Factors in the Choice of Monetary Policy Regime

Christopher Adam

University of Oxford, UK

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Email: christopher.adam@economics.ox.ac.uk

1. Introduction

Over the last quarter century and in all corners of the world, perspectives on the role of monetary policy have changed radically, no more so than on the African continent. As recently as the early 1990s the prevailing orthodoxy across much of Africa was that monetary policy could and should be deployed as a purposive instrument in the broader development process (Honohan and O'Connell, 1997). Since Independence, monetary frameworks in Africa had thus been largely geared more towards the (cheap) financing of government activities and the extension of subsidized credit to other favoured sectors than to the control of inflation. Moreover, weak fiscal control – informed to a degree by the same orthodoxy – meant that monetary policy was conducted in an environment of substantial fiscal dominance, so that even basic policy coherence was achieved only by recourse to progressively tighter exchange controls and financial repression (Honohan and O'Connell, 1997 and Masson and Pattillo 2005). Over time, the combination of fiscal dominance and the overburdening of monetary policy with multiple objectives led to the inevitable outcome that many regimes neither delivered low inflation nor, as a result, did they post sustained gains on the other policy objectives either.

By the 1990s the evident failure of an (over) activist monetary policy heralded concerted moves to dismantle control regimes, liberalize foreign exchange markets and establish more robust fiscal regimes (often, but not exclusively, in the context IMF-supported stabilization programmes). As a result, although a number of African countries still remain in the grip of severe macroeconomic instability, central banks today are on average under less pressure to accommodate large domestic fiscal deficits, while the dismantling of systems of financial repression and the elimination almost everywhere of exchange controls has created conditions where a positive approach to re-designing monetary frameworks has become both more meaningful and more pressing. In reality, few if any countries will approach this *tabula rasa*; for most, including Nigeria, the challenge involves, first: an assessment of the extent to which existing frameworks -- which often mean ones shaped through extended engagement with IMF-supported stablilization programmes -- need to be modified to effectively manage current conditions; and second, whether such frameworks constitute a suitable basis for moving towards a full-fledged inflation targeting regime, were the decision to move in this direction to be taken.

To set the stage for subsequent contributions to this volume, I use this introductory paper to provide a brief discussion of the characteristics of alternative monetary frameworks, including the contemporary inflation targeting regime (IT). My objectives are therefore to provide some background evidence on the factors guiding choice of monetary regimes and to show how this has moved recent theoretical and policy debates in the direction of inflation targeting. This is the main purpose of Section 2. One of the themes I emphasize is the extent to which effectiveness of these different regimes are likely to be shaped by the structural endowment and characteristics of a country's financial sector and by it historical legacy. This leads to

the discussion in Section 3 which attempts to identify the key issues and structural constraints facing economies such as Nigeria in defining their monetary framework. The discussion in this Section 3 does not seek to be comprehensive but rather, given the theme of this workshop, it will focus particularly on the merits or otherwise of moving towards an IT framework in the context of African emerging markets.[1]

2. Monetary policy and monetary frameworks

Today, most governments, and certainly most central bankers, would subscribe to the view that the role of monetary policy can be reduced to three core functions. The first is to control the average level of prices, in other words to stabilize the value of the domestic currency. Why should this matter when sustainable and inclusive long-run growth requires getting *relative* prices right which is fundamentally a general equilibrium problem over which monetary policy has little or no leverage? The answer is that while classical monetary neutrality may prevail in the long run, it clearly does not in the short- or medium-run, either in terms of the level of inflation or its volatility. Nor is this non-neutrality of money a positive factor in supporting sustainable economic growth. High and volatile inflation obscures relative price signals, distorting resource allocation; it creates fiscal effects, through the tax system and seigniorage; and generates powerful real and distributional effects from asset markets in all but the most perfectly indexed environments. This non-neutrality clearly influences the short and medium-term path of the economy but, to the extent inflation and inflation volatility impacts on fiscal choices, financial sector development and domestic and foreign investment behaviour, it also feeds back adversely onto long-run growth. As a result, the *sine qua non* of any monetary framework therefore becomes the delivery of low and stable inflation. The prevailing consensus sees this function as being best pursued through some form of policy rule designed to minimize or eliminate the incentives of the monetary authorities to operate in a time-inconsistent manner.[2]

The second function is to moderate fluctuations in the path of domestic output relative to its trend rate of growth, by judicious tightening or loosening the stance of monetary policy as circumstances dictate. This is fundamentally a discretionary function and hence to the extent that the output stabilization objectives may, of course, run counter to inflation stabilization objectives and *vice versa,* this potentially

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[1] This paper draws heavily on joint work with Stephen O'Connell (see Adam and O'Connell, 2006).
[2] The notion of time-inconsistency dates back to the Nobel-prize winning work of Kydland and Prescott (1977) and was developed in the context on monetary policy by Barro and Gordon (1983). The essential idea is that when the authorities set their policy instrument only once the private sector has formed its expectations about inflation (possibly based on some prior announcement about the stance of policy) they will have an incentive to renege on their announcement. Specifically, a monetary authority concerned about output as well as inflation will have an incentive to announce a commitment to low inflation and then renege on this commitment to exploit the short-run Phillips curve so as to boost aggregate demand. Anticipating this incentive, however, the initial policy announcement will not be credible and private sector expectations will adjust accordingly. In this situation, to make their announcements credible, the monetary authorities may want to make a commitment to a fixed and verifiable policy rule.

sets up a tension between rules and discretion at the heart of monetary policy. It is this tension that a coherent monetary framework must resolve, by recognizing the relative weights placed on these apparently competing objectives and prioritizing them accordingly. As I shall discuss below, contemporary monetary theory sees the reconciliation of these objectives emerging from a system of 'constrained discretion' such as embodied in an inflation targeting framework, where the institutional constraints defining the credible public commitment to an inflation target creates the space for the authorities to pursue output stabilization.

The final function of monetary policy is less direct. It is to support the smooth functioning of the payments system and the financial system more generally so as to promote the efficient market-based allocation of credit and pricing of risk in support of efficient investment and growth. As above, this objective may not necessarily be consistent with price and output stabilization and, again, a coherent monetary framework will seek to reconcile and prioritize these competing objectives.

To this list some may add a fourth function: to ensure that monetary policy choices are not themselves sources of macroeconomic instability.

Monetary frameworks: definition and desirable characteristics

A monetary framework defines the institutional arrangements under which monetary policy is made and the constraints under which monetary policy makers operate. Most frameworks are built around three pillars. The first is the institutional structure and mandate of the central bank which defines its relationship with government and shapes its formal obligations with respect to its principal functions as regulator of the financial sector, banker to the government and monopoly issuer of domestic money [3] The second pillar articulates the monetary policy objectives, narrowly defined, and the instruments and operating procedures employed to meet these objectives. Essentially the focus is on the international and domestic purchasing power of the domestic currency, and how concerns about the value of the currency are reconciled with other objectives such as output stabilization and (nominal and real) exchange rate stability. The third pillar defines the central bank's role in the regulation of the financial sector and embraces concerns about precautionary risk management, ownership and competition policy and, in the case of most emerging markets, the promotion of innovation and financial market development.

