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1 Central Bank Independence and Inflation Targeting: Monetary Policy Framework for Sub-saharan Africa*

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Abstract: Open system-holistic family view of the macroeconomic sector sees collaborations and policy coordination between the monetary and fiscal subsystems fundamental and inalienable in the holistic family-macroeconomic sector. Full independence (isolation) of the monetary subsystem from the fiscal subsystem is outlandish. The optimal point of independence shifts each time the system adapts to environmental factors but continues to lie between zero and full independence in the continuum of independence. This holistic view best describes the behaviour of modern macroeconomic sector in an ever increasingly globalized-digitalized economy. Sub-Saharan Africa can also inflation target by suitably embracing the prescribed monetary policy framework.

Key words: Holistic family, open system, central bank independence, inflation targeting, nominal anchor, secondary-subordinated anchor, dollarization

INTRODUCTION

The agency theory of Central Bank Independence (CBI) and virtually all other theories on CBI postulate that negative relationship between CBI and inflation is robust. Empirical evidence has overwhelmingly corroborated this. For inflation targeting, an Independent Central Bank (ICB) is an obvious pre-requisite. A Central Bank (CB) which is neither susceptible to political direction nor pressure and therefore operationally and managerially independent of government is axiomatic in a macroeconomic sector viewed as a holistic family-open system. Holism provides the degree of independence of CB assuredly, a feat hitherto unachieved by other theories.

OPEN SYSTEM VIEW OF MACROECONOMIC SECTOR

The macroeconomic sector can be viewed as an open system comprising of two components, namely: (1) the fiscal subsystem and (2) the monetary subsystem. For optimal performance, the two subsystems must interface (interconnect) and interact holistically. For the greatest output, neither of the subsystems can function in isolation of the other. The (CB) and the Federal Government (or the latter's equivalent) represent the monetary and the fiscal subsystems, respectively. The CB and its monetary policies (monetary subsystem) are not the only influences on inflation, for example. Fiscal wages and fiscal policies (fiscal subsystem) are important too. Therefore, a considerable premium on effective consultation and policy co-ordination between the CB and the government is desirable. The open system adapts to environmental factors by reorganizing itself according to the internal forces of its subsystems. This adaptation, we posit, results in a shift in the level of CB autonomy. This degree of independence of the CB from the core executive is a necessary requisite for the formulation of consistent optimal monetary policy decisions to combat the menace of inflation for the purpose of attaining price stability.

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TWO-FOLD CLASSIFICATION OF CB INDEPENDENCE II

The degree of independence of a CB can be revealed by political and economic indicators. In theory, a CB can be both politically and economically independent of the nation's core executive. Also, theoretically, it is possible for a CB to be fully dependent on the nation's core executive. Full independence and full dependence are polar situations that should rarely occur in practice. Indeed the degree of independence is likely to lie between the two extremes (Elgie, 1995). After all, independence is best conceived as a continuous, not a dichotomous variable (Goodman, 1992).

Political Independence

Political independence is a state in which the CB makes policy decisions without interference from the core executive. Therefore, the indicators of political independence should reveal whether by omission or commission, the governor of the CB and/or his deputies, in their official capacities, dealings and day to day functions are subordinated to the core executive or the latter's representative(s). For instance, government representatives on the board of governors of the CB are without a veto power indicates the CB is politically independent of the core executive, *ceteris paribus*. Also, an existing statute forbids the removal of the governor or any official of the CB from office without due process indicates independence of the CB from the core executive, *ceteris paribus*. If the salary of the governor and the salaries of other officials of the CB are statutorily fixed by the appropriate legislature(s) in the land, the CB is independent of the core executive, *ceteris paribus*. Also, if the capital of the CB is privately owned, the CB is independent of the core executive, *ceteris paribus*. In all, if the governor or any official of the CB is statutorily insulated from possible government interference, (in policy decision-making process), blackmail or intimidation, the CB enjoys a high degree of political independence.

