POLICY BRIEF

Assessment of Nigeria's Financial Services Sector Stability and Diversity

Enebeli-Uzor Emeka Sunday and
Ifelunini Abanum Innocent

July 2021 / No.754

Abstract

A key lesson from the global financial crisis of 2007-2009 and the ensuing widespread economic dislocations is the reminder of the nexus between financial system stability and resilience, and macroeconomic stability. Also, emerging research efforts at exploring financial system stability, resilience and economic welfare have underscored the importance of diversity in the financial system. This study assessed Nigeria's financial system stability and diversity. Specifically, the study sought to develop an Aggregate Financial Stability Index that is reflective of the intrinsic structure of the Nigerian financial services

sector; develop an Aggregate Financial Diversity Index for the Nigerian financial services sector; investigate the determinants of aggregate financial stability index; and investigate the relationship between the aggregate financial stability index and aggregate financial diversity index. Using annual and quarterly banking sector data for the period 2006-2015 and employing Principal Component Analysis, Hirschman-Herfindahl (HH) Index, Simpson Index, Simple Regression and Granger Causality, the study establishes that the Nigerian financial system shows a cyclical movement, and yet to achieve diversity. The study also found that, financial diversity positively influences financial stability and that there exists a bidirectional causal relationship between financial diversity and financial stability running from diversity to stability and vice versa. The study recommends that regulatory and supervisory authorities in Nigeria should include the diversity of financial services in their policy design as this will enhance, not only the stability of financial system, but also the economy. The Central Bank of Nigeria can also regularly monitor banks' funding models to ensure that banks set up diverse funding plans to preempt a systemic crisis.

Introduction

The global financial crisis of 2007-2009 and the ensuing widespread economic dislocations, has rekindled interest in the monitoring and identification of sources of fragility and assessment of financial system resilience. Indeed, a key lesson of the crises is the reminder of the nexus between financial system stability and resilience, and macroeconomic stability. There is currently a consensus in the central bank community that the financial stability objective is to achieve a level of stability in the provision of financial services which will support the economy in attaining maximum sustainable economic growth (Frait & Komárková, 2011). Consequently, regulators and supervisors of the banking sector now undertake periodic monitoring and identification of macroprudential leading indicators signaling incipient risks to the banking system with the overarching objective of ensuring that the banking system is stable and resilient to headwinds.

Nigeria banking system has evolved over time from the colonial era to the post-colonial era. It boasts one of the most robust banking systems in Africa and this fact has been all too evident in the fact that many banking institutions indigenous to Nigeria have established offshore operations on many other African economies (Soludo, 2004). According to Ojukwu-Ogba (2009), Nigeria's banking regulatory authority has introduced several reforms over time, and these reforms have impacted on the outlook, nature, and the operations of the banking system. Such reforms include the banking sector consolidation which increased the minimum capital base of banks from NGN2 billion to NGN25 billion and consequently reduced the number of deposit money banks operating in Nigeria from 89 to 25 at the close of the year 2005. The essence of the reforms was to retain public confidence and maintain equilibrium in the Nigerian financial system (Ojukwu-Ogba, 2009).

Banking sector operators often see stability and resilience to comprise mainly of improved capital holdings of banks, an often-dangerous implicit assumption. 'Diversity' of the financial system, the banking sector inclusive, has been identified as one veritable means of improving financial system stability and resilience that promotes competition in the financial sector. This is also now a major policy objective in some places such as the United Kingdom. Financial system diversity entails healthy systems that have a diversity of actors who occupy a variety of different niches in the system and employ various strategies to thrive. The relationship between diversity and financial system stability are many-sided, underscoring the different dimensions of diversity and how they impact on the behaviour and performance of the financial sector. These dimensions include ownership/corporate diversity, competition, balance sheet resilience and geographic spread. These different components of diversity and their relevance to stability are discussed in the subsection on conceptual literature.

According to Albulescu (2010), policy makers in general, and central bankers, have allocated increasing resources to monitor the potential threats to financial system stability and to elaborate a framework to achieve this goal. This is because attaining financial system stability has become a significant policy thrust of monetary authorities in all climes. This stems from the fact that a stable and resilient financial system engenders trust and builds confidence and ensures the optimal allocation of capital resources which enables the financial system to play its crucial role of financial intermediation in the economy. Regulators, therefore, aim to detect symptoms of frailty in the financial system and prevent crises to avert their concomitant adverse impacts on the real economy. Initial efforts to measure financial system stability and resilience focused on micro-prudential analysis which seeks to ensure that financial institutions have adequate buffers (capital adequacy) and can meet their payment obligations (liquidity).

