INCOME DIVERSIFICATION AND FINANCIAL STABILITY OF BANKS IN NIGERIA

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Abstract

Income diversification is a concept that is gaining wider acceptability mostly by banks in the developing countries. This paper studies the possible application of this concept to banks in Nigeria and examines whether it is potent in ensuring financial stability for the system. The study uses secondary data from 1960 to 2015 to conduct a time series with the aid of error correction model and observes positive and significant relationship between income diversification and financial stability. It postulates that income diversification is good for the system.

Key Words *– Income Diversification; Financial Stability; Banks; Nigeria.*

INTRODUCTION

Diversification is one of the important subjects of the finance literature as it enhances the stability of the financial institution. Banks can diversify its credit portfolio to increase the performance and reduce the credit portfolio risk. Over the last decade, it is clear from banking literature that the performance and financial stability of banks is one research area that has been of main concern to management experts, investors, hence analysts have focused on the factors that influence the performance (Sufian & Chong, 2008) because of the importance of banks on the growth of the economy.

Banks play a very crucial role in the allocation of economic resources of countries by assisting to channel funds from depositors to investors in a continuous manner (Ongore & Kusa, 2013). It is also noted that banks are also the channels used to transmit effective monetary policy of the Central Bank of the economy thus it is considered that they also share the responsibility of stabilizing the economy of their country (Siddiqui & Shoaib, 2011). The soundness of the banking sector in a country is very critical to the health of the country's economy (Sufian & Chong, 2008). To this end, Oluitan (2012a) argues that the banking sector and the economy of a country are closely related.

Generally, researchers note that the sustainability of a bank is largely determined by its level of profitability. This is due to the fact that these banks must generate the necessary income in order to be able to cover the cost of operations incurred (Ongore & Kusa, 2013). It is also noted that it is out of these profits that the shareholders of the banks get dividends from their investment and this leads to a situation where they are encouraged to invest more in the banks thus ensuring a steady flow of investment funds for the bank which secures their future in terms of sustainability of operations (Ongore & Kusa, 2013). They further assert that "Profit is the ultimate goal of banks, thus all the strategies designed and activities performed are meant to realize this grand objective". According to Aremu et al (2013) profitability is defined as the "the ability of the business organization to maintain its profit year after year". Further, according to Podder (2012), the

profitability of a bank "is the efficiency of a bank at generating earnings". The profitability of any bank normally contributes to the economic development of a country through the fact that the profits can be reinvested back into the business and thus offer additional employment to the citizens of the country which results in increased revenue for the country through taxation (income tax and corporate tax). Banks that have better financial performance are considered to have better ability to resist any negative shocks from the external environment and thus be able to contribute to the stability of a country's financial system (Athanasoglou, Sophocles, & Matthiaos, 2005).
Based on the aforementioned, this study will examine the impact of non-interest income and other macro-economic variables on the financial stability of banks in Nigeria. It will make use of secondary data for about 56 years i.e. 1960 – 2015 and conduct an error correction model to estimate the relationship.

LITERATURE REVIEW

THE CONCEPT OF DIVERSIFICATION

Diversification can be defined as the process of allocating capital in a way that reduces the exposure to any particular asset or risk. A common path towards diversification is to reduce risk or volatility by investing in a variety of assets. If asset prices do not change in perfect synchrony, a diversified portfolio will have less variance than the weighted average variance of its constituent assets, and often less volatile than the least volatile of its constituents (O'Sullivan & Sheffrin 2003). According to Stroh, and Patrick (2012), banks gain when they shift to non-interest income and reduced volatility in profits.
According to Acharya et al (2002) in their study on banks' credit portfolio where they analyzed some Italian banks'; it was found that both industrial and sectoral diversification reduces bank returns while producing riskier loans. Similarly Hayden et al. (2005) investigated German banks and found that diversification tends to be associated with reductions in bank returns, even after controlling for risk. The study by Kamp et al. (2005) analyzed whether German banks diversify their loan portfolios or focus on certain industries and found that a majority of banks significantly increased loan portfolio diversification. Apart from diversifying their loan portfolio, banks are known to diversify their income as well. These include increasing share of fees, net trading profits and other non-interest income within net operating income of a bank. Theoretically, diversification of income sources in a bank should lead to a lower risk level and a higher risk-adjusted performance. However, some studies that examined the effects of income diversification on the risk-adjusted bank performance prove that diversification may increase the volatility of bank operating income. De Young and Roland (2001) emphasized three main reasons why non-interest income may increase the volatility of bank operating income:

- **i.** Loan-based activities require higher switching costs as compared to fee-based activities.
- **ii.** Lending activities require lower operating leverage than fee-based activities,
- **iii.** Lending activities require lower financial leverage than fee-based activities

Although the related literature on income diversification is mixed, it is very significant to investigate the relationship between income diversification and risk-adjusted banking performance for bank managers, regulators and investors, because understanding whether income diversification can create value for banks or not is very crucial for the mentioned decision makers in banking sector.

THE CONCEPT OF FINANCIAL STABILITY

Financial stability is a state in which the financial system is resistant to economic shocks and is fit to smoothly fulfill its basic functions of intermediation of financial funds, management of risks and the arrangement of payments. Padoa-Schioppa (2002) contends that "financial stability is a condition where the financial system is able to withstand shocks without giving way to cumulative processes, which impair the allocation of savings to investment opportunities and the processing of payments in the economy". The emphasis here is on the shock-absorbing capacity or resilience of the financial system, so that it can continue to carry out its essential functions of resource allocation and provision of payments services. The reference to payments services here is important because like disruptions to the intermediation function, disturbances to the payments system have the capacity to inflict adverse effects on the level of economic activity (Davis, 2001).

Credit risk is by far the most significant risk faced by banks and the success of their business depends on accurate measurement and efficient management of this risk to a greater extent than any other risks (Gieseche, 2004). According to Chen and Pan (2012), credit risk is the degree of value fluctuations in debt instruments and derivatives due to changes in the underlying credit quality of borrowers and counterparties. Credit risk management maximizes bank's risk adjusted rate of return by maintaining credit risk exposure within acceptable limit in order to provide framework for understanding the impact of credit risk management on banks' profitability (Kargi, 2011).

Demirguc-Kunt and Huzinga (1999) opined that credit risk management is in two-fold which includes, the realization that after losses have occurred, the losses becomes unbearable and the developments in the field of financing commercial paper, securitization, and other non-bank competition which pushed banks to find viable loan borrowers. It is important that banks have management strategies to avoid or minimize the adverse effect of credit risk. A sound credit risk management framework is crucial for banks so as to enhance profitability that guarantees survival. Therefore, proper management of the bank portfolio and adequate profitability enhances banks stability both in the short and long run.

EMPIRICAL FRAMEWORK

Baele, et al (2007) investigated whether income diversification could lead to a better performance/risk profile in European banks over the period of 1989 – 2004. They found a positive relationship between income diversification and the market's anticipation on future bank profits. They also stated that diversification could decrease total risk for most banks, but banks with higher non-interest income portions had more systematic risk. Chiorazzo et al. (2008) studied the link between income diversification and profitability of Italian banks by using annual individual bank data over the period of 1993 – 2003. They found that income diversification could increase risk-adjusted returns of Italian banks and this relationship was stronger at larger banks.

Busch and Kick (2009) also analyzed the effects of fee-based income activities on risk-adjusted performance measures of German universal banks between 1995 and 2007. They empirically found that higher fee-based income could increase risk-adjusted returns of German universal banks. Elsas et al. (2010) investigated effects of income diversification on both bank performance and market value by using a panel data of nine countries over 1996 to 2008. They found that income diversification could improve bank profitability and market value.

Likewise, Sibel, & Ihsan (2012), studied the effect of diversification on 50 Turkish Banks' Performance between 2007 and 2011. The paper analyzed forty banks and used ROA (Return on Assets) and ROE (Return on Equity) as measure of performance and Herfindahl Index (HI) as a measure of diversification. The number of credits and the amount of credits that banks let borrowers' use are employed as control variables. It was observed that both ROA and ROE are explained by diversification.