In this section I concentrate principally on the second of these pillars relating to the formulation and conduct of monetary policy. I start by outlining some of the key design characteristics of an effective monetary framework before considering the features of the main contemporary frameworks against these criteria. I define five

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[3] In the case of institutional hard peg arrangements this will include the central bank's relationship with external or supranational agencies such as the French Treasury in the case of the CFA Franc Zone, the Reserve Bank of South Africa in the case of the members of the Common Monetary Area of Southern Africa and the European Central Bank in the case of the Eurozone countries.

desirable characteristics of a monetary framework. The first is <u>fastness,</u> by which I mean that the framework will be built around a secure and effective anchor for inflation, so that the growth rate of domestic prices and other nominal variables will follow closely the growth rate of the anchor over medium- and long-run horizons. The anchor, in this parlance, is some quantity or price in the economy that is either determined exogenously or is under the influence of the authorities.[4] To the extent that it holds fast, the growth rate of the anchor then determines the average rate of inflation in the domestic currency, around which relative prices are established. In the long-run the growth of *all* nominal variables will converge to the pre-determined rate of growth of the anchor (plus or minus any real growth in their underlying real component).

Second, and related, there will be a <u>predictable and credible</u> link (*ex ante* and *ex post*) between the instruments at the disposal of the authorities, the intermediate target (i.e. the anchor) and economic outcomes, particularly the level and volatility of inflation and output, over the relevant operational horizon, which in most cases runs from the current month or quarter up to a period of 2-3 years. As Woodford (2007) notes, an anchor which holds fast in the long-run may not be particularly useful if inflation deviates substantially and persistently from the anchor over the horizon relevant for agents' decision-making.

The third characteristic is <u>instrument independence</u>, in other words, the ease, both *de jure* and *de facto,* with which the monetary authorities can deploy sufficient and appropriate instruments in pursuit of their legitimate policy objectives. Instrument independence requires coherence between government and the monetary authorities but is also heavily influenced by the structure of financial markets and by the credibility of the regime; for example in circumstances where credibility is low, there by be no willing buyers for long-dated bonds.

Fourth, given preferences over objectives, the regime must have the <u>flexibility</u> to delegate sufficient discretion to the monetary authorities to react efficiently to exogenous shocks so as to stabilize domestic output while continuing to respect the regime's commitment to low and stable inflation: this is the payoff to 'constrained discretion'.

Finally, the regime should be <u>adaptable</u> in the sense that there is sufficient flexibility in institutional forms and capacity to allow for modification and adaptation to support the smooth transition between one anchor an another, for example between the reserve-money framework currently operated in Nigeria and an explicit full-fledged inflation targeting regime.

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[4] Strictly one should distinguish between those anchors which seek to stabilize the price *level*, typically by fixing it in terms of some standard commodity such as gold, and anchors which seek to stabilize the *growth* in the price level. Whilst in the former case a successful anchor would see the price level return to a well-defined mean in the long run, in the latter case there would no mean-reversion in the price level. In the discussion that follows, the focus will be on anchors aimed at stabilizing the growth rate of prices, i.e. the rate of inflation.

The choice of nominal anchor and the 'impossible trinity'

Virtually all contemporary monetary regimes can be thought of as 'inflation targeting' in the strict sense that a central -- if not the dominant -- objective of monetary policy is to establish a credible anchor for domestic prices. It makes sense, therefore, to characterize different regimes in terms of their choice of nominal anchor since this, in turn, will fundamentally shape the entire framework. In this section I provide a brief description of alternative frameworks; other papers in this volume, notably that by Stephen O'Connell, add rather more analytical detail.

The choice of anchor is not an un-constrained one; rather it has implications for how the authorities address the other concerns competing for their attention. The fundamental nature of the constraint is encapsulated by the notion of the 'impossible trinity' or the 'trilemma' which states that beyond the short-run no country can simultaneously maintain an open capital account, target the exchange rate and pursue an independent monetary policy.[5] One of the three must be abandoned even though each is desirable in its own right: open capital accounts to the extent they support the efficient global allocation capital to high-return investment opportunities; exchange rate targeting to support trade and sustain a stable external value of the currency; and an independent monetary policy to pursue domestic output stabilization objectives.

In keeping with many countries elsewhere, and for much of post-independence era, African economies reconciled the trilemma through controls on capital flows (and, in many cases, through controls on current account flows). Moreover, despite the liberalization of capital account transactions from the mid-1990s onwards, many African economies have continued to successfully dodge the bullet of the trilemma, intervening aggressively in foreign exchange markets while at the same time using domestic monetary policy (by manipulating interest rates or the money supply) to attempt to influence aggregate demand. This appears to have been possible because while capital account restrictions have been lifted *de jure,* the response of private capital has been slow, whether for reasons of risk and uncertainty or simply ignorance. Since the early 2000s, however, as returns have fallen, risk premia have become compressed and private capital has sought out ever more exotic markets, the volume of private return-sensitive portfolio capital flows to Africa has grown dramatically so that countries such as Zambia, Kenya, Ghana and Malawi as well as Nigeria, have been confronted for the first time by the full force of the trilemma.

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[5] To illustrate, consider the case of a positive external shock which raises the *ex ante* return to domestic bonds. With an open capital account private capital will flow in to eliminate the cross-border return differential, thereby generating an incipient appreciation of the currency. Attempts to stabilize the exchange rate will draw the central bank into foreign exchange intervention, thereby undermining the autonomy of domestic monetary policy through the effect of intervention on the domestic money stock. Restoring monetary autonomy through bond sterilization may work but only by driving up domestic interest rates relative to world rates, thereby exacerbating the original pressure on the exchange rate. Eventually one of the objectives must be abandoned.

Although debate continues on the case for limiting short-run cross-border capital flows either through tax or other restrictions it is reasonable to expect that capital flows have become permanently more responsive to cross-border return differentials, even in the presence of tax distortions. Hence for most countries, including those of Africa, the resolution of the trilemma has become a simple choice over the nominal anchor; does it make better sense to fix the exchange rate to a reference currency and adopt that country's anchor or to let the exchange rate float and use a domestic anchor to target inflation?

