



**Policy Analysis Unit (PAU)**

**Working Paper Series No: WP 0706**

**An Analysis of Bangladesh's Transition to Flexible Exchange Rate Regime**

**Sayera Younus, Ph.D.  
Mainul Islam Chowdhury**

**December 2006**

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# **An Analysis of Bangladesh's Transition to Flexible Exchange Rate Regime**

**Sayera Younus, Ph.D.\***  
**Mainul Islam Chowdhury\*\***

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## **Abstract**

The intention of this study is to assess the experience of the exchange rate regime gained by Bangladesh so far, and also to evaluate the impact of the exchange rate regime on macroeconomic variables. Bangladesh stepped into the floating exchange rate regime at the end of May, 2003 with the objectives of increasing the effectiveness of monetary policy on one hand and to avoid crisis associated with the fixed exchange rate regime on the other. An analysis of the macroeconomic variables under different exchange rate regimes shows that like other studies output growth in Bangladesh performed well in the intermediate and floating exchange rate regimes. Unlike other studies, inflation is lower in the intermediate regime despite higher money supply and exchange rate depreciation. There is also evidence that currency depreciation boosted exports growth in the floating regime, though not in the prior contexts.

Keywords: Fixed Exchange rate, Flexible Exchange Rate, Macroeconomic Variables.

JEL Classification: E0, E58, F31, F41

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## 1. Introduction

Exchange rate is an important economic indicator and a key policy variable. The choice of an exchange rate policy has a considerable impact on a country's well being. Sometimes issues related to exchange rates are highly debated. The search for a suitable exchange rate policy partly depends on the goals that policy makers attempt to achieve. Morande (2001) identified some factors that may influence the choice of an exchange rate regime such as conditions in the world economy, the domestic business cycle, imperfections in the workings of internal markets, political economy aspects and even academic trends.

After the breakdown of the Bretton Woods era (1946-1971) of fixed exchange rates with single currency peg where stabilizing the domestic economy was a primary objective of monetary policy and controls on international capital flows were the main features, many countries moved towards a flexible exchange rate regime (or float) with a view to mitigating domestic and external shocks particularly that evolve from international capital markets, terms of trade and interest rate shocks (Edwards and Savastano, 1999). Besides the bi-polar view (fixed or flexible exchange rate regime) there are at least nine types of regimes that differ in the degree of flexibility between the two extremes that a country can follow.<sup>1</sup> As of December 2004, about 53 IMF member countries had managed-float exchange rate regime, while 41 countries did not have any legal tender, 36 countries practiced independent float while another 36 countries had conventional pegged exchange rate regime (IMF 2005).

Recently a number of countries have moved towards more flexible exchange rate regimes. Historically, Bangladesh adopted diverse exchange rate regimes since her independence in December 1971 in order to allow effective management of foreign exchange and achieve a tolerable level of inflation with desired level of economic growth. In January 1972, the exchange rate of Bangladesh's currency 'Taka' was fixed with the British Pound Sterling. As the Pound Sterling was floated with dollar - later in 1972 - Taka was also floated with Dollar via Pound Sterling. In 1979 Taka was pegged to a basket of currencies of Bangladesh's major trading partners, with Pound Sterling as the intervention currency which was later replaced by US Dollar in 1983. This exchange rate arrangement continued till May 2003. Finally, Bangladesh adopted a floating exchange rate system from end May 2003 with the objective of increasing effectiveness of monetary policy together with better integration with the global capital market. The purpose of this study is to evaluate the experience gained so far since moving to the floating exchange rate regime and assess the impact of the flexible exchange rate regime on the macroeconomic variables in Bangladesh.

This paper is organized as follows. Section 2 provides the literature review. Section 3 gives an overview of the phases of evolution from fixed, peg through more flexible intermediate regimes to full floatation in May 2003 in Bangladesh. Section 4 evaluates the post floatation market behavior both in normal and pressure situations. Section 5 analyses the behavior of the macroeconomic variables under different exchange rate regimes. Section 6 discusses intervention approaches towards maintaining market order and limiting volatility followed by the IMF's technical support at various stages of the transition in section 7, and finally, the paper concludes in section 8.

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<sup>1</sup> For example, free float, dirty float, floating within a band (target zone), sliding band, crawling band, crawling peg, fixed but adjustable exchange rate, currency board, full 'dollarization' etc.

## 2. Literature Review

Ghosh et al. (1996) tried to identify how various exchange rate regimes influence inflation and growth. Their data comprised of 145 IMF member countries from 1960 to 1990. In the analysis they distinguished between the central bank's declared exchange rate regimes and the behavior of the exchange rates in practice and used a three-way classification: pegged, intermediate (which was defined as a floating rate but within a predetermined range) and floating exchange rate. They found that inflation was lower and less variable in countries maintaining a pegged exchange rate. Countries with pegged, intermediate and floating exchange rates had on average annual inflation rate of 8, 14 and 16 percent, respectively. For lower income countries the inflation differential between pegged and floating rate was almost 10 percentage points. The authors cited two key reasons for such differences. The first is that, countries with pegged exchange rate have lower rates of growth in money supply probably because of the political costs of abandoning a peg, and secondly, even for a given growth rate of money supply, pegged exchange rates enhance confidence in the domestic currency and results in lower inflation by increasing the desire to hold money.

They also found that the exchange rate regime affects economic growth. Exchange rate regime can influence economic growth through investment and productivity. While pegged exchange rate regimes have higher investment by reducing policy uncertainties and lowering real interest rates, floating regimes have faster productivity growth, part of which is reflected in faster growth of external trade. The final point of the study was that experiences of exchange rate regimes and their impact on macroeconomic performance vary from country to country based on their level of income. In general, however, countries with pegged exchange rate regime have lower inflation and growth while countries with floating exchange rate regime have higher inflation and higher growth.

Rogoff et al. (2004) find that as a country becomes more integrated into global capital markets and develops a sound financial system, the advantages of exchange rate flexibility increases. Advanced countries, which have free floats on average, recorded faster growth than other regimes but lower inflation. Developing countries with limited access to private external capital market, pegs and other limited flexibility arrangements have also been associated with lower inflation, without compromising growth or higher growth volatility. In emerging market economies with higher exposure to international capital flows, the more rigid regimes have had a higher incidence of crises. However, this finding is challenged by Edwards and Savastano, (1999) who, after reviewing an extensive literature, conclude that developing countries do not really have much to offer when it comes to defining and characterizing a flexible exchange rate regime; the impact of flexible exchange rate regime on macroeconomic variables are ambiguous.

Morande (2001) studied Chile's transition towards a flexible exchange rate regime. Chile experienced a significant number of exchange rate regimes from hard pegs to total flexibility. After the collapse of the fixed exchange rate in 1982, Chile adopted an exchange rate band which lasted up to September 1999 when the country moved to a flexible exchange rate regime. The paper investigated why Chile abandoned the exchange rate band and why it took so long to do it, whether floating was a better choice than quitting the national currency and examined how the floating regime has worked so far. The author described that Chile's transition to a flexible exchange rate regime was triggered by some simultaneous events such as the effects of the Asian crisis and the achievement of a long run inflation target. After presenting a cost-benefit analysis of giving up the peso the author explained that the adoption

of a foreign currency would be a bad policy choice for Chile. The author also opined that Chile's experience with the floating exchange rate regime has been a calm one with core inflation remaining around the steady state target and exchange rate volatility not rising significantly when compared to its pre-flexibility values.

