The Empirical Economics Letters, 4(4): (July 2005) ISSN 1681 8997

On the IMF Stabilization Program in Bangladesh

Monzur Hossain[+]

National Graduate Institute for Policy Studies (GRIPS)
7-22-1 Roppongi, Minato-ku, Tokyo 106-8677, Japan

monzur_h@yahoo.com

Abstract: This paper shows an application of the IMF Financial Programming Model to understand the relevance of the IMF stabilization program in Bangladesh started in 2002. The model has been revitalized in an innovative way to predict an equilibrium position of the economy, which ensures a viable BOP. The model outcome suggests that a viable BOP can be achieved through expenditure cut, restraining domestic credit and increasing net foreign reserve to around 1900 million US$, equivalent to 3-month import payment in the year. The model also suggests that Bangladesh needs to increase net foreign assets at a higher rate than domestic assets to maintain stable inflation rate and viable BOP position.

Keywords: Bangladesh economy, IMF stabilization program, IMF financial programming model.

JEL Classification: E10, E17, F00, F47, O11

1. Introduction

Bangladesh has sought assistance from the IMF to improve its fragile foreign asset situation, and the efforts have been intensified since the year 2002. In response to Bangladesh's appeal, the IMF came forward with its stabilization program (a 3-year arrangement: 2003-2006) after evaluating Bangladesh economy mainly in 2001-2002. For this purpose, the IMF sets some conditionality to make reforms in SOEs and state-owned banking sector, to ensure good governance etc. that the borrowing country must obey. It is now of an academic and policymakers interest as to how the IMF set the conditionality and how these work. This paper tries to provide answer of these questions

[+] The views expressed in this paper are author's own and not necessarily are those of the institutions with which the author is affiliated. The author expresses his deep gratitude to Prof. Hideo Hashimoto for his helpful guidance and valuable comments during preparing the paper.

by fitting the Financial Programming Model[1], which is well described by the Polak model (1957/1997).

Note that the IMF, as a part of its orthodox stabilization program, focuses primarily on BOP management, monetary and fiscal policy, exchange rate management and foreign borrowing of the country. The main objective of this paper is to evaluate different components of Bangladesh's economy that are the main targets of the IMF program, as well as to evaluate the relevance of the program, analyzing through the financial programming framework in an innovative and simplest way. Therefore, the contribution of this paper is mainly the simplified application of the Polak model and its outcome in reference to Bangladesh.

The IMF financial programming framework is the core of the theoretical and practical aspects of the IMF macroeconomic management programs in LDCs. The model has been making up of the backbone of the analysis leading to IMF conditionality since the 1950s. The conditionality can be described as the policy actions that a borrowing country agrees to follow as a condition for getting IMF credit (Polak, 1997). In the backdrop of IMF conditionality to Bangladesh in 2002, how Bangladesh could achieve viable BOP deserves some empirical analyses under the IMF Financial Programming Model (FPM).

The main cause of inflation and deficits in a country's BOP is the resource-expenditure imbalance of that country's public sector. It is more evident from the instances of the developing countries like Bangladesh where public sector expenditures are much higher than its revenues and thus fiscal deficits are largely financed through increasing money supply. Increase in money supply would lead to expansion of aggregate demand and thus increase in inflation. With the acceleration of inflation, imports of foreign goods and services would be cheaper relative to domestic goods and services while exports would be more expensive. As a result, domestic demand for foreign goods and services would

[1] The model determines the magnitude of domestic credit expansion required to achieve a desired balance-of-payments target under a predetermined exchange rate (see, Agnor, P. and P. Montiel, 1999).

increase while foreign demand for domestic good and services decreases. These developments would lead to a deficit in the BOP. For this purpose, as an anti-inflationary policy, general price level must be reduced by restricting money supply and credit to both public sector and private sector. This is the main theme of the model (SEN, 1999; Agnor, P. and P. Montiel, 1999).

