Central Banking in Sub-Saharan Africa: Introduction and Overview

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Abstract

African central banks have covered an extraordinary distance since the early 1990s—closing the gap, in the process, between their own policy challenges and those of richer-country central banks. Some striking differences are nonetheless easily missed, amid the many parallels between central banking reforms in Sub-Saharan Africa (SSA) and those in the industrial and emerging-market economies. The abandonment of soft pegs in low-income SSA, for example, had less to do with capital mobility than with the failures of exchange control systems under pressure from fiscal imbalances and external shocks. Fiscal and quasi-fiscal demands, in turn, have almost certainly been more important than conventional stabilisation objectives as potential sources of inflation bias in SSA. Money-based disinflation programmes, to take a final example—often supported by tight fiscal rules under IMF conditionality—do not appear to have involved costly sacrifices of output, outside of South Africa. These observations, and more in the papers collected here, suggest that the distinctive structural and institutional features of low-income countries may have distinctive implications for the design and conduct of monetary policy. Collectively,
the papers in this volume issue a compelling call for monetary policy research that focuses squarely on the economic environment of low-income Africa.

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1. Introduction

The practice of central banking has been transformed in Sub-Saharan Africa (SSA) in recent decades, particularly among countries operating independent national currencies. Until the late 1980s, exchange controls and parallel market systems were pervasive. Interest rates were controlled, and the allocation of credit was subject to government directives. Central banks were formally charged with maintaining price stability and external balance, but they operated within a development agenda that was driven by the fiscal authorities—to which they were formally subordinate. With a few notable exceptions, the task of monetary policy was to fill chronic financing gaps while using direct controls to buy some insulation of inflation and international reserves (Pattillo and Masson, 2005; Honohan and O’Connell, 2008).

The CFA Zone represented an alternative tradition, in which monetary policies were formed at the supra-national level, influenced but not controlled by the larger members of the two monetary unions of the Zone. The French Treasury guaranteed the convertibility of the CFA franc at a fixed and unified exchange rate, and until the early 1990s, the French government was strongly opposed to adjustments in the peg. Union-wide limits on domestic credit to governments could be partly circumvented by individual countries (e.g., by borrowing through state-owned enterprises) but the combination of a hard peg and regional-level decision-making effectively removed monetary policy from among the levers available to member governments.1

Outside of the CFA Zone, the structural adjustment era brought major changes to the environment for monetary policy. Between roughly 1985 and 1995, foreign-exchange rationing systems were dismantled, market-determined exchange rates were introduced, interest-rate controls were liberalised and entry into the commercial banking sector was liberalised thus encouraging competition in the sector. Central banks moved gradually

1 SSA’s other monetary union, the Rand Monetary Area, operated on the principles of a single national currency, with monetary policy firmly in the hands of the Reserve Bank of South Africa. The smaller members of the union acquiesced in South African policy via their acceptance of the rand at par with their own currencies.
from direct to indirect instruments of monetary control. Africa’s ‘great inflation’ was conquered during the second half of the 1990s as country after country came to terms with a sharp reduction in the financing governments could expect from central banks. By 2005, many African central banks were operating under revised charters that increased the priority given to price stability, discouraged the use of direct controls, and afforded greater independence from political pressures. The vast majority now operate reserve-money frameworks that target a broad monetary aggregate and sharply limit domestic credit to government. These programmes draw heavily on the IMF’s Financial Programming model and are the direct descendants of the money-based stabilisation programmes of the 1990s.

Since African central banks now use largely conventional instruments to pursue conventional objectives, the massive policy literature developed within industrial- and emerging-market countries should be more relevant for SSA today than at any point in the past. However, despite the emergence of economic growth in SSA in the mid-1990s, the economic environment in low-income Africa remains very different from that of higher-income countries. Drawing on the global literature and Africa’s own experience, this volume offers four perspectives on the design of monetary policy in SSA. These contributions highlight key insights from the literature while identifying a set of urgent research issues.

2. The global context

The evolution of monetary policy in SSA reflects two developments of somewhat longer standing in global practice. The first is the move away from pegged but adjustable exchange rates as the primary nominal anchor of policy. These were the centrepiece of the post-war Bretton Woods system, but were abandoned as intermediate targets first by the industrial countries and then by emerging-market countries, as increases in capital mobility forced sharper tradeoffs between exchange rates and domestic monetary conditions. As Calvo and Reinhart (2002) have noted, developing-country central banks continue to intervene in foreign exchange markets, sometimes heavily. But explicit commitments to a narrow but adjustable path for the exchange rate are widely viewed as non-viable, and the use of such commitments is increasingly rare.

