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Policy Analysis Unit (PAU)

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Monetary Transmission through Bank Portfolio in Bangladesh

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Monetary Transmission through Bank Portfolio in Bangladesh [1]

-Dr. Sayera Younus

Abstract

This paper examines whether monetary policy transmits through bank assets or liabilities or both. This is an important policy issue since in order to know the effectiveness of monetary policy it is necessary to identify the channel through which policy affects the macroeconomic variables. The sample period covered in this study is 1976:3 to 2004:1. Quarterly data are employed to see the trend and correlation among the monetary policy (as measured by the broad money supply M2, bank deposits or credit) and other macroeconomic variables e.g., the nominal exchange rate and real GDP growth in Bangladesh. Monetary policy as measured by M2 shows close relationship with bank deposits and credit. In other words, the correlation matrix and trend analysis shows that both the money channel and the credit channel operate in Bangladesh. This implies that if the monetary authority wants to influence the price level and the real economic activity they can do so by controlling either or both bank deposits and credit.

Monetary Transmission through Bank Portfolio in Bangladesh

Introduction

Banks play an important role in the monetary transmission process by intermediating and facilitating monetary lending, borrowing and other financial transactions. To understand the impact of monetary policy on economic activity in Bangladesh, therefore, it is necessary to study the role of commercial banking system on monetary transmission mechanisms. Whether monetary policy transmits through banks' assets (credit channel) or liabilities (money channel) is currently under debate. It is difficult to separate the money channel from the credit channel, because, following an expansionary monetary policy, bank reserves increase in both cases. This, in turn, increases bank liabilities i.e., deposits and bank assets through loan and securities. Therefore, the channel through which monetary policy transmits to the economy is not easy to identify. It may be due to the money channel, or due to credit channel, or both.

According to Walsh (1998, p.285), under the traditional money view, following an expansionary monetary policy, when banks' reserves increase, interest rates fall, which stimulates consumption and investment decisions by households and firms. This reflects the adjustments on the liability side of the banking sector's balance sheet by increasing the demand for money. However, two conditions must be satisfied for the existence of a money channel: (1) stickiness of price, so that the monetary innovation can affect real money balances, and (2) short-term interest rates must influence long-term interest rates, which could further influence investment decisions. Walsh (1998, p.286) argued that, under the credit view, following an expansionary monetary policy, banks' reserves increase too. If there is no close substitute for bank credit an increase in banks' reserves will be reflected by an increase in bank credit, which is on the asset side of the balance sheet. However, if there are close substitutes and banks fail to offset the decline in reserves through securities holding or raising fund by issuing non reservable liabilities (CD's) then bank lending must contract (Walsh, 1998, p.286).

Bernanke and Blinder (1988), on the other hand, suggests that the central bank should look at both money and credit aggregates when judging a policy's impact, because he argues, when both money and credit are growing strongly or slowly then it is logical to think that the economy is growing strongly or slowly respectively. However, if money and credit

are sending conflicting signals, then the central bank should concentrate more on credit than money due to its closer link with the aggregate spending.

With a view to understanding the effectiveness of the monetary policy in Bangladesh this study examines the impact of monetary policy on bank portfolios, i.e., on the assets and the liabilities, channel through which monetary policy transmits to the economy. Though this study does not examine the monetary transmission mechanism by incorporating imperfect information into the credit channel, it is evident from the recent experience on commercial banks in Bangladesh (nationalized and private) that all banks have been suffering substantially from the default of loans by borrowers. The total default loan rate of all banks was 33.49% (of total loans) in 1997, 40.65% in 1998, 41.11% in 1999 and 34.92% in 2000. Recently, the non-performing loan came down to 17% in 2004.[2] The problem of loan default in Bangladesh is due to three factors: (1) information problems in the form of moral hazard, adverse selection, or monitoring cost of commercial banks in selecting borrowers; (2) the lack of legal actions against defaulters (because a major portion of the loans goes to the influential businessmen, politicians, and insiders; (3) the government's practice of debt forgiveness which encourages non-payment of debt in Bangladesh.

