



Utilizing monetary policy and banking regulation for climate change in Nigeria.

by

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Abstract

The principal enquiry about global climate change is no longer whether climate will change, but how we should react. There is a pressing need for banks and their regulators to react, as climate change continues to negatively affect economies around the world. This paper studies how the Central Bank of Nigeria (CBN) could align monetary policy and banking regulations to better address the challenges posed by climate change to the banking sector and financial stability in Nigeria. The paper concludes that the CBN must utilize the linkages between monetary policy and banking regulation to mitigate the effects of climate fragilities on Nigerian banks and financial stability in the country.

Keywords: climate change, monetary policy, banking regulation, financial stability, Nigeria

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1. Introduction

Nigerian banks, with total assets and liabilities of about N33 trillion (USD91.7 billion) across numerous sectors (Central Bank of Nigeria [CBN], 2017), are at the front line in managing financial risks, including those posed by climate change. The stability of our economy, and financial system as a whole, depends on how these banks acclimatize to the risks posed to the Nigerian economy climate change (Drill, Paddam, & Wong, 2016). To date, there is no concise definition of climate change-related risks for both prudential and operational purposes in Nigeria 's banking sector. However, the Nigerian Bankers Committee developed and approved the Nigeria Sustainable Banking Principles (NSBPs) for adoption by banks, discount houses and development finance institutions in the country to achieve measurable progress in creating and sustaining economic growth that is both environmentally responsible and socially relevant (CBN, 2013). The paramount question is whether the adoption of NSBPs is enough to manage risks posed by climate change to Nigerian banks and financial stability. A substantial number of Nigerian bank employees believe that the implementation of NSBPs is not an adequate means of managing climate change related risks faced by Nigerian banks (Oguntuase, 2017).

Against this backdrop, the objective of this study is to showcase how the Central Bank of Nigeria can align monetary policy and banking regulations to better meet challenges posed by climate-related risks to Nigeria 's banking sector, and the economy at large.

2. Literature Review

2.1 Treating Climate Change as a Financial Risk

The uncertainties involved in climate change prevent prediction of the accurate nature, timing, frequency, intensity and location of climate change impacts. This uncertainty also depends on a number of demographic and socio-economic factors such as technology, values and preferences, and policies, which also are also deeply uncertain (Kalra et al., 2014). Added to these demographic and socio-economic sources of uncertainty is scientific uncertainty which arises from our incomplete knowledge of the climate system (Heal & Millner, 2013). The two-broad climate-related financial risks are physical and transition risks. The physical climate-related risks are connected to the economic damages of the surge in the regularity and scale of climate-related extreme weather events and related catastrophes such as drought, flood, hurricanes, ocean

acidification, etc. resulting from continuously growing greenhouse gas (GHG) emissions (Dafermosa, Nikolaidi, & Galanis, 2018; Nicol & Cochran, 2017). Banks may be prone to physical risks through their financing and investment projects.

The transition risks are the uncertain financial impacts (positive and negative) that result from the effects of setting up a low carbon economic model on economic actors. Transition risks are categorized by a radical uncertainty on the nature of the low carbon pathway (i.e., the pathway for reducing greenhouse gas emissions, which restructures the economy) and a more usual uncertainty on the methods for implementing this pathway in economic and social terms (Nicol, Hubert, Cochran, & Leguet, 2017).

Over the past few years, the topic of *stranded assets*, caused by risk factors like physical climate change impacts, as well as societal and regulatory responses to climate change, has emerged larger (Caldecott, Harnett, Cojoianu, Kok, & Pfeiffer, 2016). Stranded assets are defined as assets that have suffered from unanticipated or untimely write-downs, devaluations, or conversion to liabilities (Caldecott, Howarth, & McSharry, 2013). With transition towards a lower-carbon economy, these assets will suffer from unexpected or untimely write-offs, downward revaluations or get converted to liabilities (Ansar, Caldecott, & Tilbury, 2013).

A study by the Economist Intelligence Unit (EIU, 2015) put the worth of global stock of manageable assets at risk from climate change till the end of the century at USD 4.2 trillion to USD 43 trillion. Carney (2015) proposed that the stranded assets problem could result in a rapid, system-wide (downward) disposal of carbon assets which would threaten financial stability.

2.2 Climate Risk Management

Managing risks of climate change is an unavoidable and very multifaceted task, as climate change risks are ambiguous, pervasive, and delayed, as well as entangled with many other risks to a sustainable development (Döll & Romero-Lankao, 2017), but it is inevitable, as investors and regulators are ever more aware of climate change risks (Dietz, Bowen, Dixon, & Gradwell, 2016; Miller & Swann, 2017). Risk management has progressively become an important tool for climate change adaptation, given the significant uncertainty about future impacts and the inability to rely on historic data as a basis for current action (Godden, Rochford, Peel, Caripis, & Carter, 2013; May & Plummer, 2011). Risk management is part of a comprehensive suite of

tools for climate change adaptation, with international and national standards (e.g., CAN/CSA-ISO 31000) being developed to assist governments, businesses, and communities (May & Plummer, 2011). The IPCC (2014) proposed to address the persistent uncertainties of future climate change and its impacts through iterative risk management that includes both adaptation and mitigation, and takes into account, climate change damages, co-benefits, sustainability, equity and attitude to risk. This has continued to inform views of climate change adaptation as a risk management function.

