriate data on capital stock for developing countries he used incremental capital output ratio. The variables included in the equation are: export orientation, size of the public sector, inflation rate, real exchange rate distortions, real interest rate, directed credit program through development bank lendings, and financial depth. He concludes that the stock of credit to private sector to GDP ratio is a better proxy for financial depth than the stock of liquid liabilities to GDP, and that general increases in real interest rate have a positive impact on

the efficiency of resource use. King and Levine (1993) conduct both a cross-country analysis using data averaged over the 1960-89 period and a pooled cross-country time series study (panel data) using data averaged over the 1960s, 1970s, and 1980s. They used four indicators of the degree of financial sector development: (1) the ratio of liquid liabilities of the financial system to GDP, (2) the ratio of deposit money bank domestic assets to deposit money bank domestic assets plus central bank domestic assets, (3) the ratio of claims on non-financial private sector to total domestic credit and (4) CREDIT, a similar variable used by De Gregorio and Guidotti (1992). Including the indicators one at a time in the regressions, they conclude that higher levels of financial development are positively associated with faster rates of economic growth, physical capital accumulation and economic efficiency improvements.

The study by Johnston and Pazarbasioglu (1995) examines the impact of financial reform on economic growth and efficiency by using panel data from 40 countries that have introduced financial reforms. They considered the three main channels which affects economic growth and efficiency: the real interest rate, the volume of intermediation represented by quasi-money divided by GDP and efficiency of intermediation represented by lending rate minus deposit rate. The other variables of their study includes: central government expenditure, inflation rate, sum of exports and imports, foreign direct investment, claims on private sector by deposit money banks, reserve money. All these variables are expressed as a percentage of GDP except inflation. This study is different from earlier studies in three respects: first, they have distinguished between pre-reform, reform and post-reform periods; second, they used output capital ratio as a measure of

economic efficiency; third, the study distinguishes between the experiences of countries that faced financial crisis following reforms and those that did not face such crisis.

5.2 The Model:

One equation has been constructed for examining the impact of financial liberalization on economic growth for Bangladesh. The equation uses growth rate of GDP (*GRGDP*) as dependent variable. In addition to that three proxies of financial development has explored : (1) the level of real interest rate (RIR) (2) the volume of intermediation and (3) measure of financial sector efficiency upon economic growth and efficiency. The other explanatory variables include:

CPSGDP= claims on private sector by deposit money banks divided by nominal GDP.

EXIM= sum of exports and imports divided by nominal GDP.

FDIGDP= foreign direct investment divided by GDP.

RMGDP= reserve money divided by nominal GDP.

INF= inflation rate calculated as percentage change in consumer price index.

The general functional form for growth equations can be expressed as:

$$GRGDP = \beta_0 + \beta_1 CPSGDP + \beta_2 EXIM + \beta_3 FDIGDP + \beta_4 M2GDP + \beta_5 RMGDP + \beta_6 SPREAD + \beta_7 RIR + \beta_8 INF + \varepsilon_I \quad \text{LLL} \quad (1)$$

Where β_0 is constant and β_1 *to* β_8 are estimated coefficients. ε_i is the serially uncorrelated error terms. Linearity is imposed on the equations and the expression assumes that (a)

Expectation of error is zero i.e. E (ε)=0; (b) Variance of error is S^2 i.e.(ε)=S^2 ; (c)Error terms are not correlated i.e. ε_i N (0, σ^2); (d) The observations are independent.

5.3 Relationship Between the Proxies of Financial Development and Economic Growth and Efficiency

Real Interest Rate

Real interest rate affects financial sector development through it's influence on volume of financial savings and on the cost of capital (McKinnon, 1973; Shaw, 1973; Fry, 1988; Leite and Sundararajan, 1990). Existing empirical evidences suggests that national savings rate may be affected positively by the real deposit rate of interest. Even when this effect is statistically significant, it's magnitude is not large enough to warrant great policy significance. As a measure for increasing savings, the real deposit rate is subject to upper bound at its competitive free market equilibrium level. Hence only in countries where the deposit rate is negative there is much scope for increasing saving by raising the real deposit interest rate. As the Bangladesh economy is repressed till 1989 real deposit interest rate was negative (Khalily, 1987; Srinivasan, 1988). Negative real interest rate could not attract much financial savings, as financial deepening was lower in the repressed regime. There is grater extent of financial deepening in the financial reform regime in Bangladesh (see figure-3).

