Title: Monetary Policy and its Challenges in Developing Economies: An analytical Approach

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Abstract

The economic objectives pursued by the monetary authorities in developing countries of containing inflation by maintaining stable prices, low unemployment, stable currency and economic growth are arguably geared to transform the economies. However, the challenges of working with a less developed financial sector and unpredictable fiscal policy, puts these authorities in unenviable position. The spelled out objectives of the monetary authorities should therefore be looked at in light of the constraints that they have to navigate to understand fully why these objectives are rarely achieved. The prevailing debate is whether, the monetary authority in developing countries can effect successful polices without relying on IMF interventions. Further, monetary authority's lack of independence from political influence leads them to compromise sound economic policies for political expedience. Hence, there is strong sentiment that constant intervention by the IMF as a lender of the last result tends to accentuate poorly implemented polices. This paper attempts to address the effectiveness of monetary policy and the role of short term IMF economic programs in two Sub-Sahara African countries: Kenya and Cote d' Ivoire. The study seeks to determine whether the set or announced policy objectives by monetary authorities, in this case the Central Banks, are realized within the time frame announced. Like many developing countries, these economies are vulnerable to inflationary pressures, currency instability and balance of payments crises. The countries were selected in part due to several factors including: the availability of the data, the historical performance of their monetary authorities with clearly spelled out objectives, albeit with infant domestic financial capital market. The selected period of the study is from 1995 to 2000 using quarterly data.

1. Introduction

The economic objectives pursued by the monetary authorities in developing countries of containing inflation by maintaining stable prices, low unemployment, stable currency and economic growth are arguably geared to transform the economies. However, the challenges of working with a less developed financial sector and unpredictable fiscal policy, puts these authorities in unenviable position. The spelled out objectives of the monetary authorities should therefore be looked at in the light of the constraints that they have to navigate to understand fully why these objectives are rarely achieved. Although, the financial sector is less developed in sub-Sahara Africa, its role in macroeconomics policy cannot be underestimated. The prevailing debate is whether, the monetary authority in developing countries can effect successful polices without having to rely on IMF interventions. The undercurrent view is that the IMF intervention can be viewed as compromising sound economic policies for political expedience. This paper attempts to address the role of short term IMF economic programs in addressing balance of payment crises and the role on monetary authorities in the selected Sub-Sahara countries of Kenya and Cote'd Ivoire.

2. Literature Review

Several studies have attempted to explore the impact of external assisted programs on developing countries' economy. Specifically, the role of IMF structural adjustments programs, external aid programs on balance of payment and financial crises of developing economies and the overall effect on output cost of these programs. Willet (2001) found that there are different views that tend to support and oppose the IMF approach of international monetary system and the provisions of dealing with balance of payment problems. These views tend to find their support and critic from the Sub-Sahara countries experiences among the many other developing countries.

The economic structures of many of these countries are susceptible to economic fluctuations from exports on commodity prices which are their primary foreign exchange earners. With a weak manufacturing sector that is more inward looking than outward looking, and a financial sector that is less developed the countries tend to be vulnerable to external shocks. This usually tends to be the case for the non-oil exporting developing countries which depend on primary commodities. This vulnerability tends to force developing countries to depend on outside intervention either from IMF or other external source to attain their macroeconomics policy objectives.

Poor economic performances in developing countries have been traced among other things to weak financial sector where M2/GDP ratio as well as saving/investment ratio are low. Also, a balance of payment crises tends to precipitate financial crises. However, a well developed financial sector facilitates development of private sector, promotes savings and investment. There is strong sentiment that financial crises in developing countries have

been precipitated by financial repression among other factors due to government controls in the financial sector. McKinnon (1973), Shaw (1973) and Camen (et al 1996)observes that financial repression arises from a ceiling imposed on nominal deposit and lending interest rates at unsustainable levels relative to prevailing rate of inflation. Accordingly, this leads to a low and even negative rate interest rates.

