Financial Risk and Financial Flexibility: Evidence from Deposit Money Banks in Nigeria.

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Abstract

The study examines effect of financial risk on financial flexibility of Deposit Money Banks. Expos-facto research design was used for the study. This study used secondary data, sourced from the data were extracted from the audited financial reports of the banks within the period of the study for the period of ten years spanning from 2007 to 2016. The data was analysed using panel data regression analysis. The study found that funding liquidity risk has positive but insignificant effect on financial flexibility while solvency risk has negative significant effect on financial flexibility. The study concluded that financial flexibility can be determined by the both liquidity and solvency risk facing the banks, which in turn reflects their current capital levels in meeting their financial obligation. In line with the conclusion, the study recommends that management of Deposit Money Banks should strive towards expanding the customers' base in order to deposits frequency through provision of enhanced financial services and this will enhance daily capital level in meeting their obligation.

Keywords: Financial risk, Expo-factor research design, Panel data regression, Financial flexibility

1.   Introduction

Financial flexibility is the reaction of managers for financing frictions at present and anticipated future frictions and adjustment of firms' policies towards minimisation of such frictions (Almeida, Campello, & Weisbach, 2011).The incidence of consolidation in 2005 coupled with stock market crash in 2008/2009 is an exogenous shock which not only affected the economy at large but also the firms' cash flows and profitability. The historic magnitude of the current crises emphasizes the importance of understanding how shocks impact the financial decisions made by firms which lead to sub-optimal investments or poor performances. In spite of this, evidence in the literatures show that two key components that influence financial flexibility are pay-out policy and risk management. Guay and Harford (2000) stressed that the choice of lower pay-out or more repurchases relative to dividends, increases financial flexibility. In a different token, risk management is fundamental to avoiding underinvestment and financial distress (Nance, Smith & Smithson, 1993).

Risk management is a major groundwork of bank management, acknowledging this reality and the need for a comprehensive approach, the Basel Committee on Banking Supervision adopted the Basel I, II and III, to deal with the effective risk management (Sensarma & Jayadev, 2009). In line with this assertion, risk is a major and intrinsic part of the banking business model because banks convert short-term deposits into long-term loans in order to meet the demands of both depositors and borrowers simultaneously.

Based on this importance, vast number of researches has been conducted on financial risk in

relation to the performance of an organisation. The underlying and propelling force of this study is to unfold the dimension of performance beyond profitability and look at it on the aspect of financial flexibility. Thus, the current study examines the effect of financial risk on financial flexibility. In line with this, the fundamental research questions are: Does liquidity risk has significant effect on financial flexibility of Deposit Money Banks in Nigeria? What significant effect does solvency risk have on financial flexibility of Deposit Money Banks in Nigeria? The study formulated research hypotheses; Liquidity risk has no significant effect on financial flexibility of Deposit Money Banks in Nigeria. Solvency risk has no significant effect on financial flexibility of Deposit Money Banks in Nigeria. To answer these questions and test the hypotheses the remaining part is structured thus: section two reviewed literature on financial risk and financial flexibility, section three outlines the methodology adopted for the study. Data analysis and discussion were presented in section four while section five concludes the paper and proffer recommendations.

2.   Empirical Review and Theory

Holton (2004) viewed financial risk as the unexpected variability or volatility of returns and thus includes credit risks, liquidity risks and market risks. However Sisay (2014) included that reinsurance risk, solvency risk, technical provisions risk, underwriting risk are among what constitute financial risk. In a different note Barges (1963) views financial risk to be the added variability of the net cash flows of the owners of equity that results from the fixed financial obligation associated with debt financing and cash leasing. Thus, this study adopts solvency risk and liquidity risk as financial risk parameters. Financial flexibility refers to the ability at which a firm can respond to unexpected changes in cash flows or investment opportunities in a timely and value-maximizing manner. Some of the previous studies documented in the literature are review as follow.