Conventional nominal anchors

Monetary frameworks can thus be distinguished in terms of the degree of discretion over the choice of anchor and the degree of commitment to the chosen anchor. In terms of discretion we may distinguish between, on the one hand, those countries where domestic currencies are institutionally tied to an anchor currency, through a monetary union or a currency board and, on the other, those whose choice of anchor is determined only by domestic policy actions.[6]

Figure 1 shows the distribution of countries by choice of nominal anchor as at the end of 2006, based on a *de facto* classification.[7] Slightly more than half by number of the almost 190 member countries of the IMF, excluding the Eurozone countries, retain an external anchor. Of these, around half are 'institutional' hard pegs (currency boards or monetary unions with an explicit third-country anchor) or hard pegs, regimes which have persisted for extended periods of time, such as those prevailing amongst the countries of the Gulf Cooperation Council.[8]. Genuine crawling peg regimes are, by contrast, increasingly rare, and with few exceptions – most notably the 12 Eurozone members -- countries adopting external pegs are typically small or are highly dependent on oil or other primary commodities.[9]

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[6] Under a currency board a country commits to 100 percent backing of the domestic money supply (usually defined as reserve money) by foreign exchange reserves, thereby extinguishing the central bank's capacity to generate seigniorage revenue beyond the interest income earned on reserves, even though domestic currency remains the unit of account within the domestic economy. In the limit – the monetary union – the country adopts the foreign (or supranational) currency as the unit of account, exchange and value within the domestic economy, thus fully relinquishing all seigniorage revenue to the issuing authority, be it the anchor-currency country or, in the case of the Euro, to the supranational central bank (which may remit the revenue to member countries).

[7] The *de facto* classification, which seeks to assess a country's exchange rate regime on the basis of observed behaviour rather than official declaration, has been used by the IMF since 2005.

[8] The group of countries classified as having fixed exchange rates *de facto* also includes countries whose *de jure* anchor is not the exchange rate but for whom the exchange rate path suggests otherwise. This group includes countries who have actively intervened in the exchange rate market, perhaps out of concerns about competitiveness, or for whom external conditions have led to a stable floating rate.

[9] The one large exception is the Peoples Republic of China. In 2005 the Renminbi was allowed to float relative to a reference rate against a basket of currencies. However, in the data for 2006, upon which this table is based, the Renminbi fluctuated within a sufficiently narrow band around the central parity to the US dollar that it was still classified as a fixed exchange rate regime.

Figure 1. Distribution of countries by de facto nominal anchor 2006
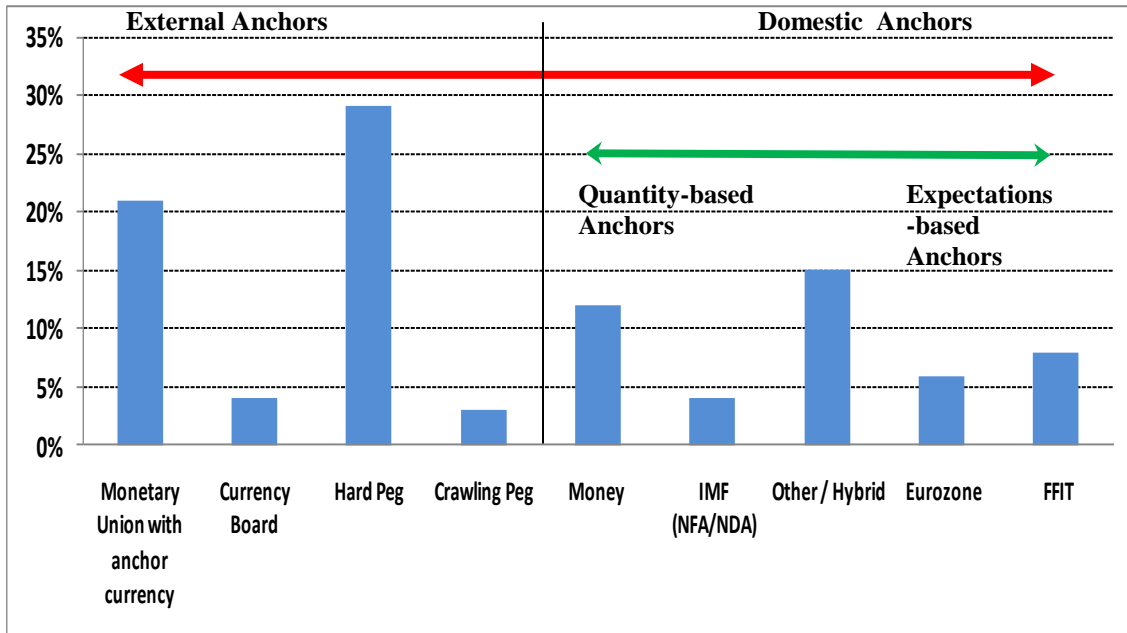
Notes: [1] Un-weighted distribution by country. **[2]** IMF {NFA/NDA} denotes countries with a specific IMF PRGF or other adjustment programme with performance benchmarks defined in terms of quantitative limits on net foreign asset and net domestic asset accumulation. **[3]** FFIT denotes 'full-fledged inflation targeting'.
**Source:** IMF *De facto classification of exchange rate regimes and monetary policy frameworks* (http://www.imf.org/external/np/mfd/er/2006/eng/0706.htm)

Domestic anchors are dominated by three groupings: those countries adopting conventional money-based pegs; those pursuing full-fledged inflation targeting (FFIT); and a final, substantial, group whose regime is described as 'hybrid' or 'eclectic', indicating that the country pursues a strategy which cannot be classified according to a well-defined nominal anchor, for example because the country articulates a money-based target but also seeks to manage the path of the exchange rate or an employment or output target. For some countries in this group, such as the Federal Reserve Board of the US, the European Central Bank, Japan and Switzerland, the regime already commands substantial credibility and functions with a high degree of instrument independence and transparency. Elsewhere, and for a number of African countries such as Nigeria, the 'hybrid' label denotes countries that see themselves in transition from, say, an exchange rate anchor or an explicit money target with an indicative target for inflation, towards a full-fledged inflation targeting regime.. This latter group has been labelled by Stone (2003) as pursuing 'IT-lite' regimes. I return to this below.

Figure 2 highlights the dramatic shift away from exchange rate-based anchors amongst African countries over the last quarter century. In 1980, three quarters of the countries outside the CFA Franc Zone and the Common Monetary Area of Southern Africa maintained an exchange rate anchor. By 2004 this had fallen to one fifth, with

only six (small) countries still relying on the exchange rate as their anchor. With the notable exception of South Africa, which operates under the first full-blown inflation targeting regime on the continent (and provides the anchor for the CMA zone), and Ghana which announced a full-fledged IT regime in May 2007, the remaining countries have adopted some variation of a money anchor, committing the central bank to control the size of the monetary base, or its constituent components. This group includes a substantial number of countries who currently publish an explicit target for inflation and who see themselves set on a path towards eventual inflation targeting. This group includes Mauritius, the economies of the East African Community, Zambia and Nigeria.

