

## **MONETARY POLICY RESPONSE TO ECONOMIC CRISES FROM AFRICAN ECONOMY PERSPECTIVE: AN EXAMINATION OF KENYA'S EXPERIENCE**

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### **Abstract**

Much of the debate on the policy responses undertaken with respect to the global financial crisis has largely focused on advanced economies, leaving out African economies' perspective. The paper examines the monetary policy responses undertaken in mitigating the economic effects of the early 2008 domestic crisis and the global financial crisis that ensued. Whereas the policy interventions were initially effective in restoring confidence, lowering short term interest rates and maintaining macroeconomic stability, the expansionary monetary policy stance could not be sustained following increased inflationary pressures and unprecedented depreciation of the exchange rate. However, the sudden shift to a tight monetary policy stance partly counteracted the gains that had been achieved. Additionally, an assessment of the effectiveness of monetary policy using VAR analysis indicates weak monetary policy transmission mechanism. Policy insights include the need for a clear exit strategy particularly when adopting a major policy shift, strengthening of the monetary policy transmission mechanisms and holistic approach to addressing structural weaknesses and vulnerability of the economy to shocks.

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## 1. Introduction

The importance of effective regulation and a sound financial system cannot be overemphasized in a highly globalized and uncertain world of today. Economic crises not only affect the level of economic activities but can also cause financial panic and lower the effectiveness of monetary policy with more damaging effects on the economy. Moreover, a crisis in one country can rapidly spill over across national borders, as clearly evidenced by the 2008 global financial crisis, which had far reaching effects in many countries across the world. Inefficiencies in the financial system can deepen or prolong economic downturns, and, in case of large scale problems, trigger capital flight. A central bank's role during a crisis is to contain the damage and limit the impact of the crisis on the real economy. This can be achieved through various means such as enhancing confidence and calming the market, ensuring uninterrupted flow of credit, reducing uncertainty; ensuring that markets for short term credit function properly, among others. Additionally, central banks also have an important role in reducing the probability of a crisis occurring by undertaking pre-emptive measures that among other things reduce systemic risks. The role played by central bank as a key regulator of the financial sector is, therefore, critical.

Much of the debate on the policy responses undertaken with respect to the financial crisis and their effectiveness have largely focused on the US, Europe and other advanced economies (Taylor and Williams 2009; Rudebusch 2009; Carboni and Carboni 2012; Ait-Sahalia et al 2012). African countries' perspective is still lacking. Many central banks in the developed economies reacted to the global crisis by reducing interest rates to historically low levels, complemented by use of unconventional monetary policy measures such as quantitative and credit easing. However, because of differences in monetary policy frameworks, development level, quality of institutions and degree of vulnerability to global macroeconomic shocks, the nature of

central banks' responses to crises and the extent of their effectiveness in African economies are bound to differ from that of developed economies. There are also concerns regarding the limited "policy space" the developing countries have in adopting autonomous and effective countercyclical macroeconomic policies consistent with the long term development objectives (Jordan 2012). The extent and differences across central banks' reactions to the crises should, therefore, be understood in the light of the varying design of their operational frameworks for monetary policy and the different structures of respective financial systems (Lenza et al., 2010).

Kenya is a developing African economy whose experience is different in the sense that by the time the impact of the financial crisis became manifest, the country was already reaping from the adverse effects of the domestic political crisis occasioned by post-election violence that erupted in January 2008 after the country held its parliamentary and presidential elections in December 2007. The disputed outcome of the electioneering process led to civil unrests that disrupted economic activity, blocked supply chains, led to loss of property and a drastic slowdown in the level of economic activities, thus affecting investment and employment. It would therefore, be misleading to discuss the effect of the global financial crisis in Kenya in isolation from the domestic crisis that arose from the post-election violence. This paper examines and assesses the policy interventions and measures undertaken by the Central Bank in response to the effects of domestic crisis and the global financial crisis that ensued, including lessons to be learnt from Kenya's experience. The analysis is based on an exploratory approach followed by estimation of a simple vector auto regression (VAR) model to empirically assess the effectiveness of monetary policy in Kenya. The discussions in the paper mainly focus on the period 2007 to 2011 within which the two crises occurred.

The rest of the paper is organised as follows; section 2 gives a brief background of the crises while section 3 outlines an overview of the economic effects. Section 4 describes the monetary policy and other policy measures undertaken while section 5 assesses and discusses the outcomes. The last section concludes and outlines lessons learnt.

## **2. Background of the Crises**

The domestic crisis was politically triggered by the post-election violence following the contested outcome of the presidential and parliamentary general elections held in December 2007. From the onset of multi-party democracy in 1991, political party formations in Kenya were based on ethnic backgrounds, and consequently, voting patterns in general elections would largely be along ethnic lines. As Chauvet and Collier (2009) observe, badly conducted elections have detrimental effects on the economy. This was clearly evidenced in Kenya after the disputed general elections of December 2007. The economy slipped into a recession as the key sectors that form the backbone of the economy such as agriculture and tourism were adversely affected. The impact of the violence on the economy was widespread as many people were displaced in the agricultural rich zones, supply chains were disrupted and overall confidence in the economy deteriorated. This adversely affected the economic performance particularly in 2008 and, derailed the economy from a strong growth path that had earlier been witnessed. Before dust could settle, the effects of the global financial and economic crisis set in late 2008.

A lot has been documented on the origins and causes of the 2007/2008 global financial and economic crisis (see Acharya, et al. 2009, Greenlaw et al. 2008, Morgan 2009, Adrian and Shin 2010, among many others). Most of the causes are generally traced to the prolonged low interest rate regime adopted by the Federal Reserve and other central banks after the collapse of the technology stock bubble in 2000 and the 9/11 terrorist attack in

2001. These factors helped fuel a dramatic increase in house prices in the United States and several other countries such as Spain and Ireland which had adopted loose monetary policy (Adrian and Shin 2010, Brunnermeier 2009, Greenlaw et al. 2008, and Taylor 2008).

In 2006, this bubble reached its peak in the United States and house prices started to fall. The bubble was much larger in the US though it also affected other countries. Nadauld and Sherlund (2008) provide an account of the developments in the housing market preceding the crisis and observe that the fall in house prices led to a fall in the prices of securitized subprime mortgages, affecting financial markets worldwide.