### **3. Overview of the Preceding Phases of the Exchange Rate Mechanism**

Following independence, Bangladesh's currency, the *Taka* continued to be pegged to U.K.'s pound sterling, the latter being the intervention currency. In order to control capital flight, government of Bangladesh imposed restrictions on foreign exchange. In the controlled exchange regime, a secondary market developed to satisfy the excess demand for foreign currency. In the secondary market, the foreign currency price was much higher than the official exchange rate. In May 1975, a major step toward effective exchange management took place with a massive devaluation (by 37 percent) of the BDT. Since then, the central bank pursued a policy of depreciating the *Taka* to improve the balance of payment deficits. It is worthwhile to mention here that in order to reduce balance of payment deficits, Bangladesh devalued her currency about 130 times over a thirty-year period (from 1972 to 2002).

In 1985, the intervention currency was changed to the US dollar. This change was made because most of the official trade in Bangladesh is performed in the US dollar rather than the pound sterling. In order to determine the strength of the BDT against foreign currency, a real effective exchange rate (REER) index was introduced in 1985. Since then, the nominal exchange rate of BDT in relation to the US dollar was determined daily by monitoring the REER index. Under the 'Structural Adjustment Program' and the 'Financial Sector Reform Program' *Taka* was made convertible on the current account beginning March 24, 1994. With a view to maintaining competitiveness of export the exchange rate was occasionally adjusted mainly by monitoring the trend of REER index, based on a trade-weighted basket of currencies of major trade partners that acted as a benchmark for the banks to set their own rates. Since 2000, Bangladesh had a pre-announced one taka wide band within which it would, at its discretion, undertake US dollar purchase and sale transactions with Banks. Banks were free to set their own rates for their inter-bank and customer transactions. Those rates generally tended to be outside the announced rate band or transactions between the Bangladesh Bank (BB) and the authorized dealers (Bangladesh Bank Annual Report 2003-04).

Finally, Bangladesh authorities decided to float its currency on May 31, 2003. Floating exchange rate was adopted mainly to avoid the overvaluation of the domestic currency. Such overvaluation, besides making export less competitive in the international market, hurts the domestic economy by stimulating imports and thereby making it harder for domestic goods to compete with the imported ones. As a result growth of domestic output and employment may slow down which inhibits the progress of the whole economy.<sup>2</sup> One reason that inhibits the implementation of floating exchange rate is the fear of a high pass-through from a depreciation of local currency to inflation. However, Chowdhury and Siddique (2006) showed that there is very limited or no exchange rate pass-through in case of Bangladesh. The low level of pass-through therefore weakens the case presented by the advocates of exchange rate management in order to avoid significant shifts in domestic prices.

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<sup>2</sup> See Bangladesh Bank (2006), on "Management of Floating Exchange Rate Regime: The Bangladesh Experience," Governor's address published in the *Bangladesh Bank Quarterly*, III (2 & 3). for details.

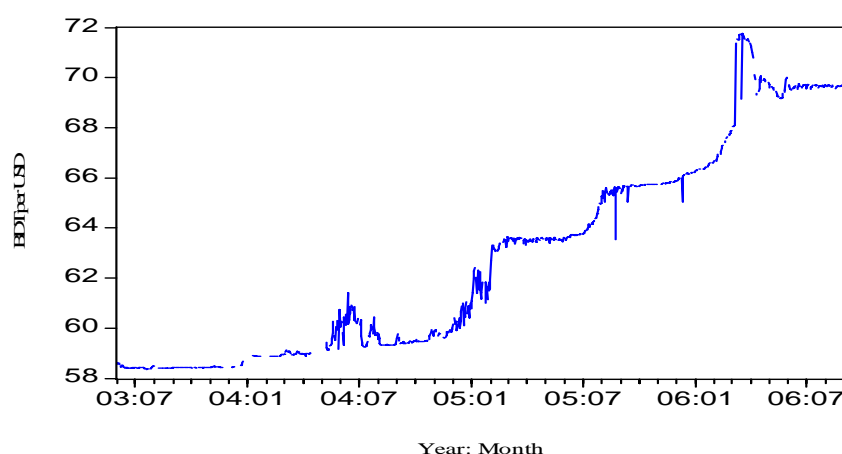
#### **4. Post-Floation Market Behavior in Normal and Pressure Situations**

Bangladesh is still at an initial stage of experience with the floating exchange rate regime. There had been no large volatility of the BDT-USD exchange rate during and immediately after the transition. Further, the transition took place in an environment of stable and low global inflation. Bangladesh Bank also took elaborate preparatory steps prior to moving towards the new regime and made efforts to equip it with the necessary instruments to maintain the stability of the money and foreign exchange market. As a part of the preparatory measure Bangladesh Bank strengthened the monitoring of the key market variables and liquidity forecasting, and carefully observed the open exchange position of the commercial banks. In addition, repo and reverse repo were introduced to have a better clutch on market liquidity.

After the float, Bangladesh Bank occasionally intervened directly in the foreign exchange market through sale and purchase of foreign exchange to maintain market stability. BB could also influence the market exchange rate of taka by tightening or loosening the money market through the auctions of T-bills, repo and reverse repo transactions. During May 2003 (just before the float) the BDT-USD exchange rate was 57.4. After the transition (on May 31), the exchange rate moved up to 58.4 in June and the weighted average exchange rate remained below 58.7 for the rest of the calendar year. From June '03 to April '04, the BDT/USD exchange rate remained fairly stable experiencing a depreciation of less than one percent. Therefore volatility in the exchange market was effectively contained. The notable success of Bangladesh in keeping the volatility low immediately after the transition to floating exchange rate is striking, especially as it has been widely reported that exchange rate suffers significant increases in volatilities when adopting the floating regime. One possible explanation could be that Bangladesh's financial system lacks the features that usually cause exchange rate volatility in an industrialized economy like significant level of speculation or heterogeneity mainly due to a relatively small number of participants and low volume of transactions. Furthermore, to avoid any undue fluctuation in the foreign exchange market due to speculation, Bangladesh Bank withdrew necessary amount of liquidity from the money market using reverse repo immediately before moving toward the floating regime. Hence, the money market absorbed the pressure of the transition, with the call money rate shooting up briefly from the pre transition single digit levels to levels exceeding forty percent. The call money rate came back to single digit levels by the second week as the pressure on liquidity was eased with the exchange rate remaining stable. Therefore, the central bank did not need to run down its reserves; rather it could build up its reserve position through buying USD regularly from the market.

However, pressure has been building since mid-2004 (as can be seen in Figure 1) due to several domestic and external factors like increased demand for imports during FY05 as a result of two consecutive floods and resulting crop damages, rise in the international commodity prices, particularly of crude oil and the MFA expiry. Strong private sector credit demand also put pressure on the inflation-depreciation spiral. Volatility in the foreign exchange market and the resulting contagious effect on the inter-bank call money market caused the interest rate to rise and the currency to depreciate. Nominal exchange rate shot up to 61.42 on 13 June 2004 but then started to fall and remained mostly below BDT 60 per USD up to November of the same year.