Damankah et al (2015), in their study of income diversification by Ghanaian banks analyze the relationship between non-interest income and profits of banks from the year 2002 to 2011 and also considers the risk associated with bank income diversification. They found that interest income remains the highest contributor to bank profits in Ghana. They also found that revenue from non-interest sources play an augmenting role in times where there are short falls in interest revenue. They also found that non-interest revenue is becoming increasingly relevant and contributes to bank profit stability. They concluded that the increasing reliance of banks in Ghana on none traditional income however comes with volatility in their earnings.

RESEARCH METHODOLOGY

This study analysis effect of income diversification and bank stability in Nigeria. It uses secondary data of banks in Nigeria from 1960 to 2015. The data used were that of profit margin, total assets, non-interest income, inflation rates, lending rates and gross loans of the banks in Nigeria as aggregated by the central bank of Nigeria from 1960 to 2015. These data were sourced from the statistical bulletins published by the Central bank of Nigeria, Naira metrics, Index Mundi etc.

ANALYTICAL METHOD AND MODEL SPECIFICATION

The data for this research study was analyzed using the E-View statistical package and estimates the relationship using Error correction model and unit root. This method helps the researcher to gain a detailed knowledge and a concise analysis of all the data that includes speed of adjustment in the subsequent years..

For the Unit Root test, the Augmented Dickey Fuller (ADF) is used to analyze the relationship among the variables. The functional specification of the model estimated is;

PM = f (TA, NIN, IF, LR, GL)

The econometric specification is thus;

$PM_t = \beta_{0\,t} + \beta_1 TA_t + \beta_2 NIN_t + \beta_3 IF_t + \beta_4 LR_t + \beta_5 GL_t$.

Where**: - PM r**epresents bank Profit Margin; **TA r**epresents Total Assets which serves as proxy for bank size; **NIN r**epresents Non-Interest Income; **IF** represents Inflation Rate
LR represents Lending rate; while **GL** represents Gross Loan

ANALYSIS AND INTERPRETATION OF RESULT

The result for the unit root test (ADF) for the variables is presented in Table 1 below:

Table 1 Unit Root Test Result for ADF

Variables	Equation estimator	ADF t-stats	CV	Level of signification	Level of integration	P value
PM	Intercept	-7.70865	-2.917650	0.05	I[1]	0.00
GL	Intercept	-10.55356	-2.926622	0.05	I[1]	0.00

TA	Intercept	-17.29749	-2.925169	0.05	I[1]	0.00
IF	Intercept	-7.515076	-2.917650	0.05	I[1]	0.00
NIN	Intercept	-3.977534	-2.926622	0.05	I[1]	0.00
LR	Intercept	-11.86700	-2.916566	0.05	I[1]	0.00

Source: Summarized from E-View

Table 1 shows that all the variables are integrated to the same order hence further analysis using ECM is considered appropriate.

The above is followed by the result for the Error correction term (ECM) model estimated.

Table 2 Error Correction Model Estimation Result with Dependent Variable: D (LOG(PM))

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.034221	0.036991	-0.925134	0.3596
D(LOG(TA))	0.492080	0.261177	1.884086	0.0657
D(LOG(NIN))	1.018402	0.041118	24.76750	0.0000
D(IF)	-0.001830	0.002648	-0.691111	0.4929
D(LR)	0.001113	0.005692	0.195541	0.8458
D(LOG(GL))	-0.330415	0.200977	-1.644041	0.1068
ECM(-1)	-0.337114	0.143336	-2.351916	0.0229
R-squared	0.932241		F-statistic	107.7718
Adjusted R-squared	0.923590		Prob(F-statistic)	0.000000
Included observations	54 after adjustments		Durbin-Wats Stat	2.006133

From table 2 above the coefficient of the error correction term indicates how quickly variables converge to equilibrium. The error correction coefficient, estimated at -0.337114 is highly significant, has the correct negative sign, and imply a very high speed of adjustment to equilibrium. The highly significant error correction term further confirms the existence of a stable long-run relationship. Moreover, the coefficient of the error term (ECM-1) implies that the deviation from long run equilibrium level of profit in the current period is corrected by 33.7 % in the next period to bring back equilibrium when there is a shock to a steady state relationship.