In a study conducted by Lartey and Boadi (2013) on the relationship between liquidity and the profitability of banks listed on the Ghanaian Stock Exchange. The study revealed that for the period 2005 to 2010, both liquidity and profitability had a downward trend. The study concluded that there was a positive significant relationship between liquidity and profitability of the listed banks. Eneyew (2013) conducted a research on financial risks and profitability of commercial banks in Ethiopia. The study found that liquidity risk, inflation and interest risk were also the major factor that adversely affects profitability of Ethiopian commercial banks. The study concluded that that inflation was not a major factor that determines the profitability of Ethiopian banks. Abate (2014) analysed the impact of Corporate Governance on credit and liquidity risks of commercial banks in Ethiopia. The study found that Central Bank regulations and board meeting frequency negatively affected measures of risks but management capacity was found to have positively impacted on risks. The study concluded that Corporate Governance had an impact on bank Risk Management. Adrian (2014) studied on the relationship between financial risk and financial performance insurance companies in Kenya. The study found that capital management risk, financial risk, solvency risk and liquidity risk negatively affect the financial performance of insurance companies in Kenya. Imbierowicz and Rauch (2014) investigated the relationship between liquidity and credit risk in conventional banks. The result of the study identified that both liquidity and credit risk have a significant impact on bank default probability. The study concluded that even with no direct relationship between liquidity and credit risk, the interaction of the two types of risk increases the probability of bank default.

Arif and Showket (2015) conducted a research on relationship between financial risk and financial performance in Indian insurance industry. The results of multiple regressions model reveal that capital management risk and solvency risk have a negative and significant

relationship with financial performance, while liquidity risk, company size and volume of capital exhibit a positive significant relationship with financial performance. The study concluded that life insurance companies in India were affected financial risk. Olusanmi, Uwuigbe and Uwuigbe (2015) investigated the impact of effective risk management on bank's financial performance. The study observed that there exist a negative non-significant relationship between risk management and bank's performance. Thus, the study concluded that financial performance cannot only be explained away by the compliance or non-compliance to Basel's regulation by financial institutions. Mutua (2015) carried out a research to investigate the effect of mitigating credit risk on performance of commercial banks. The study found that the banks had policies and strategies of mitigating credit risk which has direct impact on their performance. The study concluded that there was a significant relationship between bank performance and credit risk management. Buchory (2015) analysed the effect of credit risk and operational efficiency to the banking profitability. Multiple linear regressions was used for hypothesis testing while using T - test to examine the effect of partial variables and F - test to examine the effect of variables simultaneously with a significance level of 5 %. Based on the results, it was concluded that the partial, non-performing loan has positive significant effect to ROA; while the OEOI has negative and significant effects to the ROA. Hooshyar, Mohammadi, and Valizadeh (2017) conducted a research on factors affecting financial flexibility based on panel data in firms listed in Tehran Stock Exchange. The study found that, financial leverage and the liquidity risk in listed firms of Tehran Stock Exchange have insignificant impact on financial flexibility. The study concluded that firm size variable has a negative and significant impact on financial flexibility.

Most of these literatures reviewed focused on effect of financial risk components on corporate governance and profitability but to the best of my knowledge scanty or no studies have been conducted in Nigeria on the effect of financial risk on financial flexibility. This justifies the importance of carrying out this study and contributed to the scanty literature on financial risk and financial flexibility. The study adopted financial flexibility hypothesis to underpin the relationship between the explained and explanatory variables.

3. Methodology and Model Specification

Expos-facto research design is adopted in this study which is characterizes with quantitative or numeric description of historical data. The population the study comprises all the deposit money banks operating in Nigeria as 31st December, 2017 and sample were drawn through census sampling technique. Thus, the sample size of the study comprises of all 15 deposit money banks listed at the Nigerian Stock Exchange as at 31st April, 2017. The source of data for the study is secondary only extracted from the audited financial statements of the sampled banks. The study used longitudinal balanced panel data using multiple regressions to examine the model of the study. The model specification for this study incorporates financial risk variables and financial flexibility variable. The financial risk variables included in the existing models comprise solvency risk and liquidity risk while the financial flexibility was proxy with ratio of operational cash flow to total asset. Thus, the model is discussed under the static model and specified below:

$$FFLEX_{it} = \pi_0 + \lambda_1 LQR_{it} + \lambda_2 SOR_{it} + \lambda_3 LEV_{it} + \lambda_4 FMS_{it} + \varepsilon_{it} \dots\dots\dots\dots\dots\dots\dots 3.1$$

This model is moderately consistent with the panel data regression. Where $FFLEX_{it}$ represents financial flexibility, LQR_{it} represents liquidity risk, SOR_{it} represents solvency risk, LEV_{it} represents Leverage, FMS_{it} represent firm size, ε represents error term, λ_1- λ_4 represents coefficient of independent variables, t represents time covered and i represents

listed deposit money banks. The variables used in this study are defined in table 3.1 in the appendix. The study conducted a robustness tests such as multicollinearity, correlation matrix and heteroscedasticity, in order to improve the validity of all statistical inferences of the study.