**Figure 1: BDT-USD Exchange Rate in the Floating Regime**



Source: FRTMD, Bangladesh Bank

Exchange rate kept on rising again gradually from December 2004 and the value of taka plunged to 64.23 in July 2005. Depreciation during FY05 was 5.42 percent as compared to a 3.41 percent during FY04. The pressure on the exchange rate was high especially during the third quarter of FY05 with a volatility of 0.91 (measured by standard deviation and reported in Table 1). This pressure was created mainly due to a relatively faster growth of import bills than that of combined export earnings and remittance flows. Starting from December 2004 the pressure reached its pick during February 2005 when the exchange rate reached 63.5 with a volatility of 2.52 in a single month. To ease up the Forex market Bangladesh Bank intervened by selling US dollar in the market. Bangladesh Bank allowed limited overdraft facility on foreign currency clearing account with the Bangladesh Bank to NCBs and some private sector banks facing temporary mismatch in liquidity and relaxed restrictions on swap and forward operation in order to provide some flexibility to those banks to manage their liquidity (BB Annual Report 2004-05).<sup>3</sup> These measures helped to stabilize the foreign exchange market as volatility decreased to 0.09 during the fourth quarter of FY05.

**Table 1: Quarterly Statistics of BDT/USD exchange rate**

	Average	Maximum	Minimum	St. Dev.
FY04:Q1	58.42	58.48	58.36	0.02
FY04:Q2	58.44	58.67	58.41	0.05
FY04:Q3	58.94	59.13	58.86	0.07
FY04:Q4	59.84	61.43	58.87	0.67
FY05:Q1	59.52	60.51	59.26	0.30
FY05:Q2	59.97	61.09	59.45	0.49
FY05:Q3	62.80	63.67	60.59	0.91
FY05:Q4	63.59	63.75	63.39	0.09
FY06:Q1	65.06	65.71	63.76	0.67
FY06:Q2	65.87	66.21	65.66	0.17
FY06:Q3	68.07	71.75	66.20	2.04
FY06:Q4	69.74	71.38	69.16	0.48
FY07:Q1	69.09	69.72	66.01	1.14

Source: Authors' calculation from data provided by FRTMD, Bangladesh Bank

<sup>3</sup> The provision of covering forward sales by forward purchases with the same account was relaxed. Under the new arrangement, Authorized Dealers (AD) were required to cover at least 50 percent of their forward sales by forward purchases. The remaining portion could be covered by inter-bank forward purchase and spot purchase of export bills. Besides forward sales associated with swap transactions were not required to be covered by forward purchases.



Weighted average BDT/USD nominal exchange rate in the inter-bank foreign exchange market started fluctuating heavily again during the third quarter of FY06, with the exchange rate fluctuating within the range of BDT 66.20 to 71.75 and the exchange rate stood at BDT 71.75 at end March 2006. Depreciation during March alone was about 4.83 percent over the previous month. Based on monthly movements, the BDT/USD exchange rate registered the highest volatility during March 2006 since floatation in end-May 2003 and nominal exchange rate depreciated by about 9.36 percent in FY06. Fluctuation in the third quarter may have been caused mainly due to a 10.26 percent increase in LC opening along with a USD 410 million gap in the flow of exports and imports. This upsurge in the Forex market generated a high credit demand in the money market; in the backdrop of a restrained monetary policy stance of the central bank, the call money rate shot up to as high as 40.37 percent during March 2006. As a result, pressure in the foreign exchange market eased somewhat in the fourth quarter and came down to a value of BDT 69.70 during end-June of the same fiscal. A decrease in LC opening by 0.24 percent during the fourth quarter and a net injection of USD 336 million by the Bangladesh Bank from its reserves through out the year also helped to keep the pressure down.

Exchange rate remained mostly stable during the first two months of the first quarter of FY07 but appreciated by about 2.58 percent in September over the previous month to reach a monthly average value of 67.86. During this period the central bank conducted reverse repo auction regularly to withdraw excess liquidity from the market in order to maintain stable monetary conditions. In effect, BB tried to discourage excess buying of dollar which helped stabilize the currency value.

Rahman and Barua (2006) did a correlation analysis to explore the possible explanation of the exchange rate movement. They found that there is a strong correlation (-0.40) between depreciation and export-import gap as a share of reserves L/C openings for imports also have a positive correlation (0.45) with volatility of the exchange rate which implies that the higher the L/C openings the more volatile is the exchange rate. Therefore, after reviewing recent experience behind the behaviour of the foreign exchange and money markets in Bangladesh they found that high seasonal demand for foreign currency resulting from the increased import bills, systematic withdrawal of excess liquidity by BB, relatively faster expansion of credit (than that of deposits) signifying high demand and higher interest rates on various national savings instruments are the reasons behind the interest rate hike in the money market and depreciation of the nominal exchange rate. Therefore, careful attention is needed to monitor the variables mentioned above in order to avoid further instability in the foreign exchange market.

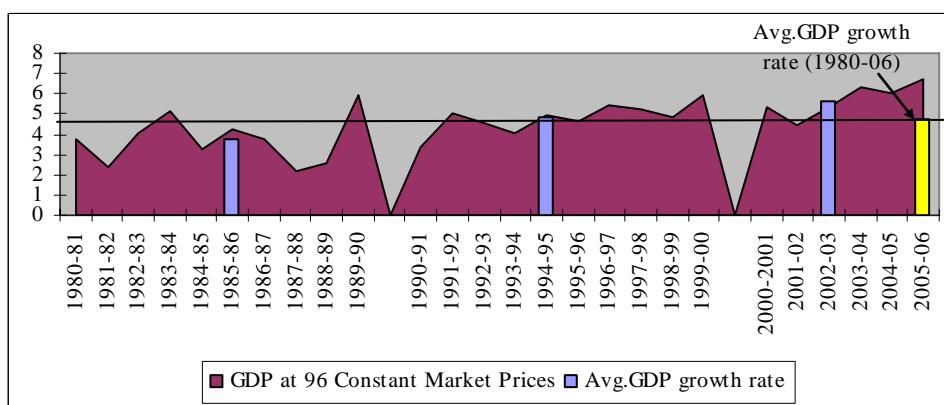
## **5. Behavior of Macroeconomic Variables in different Exchange Rate Regimes**

This section illustrates the performance of macroeconomic variables in different exchange rate regimes. If we compare macroeconomic variables during the pegged (July' 97-May' 00), intermediate (June' 00-May' 03) and post-float (June' 03-May' 06) exchange rate regimes, it can be seen that real GDP growth, exports, imports, remittances and current account balances (CAB) witnessed continuous improvement in the flexible exchange rate regime. However, inflation also continued to rise following the developments in the domestic and external sectors.