Over the years, however, especially after the Asian financial crisis of 1997, and the global financial crisis of 2007-2009, the emphasis has shifted to the macroprudential analysis of banking system stability and resilience with a focus on identification and mitigation of banking system vulnerability risks and the resilience of financial systems. Macroprudential analysis entails identifying all sources of threats to banking system stability. It involves the monitoring, assessment, and mitigation of systemic risk, namely the likelihood of failure of a significant part of the banking system. It is pertinent, therefore, to view systemic risk as partly endogenous and depends on the collective behaviour of banking institutions and their interconnectedness, as well as the interaction between the banking sector and the macroeconomy. Macroprudential analyses aim to develop approaches and evaluation methods for the timely identification of sources of financial vulnerability and design appropriate responses. They also seek to prevent, or at least contain, the build-up of financial imbalances and ensure that the banking system can withstand their unwinding and be resilient to shocks (Papademos, 2009).

The identification and prediction of the state of the banking system and sources of vulnerability is crucial for policy purposes. It is a necessary first step in developing Early Warning Systems (EWS) to provide timely warnings for imminent systemic events. The development of stress indicators, and their aggregation into a composite index of systemic stress, offers insights into the propagation channels of specific events and the extent to which a financial crisis affects segments of the financial system (Dimitrios & Angelos, 2013). Macroprudential analyses, therefore, enhance banking system stability by identifying sources of threats and strengthens the system's resilience to shocks. Macroprudential analyses emphasize an all-inclusive slant to monitoring the stability of banking systems by observing macroeconomic and market-based data, as well as qualitative and structural information (Sere-Ejembi et al., 2014). A major aspect of the macroprudential policy is the need to determine, in a timely basis, any potential stresses accumulating in the financial or banking sector, to implement measures to prevent a crisis (Jordan & Smith, 2014). On the other hand, the diversity-stability relationship offers insight into the broader question of competition in banking and extends beyond traditional measures of market structure.

Research issue

First introduced by Chinitz (1961), the role of a diversified economy in economic stability remains a focal point of a large and growing theoretical-, empirical- and policy-oriented literature (Wagner, 2000; Dissart, 2003; Noseleit, 2015). Similarly, financial diversity is meant to improve the financial stability of an economy. Whether this is the case with the Nigerian economy is yet to be verified empirically. In this regard, this study sought to investigate the relationship between financial diversity and financial stability. However, given the fact that the effect does not depict causation, this study moves the analysis further by examining the causal relationship between financial diversity and financial stability. The primary motivation behind studying banking system stability and resilience is obviously the impact of banking system instability and vulnerability on the real economy, and the social costs that it usually entails. However, the stability and resilience of Nigeria's banking sector are important for myriad reasons. First, Nigeria is home to some major African cross-border banks (Beck et al., 2014). In the aftermath of a successful banking sector consolidation exercise in 2005 and the resultant high capitalization and liquidity levels, Nigerian banks expanded into other markets on the continent, especially where entry requirements were low, thus, becoming a significant hub for cross-border banking in Africa. For example, Nigeria's United Bank for Africa (UBA) has operations in 20 African countries. Consequently, this poses an enormous systemic risk for possible contagion as instability in the Nigerian banking sector could quickly spread to other markets on the African continent.

Another pertinent motivation for studying Nigeria's banking sector stability and resilience is to assess the level of exposure to external vagaries, and the transmission of external shocks to the Nigerian financial system, primarily through the flow of Foreign Portfolio Investment (FPI) into the Nigerian capital market. It is also important to assess the response of the Nigerian banking system to monetary policy adjustments in major economies to determine the vulnerability/resilience of the Nigerian banking system to monetary policy pronouncements and adjustments in developed economies. It is also imperative to empirically assess the impact of crude oil price volatility on the Nigerian financial system, the country being a near mono-product export economy.