The second is the elevation of inflation control from one of several objectives of monetary policy to the dominant objective. A product of the inflationary 1970s and 1980s, this reflects an intellectual consensus among macroeconomists that poor credibility is the Achilles heel of an
independent monetary policy. The credibility problem, in turn, stems from the central bank’s temptation to sacrifice long-term inflation objectives in order to achieve short-term gains (e.g., in employment, exports or government spending). According to this view, a lack of credibility not only increases the average inflation rate but also compromises stabilisation policy, by weakening the short-run impact of monetary policy instruments on the real economy. The *sine qua non* of a successful monetary policy framework is an expectation by the private sector that the central bank will do what is required to keep inflation low over the medium term.

The 1980s and 1990s saw considerable policy experimentation as countries sought to reduce the costs of disinflation by establishing a credible anchor for inflation. Until 1990, the leading choices were monetary aggregates and harder exchange rate pegs. Hard pegs amount to giving up domestic monetary policy altogether: they tended to be chosen either in extreme circumstances (Argentina’s currency board, Ecuador’s dollarisation) or as part of an over-arching project of economic and political integration (the Euro zone). Countries in more modest policy straits favoured monetary aggregates as intermediate targets. Money targeting came to be viewed as destabilising in the face of shocks to portfolio behaviour, however, and was rarely pursued with great fervour following disinflation.

The most dramatic innovation in global practice came with the adoption of full-fledged inflation targeting (FFIT) by the Reserve Bank of New Zealand in 1989. Now practised by 27 central banks worldwide, FFIT replaces exchange rates or monetary aggregates with inflation itself (or in practice, an inflation forecast) as the intermediate target of policy. FFIT systems seek to institutionalise credibility, first and foremost by committing the central bank to a publicly announced numerical range for inflation. The target range is explicitly endorsed (often jointly decided) by government, which may provide the central bank with cover for politically unpopular choices. The central bank is held accountable for inflation outcomes, at least to the extent of being obliged to provide the reasons for deviations from its target range and to indicate plans for remedial action. Finally, the choice of a clear and intuitive policy target is thought to promote transparency, as does a commitment to regular communication with the public. According to its proponents, FFIT reconciles a strong inflation anchor with scope for pursuing other objectives of monetary policy. While only two countries in SSA have joined the ranks of formal inflation targeters to date, many others have taken on aspects of the framework and, as recently as 2008, were giving active consideration to making a full transition.
The global financial crisis of late 2008 provides a final bit of context. Its practical implications for policy have already been striking. Among industrial countries, the zero bound on interest rates has generated massive balance sheet operations involving non-traditional securities. Deflation risks now outweigh inflation risks, so that inflation targets—originally developed to rein in inflation bias—operate primarily as floors for expectations, rather than ceilings. Members of monetary unions have been forcefully reminded of the costs of giving up discretion when economic shocks are large and asymmetric. While its ultimate implications remain unclear, the crisis appears, at least for the moment, to have brought an abrupt end not only to the Great Moderation [Stock and Watson’s (2002) term for the reduction in macroeconomic volatility in the USA starting in the mid-1980s] but also to the triumphalism that characterised much of the monetary policy literature in the 2000s.2 Debates over FFIT and monetary union continue in SSA, but within an uncertain global context that seems likely to dampen the enthusiasm of central banks for major new institutional commitments over the next few years.

3. Four perspectives

In ‘The Design and Effects of Monetary Policy in Sub-Saharan African Countries’, Mohsin Khan (2011) provides a lucid overview of monetary policy design, focusing on the importance of a nominal anchor and the advantages of policy rules over discretion. The credibility consensus, as we will term it, was first formalised in the mid-1970s, in models that gave a prominent role to inflation expectations and embodied Friedman’s natural rate hypothesis—the proposition that the economy’s long-run real equilibrium (in which, by definition, expectations had converged to reality) was independent of monetary policy. In these models, discretion is defined as the opposite of precommitment—in particular, as the pursuit of policy objectives on a period-by-period basis, taking inflation expectations as given. The argument states that when operating in a low-inflation environment, a central bank that focuses on short-term costs and benefits will find it optimal to push inflation above what the private sector expects, in order to secure higher output or some other real objective. But this situation is not an equilibrium, if expectations are forward-looking. As soon as the private sector understands the central bank’s incentives, the economy will end up with an inflation rate that is high enough to discourage any activist impulse in

the short run, however well-intentioned. The resulting inflation bias is sub-optimal from a long-run perspective, because there are no real-side gains to offset the costs of higher inflation. It nonetheless persists over time, because the central bank is unwilling to absorb the short-term costs of creating an unexpected disinflation.