Economic Independence

Economic independence is a state where the CB is able to use the full range of monetary policy instruments without restrictions from the core executive (Alesina and Summers, 1993).

The indicators of economic independence include the presence or absence of an overriding mission; the banks ability or inability to control interest rate moves, exchange rate parities and monetary policy generally; the obligation or interdiction to lend monies to the government; the intervention or otherwise in the budgetary process and the regulation or non-regulation of the wider banking sector. On the basis of these indicators, it may be postulated that if the CB has a large number of monetary policy instruments at its disposal and if it may use them without restriction, then the degree of economic independence from the core executive is high (Elgie, 1995).

TWO-FOLD CLASSIFICATION OF CB INDEPENDENCE II

The two fold classification (political and economic) of CB independence can provide sufficient criteria to judge CB independence (Elgie, 1995). At zero independence, the fiscal authorities are fully in charge of the macroeconomic system politically and economically. In this condition, the CB can use any of the monetary policy instruments at its disposal only at the discretion of the core executive. In this situation, the CB, for all practical purposes, is a mere consenting voice of the government. In this state, the fiscal authorities are at large and tend to perversely use monetary policy for short-term political purposes, either to finance fiscal deficits or stimulate economic activity and reduce unemployment. Under government pressure, the CB tends to increase currency volume with potential of increasing inflation. Zero independence represents a condition of sub-optimality in the macroeconomic system. The sub-optimality arises from the perverse behaviour of the fiscal authorities,

who, under discretion, simply attempt to create inflationary surprises in order to push employment above its natural level towards their own politically motivated higher level. Stakeholders (individual entities) understand the temptation of policy makers and correctly forecast inflation and thereby neutralizing any effect of inflation on employment. Consequently, employment remains at its natural level but monetary policy (discretion of the fiscal authorities) is subject to sub-optimal inflationary bias. This is the well known dynamic inconsistency of monetary policy under discretion-zero independence. This bias is a pure waste from a social point of view (Cukierman, 2006a). Monetary policy under zero independence, for all practical purposes, does not take into account environmental factors as detected in the input of the macroeconomic system and therefore results in a socially inferior equilibrium. Zero independence corresponds to 6 on the GASTII index of economic and political freedom (GIEPF).

According to Svensson (1997), between full independence and zero independence, there is an optimal level of independence at which bias is virtually eliminated. At this level, a CB that is inflation targeting can stabilize output at exactly the right amount. This optimal level (point) corresponds to zero (0) on the GIEPF.

Central Bank independence is a well established feature of the contemporary monetary order (Cukierman, 2006b). Most central banks in today's world enjoy substantially higher level of independence than twenty years ago or earlier (Cukierman, 2006b). The shift in the level of independence is a feature of an open-holistic system. Each time the macroeconomic system adapts to environmental factors, optimal level of independence shifts to a new level. The primary responsibility of the CB is to assure price stability mainly. According to the continuum of CB independence, an independent CB interacts and consults with the government and should support economic policies of the latter without prejudice to the monetary objective of price stability. To achieve its objectives the CB is given instrument independence. Delegation of authority to a non elected institution should be accompanied by accountability and transparency (Cukierman, 2006b). Accountability and transparency have become buzz words of monetary institutions in an era of economic globalization. The CB thus carries out its public policy functions of monitoring the operation of the financial system and controlling the growth of the nation's money supply with a lot of accountability and transparency focusing on its objective of price stability.

A BRIEF DESCRIPTION OF THE TRANSMISSION OF MONETARY POLICY

The money market and the capital market are subsystems of the financial system. Through monetary policy of regulating money and credit conditions, a CB can impact the financial system via the money market and thus bring about a strengthening of the economy. This is the most critical function of a CB. In order to carry out this fundamental function, the CB relies on the following monetary policy instruments: (1) interest rates; (2) reserves and (3) money. The most commonly used monetary policy instruments are market interest rates. The latter are pushed higher in order to slow borrowing and spending and pushing them lower if the economy needs to grow faster. The principal monetary target is usually the volume of reserves available to the banking system.