However, the climax came in September 2008 when Lehman Brothers collapsed, sending signals to the international markets that credit risk in the banking sector and financial industry was a serious concern. Reassessing risks previously overlooked, investors withdrew from the markets and liquidity dried up. In the months that followed and in the first quarter of 2009 economic activity in the United States and many other countries declined significantly. Consequently, unemployment in these countries rose dramatically as firms undertook downsizing measures. Many other factors such as subprime mortgages, weak regulatory structures, and high leverage in the banking sector are cited to have exacerbated the effects of the crisis that quickly spread to other economies (Allen and Carletti, 2009).

## **3. An Overview of the Economic Effects of the Crises on Kenya**

The economic impact of the politically instigated domestic crisis was immediately felt in the key economic sectors that drive the economy, particularly agriculture, tourism and manufacturing. Like most African economies, Kenya's economy is primarily agro-based, with agricultural sector contributing about 24 percent of the Gross Domestic Product (GDP). Before the post-election violence, the economic recovery had been impressive and

the economy was on a steady growth path, with real GDP growth rate rising from 5.1% in 2004 to 7.1% in 2007, and was poised to grow at even higher growth rate in 2008, sustaining the growth momentum to 10% in the medium-term as envisaged in the country's blueprint aimed at transforming Kenya into an industrialized nation, dubbed *Vision 2030*. However, as a result of developments following the domestic crisis, output growth declined sharply from a real GDP growth rate of 7.5 percent in the first quarter of 2007 to a negative growth rate of 1 percent in the first quarter of 2008. The shilling depreciated against the US dollar from an average of Ksh 63.30 in December 2007 to Ksh 70.62 per US dollar in February 2008. Coupled with the rise in the international prices of crude oil in the early 2008, the supply side constraints put pressure on domestic prices, with overall inflation rate rising from 5.7% in December 2007 to a peak of 18.6% in May 2008.<sup>1</sup> The high inflation continued in 2009, largely as a result of increases in prices for food commodities owing to the drought that was experienced early that year.

On the other hand, the effects of the global financial crisis on the domestic economy are to a larger extent, bound to depend on the structure of the economy and the level to which it is integrated into the global economy. These factors influence the extent to which macro prices (stock prices, interest rates and exchange rates) are affected and how these in turn affect the real economy. The global economic and financial crisis impacted on Kenya's economy mainly by reducing external demand for Kenya's exports. This further affected the economic growth trajectory.

The onset of the global crisis in the last quarter of 2008 reinforced the negative effects of the domestic crisis. The first round effects included declining stock market and volatility in the foreign exchange market. Before the shilling could fully recover from the aftermaths of the domestic crisis, it depreciated against the major foreign currencies, from September 2008 to January

2009, owing to the impact of the global financial crisis. The second round effects resulted from a decline in global economic activity which led to a decline in demand for Kenya's exports of goods and services. Kenya's key exports are agricultural commodities i.e. horticulture (mainly cut flowers), tea and coffee. Following the reduction in global demand for cut flowers, the labour intensive horticultural industry had to downsize its workforce, as it suffered a 35 percent drop in exports of flowers in April 2009, compared with the year before. While large-scale exporters were performing fairly well, small scale farmers were the most affected by the shrinking markets, reduced earnings and rising costs of production. The depreciation of the shilling against the US dollar and other currencies was further magnified by the reduced foreign exchange inflows from exports.

Besides commodity exports, tourism is a key source of Kenya's foreign exchange. Given the sensitivity of the tourism sector, the impact of domestic and global crises was almost instantaneous. In the first quarter of 2008, the violence and bloodshed associated with the political crisis kept off tourists and as a result, tourist arrivals declined substantially by about 62% between December 2007 and February 2008 when peace was restored. Before the sector could fully recover, the impact of the global financial crisis set in and decreased the demand for tourism activities, though the impact was less severe.<sup>2</sup>

With respect to the financial sector, Kenya's banking sector is fairly insulated from foreign finance in the sense that banks hardly have derivatives or asset-backed securities in their portfolios. African banks largely retain loans that originate from their balance sheets and the market for securitised or derivative instruments is either small or non-existent. It is thus, not surprising that unlike the other sectors, Kenya's banking sector remained resilient to the adverse developments in the global financial crisis. However, the sector recorded some negative, though not significant

effects. Due to increased perception of risk and a decline in economic growth, non-performing loans increased by 14 percent between June 2008 and June 2009. Although the banks were less exposed, they tightened their risk assessment of customers seeking loans with a number of banks increasing their lending rates and /or restricting lending to particular sectors as a result of the perceived risks emanating from the crisis. As opportunities for lending narrowed, banks channelled more of their investment funds to the risk-free government securities.

Kenya's financial sector is mostly dominated by commercial banks, though the level of bank penetration is still low. Although foreign owned banks may be viewed as likely sources of financial vulnerability due to their exposure to foreign finance, stress tests and financial soundness indicators showed that the foreign banks operating their subsidiaries in Kenya were stable and sound as there was no evidence that the share of foreign banks (in terms of core capital) changed fundamentally between 2007 and 2010. As at end of June 2009, the banking sector maintained high capital adequacy ratios, adequate liquidity and low non-performing loans in relation to gross loans. The total shareholders' funds, deposits and assets expanded by 25.4 percent, 9.5 percent and 15.0 percent, respectively. Liquidity remained strong, with the ratio of liquid assets to total deposit liabilities at 40.9 percent, which was well above the statutory minimum requirement of 20 percent. In general, the overall performance of the banking sector has remained strong and sound. Commercial banks have continued to outperform firms in other economic sectors, reporting enviable profits.<sup>3</sup>

#### **4. Monetary Policy Interventions and Financial Sector Measures**

Most Sub-Saharan African (SSA) countries including Kenya adopted expansionary monetary and fiscal policies in response to the effects of global crisis, in line with similar trends witnessed worldwide.<sup>4</sup> International food and fuel price shocks that preceded the

global financial crisis had put upward pressure on domestic inflation in most SSA countries. As the price shocks subsided, there was a slowdown in inflation, thus creating more room for the easing of monetary policy (Kasekende and Brownbridge 2010). However, the challenge that countries like Kenya faced is not whether monetary easing was necessary but whether the extent of the expansion was appropriate and effective in yielding the desired effects. Following the derailment of the growth trajectory occasioned by both the domestic and global financial crises, there is no doubt that there was need for countercyclical monetary and fiscal policies to resuscitate the economy and restore growth.