In an attempt to address the financial crises, interest rates liberalization were enacted in many of these countries with the goal of reversing negative real interest rates and in process increase interest rates and investment spending. However, the role of monetary authorities in developing countries lacks a strong measure of independence as commonly expected in developed economies. In many instances the role of monetary authorities tends to be subservient to the political pressure with minimal consideration for economic objectives in place. Further, the goals set by monetary authorities tend to be augmented by the International Monetary Fund (IMF) programs under set agreement. In essence, the IMF has become a lender of the last result in augmenting untenable monetary policy positions. As Bird (1996) found out for developing countries: balance of payment difficulties, low international reserves, high external debt, low investment, as well as slow economic growth tend to influence LDCs borrowing from the IMF. Przeworski and Vreeland (2000) observe that a BOP deficit or a reserve crises tend to be a prerequisite of entering into an IMF program. However, other countries with BOP surplus have also entered into such programs to enhance other policy objectives. Although IMF intervention is sought for economic stabilization, Przeworski and Vreeland found that most often than not IMF programs seem to be counter growth. They argue that there are countries that do not participate in these programs that registered a higher rate of economic growth than those that take advantage of these programs. However, Bird (1996) argues in favor of IMF programs that focus on reducing BOP vulnerability especially for those countries that chose to participate. This is usually a more pressing case for Sub-Sahara countries that are more susceptible to fluctuations of export commodity prices which tend to aggravate the BOP.

As observed by Collier and Gunning (1999), Africa has less financial depth compared to other developing countries. The M2/GDP ratio with a 37 percent low and M2/M0 of 16 percent reveal that a significant percentage of the Africa economy relies on subsistence economy which is accompanied with high implicit taxation of the agriculture sector. Easterly and Levine (1997) found although financial liberalization was in effect, low financial depth of .03 percentage points, had a negative effect on Africa's economic growth. Inanga (1995) notes that Africa economic liberalization goal was to reverse negative real interest rates by increasing interest rates and investment spending, attract external financial capital and minimize capital flight. Arguably, price level and currency stability and economic growth have been the focus of the monetary authorizes in these countries. It is important to note that these policy goals are very similar to other developing and emerging economies in Asia and South America. Porzecanski (1979) found that Latin American countries' stated monetary policy objectives tend to be similar. However, there are inter-country differences that are reflected in inconsistency between the stated objectives and those pursued in practice. He observes that some of the countries have a tradition of price-level and currency stability while others have historically been high inflation and frequent currency devaluation countries. As is the case in some developing countries, changes in political regime and lack of central banks autonomy leads to changes in central banks objectives. Such political disruption leads to changes in economic objectives as the monetary authorities adjust to a new dispensation of political leaders. Another factor that leads to changes in central banks objectives is change in BOP. Krugman (1979) observes that whenever central banks objectives are certain specific things happen to an economy with BOP problems: reserves declines, there is a sudden speculative attack on domestic currency, and a post crisis period that results in gradual currency depreciation. Further, if the policy objective of using the reserves to stabilize the exchange rate is uncertain the BOP crises precipitate capital flight. According to Krugman BOP crises is a natural outcome of maximizing behavior by investors. Hence attempt by monetary authorities to defend fixed exchange rates leads to crises.

In an attempt to address these challenges several financial reforms in Kenya and Cote'd Ivoire were embraced. Kenya initially enacted financial reforms in 1989 by liberalizing interest rates. The process was completed in 1991. For Cote'd Ivoire liberalization of the economy was set in place under the 1994-96 IMF program (IMF 1998). By 1998 -2000 the thrust of monetary policy objectives were towards controlling inflation and strengthening the external reserve position. Price and trade liberalization in Cote'd Ivoire were enacted on majority of goods and services in conjunction with improvement on domestic credit under a regional agreement for West African Economic and Monetary Union (WAEMU). Kenya unlike Cote'd Ivoire has experienced several periods of balance of payment and currency crises in the 1980s and 1990s. In response to the prevailing challenges they attempted to handle the BOP crises by either seeking IMF intervention or financial reforms. This was fully attained in 1991.

The purpose of this study is to explore the effectiveness of monetary policy in a developing economy. The study seeks to determine whether the set policy objectives by monetary authorities (Central Banks) are realized within the time frame announced. Like many developing countries, these economies are vulnerable to inflationary pressures, currency instability and balance of payments crises. These countries were selected in part due to the historical performance of their monetary authorities. Given a functioning monetary authority with clearly spelled out

objectives was an influencing factor. Albeit accompanied by a developing financial capital market. Also the availability of data also offered convenient choice for the study.

The paper is organized as follows: Section 1 presents the introduction, section 2 offers literature review while the model and estimates are presented in section 3. The results on various tests are presented in section 4.The conclusion of the study and policy is presented in section 5.