Due to the alarming extent of non-performing loans, some banks have been unable to make their operations profitable. Most commercial banks have been suffering from capital deficiencies. Therefore, there is a possibility that the default problem of borrowers may force commercial banks in Bangladesh to ration credit. This may prevent interest rates from falling following an expansionary monetary policy, which causes bank credit, deposits and economic activity to remain unchanged or even fall following a monetary expansion. This would lead to an insensitivity of economic activity to monetary policy changes. Nevertheless this study does attempt to identify the channels through which monetary policy transmits to the economy in Bangladesh.

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[2] Source: Staff Reporter, "Banking Sector Plagued by Poor Loan Recovery," *Bangladesh Shangbad Shangstha,* Dhaka, Bangladesh.

2. Evidence from Bangladesh Data

The sample period covered in this study is from 1976:3 to 2004:1. Quarterly data are employed to see the trend[3] among the monetary policy (as measured by the broad money supply M2, bank deposits, credit) and other macroeconomic variables (e.g., the nominal exchange rate and real GDP growth)[4] in Bangladesh. This study uses graph and correlation matrix to analyze the relationship between money supply growth and macroeconomic variables. The variables are as follows: GRM2=the growth rate of broad money supply (M2); GRTD=the growth rate of total deposits in the banking sector; GRCPS=the growth rate of total credit to the private sector by the financial institutions; GRCGS=the growth rate of total credit to the government sector by the financial institutions; GRY=the growth rate of real gross domestic product (GDP); GNER=the growth rate of nominal exchange rate. Seasonally unadjusted data are used for all the variables. All the variables are in the growth form.

3. Evidence from the Correlation Matrix

The following correlation matrix shows the correlation between money supply growth and growth in the other macroeconomic variables. It can be seen from correlation matrix that the correlation between money supply growth (GRM2) and growth in the credit to the private sector (GRCPS) and growth rate in the total deposits (GRTD) are very high during the sample period from 1984 to 1990. This implies that credit channel and money channel were more active during the sample period mentioned above compared to other periods. From the correlation matrix, it can also be seen that the correlation between money supply growth and growth rate in the nominal exchange rate (GNER) and growth to the government sector are not very strong in any period, which is also evident from the trend analysis.

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[3] However, in order to understand the transmission channel clearly we need to also use sophisticated econometric methods.
[4] I would like to thank Dr. Akhtaruzzaman, Policy Analysis Unit, Research Department, Bangladesh Bank for providing me with the quarterly data of real GDP

Table-1

Correlation Matrix

	1976-2004	1976-1990	1990-2004	1983-1990
	GRM2			
GRCPS	0.74	0.69	-0.12	0.85
GRCGS	0.33	0.44	0.27	0.65
GRER	-0.08	-0.30	-0.02	0.07
GRTD	0.99	0.98	0.96	0.99
GRY1	0.11	0.17	0.16	0.24
GRY2	0.02	0.04	0.22	0.29
GRY3	-0.04	-0.02	0.07	0.12
GRY4	-0.09	-0.09	0.00	0.02

In order to see the lag effect of real sector, a lag of one to four (GRY1, GRY2, GRY3 and GRY4, respectively) of real GDP is examined. It is evident from the correlation matrix that the correlation between money supply growth (M2) and the growth of real GDP at lag one and two are higher during the period from 1983 to 1990 when financial sector reform started. But on the whole the money-real GDP correlations are not statistically significant.[5]

4. Money supply and Credit to the Private Sector

Figure 1 and 2 shows the relationship between money supply growth and growth in the credit to the private sector before the financial sector reform (1976:3-1990:4) and after reform (1991:1-2004:1) respectively. It can be seen from Figure-1 that money supply growth and growth in the credit to the private sector are following the same direction after 1984, while the pattern is irregular before 1984. This relationship is also supported by the correlation matrix, implying the existence of a strong credit channel during the period from 1976:1 to 1990:4. From Figure-2, it is evident that except few irregular patterns both series are following almost same direction particularly after 1995 to 2004. This relationship also confirm by the correlation matrix.