Figure 2. Sub-Saharan Africa: Choice of Nominal Anchor 1980-2006
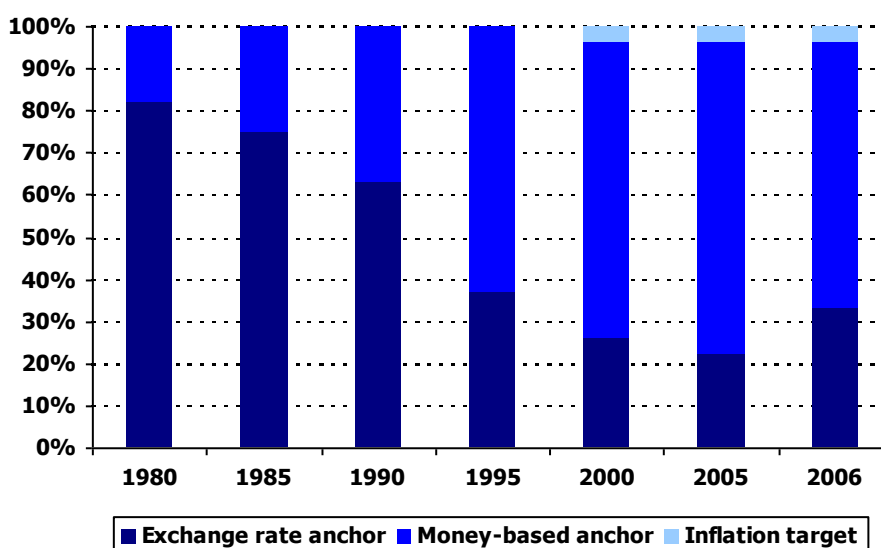
Note: Figure drawn for all SSA countries except members of CFA Franc Zone, Swaziland, Lesotho and Namiba (the small-country members of the CMA).

Source: IMF Exchange Rate Arrangements (various years)

Amongst this latter group, three key variants can be identified.[10] Under the first two the nominal anchor is a monetary quantity. In the first case, the anchor is defined in terms of the liability side of the relevant balance sheet, so that a target growth rate is defined for reserve money or broad money (sometimes including foreign currency deposits). In the second, the anchor is defined on the asset side of the monetary authorities balance sheet, in which case the anchor consists of a minimum growth rate for net international reserves (NIR) and a maximum growth rate for net domestic assets (NDA). One or other of these nominal anchors, but particularly the latter, underpin the workhorse adjustment programmes negotiated between countries and the IMF over the last quarter century. Tight commitment to such programs were at the

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[10] An alternative, but closely related, variant of the reserve money anchor involves the authorities directly targeting the rate of growth of nominal GDP (see O'Connell, this volume).

heart of most if not all of the successful inflation stabilization episodes witnessed in Africa in the last two decades, including in those in Uganda, Tanzania, Mozambique, Madagascar, Rwanda and DRC. The NIR/NDA programmes in particular were often supported by specific limits on the share of domestic credit to government, serving to locate proximate responsibility for inflation in weak fiscal control.

As O'Connell (this volume) notes, when geared towards inflation stabilization, the NIR floor tended to bind so that the floor and ceiling arrangement effectively placed a ceiling on overall reserve money. But if the NIR floor is not binding this arrangement does not provide for a monetary anchor, a problem that has become widespread in recent years. As concerns about external competitiveness drew the authorities into greater intervention in foreign exchange markets in the face of surging commodity prices and aid flows, countries accumulated foreign reserves in excess of their NIR floor and hence the commitment to the implicit reserve money target under the NIR/NDA arrangement was broached, since the growth in net international reserves arising from this intervention tended not to be fully sterilized by offsetting reductions in net domestic assets. Fund-supported NIR/NDA programs therefore remained 'on track' (in the sense that both the floor and ceiling constraints were being honoured) but without constraining reserve money growth. This arrangement is a potentially attractive way of accommodating unanticipated movements in velocity but at the cost of abandoning an explicit anchor. In a number of instances NIR/NDA programs have been modified by the introduction of explicit targets for reserve money.

Inflation Targeting and Inflation-Targeting Lite

The final domestic anchor is *expected inflation* where the instruments at the disposal of the central bank are set so as to influence the private sector's expected or forecast rate of inflation at some horizon. Under this regime, the future expected inflation rate feeds into current price and wage setting behaviour, thereby validating the forecast and placing the economy on an expectations-consistent path. This is the essence of full-fledged inflation targeting (FFIT) regime, the essential feature of which is a framework within which the authorities' policy actions and announcements credibly influence the evolution of the private sector's inflation expectations. Two elements are critical.

The first is a public commitment to an explicit target for the inflation rate, defined either as a point or interval target. This commitment may also include a horizon over which the target should be hit, thereby determining how quickly deviations from target should be corrected. The target, which will typically be set by government, may be defined either in terms of overall 'headline' inflation or 'core' inflation, where the latter excludes specific items such as food and fuel whose prices are determined principally by supply-side effects or world market conditions and to which it will generally be more appropriate to accommodate rather than attempt to offset.[11]

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[11] The argument for excluding these items from the target derives from the view that the role of monetary policy is to place 'sticky' prices as close to their notional 'flex-price' equilibrium values as

The second element is a structured approach to deliberation and communication on the part of the central bank. The objective is to resolve the problems of asymmetric information which can create incentives for time-inconsistent behaviour on the part of the monetary authorities. Making public, in a timely fashion, the central bank's information and its analysis ensures its actions are verifiable and sufficiently informative to reveal its own expectations of future developments and the relative weight it places on other objectives such as the output gap or the real exchange rate. The objective is thus to demonstrate credibly that the authorities do not have private information about economic conditions that they can exploit in a time-inconsistent manner. In practice this means that IT central banks publish the voting records of the members of interest-rate setting committees; they publish the evidence and economic analysis that informs these rate-setting decisions; and they devote substantial resources to public information and direct engagement with key stakeholders. This comprehensive communication strategy applies both when inflation is on target and, *a fortiori,* when it is off-target, in which case additional disclosure requirements may be placed on the central bank to explain deviations and specify remedial action to return inflation to target. The Bank of England's 'Open Letter to the Chancellor' (Minister for Finance) is perhaps the best-known example of this approach. Important elements in establishing the credibility of this structure are the reliance on independent external membership of key decision-making bodies -- the Bank of England's Monetary Policy Committee again is a good example – and the pressures these bodies exert on the national statistics offices to produce timely and accurate data.[12]

In combination, these two features help lay the ground for what is seen to be the defining characteristic of IT regimes, what Bernanke and Mishkin (1997) refer to as 'constrained discretion'. The explicit inflation target, along with the associated components of public disclosure and explanation of policy decisions and outcomes, provides the credible constraint, the belief in the private sector's mind that the central bank will (eventually) bring inflation back on track and will do so in a transparent manner. To the extent that these structures defuse the time-inconsistency problem inherent in monetary policy, they reduce the correlation between expected future inflation, upon which current wage- and price-setting is based, and current price developments. In other words, the private sector is able to 'see through' temporary inflation deviations in their wage and price setting decisions. The corollary of this is

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possible so that the economy's path is determined by its notional real business cycle (i.e. the path that would be followed if all prices were perfectly flexible). By this argument, prices that are in fact fully flexible, as is the case of imports where variations in world prices are allowed to pass through instantly to domestic prices, should be excluded from the target. Failure to exclude them would lead to placing excess weight on the policy levers. For example, seeking to lean against a positive oil price shock – which would be the case if policy was geared to targeting headline inflation - would lead to an inefficiently tight squeeze on the non-oil price component of the headline index, serving to 'over-deflate' the economy.

