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Relative Effectiveness of Monetary and Fiscal Policies in Bangladesh Economy

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Abstract: This research work has been undertaken with a view to ascertaining the relative effectiveness of monetary and fiscal policies in Bangladesh economy analyzing the data for the period from 1973-74 to 1999-2000. The results of the study indicates that in our economy fiscal policy is more effective and faster as well than monetary policy. Thus the economist's statements regarding the relative effectiveness of monetary and fiscal policy has been proved true in the case of our country. The same results are expected to hold in the case of all countries like that of ours.

Key words: Effectiveness, monetary, fiscal policies

Introduction

Monetary policy is designed by monetary authority to regulate the money supply with a view to obtaining desired level of growth rate. All the steps taken under monetary policy have the same goal of determining a suitable quantity of money supply as a result of which the economy grows in a smooth and sustainable manner without causing any harmful inflation.

On the other hand fiscal policy is fully regulated by fiscal authority. Government, the fiscal authority, regulates the policy by using some tools namely tax, govt. expenditure etc.. The aim of using these tools is to well affect the economy through changing the level of total expenditure($C+I+G$). The tool, which is widely used by fiscal authority, is govt. expenditure. Every year government spends a huge amount of money in the form of investment and consumption. As economic theory reveals, this expenditure plays a vital role in changing the economy' s output through multiplier process.

Macro economic theory states that growth of the economy is the result of simultaneous effect of monetary and fiscal policies. The wheel of development moves taking forces from these two wings of policy. Empirical evidence is that economic development cannot be achieved without proper use of both monetary and fiscal policies. So where there is a question of development there is a question of these policies. In all respects, especially from LDC' s point of view, monetary and fiscal policies are significantly important, as development of LDC' s is immense need of the time. LDC's like Bangladesh need quick development to ensure higher per-capita income and better quality of life. Without development they will not be able to keep pace with the changing scenario of the global economy.

Now there is a question which one is more effective monetary or fiscal policy? The answer is quite subjective. It depends upon many factors among which stage of economic development is the most important. Obviously in a developed economy, as socio-economic environment is sound, both policies work fairly and more or less to the same extent. But in case of LDCs like Bangladesh there is an element of uncertainty in the effectiveness of these policies. These countries by their very nature suffer from some chronic problems like poverty, low educational status, lack of sufficient infra-structural facilities, loose administration, lack of technological support etc.. Economy having such types of problems cannot fully succeed in achieving desired target rapidly by using monetary and fiscal policies. In other words, the role of monetary and fiscal policies in LDCs is ambiguous. But it is to be remembered that the measure of effectiveness of policies is treated as signal for policy makers. They have to keep their eyes on the measures while designing the policies to reach the target. It is, therefore, very important to study relative effectiveness of the two policies.

In my study I will try to trace out the relative effectiveness of monetary and fiscal policies in Bangladesh economy with empirical data and help policy makers by providing valuable information regarding policy effectiveness.

Objectives of the Study

The main objectives of the study are

1. to measure the contribution of monetary policy to economic growth of Bangladesh economy;
2. to measure the contribution of fiscal policy to economic growth of Bangladesh economy;
3. to analyze relative effectiveness of the two wings of policy;
4. to search reasons behind policy lag if any; and
5. to provide policy makers with necessary information about policy effectiveness so that they can design policies efficiently to run the economy well