5. Money Supply and Credit to the Government Sector

From Figures-3 and 4, we can see the relationship between money supply growth and growth in the credit to the government sector are not following the same direction in most of

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[5] By assuming added noise in the quarterly real GDP data (since quarterly data is nothing but an interpolation of annual GDP data into quarterly data) an attempt has been made to see the co-movement between annual real

the cases. This implies that transmission mechanism operates through credit to the private sector, which is also supported by a prior reasoning. An analysis of trends show volatility in both series before the financial sector reform program began. However, the volatility has smoothened out after 1990. From Figure 3 and 4 we do not get any evidence of close relationship between the money supply growth and growth rate in the credit to the government sector, which is also supported by the correlation matrix.

Figure-1

**Trends in Money Supply Growth and Credit to the Private sector Growth
Sample Period: 1976:3-1990:4**
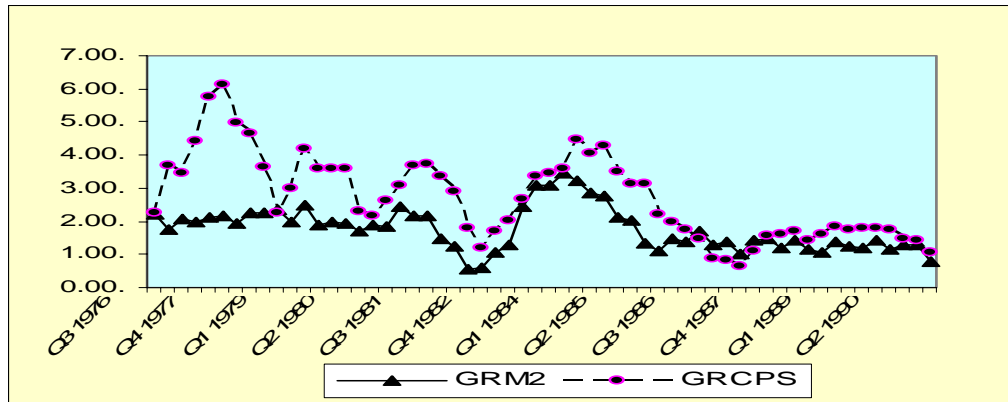
Figure-2

**Trends in Money Supply growth and growth in the Credit to the Private Sector
Sample Period: 1991:1-2004:1**
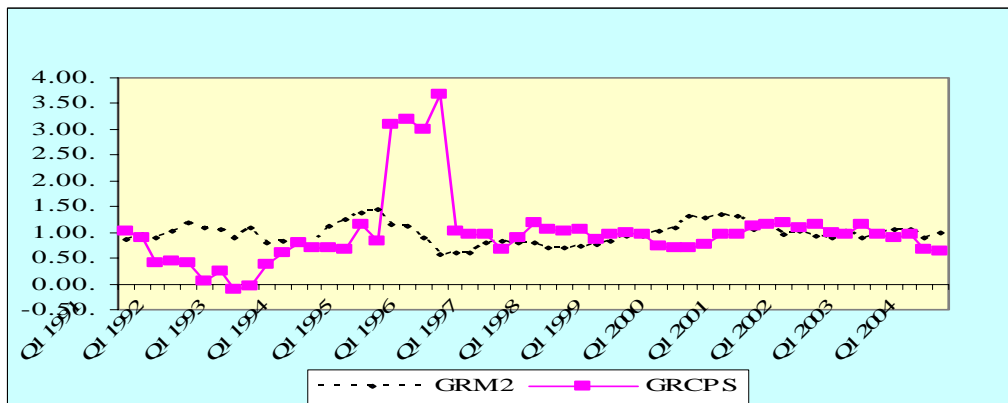
GDP growth and M2 growth by correlation matrix and trend analysis. The correlation between them appears to be extremely low and insignificant. So is the trend analysis.