## 5.1 Real GDP Growth Performance

The overall economic activity in the country experienced an improvement during FY91 to FY06 over the eighties underpinned by efforts at implementation of various reform programs initiated in the early 1990's together with Government's adoption of measures for poverty alleviation via faster economic growth. Despite two major damages by floods in 1998 and 2004, a crisis in the power and gas sector during 1996-97 and 2004-05, the GDP growth rate maintained its higher tempo than in the decade of the eighties. Figure 2 shows that the average GDP growth rate during the eighties was far below the trend line (whole period average), while it marginally surpasses the trend during the nineties and remained well above that early in the new millennium. During this transition period, the structure of the economy has also changed where the domination of agriculture has been declining steadily, such that the agriculture based economy transformed into a modern industry and service sector based economy overtime (Figure 5).

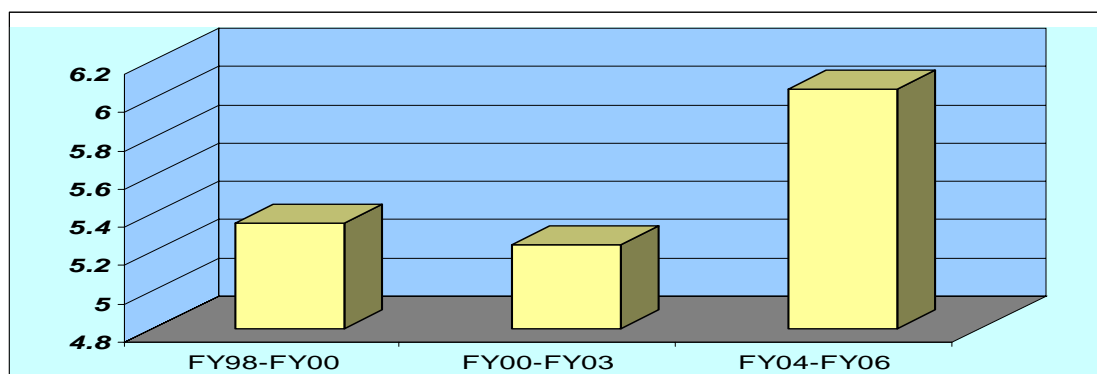
**Figure 2: GDP Growth (at 1995-96 Constant Market Prices) during 1980-81 to 2005-06**



Source: Bangladesh Bureau of Statistics

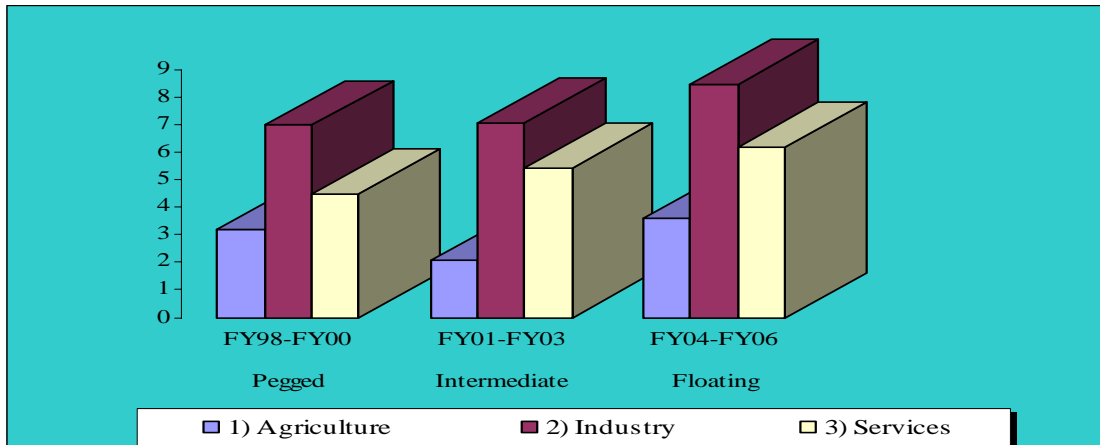
An analysis of the growth performance in different exchange rate regimes show that the average GDP growth rate has been significantly higher in the floating exchange rate regime than that in intermediate and pegged exchange rate regimes (Figures 3 and 4).

**Figure 3: Average GDP Growth (at 1995-96 Constant Market Prices) Under Different Exchange Rate Regimes**



Source: Annual Reports, Bangladesh Bank, Various Issues

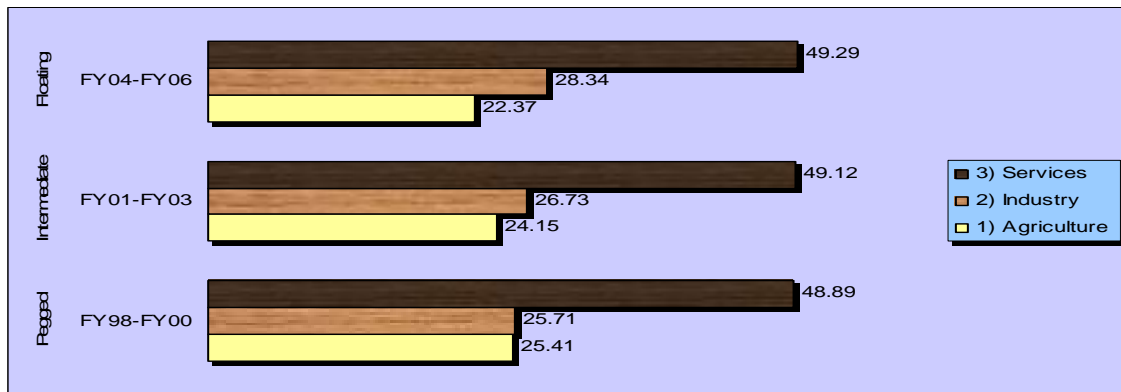
**Figure-4: Average Sectoral GDP Growth (at 1995-96 Constant Market Prices)**



Source: Annual Reports, Bangladesh Bank, Various Issues

From Figure 5, it is evident that contribution of agriculture was higher in the pegged exchange rate regime than those of the intermediate and floating exchange rate regimes, while the share of industry in the sectoral composition of GDP increasing gradually and increased from 25.71 to 26.73 in the intermediate and further to 28.34 in the floating exchange rate regime. The sectoral share of services also increases moderately from 48.89 during FY98-FY00 to 49.12 in FY01-03 and reached at 49.29 during the floating exchange rate regime.