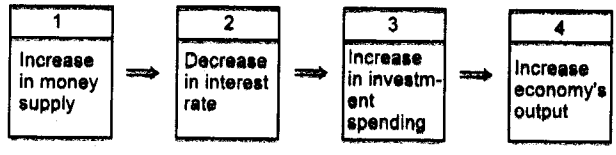
Materials and Methods

Both monetary and fiscal policies have wide range of activities. Government does a lot under fiscal policy. Similarly, monetary authority has many things to do under monetary policy. But due to lack of appropriate data all functions of government and monetary authority could not be considered in this study. To avoid complexities and to make the study easily understandable I confined my discussion within only two vital explanatory variables and one explained variable. Two explanatory variables- money supply and govt. expenditure- represent monetary and fiscal policy respectively while one explained variable gross national income(GNI at current market price) represents economy's health. Obviously these three variables are good representatives of their respective fields. The main objective of monetary policy is to regulate money supply to achieve target growth rate. For achieving the same target fiscal policy mainly depends upon govt. expenditure. Besides, GNI is the most important indicator of economic development. In case of money supply we have considered only narrow money, which is defined as any thing having the property of being used as a means of payment with minimum transaction costs. Currency in circulation and demand deposits satisfy this requirement. Thus, narrow money can be expressed as M_1 = Currency(coins and notes in circulation) + Demand deposit.

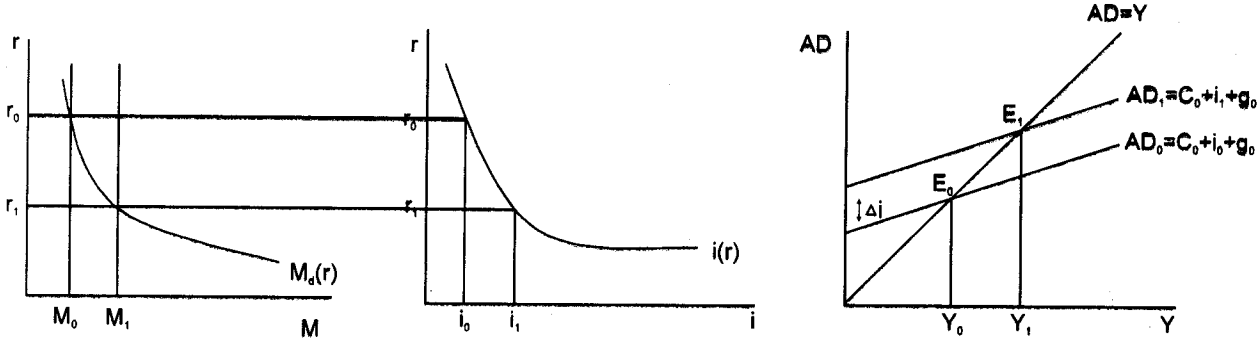
We have used only secondary data collected from Economic Trend published by Bangladesh bank. The whole analysis has been accomplished basing on yearly time series data for the period from 1973-74 to 1999-2000. Ordinary Least Square estimation method based on the Assumption of Classical Normal Linear Regression Model has been used to analyze the relative effectiveness of monetary and fiscal policies in Bangladesh economy.

Theoretical Background: Generally monetary authority increases money supply by either buying bonds in exchange for money in an open market operation or reducing SLR(Statutory liquidity ratio). According to Keynesian theory, interest rate is determined by the interaction between demand for and supply of money. If money supply increases interest rate falls. Falling rate of interest leads to increased aggregate demand through stimulating investment spending. Lower interest rate induces existing investors to invest more and new investor to go for new investment. Consumption expenditure increases as well due to the reduction of interest rate. Following the expanded aggregate demand economy's output expands also just after some adjustments.

The following table shows the whole transmission mechanism:



The graphical representation of this mechanism is as under:

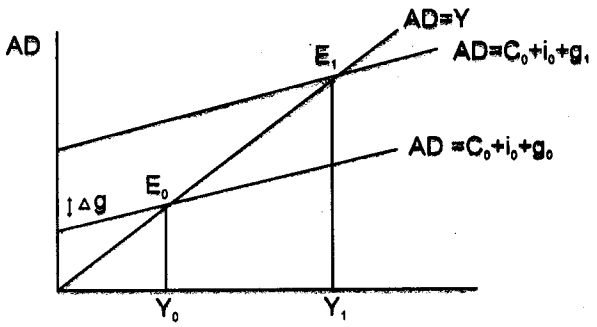


Symbolically it can be shown as: Ms↑ r↓ i↑ AD↑ Y↑

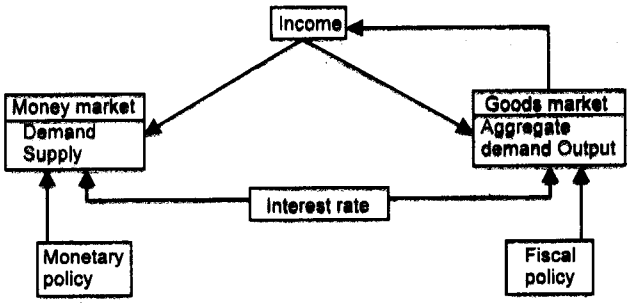
There are two critical links between the change in money supply and the ultimate effect on income. First, the change in money supply leads to change in interest rates. Second, that change in interest rate changes aggregate demand. Changes in money supply affect the level of output in the economy through these two linkages. This implies that if change in money supply does not lead to significant change in interest rates- for whatever reason- or if spending does not respond to changes in interest rates the link between money and output does not exist. It is goods market on which fiscal policy initially impacts while initial impact of monetary policy is on assets market. Govt. through fiscal policy immediately hits the economy pushing up aggregate demand instantly by an amount

equals to increase in govt. expenditure. At the initial level of output and income the demand for goods exceeds output, and accordingly firms expand production and new equilibrium is reached.
The following diagram demonstrates how output increases due to increase in govt. expenditure:

In the figure an increase in govt. spending shifts aggregate demand curve up from AD_0 to AD_1. Output rises from Y_0 to Y_1.



The channel through which monetary and fiscal policies work is shown in an abstract form by the following structure:



The structure clearly indicates that fiscal policy can easily affect the economy only by passing through goods market while monetary policy has to successively pass through two markets- money market and goods market- to affect the same. So there are reasons to believe that monetary policy is likely to face more obstacle than fiscal policy. The question of relative effectiveness lies in this point.

Specification of Model: In this section we shall specify a functional form for estimating relative effectiveness of monetary and fiscal policies in the context of Bangladesh.
In view of above discussion we may specify the functional relationship between national income, money supply and govt. expenditure in the following form:

$\Delta Y = f(\Delta M, \Delta G)$

Where $\Delta Y \rightarrow$ change in national income

$\Delta M \rightarrow$ change in money(narrow) supply

$\Delta G \rightarrow$ change in govt. expenditure

For estimation purpose the function may be expressed in linear, log-linear or non-linear. We would like to give the function a linear shape as $\Delta Y = \alpha + \beta\Delta M + \gamma\Delta G$ which is obviously a multiple regression equation.
For analytical purpose we will estimate the following equations:

$\Delta Y_t = \alpha + \beta\Delta M_t + \gamma\Delta G_t$

$\Delta Y_t = \alpha + \beta\Delta M_{(t-1)} + \gamma\Delta G_t$

$\Delta Y_t = \alpha + \beta\ \Delta M_{(t-1)} + \gamma\Delta G_{(t-1)}$

Here change(Δ) means yearly change. t and (t-1) stand for present and previous year respectively.

Estimated Regression and Its Interpretation: By econometric use of basic data we have found estimated regression equations result of which are shown in the following table.

Table 1: Regression of changes in national income(Y) on current and lagged changes in monetary(M) and fiscal policy(G) variables (Sample period: 1973-74 to 1999-2000)

Eq. no.-1	Constant	ΔM_t	ΔG_t	$\Delta M_{(t-1)}$	$\Delta G_{(t-1)}$	R^2
1	2299.80	1.7125	2.8957			0.6732
	(2.3253)* *	(1.0582) NS	(2.9482)*			
2	1316.50		2.8247	3.6333		0.7815
	(1.5284)NS		(5.3390)*	(3.5479)*		
3	1776.30			2.0138	3.7691	0.6952
	(1.7709)* * *			(1.2955)NS	(3.7677)*	

Note: Figures given are regression co-efficient; the t-statistics appear below each co-efficient, enclosed by parenthesis. * significant at 1% level of significance ** significant at 5% level of significance *** significant at 10% level of significance
NS- not significant