Figure-3

**Trends in Money Supply growth and growth in the Credit to the Government Sector
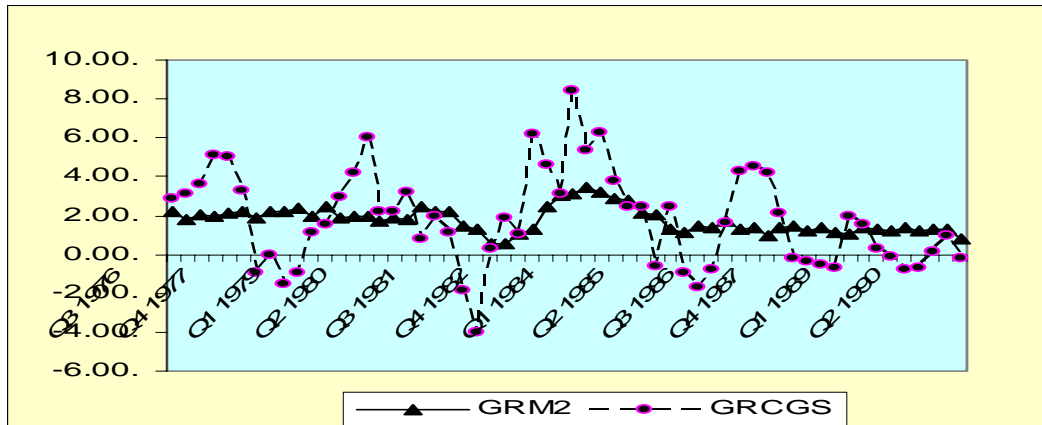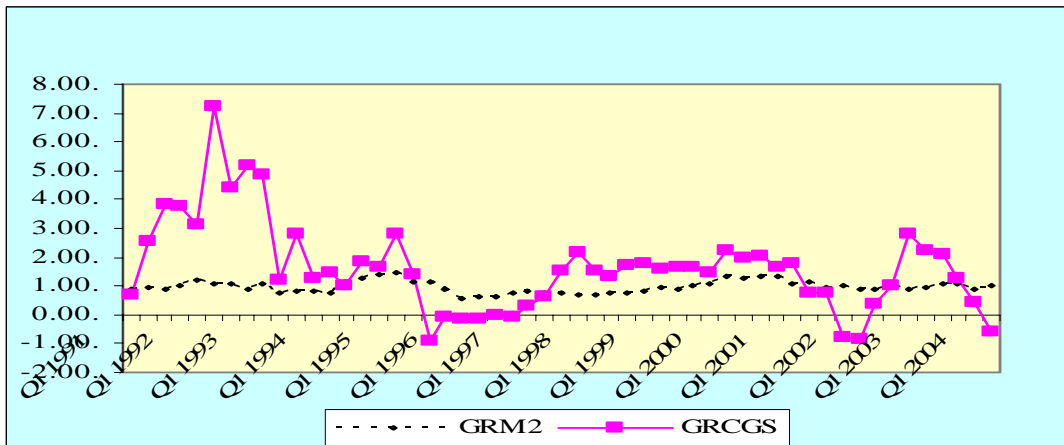Sample Period: 1976:3-1990:4**

Figure-4

**Trends in Money Supply growth and Growth in the Credit to the Government Sector
Sample Period: 1991:1-2004:1**

6. Money Supply and Total Deposits

Figure 5 and 6 show the relationship between money supply growth and growth in the total deposits. From Figure-5 and 6, we can see that money supply growth and total deposits growth are following the same direction in almost all the sample periods implying the existence of money channel in Bangladesh. It is also evident from Figure-5 and 6 that volatility in both series is much higher after 1990. The correlation matrix also confirms high

correlation between money supply growth and growth in the total deposits for all the sample periods.

