Reflections on Central Banking

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Abstract

This note summarises my reflections on central banking. It seeks to code the milestones on the epic journey of central banking from the initial conditions, through the transition, to modern policy and practice today, both in a global context and in a Kenyan perspective. It is argued that although developments in economic theory, evidence and policy have entrenched the robustness of central banking today (the good), some unresolved issues persist - five of these issues are highlighted. The note concludes with a futurology of central banking (the unknown) and some key highlights of my reflections.

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Reflections on Central Banking: The Good and the Unknown

1. Introduction

I would like to thank Dr. Patrick Njoroge, Governor Central Bank of Kenya, for his kind invitation to me to participate in this historical celebration of the last 50 years of the Central Bank of Kenya (CBK). Indeed, CBK’s golden jubilee is no trivial matter. The average corporate life expectancy of top institutions and corporate bodies in Africa is less than 50 years, and more than 80% of small firms (e.g. Jua Kali) succumb to the Valley of Death in 0-3 years; nevertheless, CBK is right here at 50 and growing stronger!

I have been asked to reminisce about central banking. But, rather than trying to demonstrate my age advantage of being a tiny bit older than CBK, I draw some boundary lines, perhaps superficially, in order to keep things manageable and also to keep off the ‘neck of the woods’ allocated to other speakers at this symposium.

I seek to code the policy milestones on the epic journey of central banking from the initial conditions, through the transition, to modern central banking today, both in a global context and in a Kenyan perspective. Then, I argue that throughout the twists and turns of the epic journey, although developments in economic theory, evidence and policy have entrenched the robustness of central banking today (the good), some unresolved issues persist – I highlight five of these issues. Futurology is often quite tempting when we reminisce, so I conclude with some important concerns today regarding the future of central banking (the unknown).

2. The Epic Journey: Global and Local Milestones

2.1 Initial conditions: The Swedish Riksbank (1661) and Bank of England (1694)

Economic historians trace the history of central banking to 1661 when the Swedish Riksbank was established as a joint stock bank, with a national charter to lend funds to government and act as a clearing house for commerce. Later in 1694, the Bank of England (BoE) was established as a joint stock company, also to lend to government, by purchasing government debt. Other central banks followed, including the Banque de France, founded in 1800 to contain hyperinflation and foster renewed economic growth during the French Revolution.

What is interesting here is that these early central banks established three building blocks of the mandate of central banking today, namely the issuance of currency and protecting its value, lender to government and lender of last resort, and payments system (banks for bankers and providing a clearing system).

2.2 The transition: The Walter Bagehot milestone and the US Federal Reserve milestone

The Walter Bagehot milestone: Major financial panics occurred during 1825-1857, when BoE turned away private claims for gold. To address these panics, Walter Bagehot proposed the “responsibility doctrine”, which required BoE to subsume its private interest to the public interest of the banking system as a whole, to lend freely on the basis of any sound collateral

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2 See Cressy (2006) on why most firms die young. See also Green, Kimuyu, Manos and Murinde (2008) on evidence from a large-scale survey of Kenyan micro and small scale enterprises (Jua Kali).
3 Some of my predictions will be supported or rejected when CBK is celebrating its Centenary Anniversary! The tragedy of economic science is that my beautiful hypotheses can be easily assassinated by ugly facts!
4 See Borodo (2007) for an excellent summary of the history of central banks.
offered—but at a penalty rate (that is, above market rates) to prevent moral hazard. Hence, the Bagehot’s dictum:

"to avert panic, central banks should lend early and freely (i.e. without limit), to solvent firms, against good collateral, and at high rates".5

It is worthwhile to note that the “responsibility doctrine” worked well such that no major financial crises occurred in England for nearly 150 years after 1866, until August 2007 when the UK experienced the global financial crisis.

The US Federal Reserve milestone: The first central bank in the US, modelled after the BoE, was the Bank of the United States (1791–1811), followed by a second Bank of the United States (1816–1836). The latter was followed by the Free Banking Era, which had minimal regulation and allowed virtual free entry into and exit out of banking. The period was characterised by frequent bank failures, banking panics and inefficient payments system, with thousands of dissimilar-looking state bank notes and counterfeits in circulation - hence, the central bank mandate of issuance of currency was at stake here.

The creation of the Federal Reserve in 1913, to provide a uniform currency and to serve as a lender of last resort, gave birth to a central banking system in the US. Hence, by 1913, the Federal Reserve System and other central banks emerged, to consolidate the various instruments used for currency, engender financial stability, and manage the gold standard (or price stability).

In addition, this transition period saw the birth of the world’s oldest international financial institution – the Bank for International Settlements (BIS). The BIS was established in 1930 to "foster international monetary and financial cooperation and serve as a bank for central banks".6 However, during the Great Depression, BIS was unable to play the role of lender of last resort and could not intervene to end exchange rate instability when Britain and the US printed more money and devalued their currencies. Subsequently BIS suspended all operations during WWII. What is to be noted here is the lack of coordination by central banks, when individual central banks pursue seemingly unrelated objective functions.

2.3 Modern central banking

Following the end of WWII, the International Monetary Fund (IMF) was created, mainly to monitor exchange rates and suppress possible currency warfare and to lend reserve currencies to nations in debt, hence addressing some of the difficulties that had crippled the BIS.