By manipulating the legal reserve balances with which depository institutions work, CBs can nudge market interest rates in any desired direction. When the supply of reserves is reduced relative to the demand for reserves, interest rate tends to rise as scarce funds are rationed among competing financial institutions. Conversely, an expansion in the supply of reserves usually results in lower interest rates because of the increased availability of loan-able funds. Some CBs use the money market instrument repurchase agreements while others use federal funds in the open market operations.

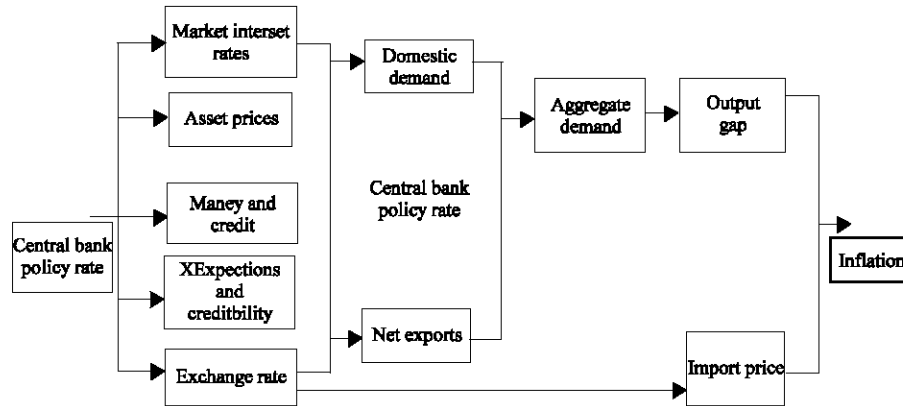


Fig. 1: The transmission mechanism of monetary policy

Source

Petursson, 2001a

As shown in Fig. 1, the first stage of the transmission mechanism is the financial system channel. There, monetary policy actions are primarily manifested by changes in short and long-term interest rates, assets prices, liquidity and the exchange rate of domestic currency. CBs can ultimately exert an impact on domestic inflation through the demand channel and the output gap (Petursson, 2001a).

THE PATH OF PRUDENCE

Unemployment can only be inimical to development and poverty-alleviating programmes in Sub-Saharan Africa. Philips Curve trade-off between unemployment and inflation is an illusion in the long-term (Economist’s view, 2007). The actual relationship between inflation and unemployment is positive in the long-run (Niskanen and Reynolds, 2002). In the long-run in Sub-Saharan Africa, very low unemployment rate is desirable. The latter can only be achieved in a very low inflation rate environment. The global economy is receptive to low inflation (price stability). The inflation targeters have lowest inflation rates on the globe and enjoy the lowest unemployment, price stability and steady growth since the late 1990s. Sub-Saharan Africa must take queue.

INFLATION TARGETERS

The following organization for economic cooperation and development countries were the first to target inflation: New Zealand, Canada, Israel, United Kingdom, Australia, Finland, Spain, Sweden and Germany.

All these countries started inflation targeting in early 1990s. New Zealand was the first to come on board. Chile, a developing country, came on board in 1990 (Table 1).

REPLACING EXCHANGE RATE-BASED ANCHORS

- Arguments advanced in favour of replacing exchange-rate based anchors by Independent Central Bank (ICB) and explicit or implicit inflation targeting are that this makes it possible to utilize monetary policy for domestic stabilization purposes (Cukierman, 2006b).