[12] Members of the Bank of England MPC have also stressed the importance of developing, and developing early, a 'culture of intellectual dissent' in which the central bank governor and his or her executive can find themselves in a minority on interest rate decisions, especially when such voting records are made public.

that the slope of the short-run Phillips Curve (drawn in inflation and output space) gets flatter, allowing more scope for short-run output stabilization. It is this credible commitment to the target, which does not rely on a proscriptive or mechanistic rule for the deployment of instruments, that hands the authorities the discretion to exploit the now flatter short-run Phillips curve and hence smooth short-run output deviations.

This text-book description of the full-fledged IT regime sets the bar high and in practice only a few countries demonstrate all these characteristics. For many more, including some of those countries classified as belonging to the IT group, their monetary frameworks are still evolving in this direction. Stone (2003) has coined the term 'Inflation Targeting Lite' (ITL) to describe countries whose frameworks are gravitating towards an IT configuration but where operationally the conduct of monetary policy lacks some clarity of objectives and transparency of communication. Thus, while most ITL regimes tend to announce a target for inflation and, simultaneously, commit to a flexible exchange rate, the clear and verifiable prioritization of objectives may still be lacking. In many cases this is located in the trilemma; ITL regimes are often characterized by a strong tendency for exchange rate management so that the prioritization of the competing constraints of independent monetary policy and the desire to influence the path of the exchange rate is obscure. Moreover, structures for communication and verification are only beginning to be established; central bank balance sheets are often still too weak to allow effective deployment of policy instruments; and, in some cases, core analytical capacity – in inflation forecasting and developing robust models of the transmission mechanism, for example – are only just being built.

Although there have been exceptions and specific episodes where policy coherence has been lacking, most ITL regimes have successfully navigated the relatively benign environment of the first half of the 2000s. Despite lacking a clear commitment to a single nominal anchor, the fact that cross-border capital flows remained modest meant that central banks were not confronted with the problem of the trilemma on a daily basis. Thus, average inflation rates have fallen steadily in most ITL regimes without significant output costs while temporary inflation spikes have tended to be corrected quickly. The changing external environment of the second half of this decade will, however, doubtless present ITL regimes with a sterner challenge, as indeed it will for other monetary frameworks.

Some evidence on the properties of monetary regimes

There is a vast literature, both country specific and cross-country evaluating the empirical evidence on the properties of alternative conventional monetary frameworks, those based on exchange rate anchors of various descriptions and those based on monetary anchors. Although the literature is probably most notable for the absence of truly robust results, some general, albeit weak, lessons can be drawn (see for example Ghosh, Gulde and Wolfe, 2003). First, historically, exchange-rate anchors have delivered lower inflation on average than money-based anchors, especially for small open middle- and low-income countries. For larger and more

industrialized countries there is no systematic difference in inflation outcomes across regimes. Second, however, the evidence cannot authoritatively and consistently identify differential effects in terms of the output stabilization or growth consequences of different anchors. Here theory provides some guidance, arguing that when price adjustment in goods markets is sluggish relative to that in asset markets, monetary anchors better insulate the open economy against domestic output volatility in environments where the economy is predominantly exposed to real shocks (such as terms of trade volatility). When portfolio or asset market shocks predominate the assignment is reversed, with exchange rate anchors providing better insulation. Few studies have been able to identify these effects clearly in the data, however. Third, there is some evidence that bilateral trade flows between countries are enhanced in the presence of currency boards or monetary unions, but that outside these arrangements other anchors do not significantly alter trade patterns (Klein and Shambaugh, 2007, Adam and Cobham, 2007).

The previous paragraph gives only the briefest of glimpses of the evidence but one factor emerges clearly: one cannot point to the clear and widespread dominance of one anchor over another in terms of delivering sustainably lower inflation, lower output volatility and deeper trade integration. This is true whether one looks at comparative performance across relatively stable periods or at the evidence on specific inflation stabilization episodes. This should come as no surprise given the deep statistical problems associated with this kind of comparative analysis. First, it is extremely hard to define the appropriate counterfactual or control group, particularly when the choice of regime is likely to be endogenous to deeper and difficult-to-identify structural characteristics of countries. Causality then becomes a thorny issue: do exchange rate anchors deliver lower inflation or do countries with a political or institutional structure conducive to macroeconomic discipline (and hence lower inflationary pressures) choose exchange rate anchors because of other benefits they confer? Second, it is difficult to identify 'shocks' in empirical data in a meaningful manner and particularly hard to develop consistent estimates of 'real' and 'portfolio' shocks, rendering it virtually impossible to assess the insulating properties of different regimes. Third, the comparative properties of exchange rate versus money anchors may depend on how the exchange rate regime is measured, whether according to declared policy (the *de jure* measure) or the actual policy (the *de facto* measure). It seems natural to select the latter but this can lead to peculiar biases. For example, in countries adopting a floating regime but enjoying periods of relative stability and limited external volatility, the path for the exchange rate a *de facto* classification may suggest the country is following a pegged exchange rate regime. By contrast, a country attempting to hold a pegged rate against a sequence of adverse shocks that force frequent devaluation may look more like a floating regime. Treating the former successful floater as a pegged regime and the latter unsuccessful pegged regime as a float will clearly bias empirical results in favour of fixed exchange rates.

Matters are slightly different if we look at the more recent literature on inflation targeting which paints a powerful empirical case for the success of IT regimes -- at least for the period up to 2007. Countries adopting IT appear to have posted

significant gains in terms of credibility and as a result in meeting the two principal objectives of low and stable inflation and better output stabilization. In their recent review of the evidence, Mishkin and Schmidt-Hebbel (2007) summarize the results for IT regimes as follows.

First, countries with IT regimes tend to be associated with lower inflation and lower inflation volatility, both with respect to their own history and with respect to most non-IT countries. The exceptions are the mature 'eclectic' non-IT regimes such as the European Central Bank and the US Federal Reserve Board, where significant differences in relative performance are difficult to discern.

Second, IT regimes are associated with lower output volatility, again relative to their own history and to output volatility in (the non-eclectic) control groups. Critically, this reduction in output volatility is observed to occur simultaneously with the reduction in inflation volatility. In other words, the evidence suggests that IT regimes are not simply reflecting a preference for lower inflation (and inflation volatility) over output volatility, but rather these regimes have been able to gain on both fronts, unambiguously increasing welfare.

Third, evidence from surveys of inflation expectations amongst decision makers, from bond market data and from elsewhere, suggests that in IT regimes inflation expectations have fallen within their target zones upon adoption of explicit inflation targets, often quite rapidly, and that deviations of actual inflation from target are quite quickly corrected (Mishkin and Schmidt-Hebbel, 2007 and Aron and Muellbauer, 2007). Moreover, the correlation between expected future inflation, upon which current wage- and price-setting is based, and current prices has fallen in IT countries (Woodford, 2007). In other words, inflation expectations are becoming more securely anchored on their target values and hence less sensitive to current inflationary developments; the private sector does indeed appear to be better able to 'see through' temporary inflation deviations in their wage and price setting decisions.