With the IMF in place, central banks started to refocus the policies. In the US, the Federal Reserve System refocused its stabilization policy from low inflation to high employment, perhaps underpinned by the theoretical persuasion of Keynesian macroeconomics and the Phillips curve trade-off between inflation and unemployment. There followed a difficult period of high inflation, recession, stagflation, until the early 1990s.

However, gradually central banks delivered the Great Moderation, with steady growth and low inflation in industrial economies and rapid growth and stable inflation in emerging economies, until the outbreak of the global financial crisis in 2008. The success is attributed to inflation targeting to ensure both economic growth and low inflation. Of course, the Fed has long had a dual (unemployment and price stability) mandate, as did Bank of Japan (to increase inflation).

5 See Bordo (2007). Note the mark-up pricing of funds, where the mark-up is risk-sensitive and stochastic over time.
6 See BIS
Another important evolution is the role of financial stability by modern central banks. It is now conventional wisdom that a healthy and well-functioning economy is built on trust and confidence in financial institutions, markets and the financial system as a whole. For example, the financial stability roles of modern central banks, such as the BoE, European Central Bank and CBK, are reflected in the mandate of the Financial Stability Board (FSB), which:

“promotes global financial stability by coordinating development of regulatory, supervisory and other financial sector policies and conducts outreach to non-member countries”.7

Two issues: first, in the financial stability deliberations, what role should be given to asset price inflation? Should central banks ‘lean against the wind’? Second, co-ordination problems persist, in part due to implicit or explicit exchange rate targeting and, indeed, Quantitative Easing now largely works through relative devaluation effects, raising fears of ‘beggar thy neighbour’ policies that the IMF was set up to eliminate in the first place. Post-GFC, undershooting inflation target is a problem for the EU as well as Japan (the UK and the US, to a lesser extent). So, at Jackson Hole two weeks ago alternatives were considered, including raising the inflation target to say 4%, as previously advocated by the IMF, or move to nominal GDP targeting, among other options, to avoid the zero bound problem and the need for negative interest rate policy (NIRP).

2.4 From the 1919 milestone to the 1966 milestone in Kenya

The first stage of the evolution of central banking in Kenya was the establishment of the East African Currency Board (EACB) in 1919 for Kenya, Tanganyika and Uganda, later joined by Zanzibar in 1936. The main role of the EACB was to issue the East African shilling, which replaced the rupee as currency in the region.8

The East African Shilling was issued at par with the shilling in the UK, strictly on the basis of sterling securities at the Bank of England. Hence, the EACB did not have any room for any kind of monetary policy or exchange rate policy or for regulating the activities of commercial banks. The EACB’s hands were tied.9

The EACB was replaced by the independent central banks of Kenya, Tanzania and Uganda in 1966. Consequently, the Central Bank of Kenya started issuing its own currency in 1966 under the mandate in the Central Bank of Kenya Act cap 491.

Unlike the EACB, each new central in Kenya, Tanzania and Uganda, respectively, would:

- Serve as monetary authority, charged with the responsibility for policies that affect the supply of money and credit in the respective country.
- Have a mandate to use its tools of monetary policy (namely open market operations, discount window lending, changes in reserve requirements) in order to affect short-term interest rates and the monetary base (currency held by the public plus bank reserves)
- Have a mandate to use monetary policy to achieve important policy goals; for example, inflation, economic growth and the exchange rate (or foreign reserves).

Notable among the consequences of the 1919 milestone is that central banking in East Africa followed the British central banking tradition and so did the entire banking system. The

7 FSB website
8 But, later during WWII, the East African shilling monetary area, expanded to include, albeit temporarily, Aden, British Somaliland, Eritrea, Ethiopia and Somalia. See Symes (2004) for detailed coverage.
9 Currency Boards have been described as a way of tying the hands of the monetary authority; see, for example, de Haan and Berger (2003), in Mullineux and Murinde (2003).
evolution of the mandate of the Central Bank of Kenya was influenced partly by its earlier connection with the Bank of England.

Overall, what has emerged from the epic journey of global and local (Kenyan) milestones is that the modern central bank now has three main goals:

- Safeguarding the value of money or maintaining price stability is the prime role. This is measured by a sustained low rate of inflation. Monetary policy is expected to achieve this goal. Notwithstanding QE, NIRP and the proposal to scrap cash so that only money is electronic bank money, so all savings can be ‘taxed’ using NIRP.
- Achieve high and sustainable economic growth. Here, monetary policy has an important role here, specifically smooth the business cycle and offset exogenous shocks.
- Financial regulation and maintaining financial stability. This goal includes maintaining regulatory and supervisory oversight of financial institutions, an efficient and smoothly running payments system, and the prevention of financial crises.\(^\text{10}\)

In addition, the evolution above gives us the theory of central banking today. In a flow of funds framework, central banks address asymmetric information problems among financial sector agents (such as banks), real sector agents (households and companies) and between the domestic economy and the rest of the world. Information is used to level the playing field for all agents and to price risk by financial institutions and financial markets. Central banks also underpin the incentive structure for all agents, especially for financial intermediation models used by banks to balance profitability and risk, and the incentives for market discipline (e.g. via peer-monitoring).