The inflation bias of discretionary policies comes out clearly in a comparison of the Debrun et al. (2011) paper, where precommitment is absent, with the O’Connell (2011) paper, where the central bank is able to commit to a policy rule. In both papers, the socially optimal inflation rate is zero in the absence of fiscal distortions. In the O’Connell (2011) paper, a variety of rules deliver this outcome in expected value terms, so that an inflation forecast stays close to zero. In the Debrun et al. (2011) paper, by contrast, expected inflation is $c/a > 0$ in equilibrium. This difference is central to the research questions being asked in these two papers: Debrun et al. (2011) are concerned with the impact of institutional interventions on inflation bias, while O’Connell (2011) focuses on the conduct of policy within a situation of established credibility.

The inflation bias of discretionary policies is so routine to contemporary macroeconomists that it is easy to forget that credibility problems are not the only source of inflation. In adapting a standard model to African conditions, for example, Debrun et al. (2011) paper introduce not one but two sources of inflation: inflation bias, and fiscal limitations that force a partial reliance on seigniorage to support government spending. The first of these comes straight from the credibility consensus: the government wants output to exceed the natural rate in the short run, even though such a goal is infeasible in the long run. Seigniorage requirements can produce a similar inflation bias on their own, but there is an important difference: a positive level of real inflation tax revenues is not only feasible in the long run but may be optimal, if fiscal distortions are severe and unavoidable. The optimum under commitment might therefore include positive

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3 This is in the simplest case, where fiscal limitations are absent. To derive the inflation bias, define $y^\nu$ as the log of exogenous ‘natural’ output (the equilibrium under perfectly flexible wages and prices) and let the central bank choose inflation to maximise the objective function $[y - y^\nu] - (a/2)\pi^2$, subject to the Phillips curve $y = y^\nu + c(\pi - \pi^r)$. Assume that in the absence of precommitment, the central bank takes expected inflation, $\pi^r$, as given. An equilibrium must jointly satisfy the central bank’s first-order condition for inflation—readily obtained after substituting for $y$ in the objective function—along with the rational expectations condition $\pi = \pi^r$. These conditions yield the equilibrium $\pi = c/a$ and $y = y^\nu$. The social optimum, which can be reached as a rational-expectations equilibrium under commitment, has $\pi = 0$ and $y = y^\nu$. See Walsh (2010).
inflation; and the bias from discretion may actually be smaller in the presence of fiscal distortions than it is in their absence.\textsuperscript{4} Heintz and Ndikumana (2011) take a broad, empirical approach to the question of what inflation rate is optimal for low-income countries in Sub-Saharan Africa, by surveying the cross-country empirical literature on inflation and growth. They argue that the optimal range for inflation, in terms of long-term growth, appears to be higher for low-income countries than it is for industrial countries.

In theory, of course, the considerations that determine a country’s optimal range for inflation may be distinct from those that govern the appropriate mix of rules and discretion. One could easily re-do the analysis of footnote 4, for example, with a time-varying inflation target in the loss function: the period-by-period inflation bias would be unchanged. But in practice, the case for policy rules is virtually always interpreted as a case for simple and transparent rules, like zero (or close-to-zero) inflation. Heintz and Ndikumana (2011) are arguing that the costs of such commitments, for a given level of credibility, may be higher in low-income SSA than they are in industrial and emerging-market countries.

The credibility consensus states that disinflation can be achieved at low social cost only by removing the underlying inflation bias. This requires reforms that support a forward-looking adjustment of private-sector expectations. Within SSA, these might include submitting to IMF conditionality on central bank lending to government, appointing inflation hawks as central bank governors and protecting them from political interference, or implementing elements of FFIT such as indicative target ranges for inflation and regular communication with the public. The Debrun \textit{et al.} (2011) paper suggests a further avenue: joining a monetary union. They