First and foremost important was the urgent need to address the waning confidence in the economy occasioned by the aftermaths of the domestic and global financial crises. Additionally, the Central Bank responded to the crises by loosening monetary policy complemented by other intervention measures. It was envisaged that the expansionary monetary policy would facilitate release of resources that would eventually be channelled to the real sector to finance economic recovery. However, to be more effective, this needed to be complemented by a fiscal economic stimulus to stimulate demand. Thus, the Government initiated an infrastructure bonds programme to finance public investments in targeted infrastructure project and the first infrastructure bond was issued in February 2009. It was envisaged that lower interest rates would facilitate the government to spend more on infrastructure without crowding out the private sector. In addition, an economic stimulus package of Ksh 22 billion (about USD 280 million) directed at creating employment and funding rural-labour intensive projects (dubbed "*Kazi Kwa Vijana*"<sup>5</sup>) was incorporated in the 2009/2010 fiscal budget. The package was expected to stimulate consumption levels, thereby generating the necessary demand to boost production in the economy. However, the actual implementation of fiscal stimulus package lagged behind and was marred by



implementation bottlenecks relating to bureaucracy and delays due to government procurement procedures and other setbacks. In contrast, the flexibility in employing monetary policy tools enabled a quick response by the central bank in mitigating the effects of the crises.

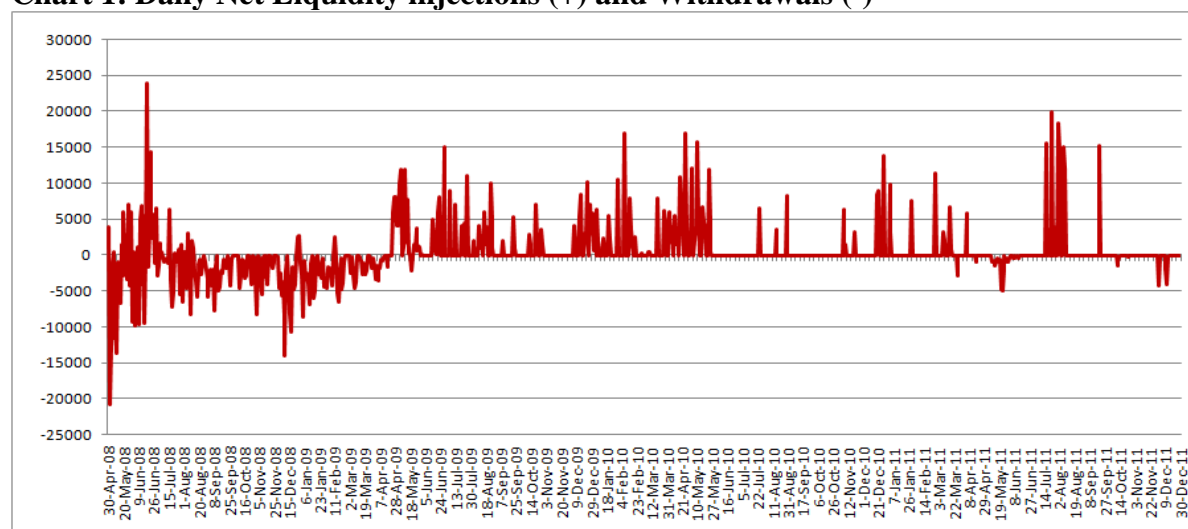
The monetary policy was geared towards ensuring availability of liquidity to enhance private sector credit for financing economic activities. The use of traditional monetary policy instruments was complemented by additional policy tools and other measures to enhance the effectiveness of monetary policy actions and support the functioning of the financial markets. We briefly discuss some of the policy measures in detail below.

#### 4.1 *Expansionary Monetary policy*

Although CBK follows a monetary targeting framework, it uses a policy rate, i.e. the Central Bank Rate (CBR) which is set by the Monetary Policy Committee (MPC) to signal

monetary policy stance. The rate is raised or lowered depending on the prevailing conditions. Following the onset of the global financial crises in September 2008, the Bank lowered its policy rate from 9.00 percent to 8.50 percent and the Cash Requirement Ratio (CRR) from 6.00 percent to 5.00 percent in December 2008, as a policy signal for lower interest rates in order to enhance credit supply in the economy. In July 2009, the CRR was further reduced to 4.50 percent, releasing about Ksh 5 billion (about USD 65 million) to the banks to lend. The availability of liquidity was further enhanced by consistently lowering the CBR to 6.75 percent in March 2010. The lowering of the policy rate was complemented by quantitative measures operationalized through open market operations, injecting (on a net basis) more liquidity to the banking system than the withdrawals. This was the case for the better part of the first half of 2008 just after the domestic crisis, and from the second half of 2009 following the global financial crisis (see Chart 1).

**Chart 1: Daily Net Liquidity injections (+) and Withdrawals (-)**



Source: Central Bank of Kenya

For quite a long time, the Bank had adopted a tight monetary policy stance characterized by regular mop-ups of liquidity. Cheng (2006) contend that tight monetary stance appear to have been a dominant feature of the Kenyan economy. The consistent liquidity injections that followed the crises period was, thus, one of the most historic policy shift in the

country's conduct of monetary policy – a clear indication of countercyclical policy. It was historic in terms of both the duration and the amounts of liquidity injected.

Even after injecting liquidity in the market, a distributional imbalance of the liquidity in the banking system was noted, largely as a result

of segmentation in the banking sector, particularly between the large and small banks. Consequently, other policy tools e.g. horizontal (inter-bank) repurchase agreements were introduced in September 2008 to deal with distortions and enhance even distribution of liquidity in the banking sector. Through this facility, commercial banks can use treasury bills as collateral to secure credit from other banks to meet liquidity requirements.

The clarity with which central banks are able to communicate the monetary policy stance especially during periods of crisis cannot be overstated. Provision of liquidity was complemented with a communication strategy that continuously kept the market informed of the monetary policy stance being pursued and other measures or issues that emerged. This was particularly critical in fostering stability of the market and defusing anxiety and unnecessary panic at the onset of both the domestic and financial crises.