3. Observations on some unresolved issues

The epic journey for the evolution of central banks, described above, was characterised by many breakthrough developments. However, some challenges have persisted in economic theory, empirical evidence, policy and practice. Let me consider five challenges.

3.1 Macroeconomic policy modelling

Central banks, the world over, have been at the forefront of macroeconomic policy modelling to underpin their policy decisions and forecasts. The most notable achievements include the flow of funds modelling approach pioneered at the Cowles Foundation for Research in Economics at Yale University,\(^\text{11}\) the vector autoregressive work pioneered by Christopher Sims, among others, and the focus on monetary policy by Bernanke and others, and recently the DSGE approach that has proved popular with many central banks.\(^\text{12}\)

Economic theory and econometric applications have thrown up at least 5 challenges:

- The objective function – what utility function are you maximizing?
- Model uncertainty – the functional form as well as parameter uncertainty
- Lag structure for dynamics: shall we use Akaike Information Criterion (AIC) or Schwarz Information Criterion (SBC) or Hannan-Quin Information Criterion (HC) or cointegration? The results from AIC and SBC often conflict.

\(^\text{10}\) This is consistent with Griffith-Jones and Gottschalk (2016) on balancing financial stability and growth in Africa.
\(^\text{12}\) These macroeconomic modelling approaches are covered in detail in Murinde (1992, 1993), Green and Murinde (1993, 1998) and Murinde (2011), among other studies. See also applications of flow of funds modelling to capital flight, in Murinde, Ochieng and Meng (2015).
Making forecasts: can we forecast a W or structural breaks?
Choice of policy instrument – the Tinbergen-Theil framework and the 'assignment problem'

Nevertheless, what we have learnt from the macroeconomic modelling work by central banks over the last 50 years is that each approach has its major advantages as well as limitations. For example, the flow of funds approach to large scale macroeconomic models gives researchers the flexibility to calibrate the model to the structure of the respective economy with the central bank located at the core of the macro model, and to undertake policy experiments using stochastic simulations in order to generate what-if scenarios for the impact of a given policy package on each of three targets: inflation rate, economic growth rate, and exchange rate. The central bank can easily pick the policy package of choice for the desired macroeconomic outcomes. However, the well-entrenched Lucas critique warns us that some parameters may change when policy changes. DSGE approach is very promising, but falls short of the forecasting power of Bayesian vector autoregressive (BVAR) models.

CBK has featured actively in these developments, generating rigorous econometric models to support strategic financial policy at the macro and micro levels, thanks to the competent team in the Research Department, the Kenya School of Monetary Studies and the School of Economics at the University of Nairobi. Given this huge battery of research expertise, it appears worthwhile for the CBK to invest in a suite of the best three model vintages available to date, with each tailored to a special purpose, but offering the advantage of comparing outputs: the flow-of-funds model for macro and micro policy; the BVAR for forecasting and the DSGE for dealing with specific monetary policy questions.

3.2 Governance: Central bank independence and other governance reforms

The governance of central banks is a major issue of interest today in industrial economies as well as developing countries. Indeed, a quick look at the structure, composition and roles of the Board of Directors and top management of many central banks points to some surviving commonalities (consistent with the original sin hypothesis), but the differences (mainly shaped by institutional environment such as legal and political factors) seem to suggest that no two central banks are the same, even within the East African region!

But, core to the governance of central banks is the issue of governance reforms designed to secure central bank independence (CBI). The theoretical underpinnings are well represented in a government budget constraint. A useful characterisation defines CBI in terms of personnel independence, financial independence, and policy independence. Personnel independence reflects limits to the government’s influence on the central bank board’s membership or tenure. Financial independence restricts the government’s ability to use central bank’s loans to fund its expenditures, to avoid monetary policy subordination to fiscal policy. Policy independence

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14 The central bank governance structures are not homogenous of degree one among the 5 East African countries.
15 See, for example, Bernhard (2002) and Garriga (2016). See: the time-inconsistency problem (Kydland and Prescott, 1977) can be overcome if the control of monetary policy is delegated to independent central banks; on “rules versus discretion” debate (Barro and Gordon, 1983; Rogoff, 1985); and the fact that the IMF welcomed CBI (Bernhard, Broz, and Clark, 2002; International Monetary Fund, 1999; World Bank, 1992; and Garriga, 2016).
16 See, for example, Murinde (1992, 1993).
reflects the central bank’s powers to select targets and instruments for monetary policy and to implement them. It is a sharp departure from the early experience in East Africa, where the hands of the EACB were tied.

But, what do we know about the dynamics of central bank reform in the world? Existing knowledge today suggests that CBI is linked to lower inflation, reduced variation in inflation and output, increased credibility of monetary policy, and lower uncertainty among economic agents.\textsuperscript{18} However, it is not altogether true that African central banks have the highest marginal propensity to be manipulated by political ambitions. On the contrary, Kenya is featured as having the highest CBI in Africa during 1998-2010. Nevertheless, the measurement of CBI is still imperfect and it is not clear whether the three types of CBI identified above all have stabilizing potency.