Thus, the IMF programs aim to achieve reasonable domestic price stability and a sustainable balance of payments position. This can be achieved by controlling the growth of domestic demand to a level consistent with targets for inflation and for the foreign exchange reserves. The simplified application of the Polak model in this paper will help understand the IMF ongoing stabilization program in Bangladesh.

The paper proceeds as follows: Section 1 gives introductory description, section 2 analyzes the IMF financial programming model and discusses the outcome, section 3 discusses initiatives of the government toward maintaining Fund conditionality, and section 4 concludes the paper.

2. The Financial Programming Model and results

The IMF approach splits the economy into four sectors- private non-financial sector, government sector, banking sector and the foreign sector. The accounting relationships highlight the fact that any sectors spending beyond its income must be financed by the savings of the other sectors and that such excess spending by an economy is possible only when it is financed by net saving from the foreign sector. The IMF mandate ensures that the use of its resources by a beneficiary country is linked to a policy program that leads within reasonable time to a viable BOP position. Therefore, the analytical framework underlying the IMF programs focuses on the BOP and its various components as well as overall macroeconomic developments. Table 1 depicts the flow of fund in Bangladesh economy.

This section analyzes the identities and structural equations in a revitalized form of the Polak's model without loss of generality following SEN, 1999.

Table 1: Flow of fund in Bangladesh economy

Items\Year	2001	2002
Financial Sector (billion Taka)		
Assets	871	985
Lending to private sector	551	643
Lending to public Sector	229	263
Foreign reserve	91	79
Liabilities: Money	871	985
Income velocity of money	2.91	2.75
Balance of Payments -Foreign Sector (million US$)		
Current a/c	-43.3	240
Exports	6419	5929
Imports	8430	7697
Capital a/c		410
Increase in foreign reserve	-290	276
The National Income Account (billion Taka)		
Resources	2698	2848
GDP(nominal)	2533	2732
Imports	505	461
Exports(-)	348	345
Expenditures (Domestic absorption)*	2665	2849 (2834)
Public consumption	1965	2100
Private consumption	114	120
Public investment	402	436
Private investment	184	193
The Government Sector (in billion Taka)		
Revenues	235	267
Taxes	198	219
Expenditures	374	384
Public consumption	215	226
Public investment	159	158
Borrowing	123	136
From financial sector	29	30
From private sector	42	43
Foreign borrowing	52	63
Some other necessary indicators		
GDP (nominal) in billion Tk. (Projected)	2533	2732 (2780)
GDP (real) in billion Tk. (Projected)	2157	2252 (2276)
GDP growth (real) (Projected)	5.16	4.4 (5.5)
Change in nominal GDP(ΔY) (Projected)	--	199 (247)

+ Source: Bangladesh Bank and Ministry of Finance, Bangladesh Bureau of Statistics.

Note: Exchange rate, 1 US$= Tk. 57.9 (average of 57.4-58.4), Inflation rate is 2.79 and * indicates that domestic absorptions are somewhat adjusted for rounding error.

2.1 Balance of Payment Identity: The Foreign Sector

The financial programming framework links the financial sector with the BOP as illustrated by the following identities:

$$NI = GDP - NF = 2732 + 116 = 2848 \text{ billion taka}^2 \quad (1)$$

$$GDP = C + I + (X - M) = 2732 \text{ billion taka} \quad (2)$$

$$DA = C + I = 2834 \text{ billion taka} \quad (3)$$

$$CA = X - M - NF = -102 + 116 = 14 \text{ billion taka (or 240million US\$)} \quad (4)$$

E = Exchange rate = 57.9 taka/ US Dollar
NF = Payment to abroad-Transfer from abroad = -116 billion taka.

where NI = national income,
DA = domestic absorption,
CA = the balance on current account of BOP, and
NF = net factor payments to abroad.