#### **4.2 Financial Sector Policy Measures**

Besides the direct monetary policy interventions, efforts were directed towards other measures undertaken as part of the broader financial sector policies, to enhance the depth, operation and efficiency of the financial market and ultimately, monetary policy effectiveness.<sup>6</sup> Additionally, these measures were also envisaged to assist in bringing down the cost of credit, which is still regarded to be relatively high. These include creation of credit reference bureaus with the licensing of the first credit reference bureau in the first quarter of 2010, to facilitate credit profiling after it emerged that challenges in the realization of collateral and the sufficiency of information for pricing risk were among the factors that impeded efficiency in the banking sector and, gave rise to higher cost of credit. The existing models of pricing risk were not reflective of a competitive market structure as would be expected.

CBK has also been pursuing a policy of broadening financial inclusion to the majority of Kenyans. This has been pursued through

several channels, including the introduction of agency banking (use of third party agents to offer specific banking services) in a bid to reach the unbanked population especially in small towns and rural areas; embracing Information Communication Technology (ICT)-related innovations such as mobile money transfer and banking services and, increasing access to investments in government securities by reducing the minimum investment in Treasury bill from Ksh 1,000,000 to Ksh 100,000 to encourage the participation of small investors in the risk-free government debt market and offer increased competition to large investors. As a fiscal agent to the Government, the Bank in collaboration with the Treasury has been spearheading reforms in the domestic government securities market to broaden the investor base, promote secondary trading and develop an appropriate and reliable yield curve for government securities. Additionally, a Microfinance Act was operationalized in 2008 by putting the deposit taking microfinance institutions under the regulatory purview of CBK.

#### **5. Assessing the Outcomes**

By and large, it has been acknowledged that the aggressive monetary policy measures undertaken by central banks in the developed economies starting with the US were effective in lessening the severity of the economic downturn following the global crisis (Mishkin 2011). For instance, using event study methodology, Ait-Sahalia et al (2012) examine the impact of macroeconomic and financial sector policy inventions in the US, UK, the Euro area and Japan and contend that the policy interventions were associated with reductions in interbank risk premia, with market responses depending on the broader context in which market participants interpreted the policy actions.

However, with respect to the African economies, Kasekende and Brownbridge (2010) conclude based on 10 SSA countries (including Kenya) that the attempt to stimulate demand through monetary policy was not fully

successful, as bank lending to the private sector fell sharply in 2009 to an average of 16 percent, from an average of over 30 percent in the few previous years. Following the increased liquidity, most banks, as was also evidenced by Kenya's case increased their accumulation of reserves with the central bank and the purchase of government securities in their portfolios. Efforts to further increase bank credit to the private sector were hindered by inefficiencies in the transmission of monetary policy from short term interest rates to long term (lending) rates. Kasekende and Brownbridge (2010) show that for five countries (Ghana, Kenya, Tanzania, Uganda and Zambia), the fall in the Treasury bill rate left bank lending rates virtually unchanged, and attribute the stickiness in the lending rates mainly to lack of competition in the banking sector. We briefly examine some of the outcomes associated with the policy interventions, followed by an empirical assessment of the monetary policy effectiveness in the sub-sections below.

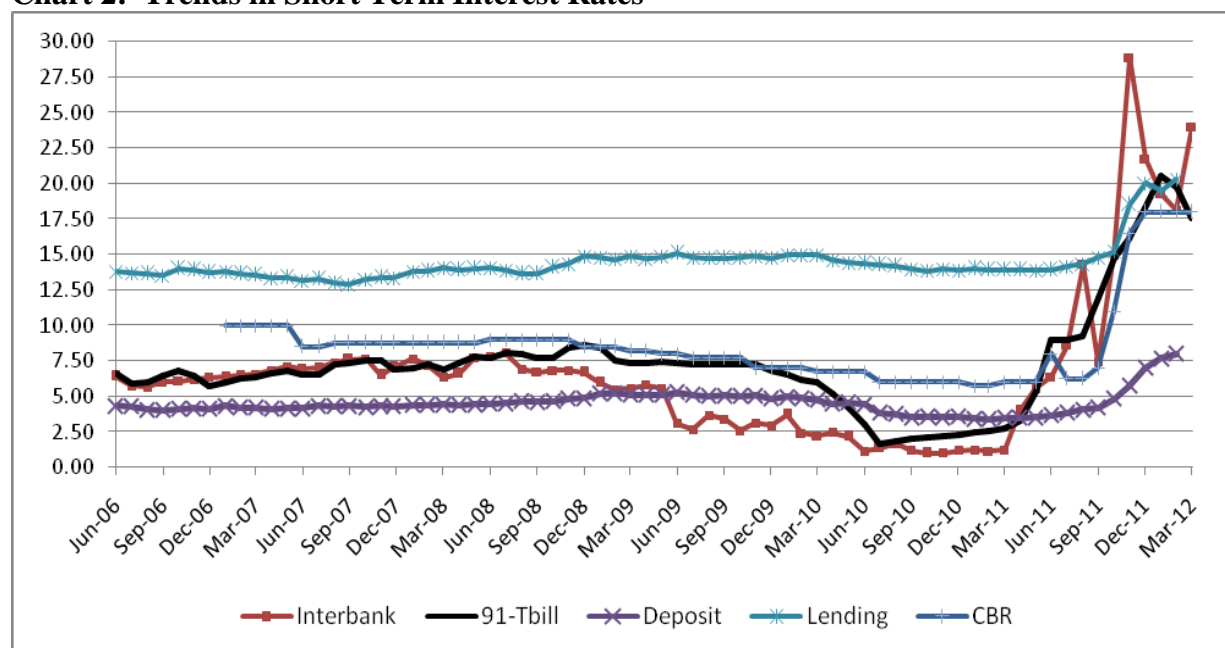
## 5.1 An Exploratory Analysis

### 5.1.1 Interest rates and exchange rates

Our analysis shows that the monetary policy expansion through successive cuts in the CBR

and injection of liquidity led to a decline in the short term interest rates (the REPO rate<sup>7</sup>, interbank and 91 day Treasury bill interest rates) especially in the period 2008-2010. However, there were no significant reductions in the commercial banks' lending rates during the period of the decline, leading to high interest rate spreads (Chart 2). The 91-day Treasury bill rate declined from 8.59 percent in December 2008 to 5.98 percent in March 2010. Similarly, the interbank interest rates and the REPO rate declined by 444 basis points and 393 basis points, to 2.22 percent and 2.43 percent, respectively over the same period. On the other hand, the average lending rates increased from 13.3 percent in December 2007 to 14.1 percent in March 2008 before declining slightly to 13.7 percent in September 2008. The rise was mainly attributed to the effects of post-election violence, i.e. a rise in default risks. The rates could, in fact have risen higher if the re-assurance that inflation was not likely to rise further once the supply bottlenecks were addressed was not communicated to the market participants. However, the decline was short-lived as the lending rates increased to 15 percent by June 2009, with banks exercising cautious lending following the global financial crisis.