**Figure-5: Average Sectoral Composition of GDP**



Source: Annual Reports, Various Issues

**Table 2: Sectoral GDP growth Rates at FY96 constant Prices: In Percent**

	FY91-FY00	FY01	FY02	FY03	FY04	FY05	FY06
<b>1) Agriculture</b>	<b>3.20</b>	<b>3.10</b>	<b>0.00</b>	<b>3.10</b>	<b>4.10</b>	<b>2.20</b>	<b>4.50</b>
a) Agriculture and Forestry	2.10	5.50	-0.60	3.30	4.40	1.80	4.70
i. Crops and Horticulture	1.80	6.20	-2.40	2.90	4.30	0.20	4.20
ii. Animal Farming	2.50	2.80	4.70	4.50	5.00	7.20	6.30
iii. Forest and Related services	3.60	4.90	4.90	4.40	4.20	5.10	5.20
b) Fishing	8.20	-4.50	2.20	2.30	3.10	3.70	3.90
<b>2) Industry</b>	<b>7.00</b>	<b>7.50</b>	<b>6.50</b>	<b>7.30</b>	<b>7.60</b>	<b>8.30</b>	<b>9.60</b>
a) Mining and Quarrying	6.00	9.70	4.50	7.20	7.70	8.40	8.70
b) Manufacturing	6.90	6.70	5.50	6.80	7.10	8.20	10.50
Large and Medium scale	7.00	6.60	4.60	6.60	7.00	8.30	11.00
Small Scale	6.80	7.00	7.70	7.20	7.50	7.90	9.00
c) Power, Gas and Water Supply	5.50	7.40	7.60	8.00	9.10	8.90	7.70
d) Construction	7.50	8.70	8.60	8.10	8.30	8.30	8.40
<b>3. Services</b>	<b>4.50</b>	<b>5.50</b>	<b>5.40</b>	<b>5.40</b>	<b>5.70</b>	<b>6.40</b>	<b>6.50</b>
a) Whole Sale and Retail Trade	5.70	6.40	6.60	6.10	6.60	7.10	7.30
b) Hotel and Restaurants	5.50	7.00	6.90	7.00	7.10	7.10	7.50
c) Transport , storages and communication	4.60	7.90	6.60	6.90	6.20	7.90	8.30
d) Financial Intermediations	4.80	5.50	6.70	6.70	7.00	8.90	7.10
e) Real State, Renting and other Business activities	3.50	3.40	3.40	3.50	3.60	3.70	3.70
f) Public administration and Defense	6.80	5.90	5.90	5.20	7.10	8.00	8.20
g) Education	6.10	7.10	7.60	7.60	7.70	7.90	8.00
h) Health and Social Works	4.00	4.90	5.30	5.60	6.20	7.40	7.10
i) Community, Social and Personal Services	2.80	3.10	3.20	3.30	4.20	4.10	7.10
<b>GDP at 96 Constant Market Prices</b>	<b>4.80</b>	<b>5.30</b>	<b>4.40</b>	<b>5.30</b>	<b>6.30</b>	<b>6.00</b>	<b>6.70</b>

Source: Annual Reports, Bangladesh Bank, Various Issues

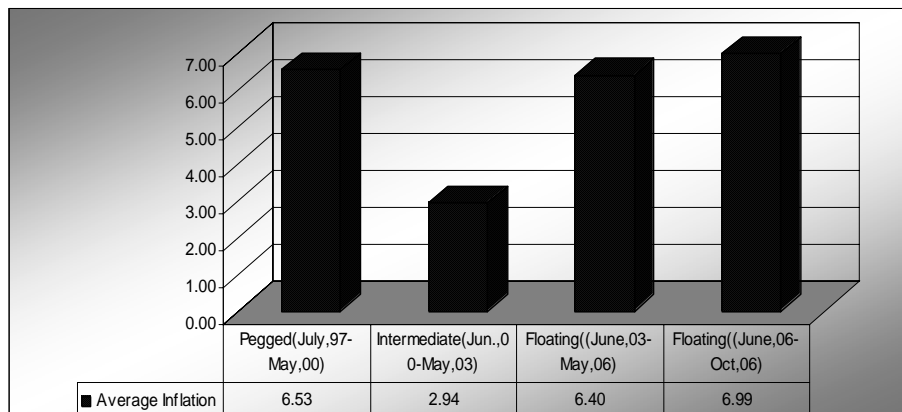
Table 2 shows that growth of agriculture during FY91-FY00 was 3.20, which, while fluctuating overtime, reached at 4.50 in FY05. The setbacks in FY02 and FY05 resulted from negative and lower growth in the crops and horticulture sub-sectors. The industrial growth, by contrast, gathered momentum overtime; from 7.00 percent in FY91-FY00 it reached to 9.60 percent in FY06 with significant contribution from mining and quarrying, manufacturing, power, gas, and water supply. The growth of the service sector is significantly up from the average of 4.50 in FY91 to FY00 to 6.50 in FY06 mainly fuelled by transport, storages and communication, community, social and personal services, wholesale and retail trade and health and social work.

## 5.2. Inflation

A comparison of inflation under different exchange rate regimes shows that inflation has been gradually increasing during the latest phase (FY03-06) resulting from higher international oil and other commodity prices in the international market. Supply side factors, e.g., two episodes of floods during mid-2004 also contributed partly to the higher price level during this era. Contrary to the findings of Atish et al. (1996) inflation was comparatively higher in the pegged exchange rate regime in Bangladesh partly due to flood, a supply side phenomenon, which caused major damages in the agricultural sector during 1998, the consequences of which continued further in 1999. However, during FY00 to FY03, inflation was significantly lower despite exchange rate depreciation and higher growth in money supply (M2). This is because proper steps were taken to

cushion against shortages of consumer goods, industrial raw materials and equipments by reducing import duties significantly (Annual Reports, 1999-00, BB). Besides, structural shifts in the GDP composition took place over the years that reflected in the more monetized sectors, e.g., wholesale and retail trade, construction and transport, storage and communication are believed to have higher money absorption capacity and thereby reduced inflationary impact of increased money supply (Annual Report, 2006, BB).

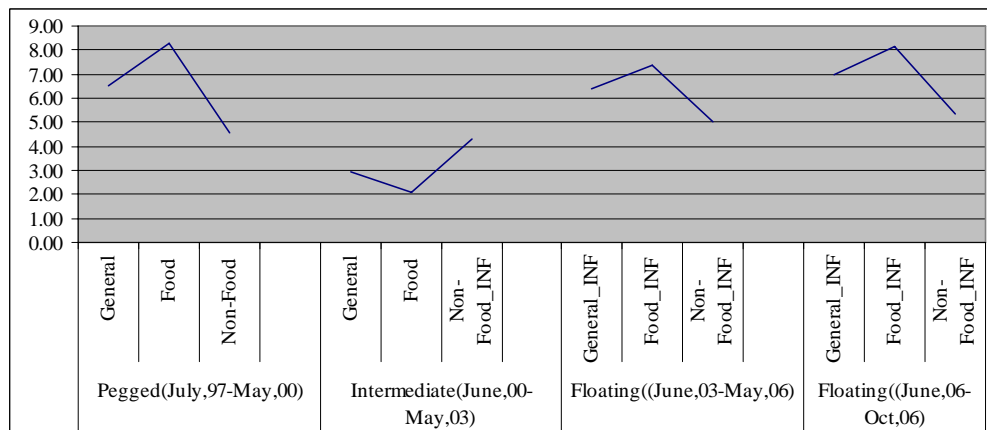
**Figure 6: Average Inflation under Different Exchange Rate Regimes (Base: 1995-96=100)**



Source: Research Department, Bangladesh Bank

Figure 7 shows that except for the intermediate regime, food inflation is higher in the pegged and floating exchange rate regimes contributing significantly to twelve month point to point general inflation.