4. Result and Discussion

The mean values of fflex, lqr, sor, lev, and fms are 0.008097, 0.099435, 0.854117, 5.743437 and 7.780823 respectively. The common feature of these variables is that they all have positive mean values. This means that each of the variables displays increasing tendency throughout the sampling period. The average or mean value of financial flexibility is approximately 0.008 which implies that the proportion of financial flexibility of deposit money banks is very low and it indicates low financial flexibility of the banking system. The average value of funding liquidity risk is approximately 0.099. This average ratio is very low purporting that the liquidity risk of the deposit money banks reviewed on average amount to about 10 per cent. The average value of solvency risk is approximately 0.85. This average ratio is very high (i.e. 85%) purporting that the tendency of deposit money banks running into solvency problem is high in their operation. The average value of leverage is approximately 7.78. This average ratio is very high (i.e. 778%) purporting that the deposit money banks do use much long-term debt in their respective capital structure choice. The average value of firm size is approximately 5.74 which indicate that there is growth in the size of deposit money banks. Another interested characteristic of financial flexibility is that it ranges between -0.5313 and .0817. This has explicitly revealed that there are situation where deposit money banks are financially slack to the tune of 0.5313 and they are financially flexible to the tune of 0.0817. The value of liquidity risk ranges from -0.232747 to 0.326738. The value of solvency risk ranges from 0 to 0.6151. The value of firm size ranges from 4.288585 to 6.542934. The value of leverage ranges from -6.246788 to 191.2567. The result above also shows standard deviation (SD) which measures the level of variation of the variables from their mean value. It reveals that the most volatile of the variables examined is leverage and the least volatile variable is financial flexibility.

The interpretation of the Pearson correlation would follow Guilford rule of thumb which is < 0.2 is a negligible correlation, 0.2 to 0.4 is low correlation, 0.4 to 0.7 is a moderate correlation, 0.7 to 0.9 is a high correlation, > 0.9 is a very high correlation. The result shows that the correlation between the independent variables and dependent variable is generally small. The largest correlation coefficients exist between the fund liquidity risk and solvency risk (66.28%). The result shows that financial flexibility is positively correlated to liquidity risk, firm size and leverage. However the financial flexibility is negatively correlated to solvency risk. Also, the correlation matrices does not reveals that two explanatory variable are perfectly correlated. This means there is absence of multicollinearity problem in our model. This was confirmed by Variance Inflation Factors (VIF) and Tolerance Values (TV). The result is presented in the table 4.4 reveals that two explanatory variable are not perfectly correlated. This was confirmed by Variance Inflation Factors (VIF) which is less 10 and Tolerance Values (TV) which is less than 1. More so, the study adopted Breusch-Pagan-Goldfrey Test was adopted to test for existence of heteroscedasticity across the range of variables. The result presented above found that there is no heteroskedasticity since the P-value is 0.0000 which is less than 5%.

Brooks (2008) identified broadly two classes of panel estimator approaches that can be employed in financial research: fixed effects models and random effects models. The choice between both approaches is done by running a Hausman test. The result show that the fixed

effect model is appropriate since the p-value is less than 0.05 and this is line with the decision rule. Thus, the study interpreted the fixed effect model as follow

The result of the regression shows that the adjusted R^2 value is 26.06% which indicates that the dependent variable of financial flexibility of Deposit Money Banks is explained by the independent variables and Control variables (measured as liquidity risk, solvency risk, leverage and firm size). Thus, these variables collectively are good explanatory variables to explain the effect of financial risk on financial flexibility of Deposit Money Banks in Nigeria. The regression F-statistic (8.43) and the p-value of zero attached to the test statistic reveal that the null hypothesis that all of the coefficients are jointly zero should be rejected. Thus, it implies that the independent variables in the model were able to explain variations in the dependent variable. From the regression results it was found that liquidity risk has positive but insignificant effect on financial flexibility. This contradicts the findings of Hooshyar, et al. (2017) and the theoretical explanation as holding cash permits management to maintain the flexibility to pursue objectives at their discretion and to undertake sudden growth opportunities. This implies that banks facing liquidity risk are less likely to solve a shortfall by drawing down cash reserves. Also the study found that solvency risk has negative and significant effect on financial flexibility. This implies that an increase in solvency risk leads to a decrease in financial flexibility of the Deposit Money Banks. This is in line with a priori expectation and indicates that low solvency risk enables banks to embark on unexpected investment growth opportunity that may arise and prevent them from bankruptcy and financial distress. The result also found that leverage has positive but insignificant effect on financial flexibility this contradicts the findings of DeAngelo, etal. (2007). The explanation for this could be maintaining low levels of leverage in most periods enable firms to preserve debt capacity in periods of high capital needs in order to finance future investments or growth opportunities. More so, the study also found that the size of banks affects their financial flexibility positively and this contradicts the findings of Hooshyar, et al. (2017). The explanation for this is that a large bank might have better access to the interbank markets because it has a larger network of regular counterparties or a wider range of collateral and this enhances of fund for investment opportunity.