The substitution of (2), (3), (4) into (1) gives the following identity:

$$NI = C + I + (X-M) - NF \Rightarrow NI = C + I + (X-M) - NF \Rightarrow NI = DA + CA,$$
and thus, $CA = NI - DA = 14$ billion taka (240 million US\$) (5)

The equation (5) shows that the current account surplus comes from the difference between national income and domestic absorption, and a deficit is the reverse case. This information illustrates the important principle that a current account deficit can be reduced by a decline in absorption (relative to income) or by an increase in income (relative to absorption). Similarly, a change in reserves will be equal to the current account balance plus any net foreign assets (ΔF). Here ΔF is assumed as exogenous. Thus

$$\Delta R = CA + \Delta F = 14 + 21 = 35 \text{ billion taka} \quad (6)$$

The equation (6) determines the required level of change in foreign reserve that would make the BOP viable. This equation can be used as a substitute of the BOP equation of the Polak's model. Combining equations (5) and (6) we obtain,

$$\Delta R = NI - DA + \Delta F \quad (7)$$

The explanation of equation (7) is noteworthy. Current account deficit implies that the excess of domestic absorption over income not financed entirely by foreign borrowing leads to a rundown of net foreign assets. Since the stock of foreign assets is limited in Bangladesh, the financing of domestic absorption in this manner is greatly limited. In that situation the IMF approves assistance to Bangladesh under certain conditions, known as 'Poverty Reduction and Growth Facility' (PRGF) to improve its foreign exchange reserve position.

Note that demand management policies directly influence domestic absorption and so thus the internal balance which refers to the conformity between aggregate expenditure (equal to absorption plus exports minus imports) and potential output at stable prices. Thus, current account surplus in 2002 indicates some degree of decrease in aggregate demand and inefficiency in demand management policies.

2.2 Monetary balance identity: The financial sector

The monetary balance identity can be expressed as:

$$\Delta M = \Delta R + \Delta D. \quad (8)$$

The identity above shows a balance-sheet relationship for the banking system, where the change in domestic money stock is equal to the sum of changes in foreign and in domestic assets. It is also assumed under the IMF approach that money demand is a function of income, prices and the opportunity costs of holding money, which takes the form:

$$\Delta M = k\,\Delta Y = f(\Delta y,\ \Delta P,...) \quad (9)$$

where, k is the inverse of the income velocity of money.

---

[2] Taka is the Bangladesh currency.

Hence, equations (8) and (9) can be combined to relate the change in net foreign assets, in which BOP is given by the difference between the change in money stock and the change in domestic credit (Polak,1997). So from (8) we have

$$\Delta R = \Delta M - \Delta D = k\,\Delta Y - \Delta D \qquad (10)$$

We may estimate the equation (10) by setting a target for change in reserve, constant exchange rate, a projected constant *v* and a projected value for change in nominal output. I assume that at projected 5.5% real GDP growth rate, the nominal GDP needs to be around 2780 billion taka (at 3.4% change in GDP deflator) for the year 2002. This assumption gives the analysis a *Keynesian closure*[3]. I also assume a projected constant velocity v = 2.5, and the change in foreign exchange reserve is 35 billion taka (with a target for 1900 million USD equivalent to 3-month import payment obtained from equation (6)). Thus the required stock of domestic credit is (from (10)),

$$\Delta D = 247/2.5 - 35 = 63.8 \text{ billion taka.} \qquad (11)$$

The equations (11) and (6) provides the projected equilibrium position of the economy E = (ΔY^*, ΔR^*) = (247, 35) as shown in Figure 1.

In the design of the IMF program, the implications of policies for both output and the price level are analyzed carefully and output and inflation targets are major factors in deciding upon the policy package.

Equation (5) shows that the gap between income and domestic absorption is equal to the current account. Further, equation (10) shows that the current account must be matched by the change in net foreign assets which is also equal to the difference between the change in the money supply and the change in domestic credit from the balance of the banking system, combining these equations we have:

$$\Delta R = CA + \Delta F = \Delta M - \Delta D. \qquad (12)$$

[3] Solved for changes in real output taking the price level as given. The opposite case is known as *classical closure.*

Substituting equation (5) to the equation (11) gives the overall financial programming framework that completes the story

$$NI - DA + \Delta F = \Delta M - \Delta D. \quad (13)$$

Thus the overall financial programming framework demonstrates the relationship between change in net foreign assets and changes in domestic credit. Therefore, we may conclude that if the change in domestic credit is higher than the change in money stock, it implies the deficit of current account balance and low net foreign assets.