This is compelling evidence, all the more so because much of the research on which it is based exploits best-practice econometric methods and, by drawing on the burgeoning literature on programme evaluation, attempts to address the fundamental endogeneity associated with the choice of monetary regime. Nonetheless, it must be qualified. First, the sample remains small with little more than 20 countries worldwide pursuing full-fledged IT regimes. Working with such a small sample means researchers cannot completely control for problems of sample selection and aggregation. Countries that have adopted IT regimes tend to fall into two groups. The first are those with robust institutional frameworks for whom the move toward IT was, at least in retrospect, a natural technical innovation in response to changing structural features in the domestic economy. Into this category might fall countries such as the UK, New Zealand and Canada: this group may be usefully identified by the oft-repeated claim of a former Bank of Canada governor that "we did not abandon monetary targets; they abandoned us!" Crucially, these are countries where the much-vaunted feature of the regime, namely 'credibility' was, at least to a substantial

degree, in place. The second group are those countries such as Israel, which adopted IT out of desperation as part of a serious stabilization effort, often after all other options had failed but also when the political commitment to adhere to the discipline of *any* regime had finally been wrought. Aggregating these two groups of countries, and their very different outcomes, generates an 'average treatment effect' that is remarkably hard to interpret. Ideally one could conduct the same robust evaluation on the different sub-groups of countries but this risks reducing even further the meagre cross-country dimension of the sample.

A second important consideration is the global background to the IT experiment. The introduction of IT regimes coincided with the 'great moderation' in inflation where, broadly speaking, China and the other large emerging economies, were net contributors to global aggregate supply. Since late 2006 global economic conditions have changed; inflation has risen sharply across the world as these same emerging markets have added to global aggregate demand pressures. It is too early to tell whether the IT regimes will continue to out-perform the control group in this changed global environment, or indeed how well IT regimes perform in bringing inflation expectations back to target.

The predictable, if rather negative, conclusion emerging from this brief review of the evidence is that it is enormously difficult to draw definitive lessons from the evidence. Superficially the case for inflation targeting is persuasive and it is notable that no country IT has either stepped back from the regime. Nonetheless, as I have noted, the evidence needs to be interpreted with caution and from a position which pays due attention of country-specific characteristics. It is to these issues I now turn.

3. Key factors in the choice of exchange rate regime.

In this section, I return to the central topic of the paper to identify some key issues in the choice of monetary framework, using as a guideline the criteria outlined above. In the first sub-section I discuss the issue of fiscal dominance before moving to questions of how the monetary transmission mechanism in emerging market economies differs from its textbook representation. In the final sub-section I return to the issue of the impossible trinity to consider the extent to which monetary frameworks can coherently pursue potentially competing objectives. Throughout this section I shall draw a distinction between those structural issues that are likely to shape decisions and those which the authorities can, and should, seek to influence. In most instances, these changes are likely to enhance the effectiveness of any monetary framework and therefore need not be associated with a firm commitment to move in any specific direction, for example towards a full-fledged IT regime.

Fiscal Dominance

Fiscal dominance is the single greatest threat to the smooth functioning of *any* monetary framework. Fiscal dominance may be defined as a situation in which the government adopts a stance that is incompatible with sustaining low inflation without

recourse to distortionary measures such as heavy taxation of financial intermediation through reserve requirements or more draconian restrictions, such as those underpinning the multiple exchange rate regimes prevalent in much of Africa throughout the 1980s. In circumstances of extreme fiscal dominance, the actions of the central banks become fully subsumed to the over-riding requirement of funding fiscal deficits, so that it loses control over the size and composition of its balance sheet. Its capacity to separate liquidity management objectives from its government funding obligations eliminates its capacity to conduct monetary policy beyond the very short run.

Across the African continent as a whole, there has been steady decline in domestic deficit financing. Since the early 1980s, domestic credit to government in non-CFA SSA fell from an average of around 10% of GDP per annum to 4.0%. For 'mature stabilizers'[13], the overall decline was similar but was particularly concentrated on credit from the central bank; between 1985-89 and 2000-03 governments switched from being net debtors to the central bank to the tune of approximately 5% of GDP to being net creditors (of around 1% of GDP), a picture that is also reflected in Nigeria (see Table 1).

The last decade has seen a significant reduction on governments' reliance on domestic deficit financing and, with the exception of Zimbabwe, the elimination of the most serious fiscal and monetary pathologies on the continent. What matters from a monetary policy perspective, however, is not just the *ex post* fiscal outcome but also the *ex ante* risk that fiscal dominance problems might re-emerge and, in particular, that the private sector doubts the fiscal authorities' willingness, or capacity, to resist such pressures.

This is a challenge for all countries but is particularly relevant in developing countries where the fiscal stance tends to be strongly pro-cyclical and where fiscal consolidations are hard to sustain.[14] Arguably these problem are magnified in resource-rich economies, such as Nigeria, where the interaction of 'voracity effects' arising from highly visible fiscal booms and the structural 'commons' problem associated with fiscal federalism makes spending increases harder to resist during booms and spending cuts harder to push through during recessions. If access to world capital markets is similarly pro-cyclical, the premium on external borrowing rises as pressures on the deficit increase. Moreover, when domestic debt markets are also thin the domestic debt burden can rise rapidly in response to borrow pressures, which may raise incentives for the fiscal authorities to seek recourse to (surprise) inflation to reduce the real debt stock.

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[13] Mature stabilizers, as classified by the IMF include: Benin, Ethiopia, Madagascar, Mozambique, Rwanda, Senegal, Uganda and Tanzania.

[14] Cross country evidence from Africa and elsewhere certainly suggests that even amongst those countries that have achieved a measure of fiscal consolidation, the victory is often tentative and short-lived: Adam and Bevan (2003) compute that over the period 1970-2000, the unconditional mean duration of fiscal consolidation episodes was 3.2 years in low-income countries compared to 5.6 years in the OECD and only about 50% of identifiable fiscal consolidation episodes survived beyond their second year.