Table 1: Inflation-targeting countries

Country	Since	Target set by:	Instrument independent	Current target (%)	Target variable
Australia	1993	Government and central bank	Yes ¹	2-3 (b)	CPI
Brazil	1999	Government	Yes	4.5±2.0 ³ (p)	CPI
Canada	1991	Government and central bank	Yes ¹	2±1 (p)	CPI
Chile	1990	Central bank	Yes	2-4(b)	CPI
Colombia	1999	Central bank	Yes	3.5-5.5 ⁴	CPI
Czech Republic	1997	Government and central bank	Yes	2-4 ⁵ (b)	CPI
Hungary	2001	Government and central bank	Yes	4±1 (p)	CPI
Iceland	2001	Government	Yes	2.5±1.5 (p)	CPI
Israel	1991	Government	Yes	1-3 (b)	CPI
Mexico	1995	Central bank	Yes	3±1 (p)	CPI
New Zealand	1990	Government and central bank	Yes ¹	1-3 (b)	CPI
Norway	2001	Central bank	Yes ¹	2.5 (p)	CPI
Peru	2002	Central bank	Yes	2.5±1 (p)	CPI
Philippines	2002	Government and central bank	Yes	4-5 (b)	CPI
Poland	1998	Central bank	Yes	2.5±1 (p)	CPI
Republic of Korea	1998	Government and central bank	Yes ¹	3±1 (b)	UND ⁶
South Africa	2000	Government and central bank	Yes	3-6 (b)	CPIX
Sweden	1993	Central bank	Yes	2±1 (p)	CPI
Thailand	2000	Central bank	Yes ¹	0-3.5 (b)	UND ⁶
UK	1992	Government	Yes ¹	2 (p)	CPI (HICP)

¹Normally but government can intervene. ²p = point target, b = band target. ³For 2006, ⁴For 2005, ⁵Through 2005, thereafter 3% point target. ⁶CPI excl. food and oil prices. Sources: The central banks web sites, Truman (2003) and Carare *et al.* (2003)

- A second argument against exchange rate anchors is that in the current era of free capital mobility, the level of foreign exchange reserves needed to defend a fixed peg is likely to be prohibitive (Cukierman, 2006b).
- Reasonably, ICBs are in a better position to maintain price stability (Cukierman, 2006).

FLEXIBLE TARGETERS VS STRICT TARGETERS

An ICB is a flexible inflation targeter if its loss function penalizes both output and inflation gaps; it is a strict inflation targeter if it cares only about the inflation gap (Cukierman, 2006b). Flexible inflation targeting requires an operational measure of the output gap (Cukierman, 2006b). Cukierman (2005) shows that errors in forecasting potential output and the output gap are generally serially correlated.

Consequently, the monetary policy errors of flexible inflation targeters become serially correlated, as well. In periods in which potential output does not deviate much from its trend, the measured persistence in policy is small and may not constitute a serious problem for growth targeting (Cukierman, 2006b). In periods with large deviations of potential output from its trend, however, policy errors may be quite persistent over time. Thus, in the presence of flexible inflation targeting, the inherent unobservability of the output gap is particularly dangerous for nominal stability around and following turning points in the path of potential output (Cukierman, 2006b).

CAPITAL MARKET INFLATIONARY EXPECTATIONS AS A GUIDE TO MONETARY POLICY

Since prices are determined by the decentralized decisions of many sellers, the inflation rate is ultimately determined by the aggregation of their decisions. An important insight of new-Keynesian economics is that temporary price and wage stickiness make the aggregate inflation rate dependent on inflationary expectations. This implies that a current credible change in CB policy may affect the inflation rate immediately and not only with a lag, as is the case in backward-looking models.

OBTAINING INFORMATION ON INFLATIONARY EXPECTATIONS

In Chile and Israel, the joint availability of nominal and indexed bonds makes it possible to obtain up-to-date information on inflationary expectations. Such countries can use this information as a leading indicator of inflation and partially base monetary policy on it. The Bank of Israel has done precisely that to varying degrees in the last decade with reasonable success. One advantage of using inflationary expectations from the capital market as an indicator of monetary policy is that when unanticipated adverse shocks cause credibility to decline, the bank can act quickly to restore credibility before the decline has a serious impact on inflation. The availability of such an indicator is particularly attractive following the successful stabilization of inflation, when uncertainty about structural economic parameters is high. Bernanke and Woodford (1997) point out that if conventionally defined rational inflationary expectations are used as the sole policy indicator, the price level may become indeterminate and the inflation rate may diverge. This problem is sometimes referred to figuratively as the monkey in the mirror.