Loan rate ceilings discourage risk taking on the part of financial institutions; risk premia cannot be charged when ceilings are binding and effective. This itself may ration out a large proportion of potentially high-yielding investment. In the financially repressed economy there is a tendency for the investments that are financed to yield returns barely above ceiling rate of interest. Interest rate ceilings deterred economic growth and efficiency in three ways. First, low interest rate produce a bias in favor of current consumption and against future consumption. So, funds are not channeled to investment purposes, rather consumption purposes. Also, this may reduce saving below the socially optimum level. Second, potential lenders may engage in relatively low-yielding direct investment instead of lending by way of depositing money in the bank. Third, bank borrowers able to obtain all the funds will choose relatively capital-intensive projects.

Subsidized and priority sector projects are associated with increase in real interest rate, which is declined in other projects as a consequence of Financial sector liberalization. This mismatch can be corrected by fund allocation restructuring by shifting funds from the subsidized projects with less degree of viability to the neglected projects with healthy return potential. Financial liberalization opens the door of productive investment opportunities to get sufficient funds at competitive rates. From theoretical point of view, higher equilibrium real interest rates should be concomitant with more efficient investment and higher rates of return on capital, which in turn promotes higher economic growth and efficiency. The counter argument is that high real interest rate may be associated with adverse selection and the channeling of funds in more risky projects. Such high real interest rate may also reflect other factors, such as lack of credibility, a country risk premium or

fragility of the banking system (Calvo, 1988; Calvo and Guidotti, 1991; Person and Tabellini, 1990). Except for the counter arguments mentioned above, we would expect a positive relationship between RIR and economic growth and efficiency.

Volume of Intermediation

If financial liberalization improves the rate of return for savers then the volume of intermediation is expected to increase in the long run. McKinnon (1973) in 'outside money' and Shaw (1973) in 'inside money' model emphasized the vital role played by financial intermediaries in increasing savings and hence investment. Holding of financial assets and financial deepening generally increased as a consequence of liberalized interest rates and introduction of new financial instruments. Financial sector reform is usually associated with the increase of financial development (deposit or currency in circulation and broad money as percentage of GDP). Despite many studies, this remains an empirically controversial area – partly because of the surprising shortage of reliable and comparable cross-country data on the parameters upon which savings depends. Recent reviews by Balassa (1990), Srinivasan (1993) and Fry (1995) conclude that interest rate has a positive impact upon savings rather than negative, but the coefficients have generally small and often insignificant. Interestingly, Levine (1997) finds that the greatest improvement in growth comes from eliminating significantly negative real interest rates, with small gains to further increases.

Two main factors – sources and uses of credit expansion – are likely to determine whether the observed increase in intermediation will improve economic growth. Robust increase in financial intermediation should involve a real savings rather than a positive inflation component to affect positive and higher economic growth. Increases in money and credit due to inflation would have a transitory effect upon economic growth and higher inflation has a longer-term negative effect. In Bangladesh financial sector has been liberalized with no restriction on interest rate and credit. Rapid credit expansion often follow the liberalization of controls on banking system, as in Bangladesh, a good number of private banks has emerged in the reform and post-reform period. Deposit and credit has expanded enormously in the liberalized regime. Whether the expansion of credit has contributed to higher economic growth remains an empirical issue. As already noted, this increase may be channeled to consumption or unproductive uses rather than investment purposes. The level of real interest rate and the proxy for the efficiency of the financial system should control for these factors. Hence, we anticipate that the volume of intermediation variable will mainly play the role in the financial system of promoting savings and positively contribute to growth and efficiency. However, as the volume of intermediation rises due to inflationary escalation in money and credit, the impact on growth and efficiency would be depressing.

The study uses two alternative proxies for the volume of financial intermediation through the banking system – the share of credit to the private sectors by banks in GDP (denoted as CPSGDP) and Financial deepening (denoted as M2GDP). These two variables capture the two main functions of financial market, one is deposit mobilization role and another is

credit allocation role. CPSGDP is a more appropriate indicator of the volume of intermediation through the banking system than the CREDIT variable as used by De Gragorio and Guidotti (1992) and King and Levine (1993 a, b) because it excludes the credit granted to the private sector by the central bank, which is often high during financial repression.

Efficiency of Intermediation

If financial reform whether comprehensive and sweeping or measured and gradual cannot ensure the efficient allocation of resources it can prove detrimental to the long-run economic growth. If liberalization in the form of increased competitiveness and efficiency does not contribute any discernable benefit either in terms of availability of finance and credit or in terms of the reduction of intermediation costs then it can be said that liberalization has departed from its target. The channeling of funds through formal financial sector can improve investment and growth for a number of reasons like benefits of economies of scale in savings mobilization and allocation and the role as intermediary in project selection. However, efficiency and growth cannot be achieved in a day. It takes time to get hundred percent from financial reform and also the institutional and legal support is vital.