Figure-5

Trends in Money Supply Growth and Total Deposits Growth
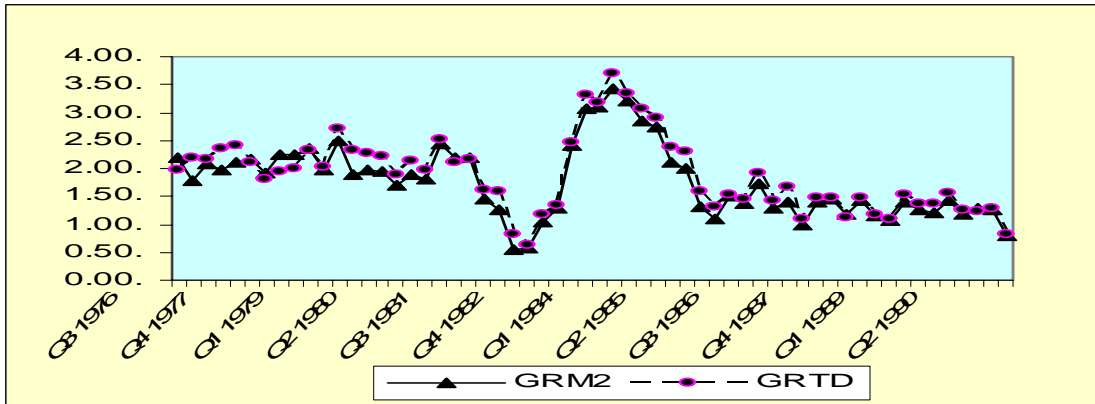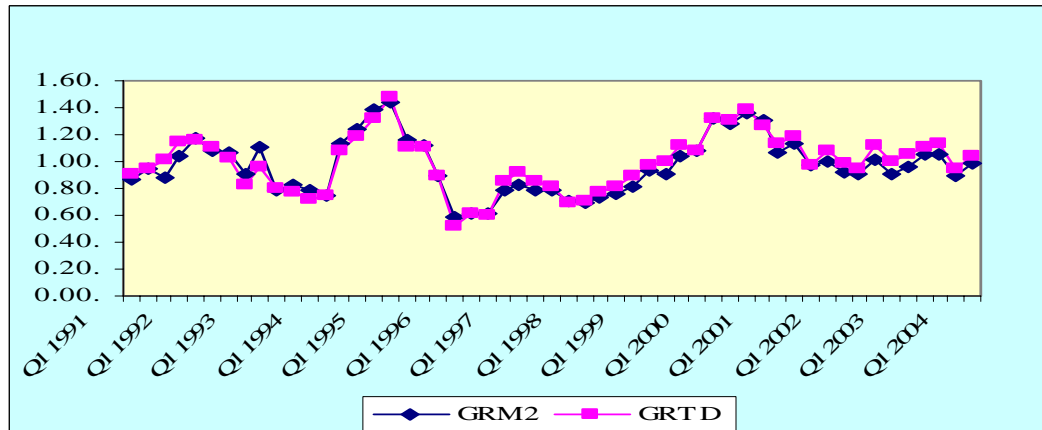**Sample Period: 1976:3-1990:4**

Figure-6

Trends in Money Supply Growth and growth in Total Deposits
Sample Period: 1991:1-2004:1

7. Money Supply growth and Real GDP Growth

From Figure 7 (a) to 7(e) we can see the relationship between money supply growth and real GDP growth from quarterly data and annual data. Figures 7(a) to 7(e) show volatility in real GDP is higher before financial sector reform took place. However, it is evident from the correlation matrix that the correlation between money supply growth (M2) and the growth of real GDP at lag one and two are higher during the period from 1983 to 1990 when financial sector reform started. But on the whole the money supply growth and real GDP correlations are not statistically significant. It is also evident from Figure 7(a) to 7(d) quarterly data that

an exogenous shock during FY89 to FY90 may contribute to a jump in real GDP. A data plot of annul real GDP Figure in 7(e) also confirms that. These discrete jumps largely relate to the flood losses of 1987 and 1988 and subsequent recovery.