**Chart 2: Trends in Short Term Interest Rates**



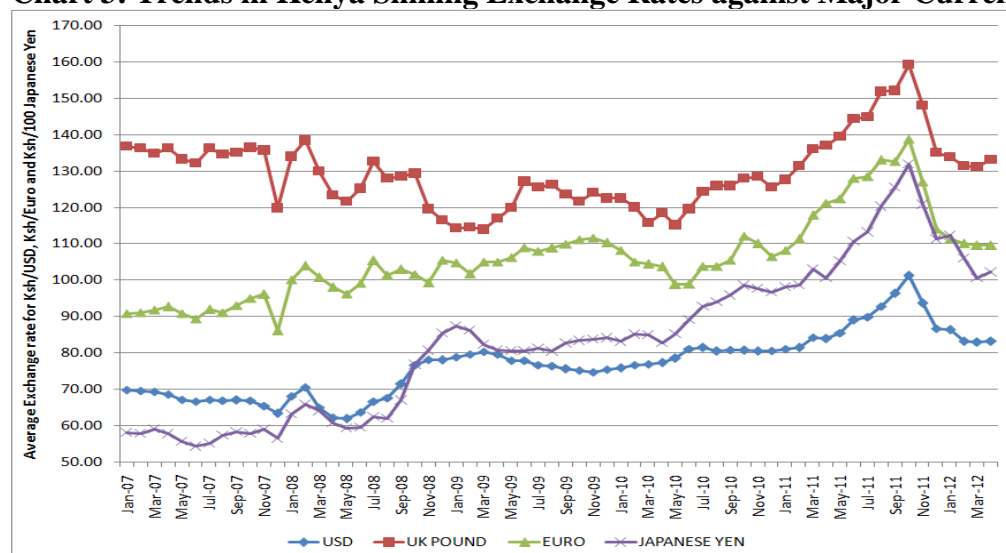
Source: Central Bank of Kenya



It has been observed that lowering the policy rate may have a limited effect on credit markets if the standard monetary policy transmission mechanisms are impaired (Ghosh et al., 2009). In the case of Kenya, Misati et al., (2011) find an incomplete pass-through of the policy rate to lending rates, both in the short term and the long term. Their findings show that it takes approximately between 11 and 24 months for the policy rate to be transmitted to long term rates in Kenya. Based on simulations from the CBK macroeconometric model, Were et al (2012) provide further evidence which show that whereas the impact of a change in the policy rate on short term rates such as interbank is strong, the transmission to the lending rates is weak. The ineffectiveness of monetary transmission from short to long term rates should partly be understood in the context of the structure of the banking sector in which only a few banks dominate the market and the perception of risk is high. Basically, the need to understand and strengthen the transmission mechanism is of essence.

Chart 2 shows the vivid turn around in the interest rates, from a remarkable decline to a sudden, sharp rise starting around mid 2011. This followed a sudden shift in the monetary policy stance from an expansionary policy to a tight monetary policy, in response to the build-up in inflationary pressure and a rise in exchange rate volatility. By 12<sup>th</sup> October, 2011, the Kenya shilling depreciated to its historical lowest level of 107 against the US dollar, compared with an average of 81 shillings per US dollar in January 2011 (see Chart 3). This reflected a depreciation of about 32 percent in nominal terms over the period and drew remarkable concern from both policymakers and the general public. The fall in the shilling attracted so much attention to the extent that while on one hand the Central Bank explored varied avenues and monetary policy tools to tame the exchange rate volatility, the legislative assembly instituted a special committee to investigate and establish the factors that were causing the depreciation<sup>8</sup>.

**Chart 3: Trends in Kenya Shilling Exchange Rates against Major Currencies**



Source: Central Bank of Kenya

On its part, the Bank undertook a number of measures to address the inflationary pressures and the sharp depreciation of the shilling. Specifically, the MPC raised the CBR from 6.25 percent in early September 2011 to 18 percent in December 2011, which is highest

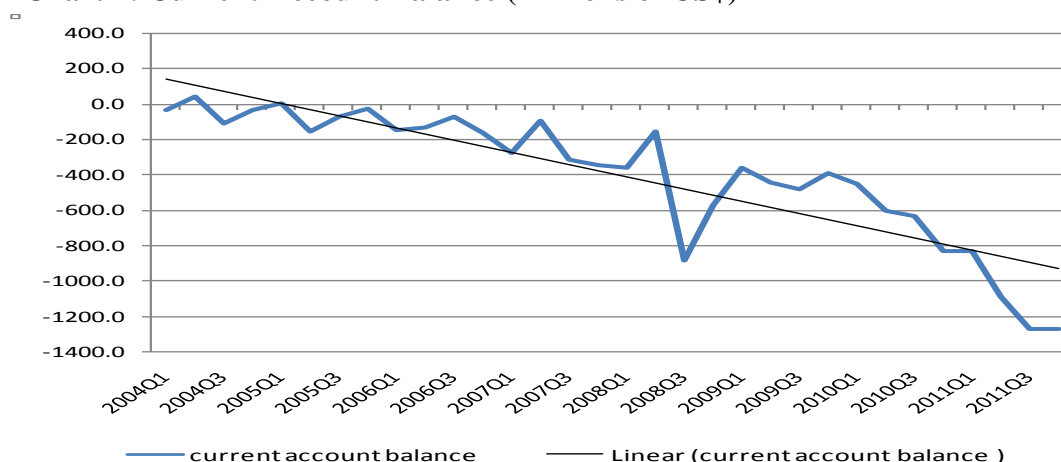
level ever set, thus reflecting the magnitude of inflationary pressures and exchange rate volatility that was being experienced. Other measures to stabilise the shilling included interventions in the foreign exchange market through sale of foreign exchange and an audit

of the foreign exchange activities of commercial banks, leading to a review of the foreign exchange guidelines with a view to mitigate against excessive speculative behaviour and market manipulation.