2.3 Outcome of the model and the IMF conditionality

The projected equilibrium position of viable BOP is E = (ΔY^*, ΔR^*) = (247, 35), obtained from the equations (6) and (11). The intersection of MM and RR loci determines the change in nominal income and foreign reserve that could provide a viable BOP to the economy of Bangladesh for the year 2002.

Now we estimate E*, the actual equilibrium of the economy, to estimate it with the projected one in (11). Following equation (10) we have

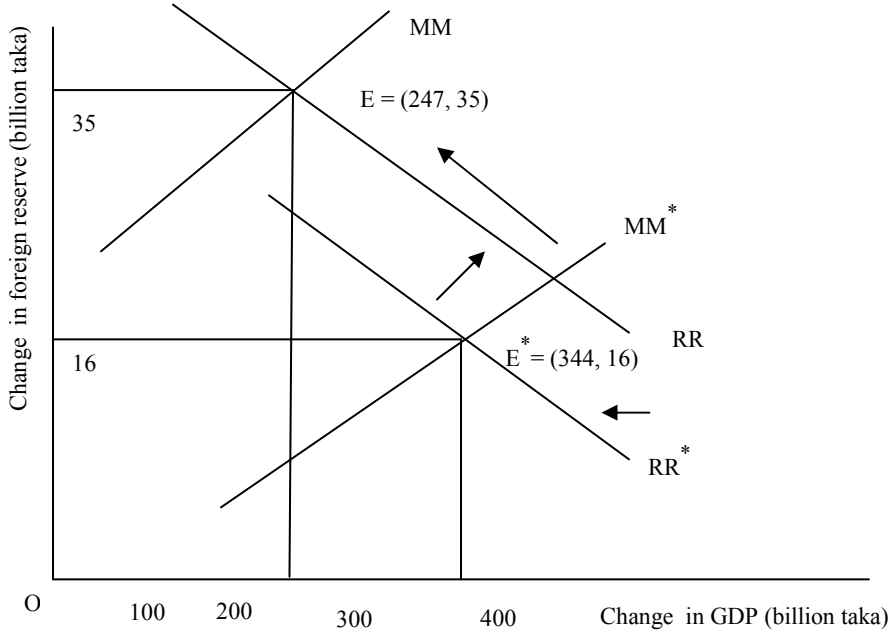
$$\Delta Y = v\,(\Delta R + \Delta D) = 2.75\,(16+109) = 344 \text{ billion taka} \quad (14)$$

Therefore, the estimated equilibrium of the current economic position is E* = (344, 16). Since the actual ΔY = 199 billion taka, the overestimation of change in nominal output in (14) arises from the discrepancies in existing excess domestic credit, low foreign reserve and high income velocity of money.

From Figure 1, to reach the viable position E from E*, we need foreign exchange equivalent to Tk.19 billion (approximate 328 million USD) more in 2002 to increase the official reserve for meeting up of 3-month import payment. On the other hand, the change in domestic credit needs to be reduced to 64 billion taka (around 40% decline is required)

and velocity of money should remain constant to 2.5%. Along these measures, the viable economy needs some unnecessary expenditure cut. This is the simple outcome of my analysis, obtained from the revitalized IMF financial framework, and the Figure 1 has been drawn by taking the notion of the Polak model (1997).

Figure 1: Projected equilibrium for Bangladesh's economy to attain viable BOP



We observe that to reach from the point E* to E it is necessary to increase foreign exchange reserve and reduce money supply through restricting domestic credit. Since Bangladesh had been maintaining its low inflation target in 2002, the main focus of Fund conditionality is therefore on the growth of the main three components of money supply: the increases in net foreign assets, and credit to the private and public sector (net domestic assets). Thus the IMF program has set separate target or ceiling for all three components of money supply growth, which needs to be maintained (see IMF country report 04/27). Because this is to ensure that the overall money supply target is achieved without excessive Government borrowing squeezing out the private sector from access to credit.