\textsuperscript{4} To see this in a version of the Debrun \textit{et al.} (2011) model, set $\gamma^n = 0$ without loss of generality, and let the central bank maximise $y - (\gamma/2)(\bar{g} - \bar{g})^2 - (a/2)x^2$ subject to the Phillips curve, given the government budget constraint $g = \pi\mu$, where $\mu > 0$ is the private sector’s holdings of real money balances and $\bar{g} > 0$ is the optimal level of public spending under non-distortionary taxes. Fiscal constraints are severe: we are assuming that the government has no conventional revenue sources. In this situation, the optimal inflation rate under precommitment is $\pi^* = \theta(\bar{g}/\mu) > 0$, where $\theta = \gamma\mu^2/(a + \gamma\mu^2)$ is between 0 and 1. Inflation and government spending are therefore positive under precommitment, but spending falls short of what the optimum would be if the government could collect revenues in a non-distortionary way. Under discretion, the equilibrium is $\pi = \pi^* + (1 - \theta)(c/a)$. This implies an inflation bias of $(1 - \theta)(c/a)$, which is smaller than it would be in the absence of fiscal distortions. The impact on overall inflation under discretion is ambiguous, but if $c/a > \bar{g}/\mu$, overall inflation actually falls when the central bank takes fiscal distortions into account.
show that on average across union members, the inflation bias due to discretion tends to fall when monetary policy moves from the national to the supra-national level. In their model, this is because the short-run Phillips curve gets steeper as members lose the benefits of competitive depreciation vis-à-vis other members. As their paper demonstrates, however, membership in a monetary union also exposes participants to the heterogeneous fiscal requirements of other members. For the fiscally stronger countries, this can easily mean a net increase in inflation. The authors conduct a cost/benefit analysis of union membership for the members of current and planned monetary unions in Africa. They find that, for most countries, incorporating the reduced inflation bias generates a modest increase in the net benefits of union (by comparison with a calculation that focuses only on standard optimal currency area considerations). But the overall net benefits of membership remain small in virtually all cases, and are sometimes negative. The authors take a sceptical view, on balance, of the economic benefits of reducing the number of African currencies.

In the second half of his paper, Khan argues for greater attention to bank credit in the formation of monetary policy in SSA, a theme also taken up by O’Connell (2011). The argument is that securities markets are thin or non-existent, so that bank credit has few substitutes other than internal funds in financing economic activity. At one level, of course, this simply strengthens the appeal of monetary aggregates as intermediate targets of policy, because the growth rate of private sector credit is identical to that of bank liabilities unless there are compositional changes on the asset side of the banking sector’s balance sheet. But if asset-side changes are important, the monetary aggregates may be inferior to credit aggregates—or an amalgam of the two—as intermediate targets, or as indicators of the stance of monetary policy.

Khan provides some suggestive evidence of the importance of private-sector credit, in the form of country-level correlations between growth rates of bank credit and GDP in SSA. Surprisingly perhaps, these are no higher on average than those reported by Blinder and Bernanke (1988) for the USA, where evidence of an important causal role for the credit channel has been inconclusive at best (Walsh, 2010). The comparison is not clean, because Bernanke and Blinder used quarterly data while Khan uses annual. Bernanke and Blinder report correlations of 0.50 (nominal) and 0.51 (real) for the 1974:1–1979:3 period and 0.38 and 0.47 for 1979:4–1985:4. The
situation may change in the wake of the global financial crisis, which has generated large swings in the external finance premium and the liquidity behaviour of banks. The paucity of evidence on the transmission mechanism in SSA, moreover, leaves tremendous room for research that accommodates the central role of banks in African financial systems. As emphasised by O’Connell (2011), understanding the asset side of bank behaviour should improve the conduct of monetary policy even within existing money-targeting frameworks, by reducing the slippage between reserve-money targets and higher monetary aggregates.

Heintz and Ndikumana (2011) take a sceptical view of FFIT. Their central claim is a very strong one: that under African conditions, too tight an allegiance to inflation targets compromises economic growth. At one level, this argument runs right into the teeth of the credibility consensus. Growth is a real target, after all, and monetary policy has significantly less traction over growth in the medium to long run than in the short run; so a proposal that central banks should pay greater attention to growth looks like a formula for reviving inflation bias. But Heintz and Ndikumana (2011) are opening up a deeper debate, and one that should receive serious attention from researchers working on SSA. They begin by arguing that some of the fundamental building blocks of the credibility consensus—including the optimality of very low inflation, the forward-looking nature of expectations and the dominance of demand in determining short-run output—are of unclear empirical relevance in SSA. Later in the paper, they argue that inflation targeting may undermine growth from the supply side, by producing excessive real interest rates and overvalued real exchange rates. These claims are controversial and important; there is a high premium on empirical research to help narrow the terms of the debate.

At the policy level, Heintz and Ndikumana (2011) retreat to a quarrel with narrow target ranges and limited flexibility, rather than with inflation targeting per se. They note with approval, for example, that South Africa—a formal inflation targeter—has allowed inflation to exceed the target range when the economy has been hit by adverse supply shocks. As pointed out in the O’Connell (2011) paper, this pattern is consistent with maintaining an effective inflation anchor provided that something like the Taylor principle holds. But the deeper issues they raise remain unresolved—for averages across SSA in Khan’s table, which refers to the 1991–2007 period, are 0.40 (nominal) and 0.38 (real).
example, whether the appropriate exercise of flexibility can indeed increase
the economy’s average growth rate, or—as in the Taylor rule literature—
merely alter the volatility of output around a given path.