Banking system plays predominant role in credit allocation though sometimes it is intricate to get the real picture of efficiency of the banking system in the allocation of credit. Banks efficiency in credit allocation is usually reflected in activities. Such as,

wide lending margins, which in turn reflect incompetitiveness in banking industry. Bad and classified loans in the banking sectors is another aspect of efficiency in intermediation. Inefficient asset- liability management in banks by inefficient management body contributes to plethora of non-earning assets in banks portfolio. This paper used two different variables to represent the efficiency of intermediation. First one is the spread between lending and deposit interest rate (denoted as SPREAD) and the second one is ratio of reserve money to GDP (denoted as RMGDP). There are some loopholes in the measures. The spread may not be a robust indicator of efficiency because interest rates were administered before reform measures and after the reform it is influenced by a numerous government regulations. Reserve money is defined as the currency in circulation plus the required and excess reserves in the banking industry. The variable RMGDP, therefore, includes the currency to GDP ratio, which is a measure of efficiency of the overall banking industry in enhancing the volume of GDP.

6. Estimation Results

From the analysis of the data it is seen that different Macroeconomic variables influenced economic growth of Bangladesh in different ways in prereform and postreform periods.

Financial intermediation variables share of credit to the private sectors by banks in GDP (measured by CPSGDP) and financial deepening (measured by M_2GDP) impacted economic growth almost in similar fashion. CPSGDP has a significant negative effect on growth in both pre-reform and post-reform periods that indicates the inefficiency of the private sectors in using resources obtained as loans from banks. It happened due to faulty and prolonged privatization process that caused the creation of fake and inefficient entrepreneurs who could not get the highest reap of the banks money. Another variable M_2GDP also has the negative effect on economic growth particularly in the reform period that implies the weakness of the banking sector in mobilizing savings that mismatches the volume of loans. It happened probably due to inconsistency between banking sector liberalization and the state of Bangladesh economy. In fact, Bangladesh economy was strong enough to support partial liberalization.

The efficiency of financial intermediation proxied by RMGDP and SPREAD has both positive and negative insignificant effect on growth in reform period. Both RMGDP and SPREAD affect economic growth indirectly. These variables are adversely affected by inflation rate and shows negative effect on economic growth. RMGDP bears significant positive impact and SPREAD bears insignificant positive impact on growth in prereform period. This result indicates pernicious effect of liberalization in reform period. Untimely

and inappropriate banking sector liberalization, as previously stated, in fact, worsen the crises of Bangladesh banking sector, which was caused by huge volume of non performing loan, labor union activities, adverse selection, political influence to direct credit etc.

Trade liberalization proxied by EXIM, the sum of exports and imports over GDP got significant negative influence on growth in prereform period and significant positive influence on growth in post reform period. This result means that trade is beneficial to economic growth. However, for Bangladesh, the impact of openness of trade is significantly negative in the entire period of liberalization, which resembles as the results of the crisis countries (Johnston and Pagarbasioglu, 1995). This result may be due to non-alignment of trade liberalization with financial liberalization. However, after a decade of financial liberalization there is evidence of integration with goods market and exchange market (Hoque and Kabir, 2002).

Looking at entire period, FDIGDP, the ratio of foreign direct investment to GDP has positive effect on growth but the same variable has insignificant negative effect on growth in prereform and post reform periods. As a matter of fact the inflow of FDI in Bangladesh is relatively lower as compared to other South Asian countries probably due to lack of better socio economic infrastructure, administrative corruption, narrow market, and political unrest. On the contrary, the recent situation is different with favorable conditions for the FDI inflow in Bangladesh that expected to have positive effect on economic growth. RIR (Real Interest Rate) has a significant positive influence on growth in entire, pre reform, and post reform periods. Real interest rate increased either because of increased deposit rate

or decreased inflation rate. In practice deposit rate increases in harmony with inflation rate but this consistency is not found in case of crisis countries. Bangladesh, a non-crisis country captured the positive impact of RIR on economic growth. Inflation rate (INF) has negative and significant effect on economic growth in both pre-reform and post-reform periods. This negative effect implies that inflation is a setback of economic growth.

7. Policy Implication and Concluding remarks

Bangladesh financial sector has experienced reform programs but the result of financial reform is dubious. The well-documented effect of liberalization is that it increases financial deepening, foreign trade improvement, credit expansion and so on. However, the goal of financial liberalization, which is to improve growth and efficiency of the financial system, is not addressed in the literature in context of Bangladesh. The econometric analysis improves the understanding whether liberalization did help improving the growth of the economy.