Although much of the public debate on the fall of the shilling focused on the role of the monetary policy in reference to the monetary policy easing, structural weaknesses especially

the huge import demand relative to export earnings leading to a widening current account balance (chart 4) has had a bearing on the exchange rate (Were et al. 2013). Even though balance of payment (BOP) support from the IMF helped strengthen the official foreign exchange reserves and eased BOP pressures, the growing external imbalance still remains a challenge.

**Chart 4: Current Account Balance (Millions of US\$)**



Source: Central Bank of Kenya

In response to the marked increase in the policy rate, all other market interest rates increased significantly (Chart 2). For instance, the interbank and lending rates rose sharply from 7.46 percent and 14.79 percent to 24.02 percent and 20.34 percent, respectively, between September 2011 and April 2012. Although the lending rates are sticky downwards in response to the policy rate, they are quite flexible upwards, leading to high interest rate spreads.<sup>9</sup>

Although a combination of policy responses and regulatory measures adopted by the CBK and the Government has yielded the desired results of stabilising the exchange rate as well as easing inflationary pressures, the turn of events that saw the sharp depreciation of the shilling and an upsurge in interest rates raised a number of questions, such as whether the tightening of monetary policy should have started much earlier, perhaps in anticipation of the subsequent turn of events. However, there

is no consensus on how quick or aggressive policy actions should be, since the manner and extent of policy actions are bound to differ depending on the institutional and economic structure of the economy, not to mention the nature of the economic problem at hand. Nevertheless, Jordan (2012) argues that as a result of the measures implemented during the crisis, central banks took much more risk onto their balance sheets and attracted a great deal of public and political attention, which can threaten the principle of independence.

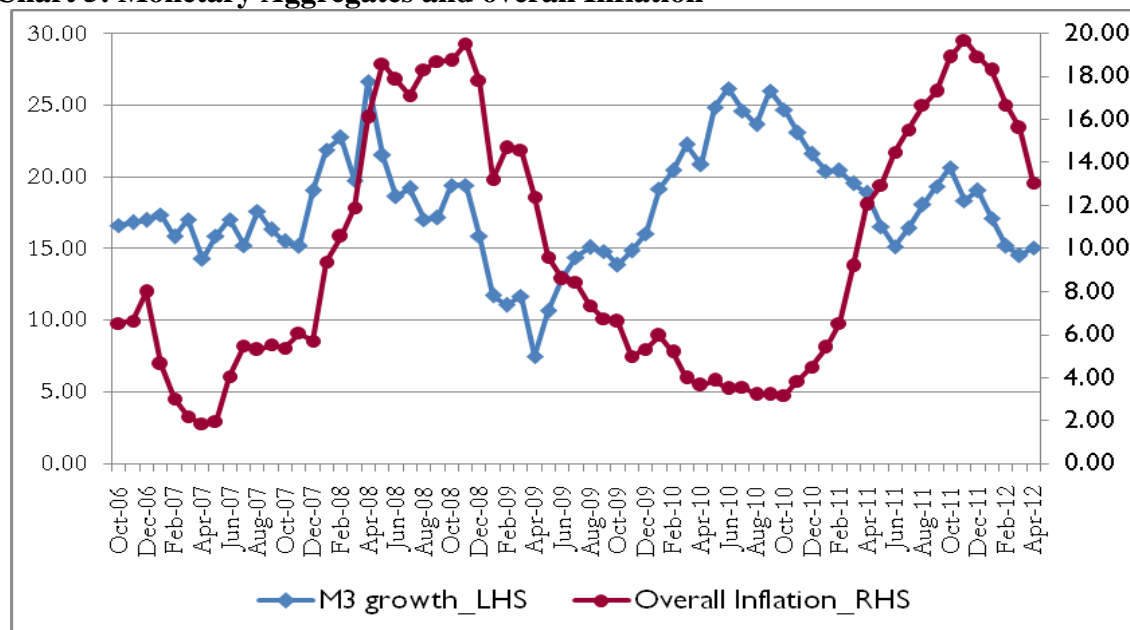
### 5.1.2 Inflation, money supply and credit growth

Like most central banks, the primary objective of the Bank is to formulate and implement monetary policy directed to achieving and maintaining stability in the general level of prices. Inflation in Kenya is often characterized by cycles and is highly susceptible to supply shocks relating to weather conditions and international price

shocks. This is characteristic of inflation in most African economies which are agriculture-based. Chart 5 shows trends in inflation (and money supply growth), with notable peaks and troughs.<sup>10</sup> The first peak relates to the high inflation experienced in the early 2008, mainly occasioned by the supply-side factors caused by the domestic political crisis. Disruption of the supply chains particularly in the high potential agricultural areas resulted in shortage of food supply in other parts of the country. The inflationary pressures were reinforced by the subsequent rise in international oil prices and domestic weather-related supply constraints. The initial response of loosening the monetary policy stance to support growth recovery did not pose a threat to inflation which had mainly been triggered by the supply-side factors following the aftermaths of the crisis. Following the restoration of political stability and resumption of growth, inflation started declining,

maintaining a downward trend as from late 2008 to end of 2010, at the time during which growth in money supply was rising (chart 5). However, from December 2010, inflation rose persistently from 4.5 percent to a peak of 19.7 percent in November 2011 before starting a consistent decline. This particular rise in inflation was largely fuelled by the drought conditions experienced in early 2011, leading to high prices for staple foods like maize and other essential commodities. The depreciation of the Kenya shilling against the dollar further exacerbated the inflationary pressures, which persisted despite the decline in money supply growth. Recent empirical studies on inflation in Kenya have shown that the impact of money supply growth on inflation is minimal and has a lagged effect (Misati et al 2012, Were and Kaminchia 2011).