Restricting domestic credit (ΔD) accompanying some structural reforms is the main priority of the IMF stabilization program. A major portion of the domestic credit in Bangladesh is non-performing (varies between 30-40% of total loan) and sources of such loans are the NCBs (4 nationalized commercial bank). Thus, reasonably the IMF would target the NCBs for their restructuring to bring efficiency in the management. Besides, restricting credit to the government is mainly associated with expenditure reductions (reducing subsidies, wage freeze, reduction in military budget etc.) to improve the fiscal deficit.

Bangladesh already initiated floating exchange regime by fulfilling one of the IMF conditionality, market will determine the level of exchange rate. Thus the tool 'devaluation' is therefore ineffective. Increase in the exports of goods and services can improve the current account balance of the BOP in terms of increased foreign exchange earnings. This is also far reaching objective since Bangladesh is mainly an import-based country, and her export goods are less competitive and export basket is less diversified.

The trend of foreign aid and loans are decreasing (Table 2), and only the overseas worker's remittances show increasing pattern. Current account surplus is only due to the lion share of the workers remittance. The flow of remittance will hopefully remain more or less the same. It may decrease due to the volatile situation of the Middle East as the major remittance comes from the workers of the Middle East. There is no hope still for increase of exports; it may deteriorate after phasing out of the Multifiber Agreement (MFA) quotas for ready-made garments at end-2004.

Without impairing the growth, to maintain the stability it is necessary to make a balance between domestic assets and foreign assets. This can be done only through some structural reforms to ensure effective demand management policies.

Therefore, the following IMF-set conditionality seem to have been found highly relevant and consistent with my analysis: (i) fiscal reform for a sustained revenue effort and a shift in spending toward infrastructure and human capital; (ii) reform of the nationalized commercial banks (NCBs) to reduce bad loans and cost of fund; (iii) reform of the SOEs

Table 2: Major Macroeconomic Indicators

Indicators	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04
GDP growth	5.39	5.23	4.87	5.94	5.41	4.42	5.33	5.5
Growth of broad money	10.82	10.17	12.81	18.62	16.60	13.13	15.59	13.8
CPI Inflation (FY96=100)	3.96	8.66	7.06	2.79	1.94	2.79	4.38	5.8
Foreign exchange reserve (million dollar)	1719	1739	1523	1602	1307	1583	2470	2705
Exchange rate	42.7	45.46	48.06	50.31	53.96	57.43	57.90	58.9
Net Foreign Asset (billion Taka)	65.45	67.94	64.02	85.74	74.85	95.94	140.94	163.3
Overall budget deficit	3.7	3.4	4.6	6.1	5.2	4.7	4.3	4.2
Financing of overall budget deficit								
a. Net foreign financing	2.8	2.3	2.5	2.5	2.0	2.1	2.3	2.4
b. Net domestic financing	1.5	1.6	1.9	2.8	2.8	2.6	1.9	1.8
-bank	0.9	0.6	0.9	1.5	1.1	0.9	0.4	0.5
-public	0.5	1.0	1.0	1.4	1.7	1.7	1.4	1.3
Current account balance		-0.6	-0.9	0.0	-2.4	0.3	0.3	0.3

*Source: Bangladesh Bank, Bangladesh Bureau of Statistics, Bangladesh Economic Review

to ensure fiscal sustainability and renewed investment in infrastructure; and (iv) exchange and trade reform to reduce external vulnerability, and (v) reforms toward good governance (see the IMF Country Report 04/27).

3. Government Initiatives toward Implementing the IMF Conditionality

The government of Bangladesh (GoB) already has taken some initiatives toward meeting the conditionality. It includes partial independence to the central bank, privatization of two NCBs and restructuring the management of remaining two's, initiation of floating exchange regime (from May 31, 2003), monetary tightening in the year 2002/2003, fiscal initiatives to rise revenue and reduce expenditure etc. In light of GoB's effort, the IMF approved an amount of SDR 347 million (equivalent to US $518 million) under a 3-year (2003-2006) arrangement named 'Poverty Reduction and Growth Facility' (PRGF). The

amount would be disbursed in seven equal installments subject to good progress of the programs.