2.3 Nexus between Monetary Policy and Banking Regulation

Monetary policy represents any deliberate action or conscious effort made by the Central Bank or Monetary Authorities of a nation to control the quantity, availability or cost of money in an economy with the view of achieving set goals (CBN, 2016). As a technique of economic management, monetary policy is one of the key drivers of economic growth and development through its impact on economic variables. It always targets inflation rate or interest rate to ensure price stability and general trust in the currency, stable exchange rate, high output growth rate, poverty reduction, reduction in inequality gap in the society, employment creation, as well as improving livelihoods (Agoba & Sare, 2017; Anowor & Okorie, 2016; Musa, Usman, & Zoramawa, 2014). Because financial and macroeconomic conditions are tightly interconnected, financial stability considerations are also an important element of any monetary policy framework (Kryvtsov, Molico, & Tomlin, 2015).

Monetary Policy Rate (MPR) was adopted as the major monetary policy instrument by the Central Bank of Nigeria (CBN) in December 2006. The MPR is the rate at which CBN lend to other banks. Prior to the adoption of MPR, Minimum Rediscount Rate (MRR) was the major instrument (CBN, 2006). A decrease in MPR, that is, lax or accommodative monetary policy encourages banks to take on more risks in their lending. A reduction slows down the mechanism of money multiplication, i.e., makes the money multiplier lower. Banking sector regulation defines the rules for financial institutions at both prudential the individual level– and macro-prudential policy – the interconnectedness of individual financial institutions and markets to safeguard financial stability. Banking regulations can vary widely across nations and jurisdictions but follows the same general principle of minimum requirements, supervisory review and market discipline. The instruments and requirements of bank regulation in Nigeria

include capital requirement, reserve requirement, corporate governance, financial reporting and disclosure requirements, credit rating requirement, large exposure restrictions, and activity and affiliation restrictions (Oni, 2012; Chude & Chude, 2014).

There is interaction between monetary policy and banking regulation. Preserving financial stability is closely related to the typical goals of monetary policy (stabilizing output and inflation). Monetary policy cannot completely ignore financial stability issues and macro-prudential regulation aimed at correcting imbalances can affect the conduct of monetary policy (Bean, 2003; Blinder, 2010). Kryytsov et al. (2015) submitted that while the ideal mix of policies may depend on many factors such as the nature and severity of potential financial risks, the efficacy of each policy tool, and the expected side effects of each tool on the economy regulators and central bankers must also take into account the interplay between monetary policy and regulation. The efficiency of monetary policy depends on the smooth running of the banking system, which is promoted by sound banking regulation and supervision practices. Also, the monetary policy stance may also pose risks to financial stability, justifying that monetary policy decisions should be under the watchful eye of the banking supervisors (Lima, 2017). When both monetary and macro-prudential functions are housed within a central bank, as in Nigeria situation, coordination is improved but safeguards are needed to counter the risks from dual objectives (European Parliament, 2016).

3. Theoretical Perspective

3.1 Keynes Radical Uncertainty Theory

Keynes (1937) submitted that our knowledge of the future is instable, vague and uncertain, which renders wealth a peculiarly inappropriate subject for the methods of the classical economic theory. For Keynes (1937) proposed that macroeconomic phenomena cannot not be understood properly, if radical uncertainty and the methods to deal with it are ignored. Radical uncertainty in the sense of a fundamental unpredictability is pervasive in the changing climate system due to several interacting sources of uncertainty (Roos, 2015). Minsky (1992) developed a novel theory the financial instability hypothesis of the working of capitalist economies. In his view, the financial structures and interrelations which are essential to the capitalist system inevitably result in the violent fluctuations of the economy. The theoretical argument of the financial instability hypothesis starts from the classification of the economy as a capitalist

economy with expensive capital assets and a complex, sophisticated financial system. Minsky's financial instability hypothesis takes banking seriously as a profit-seeking activity. Banks seek profits by financing activity. Like all entrepreneurs in a capitalist economy, bankers are aware that innovation assures profits. Thus, bankers (using the term generically for all intermediaries in finance), whether they be brokers or dealers, are merchants of debt who strive to innovate in the assets they acquire and the liabilities they market (Minsky, 1992). Over periods of prolonged affluence and optimism about future prospects, financial institutions invest more in riskier assets, which can make the economic system more vulnerable in the case where default materializes (Bhattacharya, Goodhart, Tsomocos, & Vardoulakis, 2011).