5.   Conclusion

The study concluded that financial flexibility can be determined by the both liquidity and solvency risk facing the banks, which in turn reflects their current capital levels in meeting their financial obligation. The findings of the study are not completely consistent with a prior expectation as documented in the literature and this bring new information regarding effect of financial risk on financial flexibility for listed Deposit Money Banks. In line with the conclusion, the study recommends that management of Deposit Money Banks should strive towards expanding the customers' base in order to deposits frequency through provision of enhanced financial services and this will enhance daily capital level in meeting their obligation. The study is limited to bank specific factors, thus further work is required to introduce macroeconomic factors as new variables in order to examine combine effect of both bank specific factor and macroeconomic factor on financial flexibility.

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Appendix
Table 3.1: Measurement of Variables and A priori Expectation

S/N	Variable	Type	Measurement	Source	A priori
1	Financial flexibility	Dependent	Operational cash flow divided by total asset	Hooshyar etal. (2017)	
2	Liquidity Risk	Independent	Current asset divided by current liability	Sisay, (2017)	_
3	Solvency Risk	Independent	Total asset divided by current liability	Sisay, (2017)	_
4	Leverage	Control Variable	Total debt divided by Equity	Adesina, Nwidobie and Adesina, (2015)	_
5	Firm Size	Control variable	Logarithm of total asset	Khan, Naeem, Rizwan, and Salman, (2016)	+

Source: Researcher compilation, (2018).

Table 4.1 Descriptive Statistics

	FFLEX	LQR	SOR	FMSZ	LEV
Mean	0.008097	0.099435	0.854117	5.743437	7.780823
Median	0.018423	0.095036	0.853574	5.793078	5.683039
Maximum	0.081663	0.326738	1.580512	6.542934	191.2567
Minimum	-0.531251	-0.232747	0.604777	4.288585	-6.246788
Std. Dev.	0.063077	0.069513	0.097200	0.460179	16.36816

Source: Researcher computation from STATA output, (2018)

Table 4.2   Correlation Analysis

Variables	FFLEX	LQR	SOR	FMSZ	RDE
FFLEX	1	0.3983	-0.4535	0.1821	0.0424
LQR	0.3983	1	-0.6628	-0.0647	-0.1785
SOR	-0.4535	-0.6528	1	-0.0533	0.1852
FMSZ	0.1821	-0.0647	-0.0533	1	-0.0659
LEV	0.0424	-0.1785	0.1852	-0.0659	1

Source: Researcher computation from STATA output, (2018)

Table 4.3 Heteroskedasticity Test

Statistics	values
chi2(1)	366.42
Prob > chi2	0.0000

Source: Researcher computation from STATA output, (2018)

Table 4.4   Multicollinearity Test

Variable	VIF	1/VIF
lqr	2.38	0.420033
sor	2.38	0.420795
lev	1.04	0.957738
fmsz	1.03	0.967309
Mean VIF	1.71	

Source: Researcher computation from STATA output, (2018)

Table 4.5   Hausman Test

Statistics	Value
chi2(4)	11.42
Prob>chi2	0.0223

Source: Researcher computation from STATA output, (2018)

Table 4.6   Dependent Variables: Financial Flexibility

Variables	Coef.	Std. Err.	t-statistics	P-values
lqr	.086039	.1112056	0.77	0.441
sor	-.2587266	.0802675	-3.22	0.002
lev	.0005943	.0003026	1.96	0.052
fmsz	.0207437	.013071	1.59	0.115
cons	.0967611	.1116863	0.87	0.388
R-Sq	0.2606			
F-Stat	8.43			
Pro(F-stat)	0.0000			

Source: Researcher computation from STATA output, (2018)