Figure-7 (a)

**Trends of M2 growth and lag one to four to Real GDP
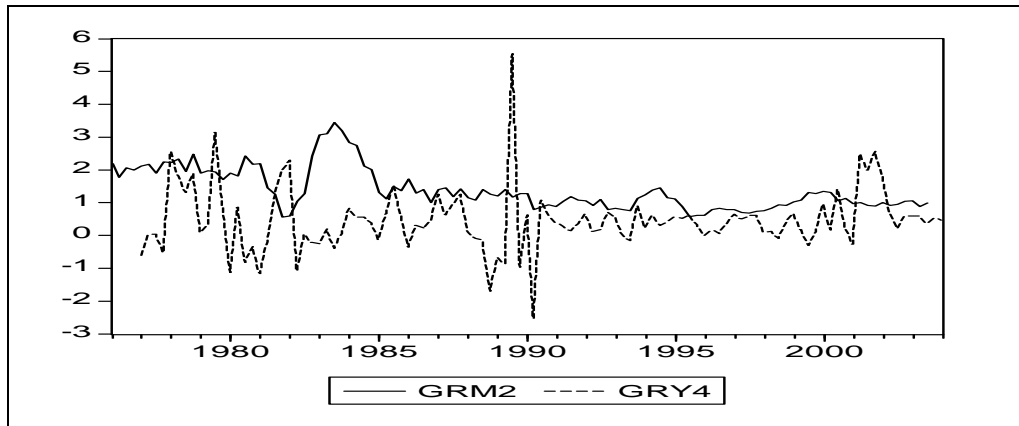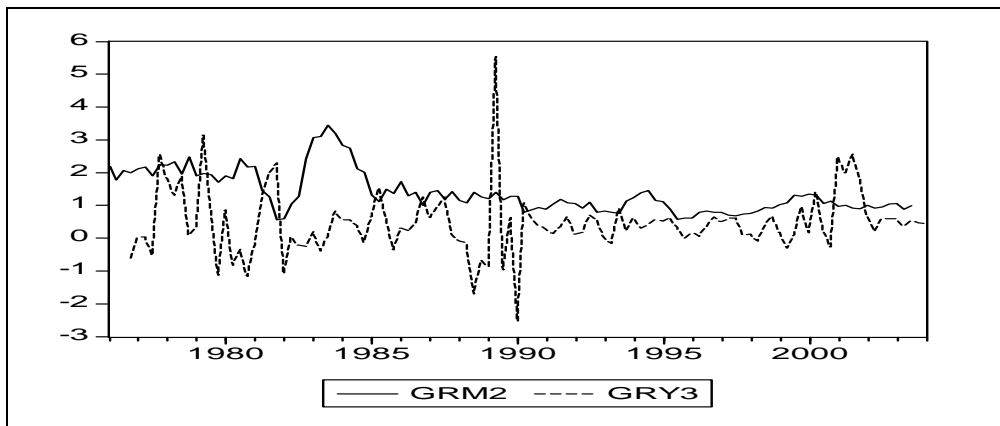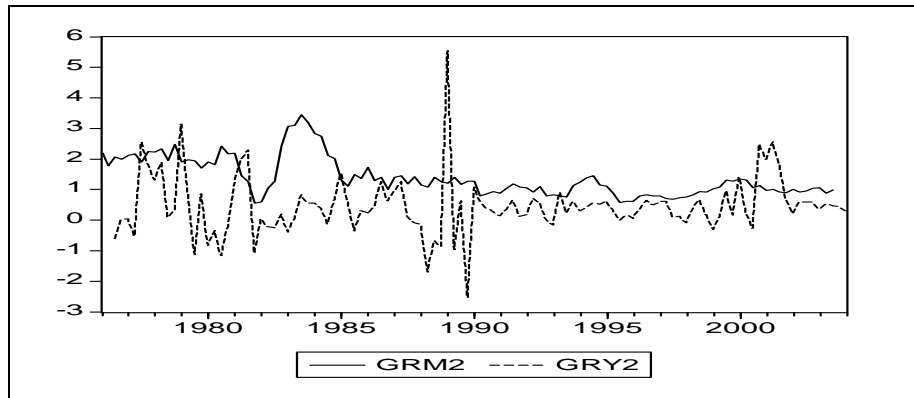Sample Period: 1976-2004**