3.3 Exchange rate regime and natural resources

Competitive devaluation of the exchange and beggar-thy-neighbour policies featured in our epic journey of central banking.\textsuperscript{19} Post-WWII, the IMF has played a key co-ordination role with central banks in order to minimize the incidence of competitive devaluation, notwithstanding some intermittent currency wars.\textsuperscript{20}

However, recent literature has flagged up an interesting aspect of exchange rate regime and CBI, which has important implications for African countries that are endowed with natural resources, including Kenya – given that central banks are at the core of managing natural resource rents as well as seigniorage.\textsuperscript{21} It is argued that for countries which depend heavily on natural resources, the degree of exchange rate management tends to influence the relationship between seigniorage and governments’ natural resource revenues. But, the exact influence seems to also reflect the various types of natural resources as well as the exchange rate regime. For example, it is found that under fixed or limited flexibility exchange rate regime, an increase in natural resource rents may trigger an increase in seigniorage. But, the same increase in natural resources has little effect on seigniorage under crawling currency bands and managed floating regime, while under freely flexible exchange rate regimes, an increase in natural resource rents allow less reliance on seigniorage. In terms of the various types of natural resources, it seems that the direct relationship between natural resource rents and seigniorage is driven mostly by oil and natural gas, with mixed evidence of a direct relationship for minerals and little evidence that coal and forestry influence seigniorage in the sample countries.

Researchers at CBK, KSMS and School of Economics of UoN may wish to pursue this line of research, with respect to Kenya and other countries that are blessed with natural resources.

3.4 Bank regulation: Still at the cross-roads?

National central banks and BIS, the central banks’ bank, have played a critical role in sustaining the dynamics of international banking regulation, codified in Basle Accords. Basel I was introduced in 1988 to create a bank asset classification system in order to deal with credit risk: banks were required to maintain a minimum amount of capital based on a percent of risk-

\textsuperscript{18} See, in particular, Bodea and Hicks (2015a), and de Haan and Berger (2003).
\textsuperscript{19} Specifically, using beggar-thy-neighbour policy, one country attempts to remedy its economic problems by means that tend to worsen the economic problems of other countries. The term is attributed to Adam Smith.
\textsuperscript{20} See IMF Annual Report on Exchange Rate Arrangements and Exchange Rate Restrictions (IMF, 2014)
\textsuperscript{21} See Elbahnasawy and Ellis (2015) on the inverse relationship of financial development and exchange rate management to seigniorage. See also Kamgnia and Murinde (2015) on the role of these natural resources for economic growth and employment creation for the youth in Africa.
weighted assets (8%). But, the Asian financial crisis highlighted deficiencies in monitoring credit risk and hence derailed Basel I. An updated version was introduced in June 2004, coded Basel II, structured into three pillars: minimum capital requirements (for credit risk as in Basel I), supervisory review, and market discipline. But, before it could be fully implemented by many countries, Basel II reached the cross-roads following the outbreak of the global financial crisis in 2008. From the cross-roads many African countries are a bit apprehensive about Basel III, which is structured around bank capital adequacy, stress testing and market liquidity risk. The schedule for implementation has been extended to 31 March 2018 and again to 31 March 2019.23

But, why are bank regulators overstayng at the cross-roads? Perhaps, it is the ownership of Basel III (or earlier versions in Basel I and II), involving wider membership and due consultations (voice), or simply that the small print of the accord are not well understood. Indeed, some researchers have called for Pillar 4 in designing post-crisis bank regulation.24 Also, it may be the capacity building required to bridge the gap between bank regulation and bank supervision. But, it may well be the case of the missing evidence: some tenets of Basel III, such as capital buffers, are part of the unresolved issues in theory and empirical research today: specifically, the Basle accordes have not reconciled three issues — bank capital, bank risk and bank profitability. For example, recent research investigates the simultaneous relationship among bank capital, risk and profitability, using bank level data from West African Economic and Monetary Union (WAEMU) countries during 2000-2014.25 The 8 WAEMU countries are split into lower middle-income (LMIs) and low-income (LICs). It is found that:

- the sensitivity of bank profitability to changes in capital ratio is much higher in LICs (-0.39) than in LMIs (-0.07)
- on average, one unit percentage increase in capital ratio leads to 107 basis points decrease in bank risk (as per the moral hazard hypothesis); the impact is stronger in LICs than LMIs.
- banks are counter-cyclical in LICs, i.e. banks accumulate capital buffer during expansions and deplete the capital during recessions when risk is high, mimicking Basle III.
- Foreign bank ownership and cross-border banking reduce risk in the banking sector, but while the former is associated with an increase in capital ratios (0.005) in LICs the latter reduces the capital ratio in LMIs and increases profitability in LICs.

Jointly with CBK, KSMS and the School of Economics at UoN, it will be interesting to investigate the case of Kenya, together with the regional member countries which host cross-border banks from Kenya.