3. The Model and Estimates

The basic methodology used in our study was first applied by Reuber (1964) on a Canadian study, Dewald and Johnson (1986) on a USA economy, Porzecanski (1979) on patterns of monetary policy in Latin America, Maxwell Fry on money, interest, and banking in economic development (1995) and Goldstein and Montiel (1996) on IMF supported stabilization programs. This methodology is based on the "reaction function" approach. However, the methodology in this study differs from the above approaches as follows: we seek to analyze the effectiveness of monetary policy on two similar countries with clearly set objectives but limited financial depth and underdeveloped domestic financial capital markets. However, dissimilarity exist in that Kenya operates under a flexible exchange rate while Cote'd Ivoire is under pegged exchange rate. It is important to note that the monetary objectives of the two countries are very similar. Under the liberalization program the two countries were committed to maintaining low levels of inflation and currency stability. The other objective was to promote income growth by creating an environment for easy credit policy during economic downturn and tight credit policy during inflationary period. The other objective is in having a more effective approach in addressing balance of payment (BOP) performance by reducing its volatility. Income growth does have a direct influence on the BOP where a high demand for imports may create huge deficits. Bird (1996) observes that BOP problems are not necessarily a result of economic mismanagement but may be due to external factors. The last objective that we seek to analyze is the international reserve as an indicator of external imbalance. This is more prevalent with the developing economies that are susceptible to seasonal variations in the production of the major primary agricultural products.

In constructing our reaction function model, the above variables (as determinant of monetary policy) are presented as follows:

$$Md= \zeta(Y,P, i_d, i_f, \sigma, W) \qquad 1$$
$$Ms=R+D \qquad 2$$
$$Ms= Md \qquad 3$$
$$D= Dg + Dp \qquad 4$$
$$Bd= \gamma(Y,P, i_d, i_f, \sigma, W) \qquad 5$$
$$Bs=\omega(i_f, \sigma, \Sigma CA, W) \qquad 6$$
$$Bs=Bd \qquad 7$$
$$\Delta Bs=P.G-\Delta D \qquad 8$$
$$W=M+K+B \qquad 9$$
$$\Delta D= \mu(Y,R,\pi, \sigma) \qquad 10$$

Where: Y is domestic income, P is the price level, i_d is nominal return on domestic assets, σ is the exchange rate, i_f is the foreign nominal interest rate, W is the domestic wealth, R is the international reserve, D is the net domestic credit, Dg is the net domestic credit to the government sector, Dp is the net domestic credit to the private sector, Bd is the demand for domestic bonds in nominal terms, G is government deficit in real terms, Bs is the supply of bonds, CA is the current account, W is the wealth, M is the money in nominal terms, K other domestic assets.

Equation 1, 2 and 3 represent the money market. Equation 4 decomposes domestic credit D into exogenous net domestic credit to the government sector Dg and endogenous domestic credit to the private sector Dp. Equation 5, 6 and 7 illustrates the behavior of the domestic bond market. Equation 6 shows that the net supply of credit is determined by the foreign interest rate, real exchange rate σ, the size of country's cumulated current account position ΣCA and wealth W.

Equation 8 links the nominal government deficits to the asset markets. It is assumed that the government budget deficits are equal to the change in domestic credit to the government plus loans from abroad or domestic. Equation 9 shows that domestic wealth W is exogenous and constitutes of money, other domestic assets consistent with a developing economy K and bonds B. Equation 10 represents the monetary authorities policy reaction function where net domestic credit is the monetary policy instrument. Hence, a change in domestic credit is a function of a change in income Y, international reserve R, domestic inflation π and exchange rate σ.

We recognize that there is a lag period between the observed macroeconomic indicators and the response of the monetary authorities. We use quarterly data for convenience estimates of the effectiveness of the monetary policy. While monthly data would offer an even more suitable data they are not readily available. However, the annual data may not effectively capture the reaction of the monetary authorities. Hence we settled on the quarterly data. The source of our data is from international financial statistics (IFS), IMF publications.