**Figure 7: General, Food and Non-Food Inflation under Different Exchange Rate Regimes (Base: 1995-96=100)**



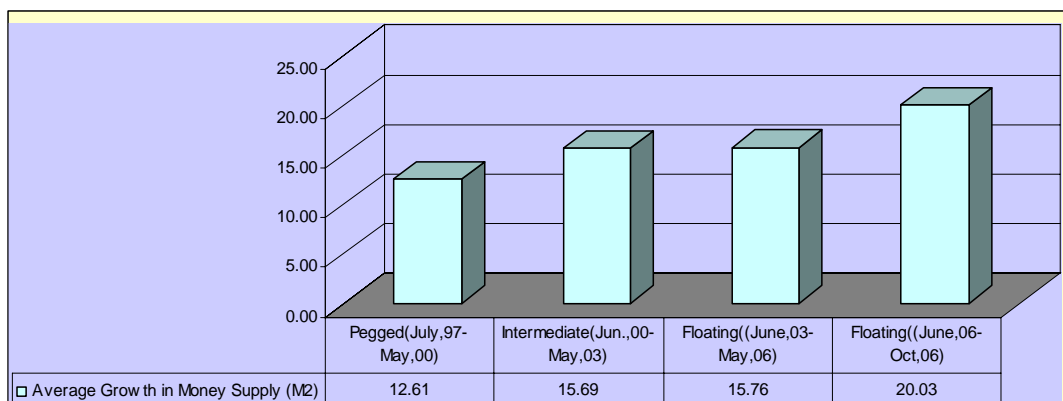
Source: Research Department, Bangladesh Bank

### 5.3 Money Supply (M2)

Despite faster growth in the money supply (M2) during FY00 resulting from a 31.3 percent increase in the net credit to the government as against 21.3 percent increase in FY99 and 33.9 percent increase in the net foreign assets (NFA) as against 5.8 percent during FY99, the average money supply growth during the pegged exchange rate period remained lower than

in intermediate and floating exchange rate regimes. The average money supply (M2) growth increased from 12.61 percent in the pegged regime to 15.69 percent and 15.76 percent in the intermediate and floating exchange rate regime respectively owing to an increase in the NFA and net domestic assets (NDA) in the banking system during FY00 to FY03. The NDA increase was propelled both by the increased demand in the private sector and government sector credit. While in the early period of the floating exchange rate (FY03 to FY04), the driving forces behind money supply increase were NFA and private sector credit, a component of NDA. During FY05 and FY06 both public and private sector credit components of NDA contributed significantly to higher money supply growth to support the accommodative monetary policy.

**Figure 8: Average Growth in the Money Supply (M2) Under Different Exchange Rate Regimes (Base: 1995-96=100)**

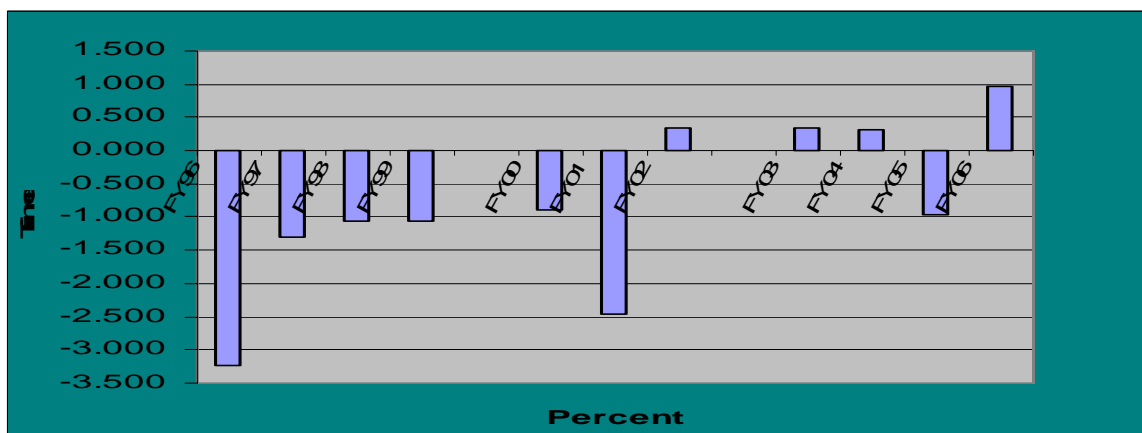


Sources: Statistics Department, Bangladesh Bank

#### 5.4 Current Account Balance as Share of GDP

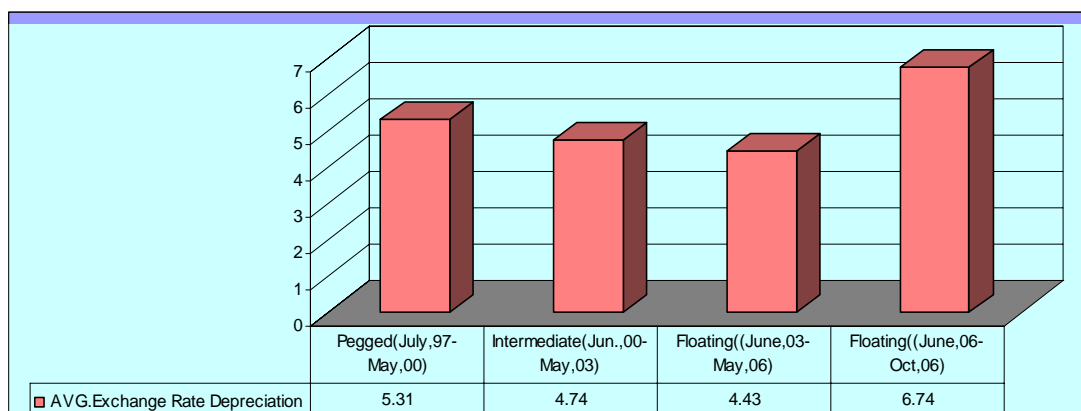
From Figures 9 and 10 one can see the non-existent relationship between current account (C/A) balances (surplus/deficits) and the exchange rate depreciation. However, it is evident from the figures that exchange rate depreciation during FY98 to FY00 helped reduce deficits by increasing the growth of exports, remittances and decelerating the growth rate of imports.

**Figure 9: Current Account Balance as Share of GDP**



Source: Economic Trends, Bangladesh Bank

**Figure 10: Year on Year Exchange Rate Depreciation (average) under Different Exchange Rate Regimes**



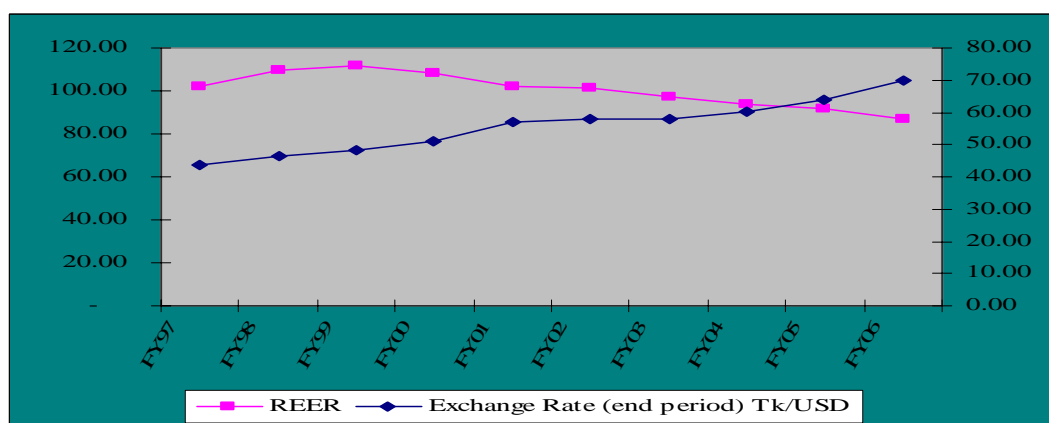
Source: Economic Trends, Bangladesh Bank

Figure 9 shows that current account balance as a percent of GDP has been in the surplus territory during and after the float. However, it was in deficit during FY05 due to higher food imports following major flood in mid-2004.