Figure-7 (b)

Figure-7 (c)

GRM2 ---- GRY2

Figure-7 (d)

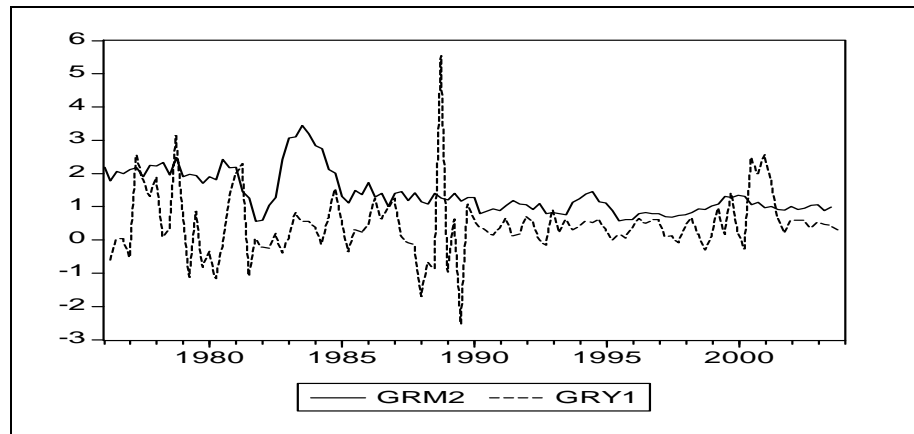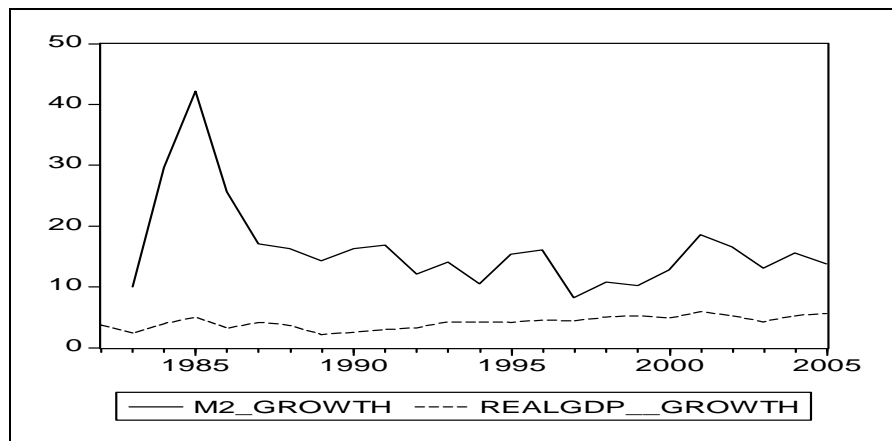
GRM2 ---- GRY1

Figure-7 (e)

M2_GROWTH ---- REALGDP__GROWTH

8. Money Supply growth and Nominal Exchange rate growth

From Figure-9 and 10, we can see that the relationship between money supply growth and nominal exchange rate growth do not follow the same direction. The trend also confirms that volatility in the nominal exchange rate is much higher than that in the money supply growth for almost all the sample periods. The correlation matrix also indicates lower correlation between money supply growth and nominal exchange rate.