INFLATION TARGETING

Inflation targeting is a monetary policy framework that commits a CB to achieving low inflation by enabling the monetary sub-system to supplement the traditional transmission channel with an expectation mechanism (Berg, 2005). This framework consists of the following steps: (1) An ICB is *de jure* and *de facto* independent. That is, it must have instrument independence; (2) the objective is the attainment of price stability and the latter must be jointly declared by the government and the ICB in terms of an inflation target; (3) primary anchor is inflation rate; (4) inflation in the range of 1-3% is generally considered compatible with PS (Central Bank of Iceland, 2001). For developing economies including those in Sub-Saharan Africa, a range of 3-5% should be sufficient in the interim; (5) The time horizon during which the stated target is to be accomplished must be stated. For example, the macroeconomic system might publicly declare a 3% inflation a year during the following two years (Croce and Khan, 2000). This is because monetary policy affects prices with long, variable and uncertain lags. International studies suggest that the initial impact of monetary policy actions on prices is felt six to twelve months later, with its full effects taking up to two years (Central Bank of Iceland, 2001); (6) the ICB must be transparent in the implementation of the monetary policy. This commitment to transparency helps reduce uncertainty about the future course of monetary policy while enhancing the ICB credibility and accountability. The intentions of the ICB become verifiable. This may help reduce volatility in financial markets with the attendant beneficial effects of lowering risk and exchange rate premia (Croce and Khan, 2000); (7) where a Sub-Saharan African open economy is highly dollarized, it might find it prudent to use a fixed rate system of crawling pegs or target zones transitionally along-side an inflation target. In such a case the former is subordinate to the later (Leiderman *et al.*, 2006; Masson *et al.*, 1997).

MEASURES OF INFLATION

The most commonly used measures of inflation are the Consumer Price Index (CPI) and the Gross Domestic Product deflator (GDP). However, the CPI has greater operational advantages over the GDP because of the availability of the former on regular monthly basis which makes its monitoring easy. The CPI provides a measure of core inflation since items subject to idiosyncratic price changes arising from supply shocks, such as energy, food, government-administered prices, the effects of changes in indirect taxes and a host of others are excluded. Besides, it is seldom subjected to revision.

INFLATION RANGES VERSUS TARGET POINTS

Inflation targeters prefer inflation target ranges to target points. Because of monetary transmission lag, point targets are more likely to be missed with the attendant cost to credibility (Central Bank of Iceland, 2001) (Table 1).

CONVERGENCE OF INFLATION RATES

There is convergence of inflation rates among inflation targeting countries.

Factors contributing to convergence are: (1) integrated networked global economy; (2) focus on price stability as the main objective of all the targeters and (3) ability to overcome shocks such as large increases in petrol prices, large current account deficits and general financial instability such as the recent Asian crises.

INFLATION FORECASTS

Inflation forecasts act as an intermediate target; the discrepancy between the forecast and the inflation target prompts policy choices to close the gap. A typical inflation-targeting CB thus sets its instruments-interest rates, for example, at a level that will bring inflation for, say, inflation one or two years ahead-close to the inflation target at that future time. This forward-looking approach is obviously desirable, given the long and variable lags between changes in the monetary instruments and their impact on the ultimate policy goal (Croce and Khan, 2000).

Sources of Forecasts

Structural macroeconomic models; vector autoregressive models and market-based inflation expectations. To the extent that more than one of these indicators suggest that future inflation is likely to exceed the target, the need to activate instruments becomes more evident (Croce and Khan, 2000).

GLOBAL PRICE STABILITY

Global price stability can enhance investments and trade across borders even in real time. A major requisite for this is global convergence of inflation rates. Those who participate in the realization of global convergence of inflation rates will reap the benefits of increased global investments and trade. Sub-Saharan Africa cannot be oblivious to this; she should plan and join the band wagon of inflation targeters.