Table 1: Fiscal Dominance in Sub-Saharan Africa 1980-2003

Country Groupings	Period average of country group median values (% of GDP)				
	1980-84	1985-89	1990-94	1995-99	2000-03
Net Domestic Credit to Government (Monetary Survey)					
CFA countries	1.7	0.9	7.2	6.5	5.1
Non CFA countries	8.0	9.6	5.3	4.0	3.7
Mature stabilizers [1]	15.1	10.8	6.2	4.8	2.6
Nigeria [2]	7.8	6.5	3.5	2.2	5.1
Net Domestic Credit from central bank					
CFA countries	n.a	2.9	5.8	4.0	4.4
Non CFA countries	3.7	2.7	1.5	1.0	1.2
Mature stabilizers[1]	4.2	5.4	4.0	-0.5	-1.1
Nigeria [2]	11.8	13.6	16.3	3.8	-4.5

Notes:
[1] Mature stabilizers (IMF definition): Benin, Ethiopia, Madagascar, Mozambique, Rwanda, Senegal, Uganda, Tanzania.
[2] Data for final period 2000-2005
Source: IMF International Financial Statistics

These risks raise a set of questions about the flexibility and credibility of fiscal institutions and whether the design of effective monetary frameworks necessarily requires the establishment of compatible fiscal rules. Conventional wisdom, articulated for example by Allsopp and Vines (2005), suggests that, beyond the flexibility delivered through automatic fiscal stabilizers, fiscal policy – and hence fiscal policy rules -- should be trained on issues of longer term debt sustainability, with short term stabilization being left to monetary policy, where variations in the fiscal stance feed into the output gap to which the monetary authorities react.

This conventional perspective relies on two important assumptions, however, neither of which may not hold in emerging market conditions. The first is that the monetary authorities have sufficient instruments at their disposal (on which more below) and the second is that the fiscal and monetary authorities are able to act in an appropriately coordinated fashion. In both areas, action is still required.

Although the decline in fiscal dominance in the early 1990s, combined with the overhaul of many central bank charters later in the decade, should in principle have allowed central banks to exert greater control over their balance sheets and draw a clearer distinction between their deficit financing and liquidity management functions, coordination problems remain widespread. In particular the decline in the profitability of central banks has exposed tensions between central banks and governments over the allocation of the costs of conducting monetary policy. The

large quasi-rents which had accrued to central banks during financially repressed environments have disappeared. Many central banks now pay interest on bank reserves, while governments are increasingly maintaining net credit positions with their central bank. This squeeze on central banks' net income has been exacerbated in recent years by the decline in interest rates on foreign reserves.

In principle, the operation of monetary policy should be unaffected by the monetary gains and losses experienced by the central bank in the course of its operations in foreign exchange and domestic credit markets (the central bank simply transfers its operating surplus or deficit to the government), but in practice, however, coordination failures between central banks and governments mean that rather than reflecting efficient liquidity management from the perspective of the consolidated public sector, the disposition of monetary policy instruments often betrays the parochial balance considerations of each institution. Thus, the central bank may seek to boost its interest income by accumulating foreign exchange reserves and employing government securities rather than issuing its own liabilities for liquidity management purposes, while at the same time the government may seek to resist the use of its securities for this purpose, especially when domestic interest rates are high and it has no domestic financing requirement.

From the perspective of the public sector as a whole, the distribution of the costs of conducting monetary policy should be irrelevant and should not be a determining factor in the central bank's operational decisions. Re-capitalization of the central bank, so that it can issue liabilities against its own capital is clearly one option to overcome this problem, although simple transparent coordination which recognizes the cost of monetary policy operations may be equally effective.

The monetary transmission mechanism, velocity and implications for choice of instruments

The effectiveness of monetary policy, and the credibility of any regime will depend on how reliably and how quickly observable policy actions influence inflation and other real variables. In other words, effectiveness depends on the nature of the transmission mechanism and, critically, on how well it is understood since the credibility of the monetary regime will be undermined if observed policy actions are perceived to be ineffective or even have persistently perverse outcomes.

The textbook macroeconomic model, which underpins both IT frameworks and, with little modification, the more conventional monetary frameworks employed in Africa, fundamentally derives from research and experience of OECD.[15] This model

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[15] Labeled the 'New Keynesian Open-Economy Model', this model consists of four basic elements: (i) an open economy IS curve characterizing aggregate demand in which the output gap responds to movements in real interest rates and real exchange rate; (ii) on the supply-side, a Phillips curve in which the conventional inflation-output relationship is augmented by a pass-through effect from the exchange rate; (iii) an interest parity condition; and (iv) a policy rule summarizing central bank interest rate-setting behaviour (Berg *et al*, 2006). As Adam *et al* (2008) note, this model can be

emphasises the conventional interest rate channels of transmission, in which short-run interest rate decisions are transmitted through a well-defined yield curve to long-term interest rates which, in turn, given inflation expectations, influence the interest-sensitive components of aggregate demand and hence moderate expected and actual inflation. In the open economy setting, where capital account openness is presumed, this effect is augmented by the exchange rate channel. Working through the interest parity condition, higher interest rates appreciate the exchange rate which reduces net exports and thus the output gap. In addition, the exchange rate appreciation directly reduces the domestic cost of imports.

For less mature emerging markets and for pre-emerging markets where the financial sector is often much less developed these traditional transmission channels may be less powerful, while others may dominate. Moreover, transmission effects are also likely to be much less stable. Processes of structural transformation and innovation, particularly in financial markets, generate shocks to velocity and the money multipliers, which together with the transformation of the structure of production and consumption, can substantially alter the short-to-medium-run link between money growth or nominal depreciation and domestic inflation and output. In the rest of this section I consider some of the areas where the transmission mechanism in African economies is likely to differ from the textbook characterization. This is necessarily speculative since one of the major gaps in our knowledge about many contemporary African economies is a robust quantitative assessment of relative strengths of alternative channels of monetary transmission.

In industrial countries, short-term market interest rates are the main instrument of monetary policy, operating directly through interest-sensitive components of absorption and indirectly through wealth effects, by altering collateral conditions and thereby expanding or contracting bank lending. An implicit assumption is that the banking system is relatively competitive and fully lent out so that changes in the short-run policy rate are rapidly transmitted through the length of the yield curve. In less developed economies, where monetary policy tends to be exercised through operations on the central bank's own balance sheet – domestic credit policy, bond operations, and foreign exchange sales – and where the banking sector tends to be dominated by oligopolistic commercial banks, interest rates tend to play a less important role. Only in cases where inter-bank money markets and secondary markets for government debt are well developed, would strong interest rate effects tend to emerge.

Nonetheless, monetary policy can alter the level of credit available to loan-dependent borrowers and affect real activity via the 'effective' cost of capital even when interest rates do not constitute an instrument of monetary policy. In the presence of credit rationing, a monetary policy that increases the loanable resources available to banks may sharply reduce the shadow cost of capital for rationed borrowers. The reality in many African economies, including Nigeria, is that banking systems currently do

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readily adapted to reflect an environment in which the policy instrument is the money supply rather than the interest rate.

much less intermediation than elsewhere. Banks tend to be highly liquid, suggesting little intermediation at the margin: deposit rates are at or near legal minima and excess funds are often invested not in private enterprises but in government securities, foreign deposits, and non-remunerated excess reserves (Cihak and Podpiera 2005, Sacerdoti 2005, Saxegaard 2006). This suggests a reluctance to expand credit to private borrowers and is consistent with the weakness of the credit channel in the transmission of monetary policy. This feature emerges strongly in the few empirical studies of the transmission mechanism in Africa (for example the work by Cheng (2006) examining the transmission mechanism in Kenya).