The negative impact of inflation upon growth implies that inflation distorts growth and resource allocation other than the impact of financial variables. Bangladesh government devalued its currency more than 19 times and currency devaluation is inflationary in context of Bangladesh (Hoque and Kabir, 2002). Though currency devaluation may increase export competitiveness but this device cannot achieve its target in an economy like Bangladesh where export depends on large volume of imports in many cases particularly in garments sector. So that ultimate effect in economic growth through inflation may be detrimental.

The trade liberalization, as proxied by the sum of exports and imports over GDP (EXIM) has expected positive sign during the post-reform period, implying that trade-liberalization is generally beneficial to economic growth and efficiency. Tariff reductions from about 25% to 16% in 1996, permission of 100% foreign ownership in most economic activities is encouraging in this direction (Bangladesh Bank, 1997). The variable CPSGDP, share of

credit to the private sectors by banks in GDP, has an insignificant negative effect on growth in both pre-reform and post-reform periods. The results suggest inefficiency of the banking sector and weak privatization process. Public sector role to be reduced in economic activities. Privatization board has been created to de-nationalize public sector firms. Meanwhile 600 public firms sold off (CPD, 1996). Though some initiatives have been taken, we suggest all public sector companies should be handed over to private sector.

Real interest rate (RIR) has a significant positive effect on efficiency both in pre-reform and post-reform period. As there is huge amount of loan default occurred in reform period so RIR may not be a true reflector of real cost of capital. But, RIR has a significant positive impact on growth both in pre-reform and reform period. Financial reform doesn't bring dynamism in the growth and efficiency of financial system. Interest rates were gradually liberalized and some sectors like agriculture, exports and cottage industries enjoyed 3% subsidy in the reform period. As the interest rates have not been liberalized to the full extent analysis doesn't show clear effects on growth and efficiency.

The volume of financial intermediation (represented by M_2GDP) has insignificant negative effect on growth in post-reform period. This result is consistent for Bangladesh with the structural weaknesses of banking sector in savings mobilization. This is expected effect to the extent that banking system contributes to enhance savings mobilization. Though Bangladesh banking system suffers from lot of problems – huge loan defaults, adverse selection, political influence to direct credit – expansions still appeared as positive for growth. The efficiency of intermediation as proxied by spread has an interesting effect on growth. The effect is insignificantly positive in both pre-reform and post-reform periods.

As there is huge amount of non-performing loan in Bangladesh banking sector in the reform period it may affect the results.

Bangladesh embarked on financial liberalization as part of their development strategy to secure sustainable economic development (Ariff and Khalid, 2000). The main concern was to increase savings and mobilize resources efficiently, which will lead to higher efficiency and ultimately to higher growth. But this analysis shows that the financial and monetary variables are not contributing fully to growth and efficiency due to lack of proper structural and legal support, lack of policy enforcement. Moreover, the sequence of financial sector liberalization has been found to be crucial to the success of liberalization. In Bangladesh, the domestic sector has not been fully liberalized before trade sector liberalization. It hampered the ability of domestic industries to compete with the world market. Similarly, trade and capital account liberalization need to be done carefully as McKinnon (1982) suggested that trade liberalization should be done after fiscal deficit has been eliminated. Policy makers need to take into account all these factors to take appropriate steps to ensure robust economic growth.

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Appendix 1

Estimation Results : Growth Equations

Entire period : (1974:Q1 – 2001:Q1)

Equation	Constant	CPSGDP	EXIM	FDIGDP	M_2GDP	RMGDP	SPREAD	RIR	INF	R^2	DW
1	-10.011 (-.752)	-47.964 (-1.025)	-291.857* (-1.919)	25.079 (.887)		263.254 (1.444)		2.263*** (19.404)		.818	1.89
2	3.598 (.425)	-51.376* (-1.831)	-101.607 (-.885)	11.684 (.695)		218.978* (1.855)			-1.866*** (-14.759)	.712	1.67
3	-5.687 (-.438)		-321.676** (-2.046)	18.000 (.631)	-30.195 (-.452)	241.171 (.948)		2.242*** (19.587)		.821	1.89
4	13.361 (1.231)		-276.997* (-1.893)	9.671 (.411)	-39.796 (-.693)	280.284 (1.244)			-2.212*** (-19.048)	.811	1.90
5	-.839 (-.086)	-21.381 (-.639)	-273.940* (-1.837)	17.104 (.644)			1.604** (1.989)	2.229*** (19.153)		.814	1.90
6	22.784** (2.510)	4.609 (.150)	-275.491* (-1.907)	9.711 (.392)			-.067 (-.092)		-2.213*** (-18.923)	.809	1.90
7	-1.099 (-.100)		-325.499** -2.135	10.166 (.383)	3.501 (.098)		1.472* (1.745)	2.237*** (19.379)		.817	1.89
8	20.269** (2.053)		-319.848** (-2.178)	5.674 (.234)	25.315 (.788)		-.196 (-.261)		-2.222*** (19.140)	.813	1.89