Figure-8

**Trends in Money Supply Growth and Nominal Exchange Rate growth
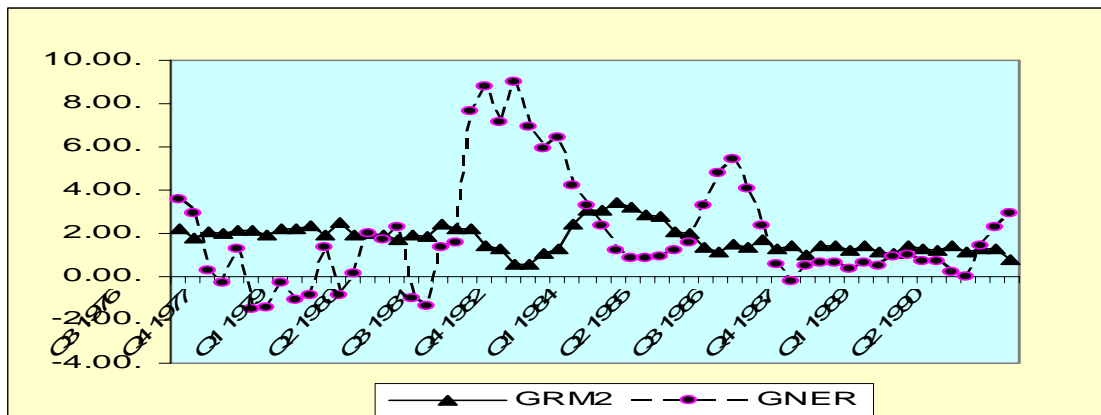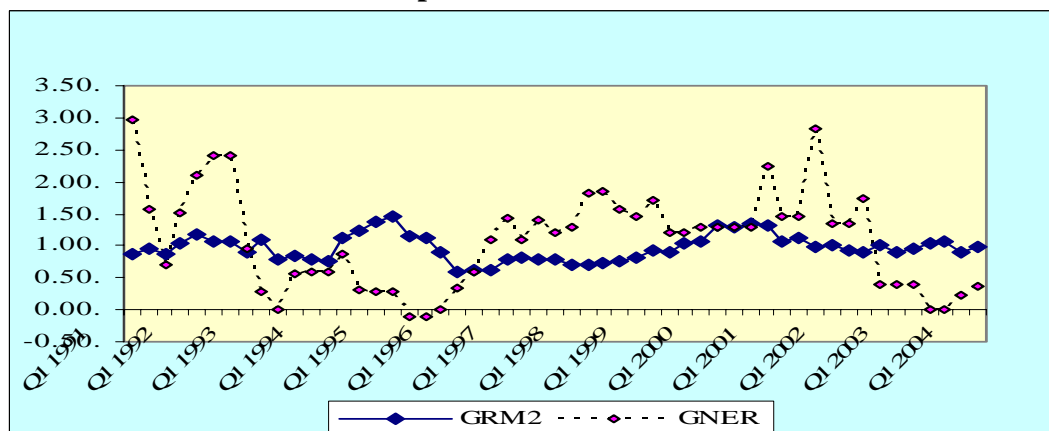Sample Period: 1976-1990**

Figure-9
**Trends in Money Supply Growth and Nominal Exchange Rate growth
Sample Period: 1991-2004**

9. Conclusion

This paper examines whether monetary policy transmits through bank assets or liabilities or both. Monetary policy as measured by M2 show close relationship with bank deposits and credit. In other words, the correlation matrix and trend analysis show that both money channel and credit channel operate in Bangladesh. This implies that if monetary authority wants to influence the price level and the economic activities they can do so by controlling both bank deposits and credit.

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