Revenue raising initiatives included increase in administered prices of gas, power and petroleum; rationalisation of income tax rates; tightening of the tax-net with mandatory income tax return submission for companies; strengthened surveys for identifying new taxpayers; and 10 to 25 percent regulatory duty on some imports. Expenditure-cutting measures included cancellation of some unproductive big projects, reduction of interest rates on National Savings Certificates, and downsizing the ADP, pruning low priority projects including some contracts under supplier's credits (Bangladesh Bank Annual Report, 2001-2002).

As a result, fiscal deficit narrowed down to 4.2 percent of GDP in 2003 from 4.7 percent of FY2002, foreign exchange reserves rose by 21.13 percent in 2002 and 26.4% in 2003 mainly due to increase in workers' remittance. The country had achieved its equilibrium level of foreign reserve in 2003. Real GDP grew by 5.2 percent in 2003, which was 4.4 percent in 2002. Inflation rose to 4.4% in 2003, which was 2.79 percent in 2002.

Overall domestic credit reduced to 9.48 percent in 2003 from 12.9 percent of the previous year (although our analysis indicates around one-third reduction), significant reduction comes from decrease of government credit (-3.96 percent). Credit to the private sector remains mostly the same (14.94 in 2003 and 14.39 in 2002). Money supply (M2) increased slightly from 36.1 to 37.9 percent in 2003 due to mainly increase in net foreign asset (62%) by the increase of workers' remittance from abroad. Consequent effect comes from lower expansion of reserve money in 2003 (3.31%). This indicates monetary tightening as prescribed by the IMF.

Annual Development Programme remains mostly the same as a percentage of GDP for the year 2002 and 2003. However, in the context of fiscal and monetary tightening, the higher GDP growth can be explained mostly by the growth in agricultural sector.

The analysis pinpoints that Bangladesh is going well on to the policy objectives of the IMF stabilization program. Although the initiatives have been taken in a hurry, the reform measures seem incomplete and partial. To make the reforms more successful, it requires strong political will and efficient and effective demand management policies.

4. Conclusion

The analysis in this paper, based on a revitalized application of the Polak model, finds the IMF conditionality highly relevant to maintain growth and stability of the economy of Bangladesh. What is needed is to carry out the reforms making consistent with the country-needs as well as it requires strong political will. To foster the economic growth beyond 5% level, it is a compelling necessity to go all out with structural reforms in various sectors.

Although restriction in domestic credit expansion can be a cause of stagflation, it can overcome by effective demand management policies and by making the financial sector more efficient through improvement of its corporate governance.

The application of the IMF Financial Programming model in this paper using aggregate data might be a ready reference to the policy makers and researchers to understand the IMF stabilization program in Bangladesh.

References

Agenor, P. and Montiel, P. (1999), 'Development Macroeconomics', 2nd Edition, Princeton University Press, Princeton, NJ.

Bangladesh Bank(BB), 'Annual Report, 2001-2002/2002-2003'.

Ministry of Finance, 'Economic Review 2001-2002/2002-2003', Government of Bangladesh.

IMF (1987), 'Theoretical Aspects of the Design of Fund-Supported Adjustment Programs', IMF Occasional Paper, No:55, Research Department of the IMF, International Monetary, Fund:Washington D.C.

IMF (1996), 'The IMF and the World Bank: How Do They Differ?' The IMF Economic Issues, International Monetary Fund: Washington D.C., pp.1-14.

Polak, J.J. (1957), 'Monetary Analysis of Income Formation and Payments Problems', IMF Staff Papers, Vol. 5, November, 1957, pp 1-50.

Polak, J.J. (1997), 'The IMF Monetary Model: A Hardy Perennial', Finance and Development, December 1997.

SEN, Huseyin. (1999), 'The IMF and World Bank approaches to macroeconomic management in developing countries', Journal of Economics & Administrative Sciences, Celal Bayer University, No. 5, 1999, pp 367-378.