One of the major transmission channels through which the global financial crisis hit the Nigerian economy was crude oil sales in the international commodities market. When the global economy contracted, and major oil-consuming economies drifted into recession, crude oil prices fell from an all-time high of US$147 per barrel in July 2008 to less than US$40 per barrel in December 2008 due to weak demand. This precipitous fall in Nigeria's primary income stream exposed the country's vulnerability to the global economic crisis. A study of the Nigerian financial system stability and resilience is also vital to elicit salient information on the nature of ownership structure, concentration and competitiveness, different funding models and geographic concentration.

Over the past three decades, Nigeria has experienced several periods of banking system instability and some incidences of full-scale financial crises. The most recent being in 2009 in the aftermath of the global financial crisis which had severe effects on the economy. Crisis in the Nigerian banking sector came to a head when according to Sanusi (2011), the balance sheet of banks became eroded to the extent that some banks remained for some time on "life support" from the central bank, inter-bank rates spiked as banks tried to borrow at any rate to remain afloat, and the size of non-performing loans significantly increased. As a crisis management option, the Central Bank of Nigeria (CBN) injected an estimated NGN1.75 trillion, which represented about 6% of Nigeria's GDP of NGN29.498 trillion as at end December 2010 into the Nigerian financial system to restore stability. Also, a "bad bank" – the Asset Management Corporation of Nigeria (AMCON) was established by national legislation to absorb the toxic assets of banks in exchange for government bonds to rebuild the balance sheets of banks.

In a bid to entrench macroprudential analysis in the supervision and regulation of the financial system and avert the sort of crisis experienced in Nigeria in the wake of the global financial crisis, the International Monetary Fund (IMF) developed a set of Financial Soundness Indicators (FSIs) to provide insight into the financial health and soundness of financial institutions and support economic and financial stability analysis. However, simultaneous multidirectional movements of these indicators

make their set of trends difficult to interpret (Arzamasov & Penikas, 2014). Given the difficulty in understanding these indicators, there have been efforts to develop an aggregate index through which financial system stress could be discerned. Aggregating the indicators into a single index provides better clarity on the health and soundness of the financial system. The unique integral index based on these parameters should potentially solve the problem (Arzamasov & Penikas, 2014). One of such integral indexes is the Aggregate Financial Stability Index (AFSI) – a single snapshot indicator of the health and strength of the financial system.

Also, emerging research effort at exploring financial system stability and resilience has underscored “diversity” as an important factor in enhancing stability and improving competitiveness. Authors argue that diverse financial markets may lead to broader financial market development than less diverse ones (Weller & Zulfiqar, 2013). Perhaps, because diverse financial systems could lower liquidity constraints more than concentrated markets. A diverse financial system may also help to mobilize more domestic savings than less diverse systems, consequently reducing the need to attract potentially destabilizing portfolio capital inflow. One good effort at exploring the diversity-stability nexus include Michie and Oughton (2013) who developed a Financial Diversity Index (D-Index) to provide insight into this relationship and measure the impact of ownership structure, concentration and competitiveness, different funding models and geographic concentration (four sub-indexes of diversity). Butzbach (2016) identified a lack of diversity in banking as a severe source for systemic risk that is worth specific regulatory attention. Similarly, HM Treasury (2010) notes that the need to maintain diversity in the financial services sector remains a potential policy objective.

Three strands of thought have emerged in the financial diversity literature. The first, championed by Ayadi et al. (2009) consists of documenting the knowledge of the diversity of banking business model, across and within national banking systems and the facts that different business or banking model does not perform equally regarding efficiency, profitability, and risk. The second strand emphasizes promoting corporate diversity in the financial sector (Michie, 2011). The last strand, advocated by researchers like Acharya and Yorulmazar (2007) argues that diversity is valuable as a guarantee of a stable financial system. Despite the importance of diversity in financial services’ sector stability, studies in Nigeria have hardly focused on the diversity of financial services in Nigeria.

Thus, the overall objective of this study is to assess the stability and diversity of Nigeria’s financial services sector. Specifically, the study seeks to:

1. Develop an Aggregate Financial Stability Index that is reflective of the intrinsic structure of the Nigerian financial services sector.

