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INTEREST RATE CONVERGENCE IN BANGLADESH

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Abstract

Financial liberalization, a widely-accepted policy paradigm since the 1980s, aims to remove financial repression and thus establish an efficient financial sector as a prerequisite for financial development. Interest rate convergence is one of the obvious outcomes of the interest rate liberalization, a crucial part of financial liberalization. Uniformity of interest rate should be there in a free and competitive financial market. This paper examines the state of interest rate convergence by measuring the degree of convergence in the financial market of Bangladesh, a success case of financial liberalization initiated in the 1990s.

Key Words: Financial sector reform programs, Private commercial banks, Nationalized commercial banks, Foreign commercial banks, Specialized banks, Interest rate convergence

JEL Classification: O16, P22

1. Introduction

The financial liberalization programs appeared in the developing countries in the 1980s and 1990s as part of the worldwide approach toward giving markets a greater role in development through strengthening the financial sector: see Ariff and Khalid (2005). Governments used financial system as an instrument of allocating financial resources through directed credit at below market interest rate. Interest rate on deposits was kept very low to maintain costs of loans low. These together limited the mobilization and efficient allocation of financial resources, which in turn slowed economic growth according to the fathers of financial liberalization (McKinnon 1973; Shaw 1973). Low interest rates discouraged the mobilization of finance, and so bank deposit growth

slowed in in the major countries. Financial intermediation was discouraged while the inappropriate legal frameworks and information structures supported the existence of inefficient private bonds and equity markets: see Gupta and Karapatakis (2006).

The earliest policy changes as financial liberalization focused on interest rates. By freeing both deposit and loan interest rate ceilings, the advocates of liberalization suggested that credit market can operate to maximize both the quality and efficiency of investment (McKinnon 1973; Shaw 1973). Hypothetically, if market is perfectly competitive, the market based interest rate structure should allow the interest rate in the financial sector to converge. Therefore, convergence of interest rate serves as a criterion for perfectly competitive market where the financial intermediaries would maintain the same level of interest rates, which would be market determined under competition. Convergence refers to the idea where financial intermediaries move in the same direction together to a certain level of interest rate which is determined by the market.

As a part of the financial liberalization, Bangladesh initiated the Financial Sector Reform Programs (FSRPs) at the beginning of the 1990s under guidance from the World Bank. One of the objectives of this was to provide better return on deposits and thereby allocate credits efficiently in the financial market by moving towards a market based interest rate regime from the then administered interest rate regime, hoping thereby to promote economic growth through increased investment spending. Therefore, this implementation of FSRP should finally lead to a more competitive credit market and thus, convergence of interest rate will occur with the passage of time. From a general point of view, lack of an efficient intermediation and interest rate setting was believed to be a major hurdle for development.

In this connection, this study investigates whether interest rate liberalization has been able to create a competitive environment in the financial market through the convergence of interest rate, which can be used as an indicator of a more efficient financial market leading to more efficient allocation of financial resources. We examine convergence in different ways on the formal credit market comprised with four players: the nationalized commercial banks (NCBs), the private commercial banks (PCBs), the specialized banks (SBs) and the foreign commercial banks (FCBs).

This study presents the pre and post financial liberalization interest rate structure and also its impact on creating an efficient financial market. Our study also reveals the degree of competition and the structure of the credit market currently available in Bangladesh. The policy implications of interest rate convergence as an instrument of financial liberalization are discussed from its positive and negative contributions.

The rest of this paper is divided as follows. The next section is a brief statement of the literature, although it is not exhaustive. Section 3 explains the methodology employed to conduct statistical significance of the parameters estimated. The results and interpretations are to be found in sections 4 and 5 while the paper ends with concluding remarks in section 6.

2. Literature Review

Since the mid-1980s several developing countries liberalized their financial systems with the common aim as in this case. This liberalization has been to provide greater scope to market forces in the determination of interest rates and in the allocation of credits. One crucial question that needs to be addressed is whether the financial reforms that have been implemented have led to an improvement in the allocation of resources through the set up of convergence in the interest rate. It is curious that financial liberalization in general involves replacing one deeply flawed system, characterized by heavy government intervention, with another system with different flaws.