Monetary policy operates through asset prices as well as through interest rates, and the exchange rate is by far the most important of these in emerging market economies such as Nigeria. Real exchange rate changes influence aggregate demand by generating expenditure-switching between traded and non-traded goods and creating capital gains or losses on assets denominated in foreign currency. Exchange rate changes also redistribute real income among sector-specific factors of production, making the exchange rate a subject of intense political concern to policymakers even if aggregate demand effects of the redistribution are small. Further macroeconomic effects, operating through aggregate supply, may arise from the impact of exchange rate changes on the cost of imported intermediate goods.

The exposure of domestic banks to capital gains and losses from exchange rate movements strengthens the exchange rate channel. Although dollar-denominated deposits are widely available, commercial banks rarely hold substantial open positions, due to a combination of regulatory restrictions and caution; nor do domestic firms, given the reluctance of banks to lend domestically in foreign currency. Nonetheless, the widespread use of foreign currency and foreign currency deposits in private portfolios has at least two related implications for monetary control. First, the availability of a ready substitute for domestic money increases the sensitivity of domestic money demand to interest rates and inflation. Other things equal, the response of inflation and capital flows to money supply shocks will be quantitatively larger and may be less predictable than in the absence of dollarization. Monetary aggregates that do not include foreign currency deposits (e.g., domestic M2) may perform poorly as indicators of inflation pressure, relative either to narrower aggregates less affected by substitution (e.g., the monetary base) or to broader aggregates like M3 that include foreign currency deposits. Second, by enhancing the substitutability of domestic and foreign assets, dollarization heightens the macroeconomic importance of portfolio adjustments, both as autonomous shocks and as responses to other shocks.

This has potentially important implications for the allegiance to nominal anchors. As noted above, the standard approach finds fixed exchange rates to be preferable (for stabilizing output) when portfolio shocks are dominant, because these shocks require portfolio reallocation but not real exchange rate adjustment; floating rates, in contrast, are preferable when real shocks, which require real exchange rate adjustment, are dominant. A high degree of dollarization may therefore create substantial tensions

between *de jure* commitments to flexible exchange rates in support of an inflation or money anchors and the *de facto* conduct of monetary policy when concerns about output stabilization feature. (O'Connell *et al* 2007).

Finally, although conventional interest rate channels may not be as strong as elsewhere, interest rate effects may operate more powerfully in emerging markets through domestic debt markets onto the fiscal accounts. Domestic asset markets in most African economies, including Nigeria, are still relatively thin and oligopolistic while central banks conduct much of their open market operations using government debt instruments. The level and volatility of interest rates in emerging market tend to be higher than elsewhere and as a result place considerable stress on the consolidated fiscal accounts, so that monetary policy actions can exert powerful real effects through the fiscal burden of interest payments. These effects may be magnified when the domestic fiscal balance is also sensitive to movements in the exchange rate as is the case in economies where revenues are highly dependent on commodity prices and/or aid flows (see O'Connell *et al*, 2007). These fiscal channels of transmission tend not to feature in the textbook model, but understanding them is of critical importance for implementing effective monetary policy in most emerging and pre-emerging market economies.

Reconciling competing objectives

As stressed in the introduction to this paper, the incoherence brought about by the overburdening of monetary policy with multiple objectives meant that in many countries monetary regimes delivered on none of them. But, as we have seen, while a new understanding of the limits of monetary policy has emerged, the multiple objectives have not entirely disappeared. In the current environment this is seen most clearly in the competing pressures to honour an inflation target but at the same time limit exchange rate volatility and resist pressures towards its excess appreciation. One strand of the inflation-targeting literature (see for example, Batini and Laxton 2007) argues for a clear an unambiguous prioritization of the inflation target with the authorities forgoing any attempt to manage the exchange rate. This argument, that the authorities should not target the exchange rate, does not imply that they should ignore it -- not least because the exchange rate plays a central role in forecasting inflation – but rather that it should be made clear that the authorities are not beholden to any specific value of the currency, thereby removing incentives for speculative attacks against the authorities. Moreover, the argument goes, a non-interventionist stance creates the positive incentives for the private sector to develop the capacity to price and manage exchange rate risk.

Theory and empirical evidence advances a slightly modified version of this argument. Empirically, as the literature on 'fear of floating' (Levy-Yeyati and Sturtzenegger, 2007 and Edwards 2007) highlights, intervention in support of the exchange rate is the norm rather than the exception amongst IT as well as non IT countries. Similarly, as the work of Buffie *et al* (2008) suggests, when fiscal policy reacts to variations in aid or commodity price flows, some degree of exchange rate intervention may be

desirable, particularly where dollarization is widespread. These arguments are particularly powerful in environments where domestic prices are sticky or where other forms of market imperfection (e.g. credit rationing) mean that the effects of exchange rate volatility on real resource allocation are highly geared.

Navigating these considerations requires coherence both at the level of policy and in terms of communication. Most commentators point to the need to prioritize policy objectives in a narrower sense than above by making it clear how inflation and exchange rate objectives are reconciled when they clash. But at the same time, many would argue that because of the thinness of markets and the costs of exchange rate volatility, reconciliation does not necessarily entail commitment to a pure float. In reality, the recent history of low global inflation combined with the steady fall in velocity in many post-stabilization economies, has allowed for rapid non-inflationary monetary growth, so that the two objectives were rarely in conflict. With global inflation now rising more rapidly and the growth in real money demand easing, the risk of conflict is rising, not least because letting the exchange rate appreciate may be the easiest way of hitting an inflation target.[16]

4. Conclusions

In the past ten years, a substantial number of industrial and emerging market countries have moved decisively in favour of an inflation targeting monetary framework. The intellectual case is compelling and the evidence – at least that covering the first decade of experience with IT regimes – is persuasive. In Africa, the transformation of monetary policy regimes has been more heterogeneous but no less dramatic. The task facing countries such as Nigeria, whether seeking to consolidate current regimes or considering a move from conventional money-based anchors to a more recognizable full-fledged inflation targeting regime, is to know how much of the industrial and emerging market story can translate to local conditions and with what modification. This entails substantial challenges but, as I noted above, meeting them will be necessary for any monetary regime to function effectively. Hence, the current direction of travel in Nigeria is encouraging. The focus on fiscal consolidation and the creation of institutional fiscal rules is clearly a first-order priority, while the efforts of CBN to strengthen its analytical capacity to improve inflation forecasting and understand the transmission mechanism, combined with moves to improve its communication strategy are appropriate complements. Big challenges certainly loom on the horizon, stemming both from the uncertainties in energy markets and their fiscal consequences and from broader developments in the global economy. But these strengthen rather than weaken the case for examining the pros and cons of a move to inflation targeting.

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[16] This is true even if the target, core, inflation excludes fuel and (imported) food costs to the extent that both are inputs into prices of goods and services included in core inflation.

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