2. Develop a Financial Diversity Index for the Nigerian financial services sector.

3. Investigate the determinants of Aggregate Financial Stability Index and Financial Diversity Index in Nigeria.

4. Investigate the relationship between Aggregate Financial Stability Index and Financial Diversity Index in Nigeria.

Data for the study

This study utilized secondary data (quarterly and annual frequency) from the Central Bank of Nigeria (CBN) and the Bankscope Database, spanning the period Q1, 2006 to Q4, 2015. The choice of this period is informed by the banking sector consolidation exercise of 2004-2005, capturing the post-consolidation era through the period of the global financial crisis of 2007-2009, and the post-crisis period. Additional data were sourced from the World Development Indicators and the International Monetary Fund (IMF). Seventeen deposit money banks (DMBs) were used for the study out of the existing 23 banks after consolidation and subsequent mergers due to data availability and consistency. The estimation was carried out in STATA.

Conclusions, policy implications and recommendations

This study assessed financial system stability and diversity in Nigeria using annual and quarterly banking sector data from 2006 to 2015. The study applies Principal Component Analysis (PCA), Hirschman-Herfindahl (HH) index, Simpson's index, simple regression, and Granger causality analysis to develop an Aggregate Financial Stability Index (AFSI), Aggregate Financial Diversity Index (AFDI) and investigate the determinants of both AFSI and AFDI as well as the relationship between the AFSI and AFDI in Nigeria. For the AFSI, the study used financial development index, financial soundness index, financial vulnerability index and global economic climate index to derive the AFSI. On the other hand, the financial diversity index was constructed using ownership/corporate diversity, market competition, balance sheet structure/ resilience and geographic spread and concentration index.

The result shows that the Nigerian financial system has a cyclical movement. The financial development sub-index is more stable while the financial soundness sub-index is the least stable. Furthermore, this study concludes that the Nigerian financial system is far from achieving 'diversity' which has been identified in recent policy and academic debates as a veritable factor in ensuring stability and resilience to avoid a crisis. An interesting outcome of the study is that financial diversity positively influences financial stability in the same way financial stability influences financial diversity. In the same vein, there is a bidirectional causality relationship between financial stability and financial diversity.

Given the findings, the study recommends that regulatory and supervisory authorities in the Nigerian financial services sector should include the diversity of financial services in their policy design as this will enhance, not only the stability of the financial system, but also the economy. The Central Bank of Nigeria can also regularly monitor banks' funding models to ensure that banks set up diverse funding plans to preempt a systemic crisis.

Recent literature is replete with the opinion that greater diversity of the financial services sector will enhance stability, and this is shaping public policy discourse on the importance of achieving greater diversity in the financial services sector. The findings that the Nigerian financial system is far from attaining diversity has policy implications. In this regard, more considerable effort is required by the regulatory and supervisory authorities to ensure that diversity is key in the financial services sector policy design. In this regard, attention should also be focused on the components of the D-Index as this provide the regulators with means of tracking progress made.

References

Alawode, A.A. and M.A. Sadek. 2008. "What is financial stability?" Central Bank of Bahrain Financial Stability paper Series No1.

Albulescu, C. 2010. "Forecasting the Romanian financial sector stability using a stochastic simulation model". *Romanian Journal of Economic Forecasting*, 1: 81–98. At http://www.uvt.ro/files/a7b3d498d25148c6e62ff7ec394284c1a8bba941/

Acharya, V.V., and T. Yorulmazar. 2007. "Too many to fail - An analysis of time-inconsistency in bank closure policies". *Journal of Financial Intermediation*, 16: 1–31

Arzamasov, V. and H. Penikas. 2014. "A financial stability index for Israel". *Procedia Computer Science,* 31: 985–94. At http://www.sciencedirect.com/science/article/pii/S1877050914005286

Ayadi, R., R.H. Schmidt and S. Carbo ́ Valverde. 2009. "Investigating diversity in the banking sector in Europe. The performance and role of savings banks". Brussels: Center for European Policy Studies.

Beck, T., M. Fuchs, D. Singer and M. Witte. 2014. "Making cross-border banking work for Africa". The World Bank. At https://openknowledge.worldbank.org/bitstream/handle/10986/20248/892020WP0Makin00Box385274B00PUBLIC0.pdf?sequence=1&isAllowed=y

Butzbach, O. 2016. "Systemic risk, macro-prudential regulations and organizational diversity in banking". *Policy and Society*, 35(3): 239–51.