Financial system in the developing countries consists primarily of commercial banks and specialized banks, and in some cases, cooperative societies, savings banks and loan associations. McKinnon and Shaw (1973) argue that, the system of financial repression allows the financial markets to work under the administration of the government. That leads to the existence of interest rate ceilings, directed credits and subsidized credits to priority sectors, thus the overall result is not to encourage competition in the setting of interest rates in the process of providing credits to the most productive entrepreneurs.

Under this situation, they explain that financial repression in the form of low or negative real interest rates has severe consequences on the quantity and quality of investment. As in the financial sector, especially for the banks, deposits are the main

source of funds, at low interest rate the supply of fund is reduced for the financial institutions. Gupta and Karapatakis (2006) argue that this reduces the quantity of credits in the market. They state that the low real lending interest rate under financial repression also creates excess demand for credits because virtually all investment opportunities seem profitable at this low interest rates in an administered regime. Regulations of interest rates leads to financial repression, which leads to overall market inefficiency, severe imperfections, information asymmetry, undesired government interventions and distortion of the financial market equilibrium.

Eicher and Hull (2004) conclude through a theoretical model that for countries which had severe market imperfections, liberalization should lead to higher growth. Akpan (2004) in his study of financial liberalization and endogenous growth in the case of Nigeria has shown that liberalization results in a positive impact between broad money (M2), investment and the real deposit rate on economic growth. This is because more mobilization of funds, innovation of new instruments and development of legal framework for the financial sector occurred with the liberalization policy. Alike, in many countries liberalization policies proved to be successful.

But some problems also have been identified in the previous studies on the impact of financial liberalization. Ghosh (2005) argues that in many cases, the social and economic effects of financial liberalization have been especially adverse for the poor and for farmers and workers, who have not only suffered more precarious conditions even during a so-called “financial boom”, but have typically also been the worst affected during a financial crisis or the subsequent adjustments. She also concludes that, the extreme forms of liberalization are neither effective nor necessary, and that a large variety of alternative measures, as well as varying degrees of liberalization, is not only possible but can also be observed in several more successful developing countries.

Galindo, Schiantarelli and Weiss (2002) through the informal ocular econometric exercise and the comparison of mean values of efficiency index in the pre- and post-liberalization regimes, suggest that financial liberalization has led to an improvement in the efficiency with which investment funds have been allocated. Both the indices have improved for many (although not for all) countries, following the introduction of financial reform. But as a whole, financial liberalization in the 1990s in developing

countries has contributed positively to the growth of those countries. Sarr (2000), Luc (2003), Ghosh (2005), Akpan (2004) and Karapakatis (2006) separately in their empirical studies have concluded with the same results.

As part of the financial liberalization, interest rate liberalization has been the basic tool to promote financial development. McKinnon and Shaw (1973) argue that output and economic growth can be best facilitated by freeing both deposit and loan rate ceilings so that credit markets can operate to maximize both quantity and efficiency of investment. Thus, if this takes place, the banking sector would face a free and competitive environment where the interest would be charged by the market mechanism. They showed that liberalization would remove repression with low interest rate on loans and high deposit interest rates. Sarr (2000) also indicated that this would encourage competition among the financial institutions with benefits to consumers in terms of reduced net margin. In this view, Suzuki (2003) argues, in his study on competition in banking sector of Japan, that many industrialized countries have now reduced or even removed governmental controls over interest rates, fees, commissions, ownership, portfolios and the boundaries between different financial businesses, on the ground that they are seen as less important from a prudential perspective but rather harmful from a competition perspective. Bikker (2003) also suggest market imperfections by different ways would cause allocational inefficiency, and so detract from the prosperity which society derives from banking services.

As interest rate liberalization along with financial liberalization takes place, free competition results where consumers and the financial institutions would match their needs for finance. Mehran and Laurens (1995) explain that in recent years, many developing and transition countries have allowed market forces to play a greater role in their economies and in the financial sector. This means liberalizing interest rates so that they are allowed to be set by the market, and developing financial markets so that credits can be allocated more efficiently. Satterthwaite and Shneyerov (2005) show in their analysis on convergence to perfect competition in an bargaining market that the presence of many players removes imperfections and results in convergence to perfect competition with small frictions that appear to be robustly almost efficient. Interest rate liberalization first increases the interest rates in the short term but in the long term it moves toward convergence.