Table 2 indicates inflation rates in some African countries. By comparing Table 1 with Table 2, inflation targeting countries have much less inflation than African countries.

Influence of Output Gap

The ICBs of Sub-Saharan Africa should regard the output gap an important indicator for future development (Petursson, 2001b). Only at the level of demand (aggregate demand) where actual output corresponds to its potential level can inflation be stable (Petursson, 2001b).

Role of Monetary Policy

The role of monetary policy is therefore to maintain actual output close to its potential level and a low, steady rate of inflation (Petursson, 2001b). The manner in which this role is performed depends on the loss function of the ICB. The weight of the output gap relative to the inflation gap in the bank's loss function is operationally crucial. The higher this weight, the more flexible or less conservative is the bank. (Cukierman, 2006a, b). For reasons earlier stated in this study flexibility is desirable.

Table 2: Economic statistics in Africa by country, 2005

Country	GDP/PPP	GDP/PPP per capita	Real growth rate (%)	Inflation (%)
Algeria	233.2 billion	7,200	6.4	4.7
Angola	45.93 billion	3,200	19.1	17.1
Botswana	17.24 billion	10,500	4.5	8.3
Burundi	5.654 billion	700	1.1	14.0
Congo, Dem. Rep. of	40.67 billion	700	6.5	9.0 ¹
Equatorial guinea	25.69 billion	50,200	18.6	5.0
Eritrea	4.471 billion	1,000	2.0	15.0
Ethiopia	62.88 billion	900	8.9	6.0
Gambia	3,024 billion	1,900	5.5	8.8
Ghana	54.45 billion	2,500	4.3	15.0
Guinea	18.99 billion	2,000	2.0	25.0
Kenya	37.15 billion	1,100	5.2	12.0
Liberia	2.755 billion	1,000	8.0	15.0 ^d
Madagascar	16.36 billion	900	5.1	10.0
Malawi	7.524 billion	600	-3.0	15.4
Mauritania	6.891 billion	2,200	5.5	7.0 ^d
Mauritius	16.09 billion	13,100	3.0	5.6
Mozambique	26.03 billion	1,700	7.0	7.8
Nigeria	174.4 billion	1,400	6.2	15.6
São Tomé and Príncipe	214 million ^d	1,200 ^d	6.0 ¹	15.1
Togo	8.965 billion	1,700	1.0	5.5
Zambia	10.59 billion	900	5.1	19.0
Zimbabwe	28.37 billion	2,300	-7.0	585.0

Source: <http://www.infoplease.com/ipa/A0874911.html> (Downloaded on: Nov 28, 2006)

CONCLUSIONS

Inflation targeting is a technique of systematically reducing inflation with hardly any risk of moving the economy into deflation is premised on CB independence. The objective of inflation targeting-price stability is that of the macroeconomic system but its accomplishment is that of the ICB. The ICB is free to use any of its monetary policy instruments but must show complete transparency in its monetary policy formulation. The ICB is accountable to both the government and the public. Inflation targeters in the industrial economies have made history by reducing inflation rate to 3% and below in less than two decades. In return, prices have stabilized and employment and general economic growth have occurred in such countries. Some emerging economies of Asia and Latin America and transitional economies of former Eastern Europe have also been inflation targeting and have recorded comparable gains in terms of low inflation, price stability, employment and general economic growth.

In Sub-Saharan Africa only South Africa is inflation targeting and rewarded with relatively stable prices. The rest of the African sub region should wake up and join the bandwagon of inflation targeters so as to reduce inflation and stabilize prices in the sub region. The global trend is inflation rates convergence. Sub-Saharan African must be in the world zone of inflation rates convergence. For Sub-Saharan Africa to climb on board, its CBs must be de jure and de facto independent and formulate monetary policy as prescribed above.

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