3.5 Globalization (cross-border) and convergence of banking systems

The long historical dynamic of finance is to expand globally and transform local, regional and international finance accordingly. Although that dynamic has experienced reverses periodically it has accelerated between the 1970s and now, and there are theoretical grounds for believing that

22 The CAR of 8% was not very useful in identifying bank performance inefficiency; see Kirkpatrick, Murinde and Tefula (2008) on the measurement and determinants of x-inefficiency in commercial banks in Africa. See also Lensink and Meesters (2014) on institutions and bank performance; and Zhao and Murinde (2011); Zhao, Matthews and Murinde (2013) and Matthews, Murinde and Zhao (2007).
23 Murinde (2011) argues that financial regulation in in Africa is at a cross-roads: the road behind points to an expired Basel 1, the road ahead points to Basel 3 with so many unknowns, while the side roads have interesting aspects of Basel 2 and its weaknesses. See Murinde (2012) for wide coverage of bank regulatory reforms in Africa.
25 The absence of evidence is not evidence of absence.
26 See Kanga, Murinde and Soumare (2016) on capital, risk and profitability of WAEMU banks, with cross-border banking. For the debate on opening up to foreign bank entry, see Murinde and Ryan (2003).
the globalisation of finance will continue and develop new forms in future decades. The future of central banks is inextricably linked to the dynamics of globalization and convergence of banking systems.\textsuperscript{27} Existing evidence shows that banks have increasingly gone cross-border, but banking systems have not necessarily converged.\textsuperscript{28} Hence, central banks will continue to play a key role in the design of financial regulation and supervision as banks increasing go cross-border.

With respect to Kenya in the Eastern Africa region, two questions arise: first, whether banking systems in the Eastern Africa region are converging into a single East African banking space; second, the dynamics of cross-border banking from Kenya. Convergence of banking systems is driven by institutional factors such as legal framework for banks but also by the behaviour of financial markets and non-bank financial intermediaries, mainly in terms of whether bank-based financing prevails over market-based financing. The experience for a series of studies on the EU countries\textsuperscript{29} shows that corporate financing patterns in EU countries are converging towards increased dependence on equity and bond markets and a reduced share of borrowings from the banking sector. A single Eastern Africa banking space, in which Kenya is playing a leading role, is a long term perspective. CBK and other central banks in the region are already playing their coordination role to reduce asymmetric information and to promote the merits of ‘relationship banking’ in the region rather than over-reliance on sheer credit scoring.

Research conducted here in Kenya investigated the drivers of cross-border banking in East Africa.\textsuperscript{30} Four main findings are relevant here:

\begin{itemize}
  \item institutional quality is vital at the planning phase of banks’ going-abroad decision
  \item relatively competitive markets and weak market power at home seem to “push” banks abroad, but higher inflation in the host country is a deterrent
  \item banks seek to exploit the benefits of their relative efficiency through regional expansion
  \item greater earnings, economic integration, and follow-the-client do not matter.
\end{itemize}

4. Futurology of central banking

4.1 The future of bank regulation cannot ignore peer monitoring and market discipline

The architecture of Basel Accords I – III, since 1988 to the present, mimics the mechanical design of the \( n \)-speed of a manual transmission gearbox (where \( n \) is the number of forward gear ratios) in car manufacturing.\textsuperscript{31} For the future, before Basel comes up with Basel IV, there is strong imperative to integrate the role of peer monitoring and market discipline as an integral component of official bank regulation. Indeed, as recent research shows, it takes more than simple regulation to achieve financial stability.\textsuperscript{32}

As an example, in a recent empirical study, a team of Kenyan and other researchers investigated whether the interbank market in Kenya is effective as a peer monitoring and market discipline

\textsuperscript{27} A broad view of the challenge of globalization for central banks includes financial globalisation and supply-side developments, such as political instability and oil price shocks, which fall outside of the control of central banks.

\textsuperscript{28} See, in particular, Mullineux and Murinde (2003), Chapter 1; also Murinde, Agung and Mullineux (2004) on patterns of corporate financing and financial system convergence in Europe.

\textsuperscript{29} See Murinde (1992), Murinde et al. (2004), Mullineux and Murinde (2003) and xx. See also Brambila-Macias, Massa and Murinde (2011) on cross-border bank lending versus FDI in Africa’s growth story.

\textsuperscript{30} See Kodongo, Natto and Biekpe (2014) on explaining cross-border bank expansion in East Africa.

\textsuperscript{31} Think of the gradual upgrade of gears of a manual transmission car: by 1900 with 1-2 gears; 1960s, cars had gears 1-3; in the 1980s, we got gears 1-4; in 2000, we got gears 1-5; now (2016), we have gears 1-7 on the Porsche 911. Gears 1-10 eventually or just automatic transmission?

\textsuperscript{32} See recent path-breaking work by Griffith-Jones and Gottschalk (2016).
device and thus complements official bank regulation. The research uses quarterly data on 43 banks which participated in interbank transactions during 2003Q1 - 2011Q4:

- A stable inverse relationship is uncovered between interbank activity and bank risk levels, even after controlling for differences in bank characteristics.
- The overall findings suggest that regulators can use the dynamic interbank borrowing activities among large and small banks as market signals to identify risky banks.
- However, if a bank continues to increase its net interbank position up a certain level, the impact on bank risk is reversed from risk-reducing to risk-increasing.