Therefore when the market is free to act, from the inception of financial linearization, interest rates should converge. This has been seen from different analysis on the convergence of interest rate between Central and Eastern European countries (CEE): Holz (2004) concludes that, since the end of the 1990s, in some of the CEE countries, namely the Czech Republic, Hungary, Slovenia and the Baltic states, there has been a remarkable interest rate (long-term bond yield) convergence from high double-digit levels now close to those of EMU member countries. Though this was a cross-country investigation in the European Union, the conclusion is that financial market free from controls should promote convergence of interest rates. The speed of convergence may vary depending on the availability of an environment of competition in the financial market.

Honohan (2003) in his study on interest rate changes under liberalization in developing countries also showed evidence in support that the speed of convergence in interest rate is positively related with liberalization. He also shows that, liberalization means an increased short-term volatility in both real and nominal money market interest rates. Treasury bill rates and bank spreads were evidently the most repressed, and they showed the greatest increase as liberalization progressed. But this convergence of interest rate would take place only if market is efficient. Mehran and Laurens (2005) stated that uncompetitive banking systems, inadequate regulatory frameworks, and borrowers that are insensitive to interest rates undermine the efficiency of market-based credit allocation and disrupt the transmission of monetary policy signals, with adverse consequences for macroeconomic policy. When these conditions prevail, interest rates are not likely to move to their market-clearing levels.

The financial liberalization leads also to another outcome by squeezing the interest spread of financial intermediaries. Ghosh (2005) explains price competition squeezes spreads and forces financial firms (including banks) to depend on volumes to ensure returns. But Honohan showed that, while quoted bank spreads in industrial countries contracted again somewhat during the late 1990s, spreads in developing countries remained much higher, presumably reflecting both market power and the higher risk of lending in the developing world with less growth opportunities. Ahmed and Islam (2006) state that high spread to some degree leads to institutional inefficiencies. They also argue that this is the result of the government's interventionist policies of the past.

Therefore, interest rate liberalization should bring low spread for the banks, which will make the liberalization policy a success.

3. Methodology

3.1 Data Selection

Our analysis is based on monthly interest rates over the reform period, up to 31 June 2006 from January 1990. We collect data from 4 NCBs, 4 SBs dedicated to agricultural and industrial lending, 26 domestic private commercial banks (PCBs) and 16 foreign commercial banks (FCBs). The data source is *Economic Trends*, a monthly publication of the Bangladesh Bank (BB). We focus on interest rate data for all scheduled banks during 1990 to 2006 and also those which withdrew from Bangladesh during the course of this period.

The records interest rate on deposits relate to seven categories: Urban Saving Deposits (Savings-UR); Rural Savings Deposits (Savings-RU); and Fixed Deposits with 3 to 6 months term (FD3-6M); 6 to 12 months term (FD6-2M); 12 to 24 months term (FD12-24M) and 24 to 36 months term (FD24-36M). Interest rates on lending are recorded in fourteen categories – Agricultural loan (AGRI), Term loan, Working Capital loan for jute sector (WCAP_JUTE), Working Capital for other sector (WCAP-OTH), loan for Jute Trade (JUTE-TRADE), loan for jute export (JUTE-EXPORT), loan for other export (OTHER-EXP), other commercial loans (OTHER-COMM), housing loan (HOUSING), loan for residential housing in urban area (UR-HOUSE-RES), loan for commercial housing in urban area (UR-COM-RES), special term loan (SPEC-TERM), other special loan (SPEC-OTHER) and loan for other activities (OTHER). Data set from January 1990 to June 2006 is set up because the interest band was withdrawn by the central bank from 1990 to initiate the liberalization of the financial sector.