National income has been regressed on ΔM_t(current year change in money supply) and ΔG_t(current year change in govt. expenditure) in equation-1. In this equation the estimated coefficients- monetary and fiscal influence- are 1.7125 and 2.8957 respectively. Their tabulated t-statistics 1.0582 and 2.9482 indicate that current year's change in money supply (ΔM_t) has no significant impact on current year change in national income(ΔY_t) while the impact of current year change in govt. expenditure(ΔG_t) on the same is significant. The value of R^2 for this equation reveals that current years change in money supply and govt. expenditure together account for 67% of the variation in current year change in national income.

Replacing ΔM_t by $\Delta M_{(t-1)}$ (previous year change in money supply) in equation-1 we have obtained equation-2. This replacement evidently improves the value of R^2 implying that previous year change in money supply ($\Delta M_{(t-1)}$) is more powerful than current year change in money supply (ΔM_t) in explaining the variation in current year change in national income(ΔY_t). At the same time the coefficient of monetary variable has become significant. But t-values in this equation, being 3.5479 for $\Delta M_{(t-1)}$ and 5.3390 for ΔG_t, indicate that current year change in govt. expenditure is more significant than previous year change in money supply while influencing current year change in national income.

When in equation-2 ΔG_t has been replaced by $\Delta G_{(t-1)}$ we have got equation-3. Here the replacement has reduced the value of R^2 from 78% to 70% implying that previous year change in govt. expenditure is weaker than current year change in the same in explaining the variation in current year change in national income. Moreover the t-values, 1.2955 for coefficient of monetary variable and 3.7677 for fiscal variable, suggest that among one year lagged variables only fiscal variable causes significant variation in national income.

From above discussion it is observed that in all respects fiscal policy is more influencing than monetary policy in bringing about a change in national income. It is also observed that current year monetary policy has no significant impact on current year income change while current year fiscal policy and one year lagged monetary policy has significant impact on the same. On the other hand, unlike monetary policy current period fiscal policy is stronger than lagged fiscal policy in changing national income. That means fiscal policy has shorter time lag than monetary policy in influencing economic activities. In other word, fiscal policy is faster and more effective than monetary policy in Bangladesh economy.

Reasons Behind the Relative Inefficiency of Monetary Policy in Bangladesh Economy: Some inherent factors which hamper smooth working of monetary policy in developing countries like Bangladesh are mentioned below:

1. **Unorganized Money Market:** A large portion of our money market belongs to unorganized sector. This sector operates totally outside the provisions of existing bank company act. Central bank has no control over this sector. Hence influencing only organized sector of money market, monetary policy fails to affect whole economy properly.

2. **Non-monetized Sector:** Non-monetized sector plays a vital role in our economy specially in rural economy. Monetary policy is unable to cover this sector with its usual mechanism. Translation of money supply into growth of economy breaks down in this case.

3. **Tendency to Keep Money Idle:** Peoples have a natural tendency to hold idle money. This idle money do not

take part in any economic activity. As it gets out from the circular flow of income it is one kind of leakage in economy, which inevitably slows down economic development process. So, monetary policy cannot achieve its objectives.

4. **Time Lag:** Monetary policy in Bangladesh economy, as mentioned earlier, has considerably larger time lag. That is , income expending mechanism of monetary policy is very much time consuming. It is not impossible to occur any disturbance in this length of time which may weaken the effectiveness of monetary policy.

5. **Command System in Financial Sector:** Before introduction of financial sector reform program in 1989 there was command system in the financial sector of Bangladesh. Bangladesh bank was the sole authority to fix up rates of interest on deposits and loans. The rigid interest rate policy sometimes resulted in negative real rate of interest which created problems in two dimensions. Firstly, the negative or lower real interest rate restricted the availability of credit through banking system. Savers began to feel disinterest in depositing their surplus money with the banks. Secondly, the lower rate of interest on lending inhibited the efficiency of investment. Since the price of capital was lower there arose some crazy investors who, without proper prior appraisal, invested fund here and there. Real investors were often deprived of the funds from the banking sector to finance their projects. As a result many uneconomic projects were undertaken at the expense of efficient ones.