The econometric function takes the following specification for estimation purposes:

$$C_t = \beta_1 + \beta_2 Y_{t-1} + \beta_3 R_{t-1} + \beta_4 \sigma + \beta_5 \pi_{t-1} + \beta_6 C_{t-1} + u_t \qquad (1)$$

For the period where Kenya experienced currency crisis and IMF intervention programs were enacted, dummy variables are introduced to capture the monetary policy response. However, Cote'd Ivories did not register any currency crises during the period of study although financial liberalization was in effect. The model then takes the following form for estimation purposes:

$$C_t = \beta_1 + \beta_2 Y_{t-1} + \beta_3 R_{t-1} + \beta_4 \sigma + \beta_5 \pi_{t-1} + \beta_6 C_{t-1} + \beta_7 D1 + \beta_8 D2 + u_s \qquad (2)$$

The OLS estimates of the two models are presented below:

The table below provides the estimated results under equation 1 and equation 2. For our purposes, model 1 infers equation 1 as it applies to Kenya and Cote'd Ivoire. Model 2 infers equation 2 as it applies to Kenya. The results indicate that the reaction function explains between 33 and 36 percent of the quarterly variation in the domestic credit for the two countries. For Kenya in model 1, international reserve, exchange rate and inflation rate are statistically significant. As far as for Cote'd Ivoire real GDP growth, international reserve, and inflation rate they are statistically significant. Also for both countries the international reserve, exchange rate and inflation have the right sign. However, for Cote'd Ivoire exchange rate is not statistically significant. A further observation is that both countries appear to alter the monetary policy to deal with inflationary pressure, stabilization of the currency and international reserves. The rate of credit growth and international reserves are inversely related signifying that any change in the international reserve is reflected by change in domestic credit. The growth in income for both countries has the right sign although only Cote'd Ivoire is statistically significant. For Cote'd Ivoire, it may infer expansionary economic activity with a higher demand for domestic credit.

The results for model 2 show that exchange rate, inflation rate and currency crises were statistically significant. This may infer that currency crises had effect on domestic credit; however, the ensuing IMF programs were not statistically significant in altering the direction of the monetary policy. Several factors may have contributed to this short fall. Possibly the IMF programs were not implemented fully under the agreed objectives to have a noticeable effect on domestic credit. In some instances the government received the funding but failed to fully adhere to agreed conditionality. However, their commitment to currency stabilization and containing inflation may have been of higher priority.

4. Results Table

Independent Variable	Kenya Model 1	Kenya Model 2	Cote'd Ivoire Model 1
Dependent Variable: Rate of Credit Growth			
Constant	.2377* (4.1077)	.1294*** (1.2817)	.15133** (2.2112)
Real GDP Growth (t-1)	.22113 (.02815)	-.44774 (-.05005)	.13346** (2.2587)
International Reserve (t-1)	-.54305*** (-1.2674)	.69498 (.11448)	.12615** (1.9473)
Exchange Rate	-.24428* (-2.5902)	-.16503*** (-1.4142)	-.85973 .67819)
Inflation Rate (t-1)	-.34458*** (-1.2192)	-.43178*** (-1.4938)	1.32667** (2.5275)
Credit Growth (t-1)	-.11943 (-.57031)	-.01471 (-.06496)	-.16839 (.80178)
Currency Crises Dummy(t-1)		.040034*** (1.3930)	
IMF Programs Dummy (t-1)		.015795 (.57665)	
Adjusted R^2	0.33	0.33	0.36
D-W	2.0973	2.0989	1.6235

The number in parenthesis are t-n statistics
   * significant at 1%
  ** significant at 5%
 *** significant at 10%

5. Conclusion

Our study focused on the behavior of the monetary authorities in Kenya and Cote'd Ivoire. For the short duration of our study, it is possible to deduce that Kenya concentrated on containing inflation and currency stabilization while Cote'd Ivoire paid a closer attention to its income growth, and inflationary pressure. Also for both countries international reserve featured as a significant part of the monetary policy. On the other hand, exchange rate did not feature highly for Cote'd Ivoire as its currency is pegged to French Franc. However, for Kenya which has a flexible exchange rate it was of higher priority. It is evident that set policy objectives were not easily achieved due to constraints faced by the monetary authorities. The prevailing evidence is that monetary authorizes in developing countries tend to yield to political pressure which is exerted through fiscal policy. However, although currency crises had a bearing on domestic credit, the IMF programs did not yield the expected result in contain the crises. This could be traced to the failure of the government to embrace fully the structural adjustments programs as agreed to with IMF. The historical evidence supports the view that IMF programs will succeed under the right condition and where they are embraced by the recipient country. Otherwise the set objectives may not be fully realized.

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