3.2 The Climate Fragility Hypothesis

Climate and financial fragilities reinforce each other. They are intertwined into positive feedback loops, so that climate systemic risks also incur financial systemic risks (Aglietta & Espagne, 2016). Natural disasters are predictive of higher non-performing loans and higher likelihood of default in developing countries (Rajhi & Albuquerque, 2017). The increase in temperature and the economic catastrophes caused by climate change could reduce the productivity of firms and could deteriorate their financial positions. Accordingly, debt defaults could arise which would lead to systemic bank losses (Dafermosa et al., 2018). The realization of a climate systemic risk translates into potential financial turmoil and this in turn can increase around the provision of the ultimate liquidity. This feature is common to any systemic financial crisis which calls for a collective prudential approach – monetary policies and banking regulations, which intends to act on eliminating possible future outcomes more than on internalizing externality, because of radical uncertainty (Aglietta & Espagne, 2016).

4. Methodology

The approach of this paper is to systematically review academic papers, and publicly accessible documents from governments, central banks and other relevant regulators, and opinion of industry experts and groups. I used key search terms – climate change, monetary policy, banking regulation and financial stability – to screen identified literature, before reviewing and finally collating the findings. The conclusions drawn are presented in concise manner to set agenda for the Central Bank of Nigeria.

5. Utilizing Monetary Policy and Banking Regulation for Climate Change in Nigeria

Central Bank of Nigeria must treat climate change as a top precedence that must be addressed systematically without delay by ensuring that its monetary policy and banking regulation point in the same direction. The following suggestions may provide initial guidance for action:

- i. **Greening of monetary policy.** Prioritize and adapt the Monetary Policy Committee, MPC decision-making process to consider the macroeconomic impact of climate change (Campiglio, 2016).
- ii. **Green Macroprudential Regulation.** This can be achieved using countercyclical capital buffers; higher risk weights for either carbon-intensive or dependent sectors or for particularly carbon-intensive and dependent companies within these sectors; restrictions on exposure concentration to carbon intensive and dependent assets; and climate-related stress tests (Schoenmaker, van Tilburg, & Wijffels, 2015). A dedicated climate stress-tests will help to establish bank's portfolio exposure to climate change-related risks and the stability of the banking and financial system (Battiston et al., 2017).
- iii. **Green Finance Guidelines and Frameworks.** CBN should also issue a green credit guideline aimed at guiding banks towards greener lending. A roadmap for a green banking framework targeted at developing capacities for environmental risk assessment and green lending with compulsory elements is a must. Embracing green credit allocation to stimulate green investments by targeting refinancing lines to which the banks could refinance themselves at cheaper rates, hence providing an incentive for banks to lend more to the green sector by rewarding them with higher marginal profits (van Lerven & Ryan-Collins, 2017).
- iv. **Green Requirements.** These should include green differentiated reserve requirements that favor green investments over orthodox investments (Rozenberg, Hallegatte, Rerrissin-Fabert, & Hourcade, 2013). Differentiated capital requirements to reduce capital requirements on loans to climate-friendly investments (Dombrovskis, 2017). Campiglio (2016, pp. 226) proposes —adjusting the computation of Basel III risk-weighted capital ratios in a way that low-carbon activities would exercise a lower pressure than alternative investments.

- v. **Disclosure.** Embracing of the industry-led Task Force on Climate-related Financial Disclosures (TCFD) recommendations on climate change financial disclosures (Task Force on Climate-related Financial Disclosures [TCFD], 2016). Upgraded transparency of climate-related risks helps in making appropriate pricing of risks and allocation of capital, and provides the basis for green macro-prudential regulation and climate-related stress testing.
- vi. **Green supporting factors.** Green qualitative easing programmes for acquisitions of green financial assets from banks by central banking institutions to create proportionate reserves for such commercial banks hold at the central bank and use to settle inter-bank transactions (Matikainen, Campiglio, & Zenghelis, 2017). Imposing charges on brown forms of lending to compensate for negative externalities. The brown-penalizing ‘factor could include quantitative ceilings on credit extension to certain carbon intensive or polluting activities, climate-related stress tests or countercyclical capital buffers (van Lerven & Ryan-Collins, 2017). Accepting carbon certificates as part of commercial bank’s legal reserves to improve the market for carbon certificates by making carbon certificates acceptable as part of commercial bank’s legal reserves to reduce the capital costs for low-carbon projects, thereby making them relatively more attractive than regular investments (Rozenberg et al., 2011).

6. Conclusion

Greenhouse gas emissions are questionably the single biggest negative externality of our time upsetting all sectors of the economy. Given its heavily integrated role in society, the banking industry is particularly liable to the risks related with climate change, a result of excessive emission of heat trapping greenhouse gases. Climate fragilities surge financial fragilities, and climate systemic risk is a latent source of financial disruption. This paper has argued that there is need for cooperation between monetary policy and banking regulation functions to prevent climate fragilities from leading to financial instability. The paper calls for the Central Bank of Nigeria, CBN to factor the macroeconomic impact of climate change into its monetary policy function, while implementing green macro-prudential polices as it performs banking regulation roles.

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