In this scenario it was very difficult for monetary policy to achieve its goals. Because substantial portion of increased money supply became blocked instead of being absorbed in production process.

Remedial Measures: The following remedial measures may be taken to make monetary policy more effective:

1. To improve the effectiveness of monetary policy informal money market should be given a formal shape. Alternatively the central bank may enlarge the range of organized money market to capture the informal market and thus let the poorest people have easy access to the financial institutions.
2. Monetary policy can work smoothly only in an efficient and competitive financial system. In Bangladesh nationalized commercial banks dominating the financial sector, retard the creation of efficiency and competitiveness. Govt. may liberalize the financial system to a substantial extent to develop efficiency and competitiveness. It is, however, noted that financial sector reform program has been undertaken in Bangladesh in recent years with a view to liberalizing financial sector.
3. If non-monetized sector of the economy gradually becomes monetized scope of monetary policy will be broaden. And thus monetary policy will be able to perform comprehensively. Govt. may create adequate marketing and trading facilities so that non-monetized sector begins to be monetized.
4. People should be encouraged to invest their idle money or at least to deposit the idle money with banks. For this purpose govt. has to take suitable step to develop public consciousness and to promote investment environment. If anyhow idle money is injected into the circular flow of income the effectiveness of monetary policy will be stronger than before.
5. Distortion, which may take place in the time period required for monetary policy to finish its action, should be minimized. Authority should be careful and alert in this regard.

Conclusion

An attempt has been taken in this study to analyze the relative effectiveness of monetary and fiscal policy in Bangladesh economy. This study is based on 28 years data. From our empirical analysis we can draw the following marked lines:

In Bangladesh fiscal policy is relatively more effective then monetary policy in developing the economy.

Current fiscal variable is stronger than lagged fiscal variable while lagged monetary variable is more effective than current monetary variable. This fact implies that fiscal policy influences are faster than monetary policy influences.

Fiscal policy influences are more predictable than monetary policy influences.

The analysis reveals that policy makers should adopt fiscal policy rather than monetary policy to get quick and certain result.

Underdeveloped financial market, informal credit market, public unconsciousness etc. are the main factors which limit the speedy and certain working of monetary policy in Bangladesh.

Appendix

Data used in the study (Figures in crores)

Year	GNP(CP)	G	M
1973-74	7202.00	657.90	859.08
1974-75	12603.50	1047.20	831.14
1975-76	10776.40	1357.53	882.10
1976-77	10578.60	1739.51	972.80
1977-78	14759.40	2067.00	1224.10
1978-79	17460.10	2642.00	1524.80
1979-80	20145.70	3354.00	1731.80
1980-81	23908.30	3864.00	1986.30
1981-82	27092.10	4283.00	2012.10
1982-83	30005.70	4263.00	2634.30
1983-84	36207.60	5020.00	3549.90
1984-85	42558.00	6071.00	4231.80
1985-86	47815.30	7089.00	4927.90
1986-87	55474.90	7842.00	5262.80
1987-88	61759.30	8764.00	5047.70
1988-89	68212.70	10834.00	5460.70
1989-90	75983.70	11941.00	6368.70
1990-91	86090.50	12535.00	7203.70
1991-92	94035.30	13863.00	8257.20
1992-93	98686.30	15193.00	9062.60
1993-94	107900.20	18139.00	11167.10
1994-95	122593.20	20871.00	13179.40
1995-96	136163.20	22099.00	14459.40
1996-97	147407.30	23414.00	15167.00
1997-98	162351.60	25882.00	15888.50
1998-99	181314.80	29387.00	17249.40
1999-2000	198298.40	34053.00	19881.30

Sources of data:

1)Various issues of "Economic Trends" published by Bangladesh Bank.

2)Various issues of "S tatistical Year Book" and "S tatistical Pocket Book" published by Bangladesh Bureau of Statistics.

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