Other non-formal regulatory mechanisms may be invoked, including the taxation of banks, as suggested by the new research on balancing the regulation and taxation of banks. In addition, existing research seeks to draw regulatory lessons for emerging stock markets from an empirical study of the relationship between transactions costs and share price volatility in the London Stock Exchange. The findings suggest that transactions taxes (e.g. stamp duty and brokerage charges) have a significant and dependable effect on share price volatility, such that the official regulatory regime needs to take account of the impact of regulation on such costs. For the future, this is important for financial regulators that rely on stamp duty or other transactions taxes as a regulatory tool – “throwing sand in the wheels” whenever the need arises.

4.2 The mandate of a central bank

It is clear from the epic journey bank that since 1661 the mandate of central bank has been evolving, mainly influenced by economic and financial developments, globally and in Kenya. But, the economic and financial landscape has shifted and some conventional wisdom in economics has been challenged post-GFC, including the financial development and economic growth nexus; for example, recent research claims that too much finance can harm growth.

The ever changing world financial system generates international financial crises with widespread market failures of such a global magnitude that regulation machinery breaks down. The co-existence of market failure (the market was unable to price risk) and regulatory failure translates into global financial risk; for example, the re-occurrence of financial crises:

- The Tequila crisis of December 1994 was a currency crisis ignited by capital flight
- The financial crises across Asia in 1997-98 ignited fierce debate about domestic economic weaknesses and flaws in the international financial system
- The Russian financial crisis (the Ruble Crisis or the Russian Flu), which hit Russia on 17 August 1998, resulted in the Russian government and the Russian Central Bank devaluing the currency and defaulting on its debt.
- The Eurozone crisis – the multi-year sovereign debt crisis since 2009, where the Eurozone member countries of Greece, Portugal, Ireland, Spain and Cyprus have been

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33 See Green, Bai, Murinde, Ngoka, Maana and Tiriongo (2016) for a survey on overnight interbank markets and the determination of the interbank rate. See also Murinde, Bai, Maana, Ngoka-Kisinguh, Tiriongo and Green on peer monitoring role of the interbank market in Kenya and the implications for bank regulation.
34 See Chaudhry, Mullineux and Agarwal (2015) on balancing the regulation and taxation of banking.
35 See Green, Maggioni and Murinde (2000) for 150 years of evidence on transactions costs and share price volatility in the London Stock Exchange.
37 Banking crises generate contagion and pose a threat to financial integration; see Caballero (2015).
unable to refinance their debt or bail out over-indebted banks without intervention from other Eurozone member countries, the European Central Bank and the IMF.

The above financial crises have put to the test the traditional mandate of central banks and the conventional wisdom on moral hazard and adverse selection associated with deposit insurance and bank bail-outs, with new perspectives on too-big-to-fail (or too-big-to-exist). Reforming the traditional structure of a central bank to cope with a financial crisis can be quite challenging, as can be learnt from the experience of the Bank of Thailand during the Asian financial crisis.

Overall, for the future, there are five major global risks:

(i) *China’s impact as a global investor*: the new context of China, setting “new norms” in transforming the behaviour of financial markets, financial institutions, financial instruments, manufacturing and commerce. How is Chinese outbound investment influencing industries abroad or shaping trade in Africa? The big world picture is shifting, including the setting of new rules for global finance. What does this mean for Kenya? What are the effects of financial disintermediation in China for Kenya banks?

(ii) *Technology-based financial innovation*: Electronic money (such as BITCOIN and block-chain technology). Also, how will the growth of non-traditional financial vehicles, including peer-to-peer lending, mobile payments systems and mobile financial services (such as those developing from the MPESA model) affect the theory and practice of finance and financial system stability? In this digital age, such FinTech innovations may herald a shift towards disintermediation that leads to the decline of traditional banks and financial institutions, but may lead to new forms of intermediation through new financial institutions or through emulation and incorporation by established financial firms.

It is to be noted that the move to a cashless society (e.g. mobile money) not only allows electronic money held in bank accounts to be taxes using NIRP, but may lead to loss of control of the money supply by central banks as it goes outside the banking system (perhaps to avoid the tax).

(iii) *New wave of political risk*: These risks are unconventional and mutative, posing threats to global business and finance. Some of the threats depart from convention, e.g. Brexit and uncertainty about the future of the EU, with implications for global economic security. The East Africa region and Kenya in particular are no exception. The global security context has serious implications for global investment; the question is whether financial markets are mispricing geopolitical risks.

(iv) *Investment uncertainty and new rules for the regulation of global finance* arising from opaque rules for governing global finance, as in Basel III. For example, when regulatory changes, technological and business model innovations are reshaping the global banking landscape, how can long-term investments be prioritized in Kenya?

(v) *Islamic finance and shadow banking: different rules of the game?* This refers to the growth of Islamic banking and finance, as alternative forms of banking. To what extent is expansion of ‘Islamic’ finance sustainable in East Africa and Kenya? Or will there be

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38 See Griffith-Jones, Ocampo and Stiglitz (2010) on lessons from the GFC and the need for ‘a visible hand’.
40 See Murinde (2016) on mega trends in global financial risks.
41 In theory, the S-curve of financial innovation suggests that such innovations can derail financial stability; for example, securitisation in the early 1990s and the recent subprime crisis. Central banks have to watch these innovations and how economic agents adjust their expectations.
42 Lensink, Hermes and Murinde (2000) show that political risk is a key driver of capital flight. The new wave of political risk poses a threat to national and global financial systems.
44 See, Al-Deehani, Karim and Murinde (1999) on the capital structure of Islamic banks under the contractual obligation of profit sharing.
increased convergence with ‘conventional’ banking and finance as regulators and markets promote lower leverage ratios in the latter and create a conventional system which has features closer to equity based Islamic finance? The rapid growth of shadow banking globally means that there is an increasing need to monitor these non-bank financial intermediaries which provide financial services to traditional commercial banks but outside the oversight of official financial regulatory authorities.