N.B. One, two, and three asterisks represent 10%, 5%, and 1% level of significance respectively. The figures in the parenthesis are *t* statistics.

Appendix 2

Estimation Results : Growth Equations

Prereform period : (1974:Q1 – 1989:Q4)

Equation	Constant	CPSGDP	EXIM	FDIGDP	M_2GDP	RMGDP	SPREAD	RIR	INF	R^2	DW
1	-12.279 (-.716)	-160.134** (-2.139)	-405.034**	-626.395 (-.825)		604.720** (2.236)		2.196*** (14.749)		.82	1.86
2	-1.045 (-.064)	-90.104 (-1.269)	-387.977** (-2.100)	-720.349 (-.995)		652.284** (2.496)			-2.204*** (-14.796)	.82	1.90
3	-2.989 (-.174)		-402.303** (-2.037)	-1072.583 (-1.336)	-192.569* (-1.713)	851.705** (2.073)		2.207*** (14.949)		.83	1.85
4	4.589 (.289)		.386.038** (-2.021)	-972.307 (-1.321)	-116.305 (-1.109)	812.379** (2.102)			-2.213*** (-14.949)	.82	1.89
5	6.799 (.392)	-1.735 (-.018)	-410.082** (-2.064)	-337.181 (-.404)			1.556 (.749)	2.237*** (14.569)		.82	1.87
6	33.647** (1.986)	-1.735 (-.018)	-410.082** (-2.063)	-337.181 (-.404)			-.681 (-.329)		-2.237*** (-14.569)	.82	1.87
7	-12.162 (-.556)		-450.608** (-2.283)	-499.734 (-.658)	89.259 (1.083)		2.889* (1.612)	2.234*** (14.558)		.81	1.90
8	14.640 (.682)		-450.608** (-2.283)	-499.734 (-.658)	89.259 (1.082)		.656 (.370)		-2.234*** (-14.558)	.81	1.90

N.B. One, two, and three asterisks represent 10%, 5%, and 1% level of significance respectively. The figures in the parenthesis are *t* statistics.

Appendix 3

Estimation Results : Growth Equations

Postreform period : (1990:Q1 – 2001:Q1)

Equation	Constant	CPSGDP	EXIM	FDIGDP	M_2GDP	RMGDP	SPREAD	RIR	INF	R^2	DW
1	-44.069** (-2.949)	-33.798 (-.562)	473.089 (2.372)	-8.213 (-.762)		69.486 (.533)		1.634*** (8.451)		.72	2.14
2	-.084 (-.006)	-56.194 (-.872)	320.369* (1.563)	.803 (.068)		-79.100 (-.567)			-1.756*** (-9.085)	.75	2.03
3	-39.658* (-1.769)		487.273* (1.835)	-9.928 (-1.048)	-60.698 (-.458)	162.427 (1.063)		1.582*** (8.028)		.72	2.18
4	18.207 (.950)		536.275** (2.078)	-.258 (-.028)	-200.136* (-1.584)	171.429 (1.153)			-1.576*** (-8.384)	.74	2.20
5	-40.263*** (-4.137)	-40053 (-.781)	403.388* (1.946)	-1.493 (-.128)			1.402 (1.079)	1.683*** (8.808)		.74	2.10
6	-6.146 (-.688)	-41.871 (-.778)	321.785* (1.521)	-3.618 (-.295)			-.721 (-.539)		-1.733*** (-8.960)	.74	2.06
7	-25.484 (-.895)		395.380* (1.754)	.745 (.053)	-83.396 (-.618)		2.415 (1.333)	1.611*** (8.174)		.73	2.10
8	17.141 (.639)		384.633* (1.684)	1.685 (.119)	-136.258 (-1.013)		.881 (.477)		-1.617*** (-8.253)	.74	2.09

N.B. One, two, and three asterisks represent 10%, 5%, and 1% level of significance respectively. The figures in the parenthesis are *t* statistics.