**Chart 5: Monetary Aggregates and overall Inflation**



Source: Central Bank of Kenya

In terms of credit, Table 1 shows that credit to private sector grew by 20.34 percent and 30.87 percent in 2010 and 2011 respectively, from a growth rate of 13.86 percent in 2009. The decline in credit expansion in 2009 was largely attributed to strict benchmarks that were adopted by the banks over fear of

contagion effects from the global financial crisis. However, following the tightening of monetary policy, credit growth has since declined. The increase in credit to government from 10.1 percent in 2008 to 32.03 percent in 2009 and further by 35.45 percent in 2010 is largely attributable to the launch of

infrastructure bonds in February 2009 that offered a tax-free investment of Ksh 18.5 billion.

**Table 1: Summary of Changes in Monetary Aggregates**

	2005	2006	2007	2008	2009	2010	2011
Broad Money growth (%)	9.14	17.00	19.07	15.88	16.05	21.61	19.07
Credit to Private sector growth (%)	9.31	14.26	22.61	28.56	13.86	20.34	30.87
Credit to Private sector ratio to GDP(%)	25.43	25.35	27.51	30.76	31.19	34.84	38.44
Credit to Government growth (%)	-5.50	16.48	-2.87	10.10	32.03	35.45	12.17
Official Foreign exchange Reserves (USD million)	1,798.82	2,415.27	3,354.85	2,875.46	3,847.39	4,001.68	4,247.60
Months of Import Cover (based on 36 months average imports)	3.98	3.89	4.84	3.36	4.08	3.85	3.74

Source: Central Bank of Kenya

## 5.2 An Empirical Assessment

We estimate a simple VAR model, which is the most commonly used framework in assessing the effectiveness of monetary policy shocks, particularly in the empirical literature on monetary policy transmission mechanisms. For instance, using VAR analysis, Boivin and Giannoni (2003) provide evidence suggesting that there was a reduction in the effect of monetary policy shocks in the post-1980 period compared to the period 1959 to 1979. With respect to the response to the financial crisis, Carboni and Carboni (2012) show that the innovations in the policy rate could not have an impact on inflation because of the zero lower bound for the interest rates. We focus on the impulse response functions in order to analyse the behaviour of the variables following a monetary policy shock. The structure of the unrestricted VAR is given as:

$$y_t = \lambda + A(L)y_{t-1} + \varepsilon_t$$

Where  $y_t$  is a vector of variables,  $\lambda$  is a vector of constants,  $A(L)$  is a coefficient matrix,  $L$  is the backward operator and  $\varepsilon$  is a vector of serially uncorrelated disturbances. We built into the system, the standard variables in following order: real GDP (RGDP), price (Consumer Price Index (CPI)), money (M3), the policy rate (CBR) and exchange rate (EXR).<sup>11</sup> All variables except CBR are in

natural logs. The estimations are conducted using monthly data for the period January 2004 to December 2011.<sup>12</sup> The number of lags (two lags) was determined using Akaike, Schwarz and Hannan-Quinn information criteria. The corresponding impulse response functions are reported in Chart 6 in the Appendix.

Chart 6 here

The results show that following a monetary policy shock (i.e. unexpected rise in the policy rate), real GDP begins declining after 10 periods (months) whereas there is no significant impact on domestic price. This finding is consistent with the findings of Misati et al (2012) which show that a shock in short term interest rate has insignificant effect on domestic prices in Kenya. The monetary aggregate M3 declines but the impact is not quite significant. The exchange rate appreciates after about two months. Cheng (2006) also found an appreciation following a monetary policy shock using the REPO rate. The results point to the fact that the interest rate channel is still weak, particularly in controlling inflation. A shock in the monetary aggregate M3 has even much weaker impact on all the variables considered.

## 6. Conclusion and Policy Implications

Although much has been said about the 2008 global financial crisis, African countries' experience has largely been overshadowed. Kenya's experience is a bit unique in the sense that the economy was struggling to recover from the aftermaths of politically instigated domestic crisis by the time the effects of global financial crisis became apparent. To a great extent, the policy measures undertaken were effective in restoring confidence and resuscitating economic growth particularly after the economy sunk into a recession. A quick monetary policy response was needed as it set the pace for the implementation of fiscal policy measures such as the fiscal stimulus package. For the better part of 2008 to 2010, the short term interest rates declined and a rise in private sector credit was witnessed, though the lending rates did not decline significantly. However, the challenge was sustaining the gains over the medium to long term. A marked rise in inflation in 2011 coupled with unprecedented depreciation of the domestic currency compelled a sudden policy shift from loose to tight monetary policy. Although the move stabilised the exchange rate, it led to a sudden rise in both short term and long term interest rates, thus partly counteracting the gains that had been achieved.

Further analysis based on impulse response functions of the estimated VAR model signalled a weak monetary policy transmission mechanism from the policy rate to prices. However, a positive shock in the policy rate leads to an appreciation of the exchange rate.

A number of lessons can be drawn from Kenya's experience. There is no doubt that central banks have a role to play in mitigating the negative effects associated with economic crises, e.g. through pursuance of countercyclical policies. That notwithstanding, it is worthwhile to map out a clear exit strategy when adopting a major policy shift to avoid undesirable and unexpected outcomes. This is importantly so in the context of African economies where policy space to manoeuvre may be limited.

Secondly, the external environment that SSA economies face is increasingly becoming volatile. The vulnerability of the African economies to external shocks coupled with structural weaknesses in these economies is likely to affect the conduct and effectiveness of monetary policy. Consequently, monetary policy on its own is not adequate in addressing the vulnerability of the macro economy to supply-side and external shocks. In economies that are largely agro-based with large informal sectors like Kenya, fluctuations in real output and inflationary pressures are likely to be caused by supply side shocks than, or in addition to aggregate demand shocks. A holistic approach is paramount in dealing with structural imbalances such as high dependence on imports and low value commodity exports. Aggressive measures and incentives to promote high value exports and counter the over reliance on imports would go a long way in enhancing the foreign exchange earnings and boost growth.