In the face of the above 5 global risks, the central bank of the future is expected to be the “brain” of the financial system, in a F-O-F framework, co-ordinating dissemination of information about resource availability at every level, evaluating the pricing of inherent risk, and so enables the efficient allocation of resources for supporting economic growth.

Hence, future modern central bank should be modelled on a (1+n) design, where 1 is the universal goal to provide price stability (or low inflation over a long-run period) and n denotes the number of additional goals to be selected from among the following:

- **economic growth**: this is a separate goal, because low inflation does not guarantee economic growth; when the above mega exogenous shocks threaten to slow down economic growth, the central bank may temporarily ease monetary policy to restore the economy to its growth path. The most radical idea is that central banks should consider nominal GDP targeting rather than inflation targeting!
- **financial stability**: this is another separate goal, which addresses macroprudential regulation, in order to mitigate systemic risk - the risk of the financial system as a whole. Also, in case of a financial crisis, as cited in the 4 examples above, it becomes necessary for the central bank to provide the required liquidity to ensure solvency and proper functioning of a stable market-based financial system – a modern variant of Walter Bagehot principle – even if it means a temporary departure from the low inflation goal.
- **Bank supervision and regulation**: this role includes the licensing, supervising and regulation of commercial banks, as a mandate of the central bank
- **Payment and settlement systems**: the central bank has an important role to ensure regulation and supervision of effective payment, clearing and settlement systems.

Nevertheless, some questions remain; for example, what should the inflation target level be (above 2%) and should this level be ditched in place of nominal GDP growth or other nominal targets (or perhaps real targets – which is implicitly what we have with interest rate policy under Quantitative Easing)? And what about asset price inflation targets to avoid bubbles driven by global capital flows (leaning against the wind)?

To deal with these questions, the cross-country element of the above goals is knowledge and capacity building. CBK, through its Research Department, KSMS and the School of Economics at UoN, has already embarked on the cross-cutting dimension of a modern central bank.

### 4.3 Governance through ownership: Should central banks be privatised?

Recent research suggests that ownership is an increasingly influential form of corporate governance.\(^{45}\) This strand of literature may have important implications for future central banks. For example, after the outbreak of the global financial crisis in 2008, one eminent monetary economist delved into the history and the desired future role of the Bank of England and concluded with a call for the UK central bank to be privatised.\(^{46}\) The core argument was that the

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\(^{45}\) See Connelly, Hoskisson, Tihanyi, and Trevis Certo (2010) on ownership as a form of corporate governance.

\(^{46}\) See Congdon (2009) as the basis of the call: The Bank of England should be privatised.
Bank of England had been unable to rise to the occasion and save Northern Rock, say via any lender-of-last-resort instruments, and to contain the subsequent instability in the UK financial system. So, a new structure was proposed, whereby the Bank of England would be privatised, with its capital provided by the commercial banks, which would provide the right incentive to regulate the banking system and also provide the banks with lender-of-last-resort facilities.

Broadly, the futurology of central banking cannot ignore the fact that there is some controversy about central bank ownership, including the call for some central banks to be privatised. True, many central banks are owned by governments (public owned). But, some non-conventional ownership structures of central banks do exist; for example, the Federal Reserve Bank is privately owned by its member banks; and the European Central Bank is owned by the national central banks. Nevertheless, it is useful to recall that before WWII, all European central banks were owned privately, which engendered may financial upheavals until the central banks were nationalised and controlled directly by governments. It's like déjà vu all over again.

4.4 Some emerging issues

There are four emerging issues, which I have side-stepped in this paper, mainly because they feature prominently in the other presentations on the programme today:

Credit policy – modern central banks have played an important role in the formulation of credit policy, mainly through setting the central bank rate in such a way as to influence loan rates by commercial banks. Some Eastern and Southern African countries, including Kenya, feature persistently high loan interest rates and high spreads, but interestingly commercial banks in these countries also feature high loan default rates, as new research shows. Tendencies towards financial repression in many African economies have been largely eliminated in the last 20-30 years, only to be revived, ironically, by national central banks through interest rate caps and by the major shareholders in the IMF and World Bank through Quantitative Easing. What are the policy options? How can central banks intervene, taking into account the relationship (in theory and empirical work) between different interest rates or bond yields and different terms or maturities (i.e. the term structure of interest rates)?