Chinitz, B. 961. "Contrasts in agglomeration: New York and Pittsburgh". *American Economic Review,* 51: 279–289.

Dimitrios, P.L. and T.V. Angelos. 2013. "A financial systemic stress index for Greece". European Central Bank (ECB) Working Paper Series No. 1563, July. At https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1563.pdf

Dissart, J.C. 2003. "Regional economic diversity and regional economic stability: Research Results and agenda". *International Regional Science Review*, 26(4): 423–46.

Frait, J. and Z. Komárková. 2011. "Financial stability, systemic risk and macroprudential policy". Occasional Publications - Chapters in Edited Volumes. In CNB Financial Stability Report 2010/2011, Chapter 0, pp. 96-111, Czech National Bank, Research Department. At http://www.cnb.cz/en/financial_stability/fs_reports/fsr_2010-2011/fsr_2010-2011_article_1.pdf

HM Treasury. 2010. *A New Approach to Financial Regulation: Judgement, Focus and Stability.* London: TSO.

Jordan, A. and L. Smith. 2014. "Measuring the level of financial stability in The Bahamas". At http://www.ccmf-uwi.org/files/publications/conference/2014/9_2-Alwyn_Jordan-Latoya_Smith-p.pdf

Michie, J. and C. Oughton. 2013. *Measuring Diversity in Financial Services Markets: A Diversity Index.* Centre for Financial and Management Studies Discussion Paper No.133. Centre for Financial and Management Studies, April.

Nelson, W.R. and R. Perli. 2005. "Selected indicators of financial stability". ECB Conference, 2005.

Noseleit, F. 2015. "The role of entry and market selection for the dynamics of regional diversity and specialization". *Regional Studies*, 49(1): 76–94.

Ojukwu-Ogba, N.E. 2009. "Banking sector reforms in Nigeria: Legal implications for the banker-customer relationship". *Commonwealth Law Bulletin*, 35(4): 675–86.

Papademos, L. 2009. "Financial stability and macro-prudential supervision: Objectives, instruments and the role of the ECB". Speech by Lucas Papademos, Vice-President of the ECB at the Conference "The ECB and Its Watchers XI". Frankfurt, 4 September 2009. At https://www.ecb.europa.eu/press/key/date/2009/html/sp090904_3.en.html

Sere-Ejembi, A., I.S. Udom, A. Salihu, N.V. Atoi and B.N. Yaaba. 2014. "Developing banking system stability index for Nigeria". *CBN Journal of Applied Statistics*, 5(1). At http://www.cenbank.org/Out/2014/SD/Developing%20Banking%20System%20Stability%20Index%20for%20Nigeria.pdf

Soludo, C.C. 2004. "Nigeria update on banking sector reforms". Paper presented by the Governor of the Central Bank of Nigeria at the Conference on Consolidation of Nigeria's Banking Industry. Abuja, 18–19 November.

Wagner, J.E. 2000. "Regional economic diversity: Action, concept, or state of confusion". *Journal of Regional Analysis and Policy,* Stability Paper Series No.1/March, 30(2): 1–22.

Weller, C.E. and G. Zulfiqar. 2013. "Financial market diversity and macroeconomic stability". Political Economy Research Working Paper Series No. 332.

Zigrand, J.P. 2014. *Systems and Systemic Risk in Finance and Economics.* Systemic Risk Centre Special Paper No. 1, January.

Mission

To strengthen local capacity for conducting independent, rigorous inquiry into the problems facing the management of economies in sub-Saharan Africa.

The mission rests on two basic premises: that development is more likely to occur where there is sustained sound management of the economy, and that such management is more likely to happen where there is an active, well-informed group of locally based professional economists to conduct policy-relevant research.

www.aercafrica.org

Learn More

www.facebook.com/aercafrica

twitter.com/aercafrica

www.instagram.com/aercafrica_official/

www.linkedin.com/school/aercafrica/

Contact Us
African Economic Research Consortium
Consortium pour la Recherche Economique en Afrique
Middle East Bank Towers,
3rd Floor, Jakaya Kikwete Road
Nairobi 00200, Kenya
Tel: +254 (0) 20 273 4150
communications@aercafrica.org