Thirdly, use of monetary policy for active management of aggregate demand based on the current monetary framework is bound to be plagued by challenges given the weak monetary policy transmission mechanism and the primary objective of price stability. Consequently, strengthening of the monetary transmission mechanism in a way that makes monetary policy actions have a predictable impact on variables of interest is a challenge that needs to be addressed. Compared to industrialised and even emerging economies, the monetary policy transmission mechanism in most African economies is still relatively weak. This is often attributed to shallow and less integrated financial markets and limited competition in the banking sector, among other factors. Consequently, the reforms needed go beyond monetary policy implementation. More reforms are needed to deal with the structural rigidities, increase the level of effective competition and address underlying bottlenecks that hamper the efficiency of the financial sector. Last but not least is the political autonomy of the central bank. Whereas central bank should be held



accountable for its actions, its role should be safeguarded.

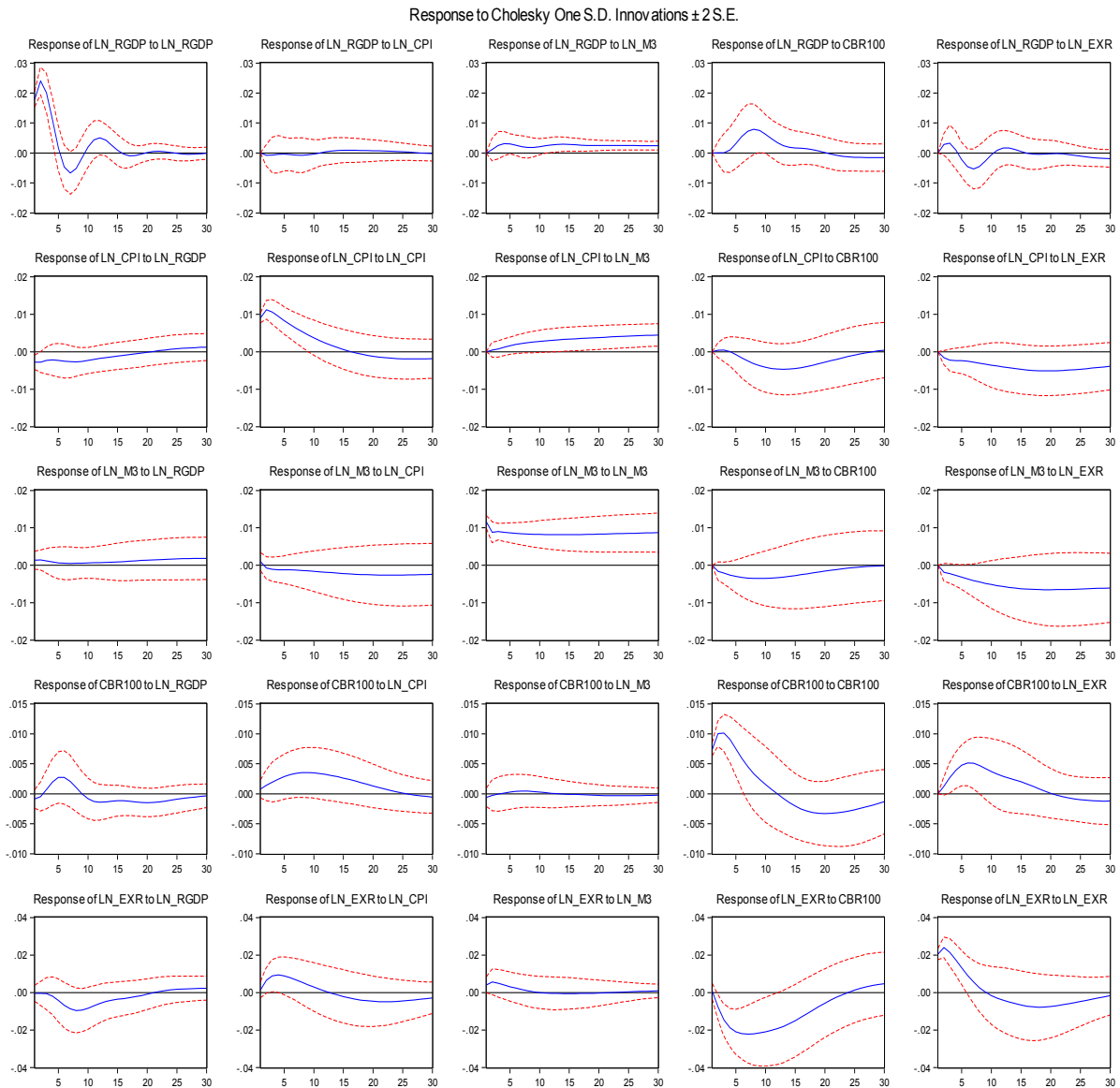
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## Appendix

### Chart 6: Impulse Response Functions



## Endnotes

<sup>1</sup> The inflation numbers reported at that time before the methodology was changed from arithmetic mean to geometric mean were much higher—e.g. inflation for May 2008 was reported to be 31.5%.

<sup>2</sup> As the adverse effects of the global economic crises dissipated, the number of tourist arrivals picked up once more. On average, the current estimates show that about 69 percent of Kenya's tourists come from Europe and 6 percent from the US.

<sup>3</sup> 2009 and 2010 overall banking sector reported average annual profits of over Ksh.70 billion

<sup>4</sup> In developed economies like the UK and USA, unconventional measures were adopted with the intention of easing financing conditions further in cases where the scope to lower the interest rates further was constrained by lower bounds (Lenza et al., 2010).

<sup>5</sup> Means "jobs for the youth"

<sup>6</sup> Some of the policy measures are still on-going.

<sup>7</sup> The rate at which the Central Bank sells securities to commercial banks in the open market operations in order to reduce money supply in the system.

<sup>8</sup> The Committee recommended amendments to the CBK Act that touch on the structure and operations of the Bank.

<sup>9</sup> The uproar about the high interest rate recently led to a motion in parliament calling for capping of lending rates but it was defeated.

<sup>10</sup> Although Kenya is not a formal inflation targeting country, the central bank works towards achieving inflation target of 5 percent.

<sup>11</sup> These are standard variables in empirical literature on assessing monetary policy transmission mechanisms using the VAR framework. Some studies include exchange rate while others do not. The ordering followed is also consistent with that in the literature including studies on Kenya e.g. by Cheng (2006).

<sup>12</sup> Monthly GDP was obtained by interpolating quarterly GDP.