Inclusive finance - the financial inclusion revolution concerns the demand, access, use and quality of financial services by disadvantaged and low-income social groups, segments of society, in order to bridge financial development gaps as well as financial inclusion gaps. Broadly, policy and practice aims to address financial inclusion in a flow of funds framework (households, firms, governments and capital markets) and to benefit from financial innovations such as mobile money banking and crowd funding. FinScope surveys have been carried out to monitor national progress in many African countries including Kenya, Uganda, South Africa, Namibia and Swaziland. The question is: what role should a modern central bank play, if any, on both the demand side and the supply side?

The ‘new normal of monetary policy’: Following the global financial crisis and quantitative easing (QE), central bank policy rates in industrial countries fell rapidly and have now hit the zero lower bound (ZLB), growth is slower and very low inflation rates actually pose a risk in maintaining price stability and financial stability. Should the new normal include higher inflation targets?

47 Taken from a famous quotation attributed to Yogi Berra; also the album by John Fogerty.
48 A recent ESRC research project pins down these issues; see Griffith-Jones and Gottschalk (2016).
49 See Allen, Carletti, Cull, Qian, Senbet and Valenzuela (2014) on financial inclusion gaps in Africa.
50 With inflation expectations at the present 2%, central banks are concerned that deflation might get out of control and unleash a long recession.
The experience in Eastern Africa and Kenya is not as bleak but these economies are highly vulnerable to the vagaries of the global financial weather conditions. The question is: what is the new normal of monetary policy in Kenya?

A single East Africa financial space: CBK is already co-ordinating with other central banks in the region for greater regional financial integration, mainly under the EAC. The next question on the agenda is how quickly a single East Africa financial space can become a reality. This mimics a ‘back to the future’: from the common EACB, 1919-1966, to three separate central banks (Central Bank of Kenya, Bank of Uganda and Bank of Tanzania, respectively) and then back in the future to integration of an EACB – East African Central Bank of Burundi, Kenya, South Sudan, Rwanda, Tanzania and Uganda.

5. Conclusion and some key take-away highlights

There are many (stated and implied) important messages from this reflection on central banking, but I would like to highlight at least five key messages:

(i) Central banks have evolved fairly smoothly and have made remarkable achievements of maintaining periods of price stability as well as promoting and sustaining global economic growth. Also, central banks have weathered a series of persistent economic and financial storms since 1661. They delivered the Great Moderation, right until the global financial crisis broke out in 2008. The Central Bank of Kenya stands tall in having shaped a strong and well-diversified financial system, with sustainable economic growth, over the last 50 years of its existence!

(ii) Price stability must remain mandate number 1 for central banks, but with the flexibility of the \((1+n)\) rule, where central banks are flexible enough to prioritize any of the \(n\) elements when extraordinary circumstances arise. In the institutional design of a central bank, there is no ‘one size fits all’, so central banks have greater flexibility to fulfil their financial stability responsibilities and cope with the growing pressure to play a role in funding fiscal expansion to deliver faster growth – or more precisely promoting inclusive economic development rather than economic growth \textit{per se} and paying more attention to inequality issues.

(iii) Central bank independence, in all its three forms, is a critical component of the architecture of a modern financial system: Personnel independence to limit the government’s influence on the central bank board’s membership or tenure; financial independence to restrict the government’s use of central bank’s loans to fund its expenditures (currently compromised in most OECD countries under QE and NIRP); and policy independence to select targets and instruments for monetary policy and to implement them. For example, CBK is at the heart of Kenya’s flow-of-funds, linked to households, companies, government, financial institutions and markets, and between the Kenyan economy and the rest of the world: If the CBK sneezes, these economic agents may catch a cold!

(iv) The architecture of Basel Accords is just moving away from the cross-roads towards Basel III. Going forward, for many central banks, including CBK, the three main aspects of Basel III (bank capital adequacy, stress testing and market liquidity risk) are necessary but not sufficient: there is strong, incentive-compatible, imperative to integrate the role of peer monitoring and market discipline (for example, through the interbank market) into official bank regulation to safeguard financial stability.

(v) Overall, the highlights in (i) – (iv) above reflect the \textit{good} of central banking. For the \textit{unknown} of central banking, especially for the future, the knowledge component of central banks is critical in enabling central banks to keep pace with the quickly shifting
economic and financial landscapes and to channel financial innovation to inclusive financial development and inclusive economic growth. As earlier noted, CBK has a competent team in its Research Department, the Kenya School of Monetary Studies and the School of Economics at the University of Nairobi. Given this huge battery of research expertise, it appears worthwhile for the CBK to invest in a suite of new model vintages, with each tailored to a special purpose, but offering the advantage of comparing outputs: the flow-of-funds model for macro and micro policy; the BVAR for forecasting and the DSGE for dealing with specific monetary policy questions. This call goes beyond standard macroeconomic policy modelling work, in order to generate new models which fully reflect roles of the financial sector, money transmission and financial contagion channels so that the central bank can help prevent (or at least mitigate the adverse effects of) another global financial crisis. The new models should also encompass studies on financial inclusion and randomised controlled experiments with household portfolio decisions, among other areas.\textsuperscript{51}

\textsuperscript{51} For example, experimental work, through randomised controlled trials, is highly recommended for CBK, mainly to understand the behaviour and incentives of heterogeneous households, including their demand for financial assets. See Sayinzoga et al. (2015). On household portfolio decisions, see Moore, Green and Murinde (2005, 2006).
References