Furthermore, the study observes that non-interest income is highly significant with a large coefficient of 1.018402. This implies that non-interest income is very important and contributes positively to the stability of banks in Nigeria. Likewise, Total Asset which is the proxy for bank size is weakly significant at 0.06 but exhibits positive relationship with the proxy for bank stability. All other variables are found not statistically significant in the relationship being estimated. From the foregoing, income diversification can be said to aid bank stability in Nigeria hence supports studies conducted by Baele, et al (2007); Chiorazzo et al. (2008); Busch and Kick (2009); Elsas et al. (2010) and Sibel, & Ihsan (2012),

CONCLUSION

This study examines the effect of income diversification by financial stability of banks in Nigeria. Financial stabilization has had important implications on the income statements of banks. There has been a shift from interest income to non-interest income that makes banks not totally dependent on traditional financial intermediation. The decline in interest margins has changed the traditional

role of banks and has forced them to search for new sources of revenue. Structural changes such as industry deregulation, new information technologies and financial innovation have also increased the importance of fee income Albertazzi and Gambacorta (2009).

The study has investigated the relationship between income diversification and financial stability of banks operating in Nigeria for the period of 1960-2015 using error correction model and found positive relationship between income diversification and financial stability of Nigerian banks. The study observes that non-interest income for banks in Nigeria is highly significant and exhibits positive relationship with the proxy for financial stability. Furthermore, the coefficient for non-interest income is very large which suggests a possible high impact of the variable in enhancing financial stability for the sector. In addition to that, Total Assets which is the proxy for bank size is also observed to be weakly significant and has a fairly large coefficient. It also has a positive relationship to the proxy for financial stability. The results indicate that banks can increase their stability with more diversification i.e. using interest and non-interest income as their income generating sources. It also suggests that banks should look beyond the traditional sources of income which are prone to risks (Gieseche, 2004).

Typical with banks in the developed economies, banks in Nigeria should put more efforts into diversifying their income sources to ensure sound financial stability. They should also protect their assets base from being depleted by the volatile activities which many institutions are readily prone to. The stability of the financial institution in a country is very important to promoting a sustained economic growth. Therefore all efforts must be geared towards this and banks should take cue from the developed economies to engender sustained growth of both the system and the country at large.

REFERENCES

Acharya, V., Hasan, I., & A. Saunders, (2002). Should Banks be Diversified? Evidence from Individual Bank Loan Port Folios. *Bank for International Settlements* (BIS) Working Papers No 118.

Albertazzi, U. & L. Gambacorta, (2009). Bank Profitability and the Business Cycle. *Journal of Financial Stability* Vol. 5, pp. 393-409

Aremu, M. A.; Ekpo, I. C. & A. M. Mustapha (2013). Determinants of Banks' Profitability In A Developing Economy: Evidence from Nigerian Banking Industry. *Interdisciplinary Journal of Contemporary Research in Business*; Vol. 4, No. 9, pp. 155 – 181.

Athanasoglou, P.P., Sophocles, N.B. & D. D. Matthaios, (2005). Bank-Specific, Industry-Specific and Macroeconomic Determinants of Bank Profitability. *Working Paper, Bank of Greece*. Vol. 1, No. 1.

Baele, L. De Jonghe, O. & R. V. Vennet, (2007), Does the Stock Market Value Bank Diversification? *Journal of Banking & Finance*. No.31: pp. 1999-2023

Busch, R., & T. Kick, (2009). Income Diversification in the German Banking Industry. *Discussion Paper Series 2: Banking and Financial Studies*, No 09, Deutsche Bundesbank.

Chen, K. & C. Pan, (2012). An Empirical Study of Credit Risk Efficiency of Banking Industry in Taiwan, *Web Journal of Chinese Management Review*, Vol.15, No1, pp. 1-16.

Chiorazzo, V., Milani, C. & F. Salvini, (2008). Income Diversification and Bank Performance: Evidence from Italian Banks. *Journal of Financial Services Research*. No. 33, pp. 181-203.

Coyle, B. (2000). Framework for Credit Risk Management, *Chartered Institute of Bankers*, United Kingdom.

Damankah B. S; Anku-Tsede O., Abubakar M. & N. Eliasu (2015), Income Diversification and Financial Stability of Banks in Ghana, International. *Journal of Business and Social Science* Vol. 6, No. 6; Pp. 177 – 184.