### 5.5 REER and NER

The real effective exchange rate (REER) and BDT/USD nominal exchange rate both depreciated after floating the currency which contributed to increasing competitiveness of the Bangladesh's exports thereby boosting domestic output.

**Figure-11: REER and Nominal Exchange Rate (BDT/USD)**

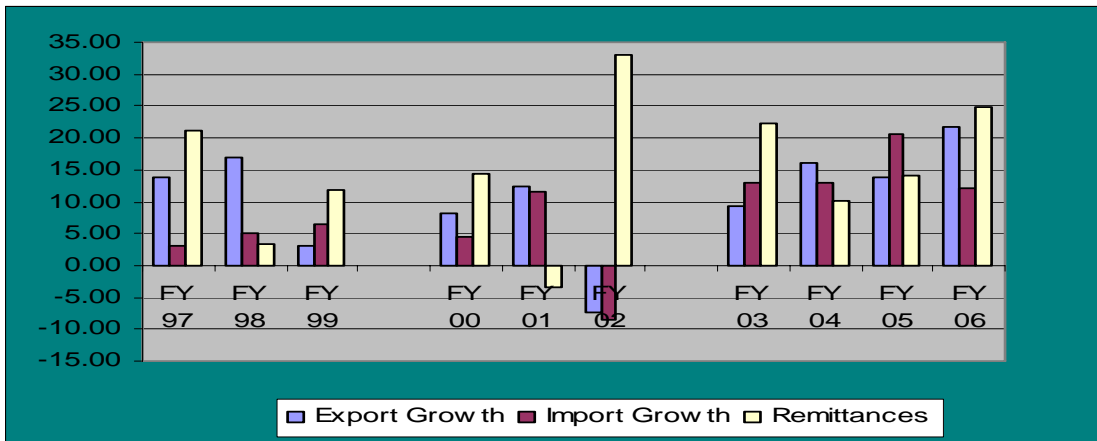


Source: Monetary Policy Department, Bangladesh Bank

### 5.6 Export, Import and Remittances

Figure 12 shows that exports, imports and flow of remittances are higher during the floating exchange rate period than in the previous regimes. Exports growth in FY06 reached its highest level so far, while import growth has been moderate following currency depreciation in the floating exchange rate regime. Inflow of remittances also increased following various steps taken by the government to channel remittances in the official process by discouraging the use of the 'Hundi' system.

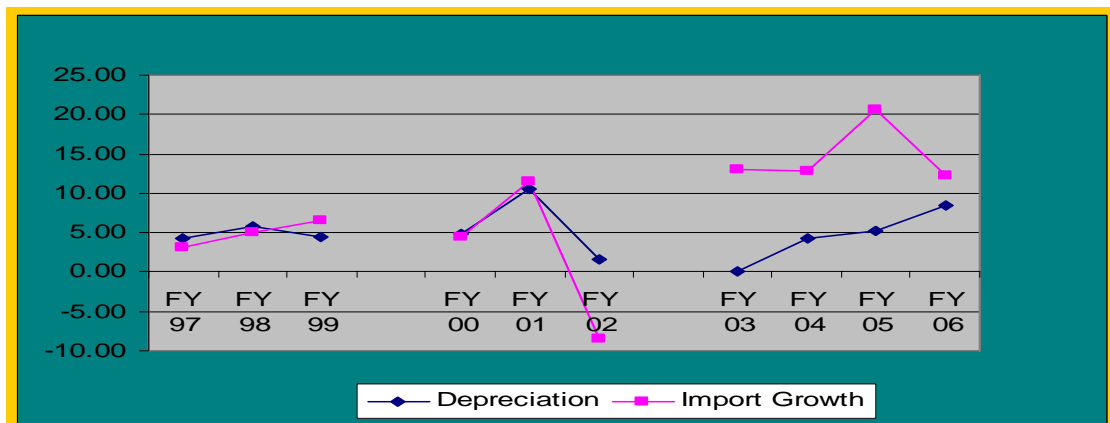
**Figure-12: Export, Import and Remittances (Growth Rate)**



Source: Statistics Department, Bangladesh Bank

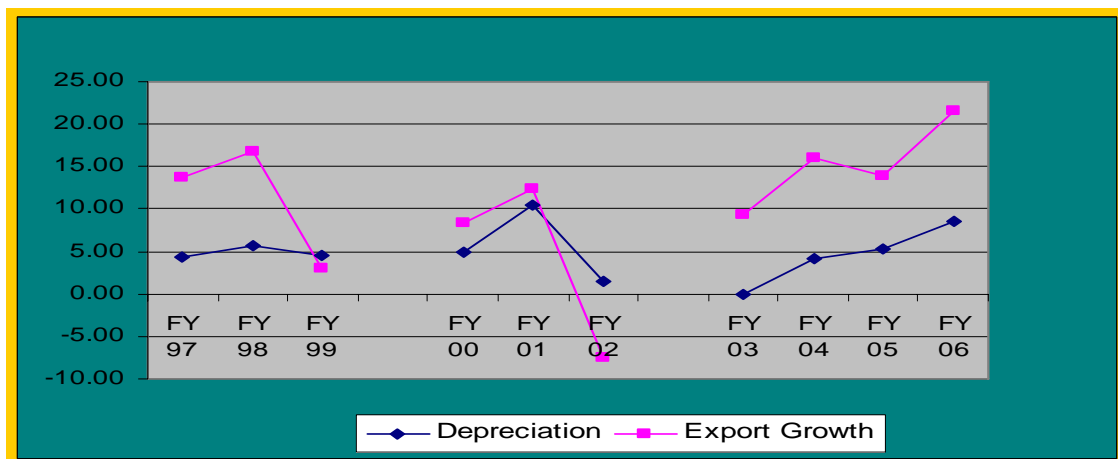
From Figures 13 and 14, we can gauge the relationship between import and export growth and currency depreciation. There is some indication of currency depreciation and dampening import growth in the floating exchange rate periods while it had not been the case in earlier regimes

**Figure-13: Depreciation and Import Growth**



Source: Statistics Department, Bangladesh Bank

**Figure-14: Depreciation and Export Growth**



Source: Statistics Department, Bangladesh Bank



There is also evidence that currency depreciation boosted exports growth in the floating regime, though not in the prior contexts.