3.2 Analysis Approach

To test the convergence of interest rate we follow the following approach –

Mean Difference Analysis: We utilize the mean difference analysis technique for every analysis to test the convergence. Mean difference analysis of interest rate shows

whether any significant difference exists between mean interest rates. The analysis is completed in three stages:

The first horizon (January 1990 – March 1992): in January 1990, efforts were taken to liberalize the financial market. The market oriented interested policy was taken but still up to March 1992, government continued to determine the interest rates for 11 sectors.

The second horizon (April 1992 – July 1999): in April 1992, partial liberalization was initiated by withdrawing interest rate ceilings from all categories except 3 namely Agriculture, Export and Small and Medium Term Loan. This partial liberalization continued till July 1999.

The third horizon (August 1999 – June 2006): in June 1999, interest rates in the 3 categories also were free and the ceiling was removed ushering a full interest rate liberalization thereby. From that moment to until June 2006 and forward, the financial market is enjoying full liberalization.

To test the convergence, we test the difference between two means with respect to NCBs vs PCBs, NCBs vs SBs, NCBs vs FCBs, SBs vs PCBs, SBs vs FCBs, FCBs vs PCBs by testing the direction towards a certain level of interest rate. As our sample size is large, we incorporated a two-tailed hypothesis test about the difference between two means with the assumption of normal distribution.

We assume in our null hypothesis (H_0) that there exists no significant difference between two means. To test this hypothesis we calculate the standard error of the difference between two means,

$$\text{Standard Error} = \hat{\sigma}_{x_1 - x_2} = \sqrt{\frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}} \quad (1)$$

We use the standard error to find out the normalized Z value

$$Z = \frac{(\bar{X}_1 - \bar{X}_2) - (\mu_1 - \mu_2)_{H_0}}{\hat{\sigma}_{x_1 - x_2}} \quad (2)$$

Where,

X_1 = Mean Interest Rate of range 1,

X_2 = Mean Interest Rate of range 2,

n_1 = No. of Observations of range 1, and

n_2 = No. of Observations of range 2.

The confidence level is set at 95% for which Z value calculated is compared with the observed values to accept or reject the null hypothesis. While we accept the hypothesis, it means that there is no significant difference and if we reject, it indicates a significant difference between means, suggesting movement away from convergence.

4. Result and Interpretation

4.1 Convergence Between NCB and SCB

The test results are summarized for different institutions in Table 1.

Table 1: Convergence in Rates across Different Institutions

Convergence in savings

Periods	Savings Rate NCB vs SCB					
	1990-1992	1990-1992	1992-1999	1992-1999	1999-2006	1999-2006
Institutions	NCB	SB	NCB	SB	NCB	SB
MEAN	12.031	12.291	7.362	7.873	7.019	7.220
VARIANCE	2.600	1.732	2.822	2.988	3.101	2.643
Z	-3.228		-9.755		-3.898	

Convergence in Lending Rate: NCB vs SCB

Periods	1990-1992	1990-1992	1992-1999	1992-1999	1999-2006	1999-2006
	NCB	SB	NCB	SB	NCB	SB
MEAN	12.541	13.433	12.712	12.820	11.867	12.218
VARIANCE	9.287	8.846	5.390	4.637	5.385	5.828
Z	-7.845		-0.179		-5.930	

ii) Convergence between NCB and PCB:

Convergence in Savings Rate:

NCB vs PCB	Time Period					
	1990-1992	1990-1992	1992-1999	1992-1999	1999-2006	1999-2006
	NCB	PCB	NCB	PCB	NCB	PCB
MEAN	12.031	12.227	7.361	8.351	7.019	8.456
VARIANCE	2.600	1.965	2.822	2.446	3.101	2.470
Z	-2.875		-25.466		-36.222	

Convergence in Lending Rate: NCB vs PCB

	1990-1992	1990-1992	1992-1999	1992-1999	1999-2006	1999-2006
	NCB	PCB	NCB	PCB	NCB	PCB
MEAN	12.541	13.839	12.712	13.558	11.867	13.116
VARIANCE	9.287	7.324	5.390	4.394	5.385	6.137
Z	-17.1577892		-17.481		-25.433	

iii) Convergence between NCB and FCB:

Convergence in Savings Rate:

	1990-1992	1990-1992	1992-1999	1992-1999	1999-2006	1999-2006
	NCB	FCB	NCB	FCB	NCB	FCB
MEAN	12.03	10.68	7.36	7.46	7.02	7.36
VARIANCE	2.60	3.45	2.82	2.94	3.10	2.68
Z	16.59		-2.31		-7.62	

Convergence in Lending Rate:

	1990-1992	1990-1992	1992-1999	1992-1999	1999-2006	1999-2006
	NCB	FCB	NCB	FCB	NCB	FCB
MEAN	12.541	13.733	12.712	12.676	11.867	11.899
VARIANCE	9.287	7.506	5.390	4.754	5.385	4.881
Z	-13.686		0.693		-0.582	

iv) Convergence between SCB and PCB:

Convergence in Savings Rate:

	1990-1992	1990-1992	1992-1999	1992-1999	1999-2006	1999-2006
	SB	PCB	SB	SB	SB	PCB
MEAN	12.291	12.227	7.873	8.351	7.220	8.456
VARIANCE	1.732	1.965	2.988	2.446	2.643	2.470
Z	0.979		-10.721		-33.212	

Convergence in Lending Rate:

	1990-1992	1990-1992	1992-1999	1992-1999	1999-2006	1999-2006
	SCB	PCB	SCB	PCB	SCB	PCB
MEAN	13.433	13.839	12.820	13.558	12.218	13.116
VARIANCE	8.846	7.324	4.637	4.394	5.828	6.137
Z	-3.537		-1.225		-22.013	

v) Convergence between SCB and FCB:

Convergence in Savings Rate:

	1990-1992	1990-1992	1992-1999	1992-1999	1999-2006	1999-2006
	SB	FCB	SB	FCB	SB	FCB
MEAN	12.291	10.681	7.873	7.459	7.220	7.362
VARIANCE	1.732	3.453	2.988	2.940	2.643	2.681
Z	20.451		8.669		-3.303	

Convergence in Lending Rate: SCB vs FCB

	1990-1992	1990-1992	1992-1999	1992-1999	1999-2006	1999-2006
	SB	FCB	SB	FCB	SB	FCB
MEAN	13.433	13.733	12.820	12.676	12.218	11.899
VARIANCE	8.846	7.506	4.637	4.754	5.828	4.881
Z	-2.443		0.239		6.765	

vi) Convergence between PCB and FCB:

Convergence in Savings Rate:

	1990-1992	1990-1992	1992-1999	1992-1999	1999-2006	1999-2006
	PCB	FCB	PCB	FCB	PCB	FCB
MEAN	12.227	10.681	8.351	7.459	8.456	7.362
VARIANCE	1.965	3.453	2.447	2.940	2.470	2.681
Z	23.419		27.720		40.333	

Convergence in Lending Rate:

	1990-1992	1990-1992	1992-1999	1992-1999	1999-2006	1999-2006
	PCB	FCB	PCB	FCB	PCB	FCB
MEAN	13.839	13.733	13.558	12.676	13.116	11.899
VARIANCE	7.324	7.506	4.394	4.754	6.137	4.881
Z-value	1.204		23.994		36.145	

The tables provide a summary – a lengthy one – of the convergence in the market parameters as a result of the reforms undertaken. There are six panels of results with test statistics comparing the results before and after the reforms undertaken. For example, the first panel shows the convergence in savings and in lending between the NCB and SCB. As is evident from the two parts of the panel (i) in Table 1, there is significant convergence in the comparisons between the national and state commercial banks. Similarly, as is evident from panel (ii), convergence is illustrated for NCB and PCB (private banks). The results in the rest of the panels are about convergence in the rates in different parts of the sector. For example, in Panel (vi) the reader finds the results on lending rates and savings rates. In the next section, the reader will note a discussion of the significance of these results.

4.2 Summary of the Results

Table 2 is a summary of the on liberalization effects in the country. These results show across the board significant changes from the liberalization measures put in place for the economy. Except in four cases, there is overall significance statistics across the financial sector. The four are shown in italics for lending, savings rates in the earlier years when the reforms had not taken roots. During the latest period after a period over which the financial institutions learned to cope with the reforms, there is strong effect showing significant impact of the reforms in the latest period over 199-2006.