O’Connell (2011) provides a systematic introduction to the use of
dynamic, stochastic general-equilibrium (DSGE) models, which have
become workhorses of the monetary policy literature and are increasingly
popular within central banks in the industrial and emerging-market
countries. These models can be adapted to study imperfect credibility,
but their dominant use to date has been in the search for policy rules
that produce desirable economic outcomes if implemented credibly. The
DSGE approach incorporates four main features: a reduced form that is
explicitly built up from behavioural relationships; model-consistent expec-
tations (though these may be mixed with naïve ones); an explicit descrip-
tion of the stochastic shocks hitting the economy; and a feedback rule that
determines monetary policy instruments as functions of the observed state
of the economy.

O’Connell (2011) argues that DSGE methods are poised to play an
increasingly important role in SSA, both in the analysis of monetary
policy and in exploring the research issues raised in this volume. As
he points out, the task of using DSGE methods to adapt DSGE models
to African conditions is not trivial: like the credibility consensus, existing
models reflect the industrial-country and emerging-market environment
within which they were developed. Structural conditions that differen-
tiate the African environment include the predominance of domestically
produced food in the consumption basket, the small size of the formal
sector, the importance of supply shocks and non-diversified commodity
exports and the prevalence of imperfect capital mobility. He shows how
the first of these features can be accommodated within an otherwise con-
ventional DSGE model, with and without private grain storage.

Money aggregates are now far more prevalent in SSA, as intermediate
targets, than they are elsewhere in the world. Khan and O’Connell both
cite the standard critique of money targets, that they exacerbate macroeco-
nomic volatility in the face of shocks to portfolio behaviour. But the key
policy question is whether alternative approaches are superior. O’Connell
(2011) shows how DSGE models can be used to compare alternative
rules. In practice, of course, central banks with money growth targets—
like those committed to FFIT—tend to pursue their intermediate target
with flexibility. The degree of flexibility can be varied within a DSGE
model, making these models a promising platform for investigating
some of the tradeoffs raised by Heintz and Ndikumana (2011). This
could include the application of DSGE methods to systems in which inflation and exchange rate stability both receive prominence as policy objectives. Stone (2003) uses the term ‘inflation targeting lite’ (ITL) to describe such frameworks. Botswana and Mauritius provide leading examples of ITL in SSA, but the label may also apply to many of the money-targeters in SSA, given the intermittent and sometimes sustained attention these countries appear to pay to the exchange rate.

The predominant use of DSGE models, as O’Connell (2011) emphasises, has been in studying the fluctuations of the economy around a largely exogenous growth path. In such a world, the differences between a policy that merely does no harm and one that is spectacularly competent may not be large (Lucas, 2003). In applying DSGE methods to low-income countries, therefore, it seems to us that serious work should be devoted to understanding and incorporating the links between monetary policy and medium-term growth. The questions raised by Heintz and Ndikumana (2011), for example—does FFIT undermine growth by producing extended periods of excessive real interest rates and overvalued currencies?—can, in principle, be studied in a DSGE context, but only one in which private investment has been endogenised and key market failures are adequately modelled. Persistent effects of monetary policy on welfare—if they emerge in such a setting—might then provide a clear and quantifiable case for greater activism than in a standard FFIT framework. Any such analysis should, of course, also be subject both to a ‘policy assignment’ standard—is monetary policy the appropriate approach to the distortion in question, given other available policy instruments, including fiscal ones?—and to a realistic assessment of government and central bank capabilities.

4. Conclusions

African central banks have covered an extraordinary distance since the early 1990s—closing the gap, in the process, between their own policy challenges and those of richer-country central banks. Some striking differences are nonetheless easily missed, amid the many parallels between central banking reforms in SSA and those in the industrial and emerging-market economies (South Africa belongs to both groups). The abandonment of soft pegs in low-income SSA, for example, had less to do with capital mobility than with the failures of exchange control systems under pressure from fiscal imbalances and external shocks. Fiscal and quasi-fiscal demands, in
turn, have almost certainly been more important than conventional stabilisation objectives as potential sources of inflation bias in SSA. Money-based disinflation programmes, to take a final example—often supported by tight fiscal rules under IMF conditionality—do not appear to have involved costly sacrifices of output, outside of South Africa.

These observations, and more in the papers collected here, suggest that the distinctive structural and institutional features of low-income countries may have distinctive implications for the design and conduct of monetary policy. Collectively, the papers in this volume issue a compelling call for monetary policy research that focuses squarely on the economic environment of low-income Africa.

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