### 5.7 Correlation Matrix of Nominal Exchange Rate, Call Money Rate and Excess Liquidity

An attempt has been made to see the relationship between nominal exchange rate, call money rate and excess liquidity in the money market from January' 98 to October'06. It is believed that money market and foreign exchange market are very closely related. Any shock in the foreign exchange market can transmit to the money market directly through the increase in demand for foreign exchange by the commercial banks which may in turn shoot up the inter-bank rate. Excess liquidity of the commercial banking also included to see the correlation among them.

**Table 3: Pearson Correlation Coefficients**  
**Prob > |r| under  $H_0$ :  $\rho=0$**   
**Full Sample Period: January, 1998-October, 2006**

	Nominal Exchange Rate	Call Money Rate	Excess Liquidity
Nominal Exchange Rate	1		
Call Money Rate	0.22 (0.02)	1	
Excess Liquidity	0.68 (0.00)	-0.30 (0.00)	1

**Pegged Exchange Rate: Sample Period: January, 1998-May, 2000**

	Nominal Exchange Rate	Call Money Rate	Excess Liquidity
Nominal Exchange Rate	1		
Call Money Rate	-0.59 (0.00)	1	
Excess Liquidity	0.87 (0.00)	-0.69 (0.00)	1

**Intermediate Exchange Rate: Sample Period: June, 2000-May, 2003**

	Nominal Exchange Rate	Call Money Rate	Excess Liquidity
Nominal Exchange Rate	1		
Call Money Rate	0.19 (0.24)	1	
Excess Liquidity	0.47 (0.00)	-0.32 (0.00)	1

**Floating Exchange Rate Sample Period: June, 2003-October, 2006**

	Nominal Exchange Rate	Call Money Rate	Excess Liquidity
Nominal Exchange Rate	1		
Call Money Rate	0.55 (0.00)	1	
Excess Liquidity	-0.54 (0.00)	-0.74 (0.00)	1

*Note: Monthly data has been used to construct correlation matrix.*

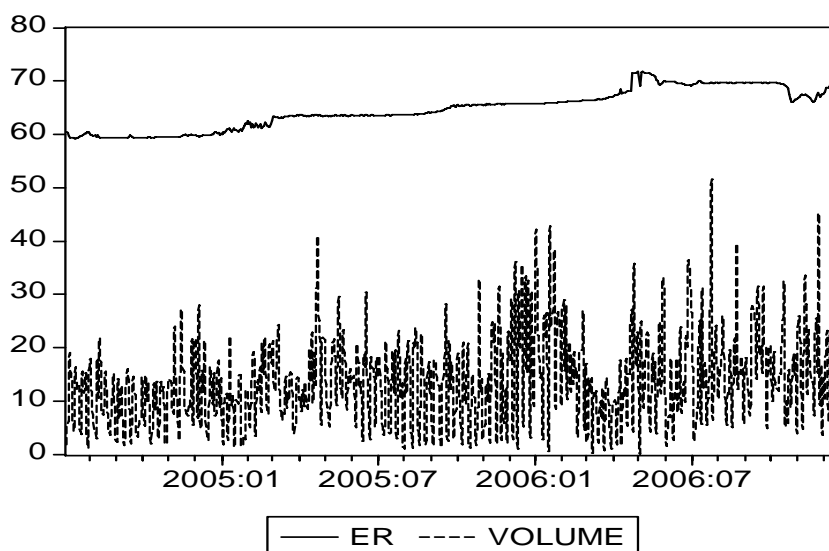
Pearson correlation matrix shows positive correlation between nominal exchange rate and excess liquidity not significant in all regimes except the floating, while the correlation between nominal exchange rate and the call money rate is negative in the pegged exchange rate regime, but positive in the floating regime. The negative correlation between excess liquidity and call money rate, which is evident in all currency regimes, is relatively stronger in the floating exchange rate regime.

## 6. Intervention Approaches towards Maintaining Market Order and Limiting Volatility

Under a flexible regime, intervention becomes optional. Central banks still can and do intervene for several reasons: (i) to correct misalignment from the long-run equilibrium, (ii) to calm disorderly markets, and (iii) to accumulate reserves or supply foreign exchange to the market (IMF, 2004). After announcing the free float of the currency at the end of May 2003, Bangladesh Bank did intervene in the foreign exchange market with a view to limiting excessive volatility but not otherwise restrain the market mechanism of demand and supply from reaching new equilibrium.

Figures (15, 16, 17 and 18) show the daily exchange rate movement and its corresponding volume since July 3, 2004 to December 21, 2006. These Figures would allow us to have an idea about the nature of central bank intervention during the exchange market pressure situation after floating the currency. Figure 15 shows that despite some fluctuation in the July, September and November period exchange rate movements were rather stable during 2004 but started to increase from January, 2005 and gradually reached its highest level in the first quarter of FY07, before coming down to its earlier level in late FY07. From the Figure 15 we can see that during the hike periods, volume of foreign exchange also increased reflecting higher supply of foreign exchange in the market resulting from central bank intervention and increased receipts from exports and remittances. The reasons for depreciating BDT against USD are mainly higher import payments resulting from higher international oil and other commodity and food imports.

**Figure 15: Daily Exchange Movements and its Volume**  
Sample Period: July 2004 - July 2006



*Source: Monetary Policy Department, Bangladesh Bank*

## 7. IMF Technical Support at Various Stages of Transition

Bangladesh bank has been receiving assistance from IMF experts regarding possible impact of float and required preventive measures against shocks, if any. For example, IMF experts help regarding the issues with the floating of currency, monetary management, development of government securities market, support regarding liquidity forecasting and repo operation has been very important in the floating exchange rate era. With a view to reviewing the progress

in implementation of the floating exchange rate and market smoothing, IMF staff observe actual floating of the exchange rate of BDT, review the developments in the forex market and recommend policy to deal with the situation. The IMF experts also help regarding intervention in pressure situations, and how to maintain an orderly market situation. More importantly IMF staff helped Bangladesh Bank staff in forecasting liquidity as per the international norms. They continuously visited Bangladesh regarding foreign exchange market issues. The IMF mission experts were providing technical assistance continuously so that Bangladesh currency can adjust to the shocks, if any, after the country stepped into the flexible exchange rate regime. BB's efforts as well as IMF technical advice helped Bangladesh so far to cushion against any dramatic fall in the BDT against major currencies.

## **8. Conclusion**

The intention of this study has been to assess the experience of the exchange rate regime gathered by Bangladesh so far and also to evaluate the impact of the exchange rate regime on macroeconomic variables. Bangladesh embraced the floating exchange rate regime at the end of May, 2003 with the objectives of increasing the effectiveness of monetary policy on one hand and to avoid crises associated with the fixed exchange rate regime on the other. It is evident from past experience that countries that adopted the flexible exchange rate regime were better equipped to adjust to shocks than those with more rigid systems. Besides, Bangladesh is yet to set a nominal anchor for inflation to move into inflation targeting policy regime. After reviewing some macroeconomic variables it can be seen that Bangladesh's experience with the flexible exchange rate regime has worked well so far and it is anticipated that its effectiveness will increase in the near future as further experience is gained in handling both normal and pressure situations.

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