Davis, E. (2001), A Typology of Financial Instability, *Oesterreichische National Bank (Central Bank of Austria) Financial Stability Report* No. 2, pp. 92-110.

Demirguc-Kunt, A. & H. Huzinga. (1999). Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence, *The World Bank Economic Review*, Vol. 13, No. 2, pp. 379-40.

DeYoung R. & T. Rice (2004). Noninterest Income and Financial Performance at U.S. Commercial Banks, *The Financial Review*. No. 39: pp. 101-127.

DeYoung R. & K. P. Ronald (2001). Product Mix and Earnings Volatility at Commercial Banks: Evidence from a Degree of Total Leverage Model. *Journal of Financial Intermediation*. Vol. 10: pp. 54-84.

Elsas R., Hackethal A. & M. Holzhauser. (2010). The Anatomy of Bank Diversification, *Journal of Banking & Finance*, Vol. 34, pp. 1274-1287.

Gieseche, K. (2004). Credit Risk Modeling and Valuation: An Introduction, *Credit Risk: Models and Management*, Vol.2, Cornell University, London.

Hayden, E., Porath, D., & N. Westernhagen, (2005). Does Diversification Improve The Performance of German Banks? Evidence from Individual Bank Loan Portfolios. *Working Paper, Osterreichische National Bank and Deutsche Bundesbank.*

Hussain, H. & G. A. Bhatti, (2010). Evidence on Structure Conduct Performance Hypothesis in Pakistani Commercial Banks. *International Journal of Business and Management*. 5(9): 174-187

Kamp, A., Pfingsten, A., & D. Porath, (2005). Do Banks Diversify Loan Portfolios? A Tentative Answer Based on Individual Bank Loan Portfolios. *Working Paper No 3, Deutsche Bundesbank,* Frankfurt am Main.

Kargi, H.S. (2011). Credit Risk and the Performance of Nigerian Banks, *Ahmadu Bello University*, Zaria

Mercieca, S. Schaeck K. & S. Wolfe (2007), Small European Banks: Benefits from Diversification? *Journal of Banking and Finance.* Vol 31: pp. 1975-1998.

Oluitan R.O (2012a) Bank Credit and Economic Growth: Evidence from Nigeria. *International Business and Management Journal*, Vol.5, No. 2, pp. 99 - 107

Oluitan R.O (2012b) "Financial Development and Economic Growth in Africa: Lessons and Prospects" *Business and Economic Research*, Vol.2, No. 2, pp. 54-64

Ongore, V.O & G. M. Kusa, (2013), Determinants of Financial Performance of Commercial Banks in Kenya, *International Journal of Economics and Financial Issues*, 3(1): 237- 252

O'Sullivan, A. & S. Sheffrin, (2003). *Economics: Principles in Action*. New Jersey: Pearson Prentice Hall.

Padoa-Schioppa, T., (2002), "Central Banks and Financial Stability: Exploring a Land in Between", Paper Presented at the Second *ECB Central Banking Conference*, Frankfurt am Main, 24-25 October.

Podder B. (2012). Determinants of Profitability of Private Commercial Banks In Bangladesh: An Empirical Study. *A Thesis for a Professional Master in Banking and Finance, Asian Institute of Technology*, Thailand

Sibel Y. T, & Y. Ihsan (2012), Diversification in Banking and its Effect on Banks' Performance: Evidence from Turkey Banks. *American International Journal of Contemporary Research*, Vol. 2 No. 12 Pp. 111 – 119.

Siddiqui M. & A. Shoaib, (2011). Measuring Performance through Capital Structure: Evidence from Banking Sector of Pakistan, *African Journal of Business Management*, Vol. 5, No. 5, pp. 1871-1879.

Stroh, and J. Patrick. (2012) .Enterprise Risk Management at United Health Group,‖ Strategic Finance, pp. 27-35.

Sufian, F., & R. R. Chong. (2008). Determinants of Bank Profitability in Developing Economy: Empirical Evidence from the Philippines. *Asian Academy of Management Journal of Accounting and Finance*, Vol.4, No.1, pp. 91–112.