5. Policy Implications

Having analyzed all the results above it can be concluded that interest rate convergence does not yet take place in the financial market of Bangladesh. Though one of the very usual outcomes of financial liberalization is interest rate convergence, we see on Bangladesh,

financial liberalization has failed to produce this outcome during the last fifteen years. This is because what we find could not take place due to asymmetric information, several market imperfections, existence of govt. control on the NCBs, PCBs, FCBs and SBs. As a whole, interest rate convergence, proceeding to a uniform

Table 2: Summary of the Results for Different Degrees of Liberalization, Bangladesh

	1990-1992	1992-1999	1999-2006
NCB and SB : Saving	Significant Difference between Means	Significant Difference between Means	Significant Difference between Means
NCB and SB : Lending	Significant Difference between Means	<i>No Significant Difference between Means</i>	No Significant Difference between Means
NCB and PCB: Saving	Significant Difference between Means	Significant Difference between Means	Significant Difference between Means
NCB and PCB: Lending	Significant Difference between Means	Significant Difference between Means	Significant Difference between Means
NCB and FCB: Saving	Significant Difference between Means	Significant Difference between Means	Significant Difference between Means
NCB and FCB: Lending	Significant Difference between Means	<i>No Significant Difference between Means</i>	Significant difference between means
SB and PCB: Savings	<i>No Significant Difference between Means</i>	Significant Difference between Means	Significant Difference between Means
SB and PCB: Lending	Significant Difference between Means	<i>No Significant Difference between Means</i>	Significant Difference between Means
SB and FCB: Saving	<i>No significant difference between means</i>	Significant Difference between Means	Significant Difference between Means
PCB and FCB: Saving	Significant Difference between Means	Significant Difference between Means	Significant Difference between Means
PCB and FCB: Lending	<i>No Significant Difference between Means</i>	Significant Difference between Means	Significant Difference between Means

interest rate, which is the result of free and competitive financial market still not in Bangladesh. To have the full benefit of financial liberalization in terms of efficient financial market the much known problems should be solved.

This study reveals that the Bangladesh financial market is still has high degree of market imperfection by the way of information asymmetry. The banking sector yet does not communicate all information that should be made available and government control also discourages much information not to be published in the market. This is because government is having good degree of control over the banking sector and using the banks for its many politically biased and unproductive purpose in Bangladesh. Information asymmetry also is available regarding the performances of the banks in the financial market which leaves the market out of equilibrium. Therefore the banking sector and the government both should allow more information to be in the market so that market becomes more competitive and consumers are benefited. This social desirable behavior would finally contribute to further development.

Government directed credits are common phenomena in Bangladesh which have been reduced after liberalization in 1990 but in many cases government directly and indirectly facilitating the White Elephants and thus distorting the efficiency of the market. Subsidies are available granted to different sectors (e.g., Agriculture, Education) which also contributing in credit allocation inefficiencies. Therefore directed credits should be removed to maximum level and subsidy should be withdrawn and this policy would bring more competition which is desired by the liberalization procedure.

In Bangladesh Financial Market, liberalization has been failed to produce desired result due to the very poor legal framework. Of course the Bangladesh Bank has formulated new policies and laws regarding the banking sector, money laundering etc. which have positive impact in the market. Though initiatives are being taken but not enough, we see the rate of default and Non-Performing Advances are alarmingly high. Legal framework and the administration over the banking sector should be more prudent to have an efficient and competitive market.

6. Conclusion

The study of interest rate convergence is a desired outcome of interest rate liberalization as a part of financial liberalization. Interest rate convergence is a process where market tends to be more competitive and a market set interest rate prevails at least in the long run. This paper finds that in Bangladesh interest convergence is not taking place after even though financial reforms measures have been in 1990s. During last 15 years after initiating the Financial Liberalization measures have not produced the desired result of a competitive financial market, especially in the banking sector, due to existence of severe market imperfections. Therefore, convergence of interest rate along with the competitive market can result successfully beneficial for the financial development if these market imperfections are wiped out. After 1990, during these 15 years, how much financial liberalization have contributed to the economic development of Bangladesh, might become the another important focus of study.

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