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The Relationship between the Percentage Share of Industry Deposits and the Percentage Share of Industry Loans and Advances: The Case of Ghanaian Banking Industry

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Abstract
The purpose of the study was to describe the relationship between the percentage share of industry deposits taken by a bank and the percentage share of industry loans and advances given by such bank, using 2012 fiscal year as a reference point. The study made use of cross-sectional analysis. The population of this study was made up of all commercial banks operating in Ghana. They are twenty-six (26) in number. However, a sample size of twenty-four (24) of these banks was used for the study. Data was mainly collected from secondary sources including financial reports of the selected banks, scholarly journals, business and financial newspapers, corporate journals, and report of 2013 Ghana Banking Survey. Descriptive, inferential and exploratory data analyses were performed. The study revealed that there is a strong positive correlation between the percentage share of industry deposits and the percentage share of industry loans and advances. The regression model which establishes the relationship between percentage share of industry deposits and lending is given as Y = 0.423+ 0.899X, where Y is the percentage share of industry lending and X being the percentage share of industry deposits. The coefficient of determination (R-sq) is 85.6%. The study therefore confirms the findings by Olokoyo (2011) that commercial banks deposits have the greatest impacts on their lending.
Keywords: Banks, Industry, deposits, loans and advances, relationship, percentage share

1.0 Introduction

The business of banking involves the mobilization of funds from excess or surplus units of the economy and giving out to deficit units as loans and advances. This is called financial intermediation (Lartey et al, 2013). Hinson (2004) as cited by Amidu (2006) has noted that "before the passage of the Universal Banking Law, banking was conducted along such narrow scopes as commercial, developmental or merchant banking. With the passage of the Universal Banking Law however, all types of banking can be conducted under a single corporate banking entity and this greatly reorganizes the competitive scopes of several banking products in Ghana". He further noted that banks in Ghana have been thrust "firmly into the competitive arena in terms of customers and products" and also that banks throughout Ghana are also "seeking unique ways of differentiating their offering".

2.0 Literature Review

Banking system plays a very important role in the economic life of a nation. The health of the economy is closely related to the soundness of its banking system (Chowdhury and Ahmed, 2009). According to Chowdhury and Ahmed (2009) a number of recent studies indicate that the banking sector plays a more important role than it was believed earlier. Banking is an essential part of our economic system. Modern trade and commerce would almost be impossible without the availability of suitable banking services. Loan facility provided by banks works as an incentive to the producer to increase the production (http://www.blurtit.com/q197532.html). Commercial banks happen to be the most important savings mobilization and financial resource allocation institutions in the economy (Olokoyo, 2011). These roles make the banks an important phenomenon in economic growth and development. In performing the above roles, the banks must be sure that they have the potential, scope and prospects for mobilizing financial resources and allocating them to productive investments. Therefore, according to Olokoyo (2011), no matter the sources of the generation of income or the economic policies of the country, commercial banks would be interested in giving out loans and advances to their numerous customers.

Credit constitutes the largest single income-earning asset in the portfolio of most banks. This explains why banks spend enormous resources to estimate, monitor and manage credit quality (Nwankwo 2000). Bank lending decisions generally are fraught with a great deal of risks, which calls for a great deal of caution and tact in this aspect of banking operations. Lending is undoubtedly the heart of banking business. Therefore, its administration requires considerable skill and dexterity on the part of the bank management (Adedoyin and Sobodun, 1996). Osayameh (1991) stressed that, the major objective of commercial banks' lending is to maximize profit. According to Chodechai (2004) as cited by Olokoyo (2011), banks have to be careful with their pricing decisions as regards to lending as banks cannot charge loan rates that are too low because the revenue from the interest income will not be enough to cover the cost of deposits, general expenses and the loss of revenue from some borrowers that do not pay. Moreover, charging too high loan rates may also create an adverse selection situation and moral hazard problems for the borrowers. Some recent researches provide support for the view that certain borrowers, especially small businesses, are very dependent on banks for financing (Abor, 2004). This finding suggests that disruptions in bank credit could affect economic activity.

Commenting on the factors affecting commercial banks' lending behaviour, Usman (1999) said the sound and viable functioning of commercial banks in Nigeria is adversely affected by the choice of certain policy instruments for the regulation of banking operations. These instruments include a rigidly administered interest rate structure, directed credit, unremunerated reserve requirements and stabilizing liquidity control measures. According to Olokoyo (2011), commercial banks decisions to lend out loans are influenced by a lot of factors. Some of these factors are the volume of deposits, the banks liquidity ratio, the prevailing interest rate, the level of their domestic and foreign investment, prestige and public recognition. Olokoyo (2011) used regression analysis to investigate the determinants of commercial banks lending behaviour in Nigeria. The study discovered that commercial banks deposits have the greatest impacts on their lending behaviour. The study then suggests that commercial banks should focus on mobilizing more deposits as this will enhance their lending performance and should formulate critical, realistic and comprehensive strategic and financial plans. What the above study purports in effect is that deposits have a direct impact on bank lending; and that the more deposits a bank gets, the more loans and advances it will give. If the above phenomenon should hold, then one would also expect that, ceteris paribus, the bank with higher share of industry deposit should make higher share of industry loan and advances. This study seeks to find out the situation in the Ghanaian banking industry, in terms the linkage between deposits and bank lending. The study seeks to find out the correlation between the percentage share of industry deposits taken by a bank and the percentage share of industry loan and advances given by such bank, using 2012 fiscal year as a reference point.

3.0 Methodology

3.1 Research Design

The study is descriptive in nature. In descriptive research, a researcher begins with a well-defined subject and conducts a study to describe it accurately and the outcome is a detailed picture of the subject (Neuman, 2007). The study made use of cross-sectional analysis. Cross-sectional studies form a class of research methods that involve observation of all of a population, or a representative subset, at one specific point in time (http://en.wikipedia.org/wiki/Cross-sectional_study). This study seeks to describe the relationship between the share of industry deposits taken by a bank and the share of industry loan and advances given by such bank, using 2012 fiscal year as a reference point. The population of this study was made up of all commercial banks operating in Ghana. They are twenty-six (26) in number. However, a sample size of twenty-four (24) of these banks was used for the study. These banks were included in the 2013 Ghana Banking Survey by PricewaterhouseCoopers Ghana Ltd.

3.2 Instrumentation and Data Collection

Data was mainly collected from secondary sources. Data emanated from the financial reports of the selected banks, scholarly journals, business and financial news papers, corporate journals, and report of 2013 Ghana Banking Survey. As the study needs historical financial data, which are from corporate reports, accessing publicly available data is assumed as the suitable method for the accuracy of the data. As public data is accessible to everyone; the study made use of the financial performance data which were of interest to the present research. Financial reports and other relevant information of the banks for 2012 fiscal were retrieved from the internet, by search engines.

3.3 Analysis of Data

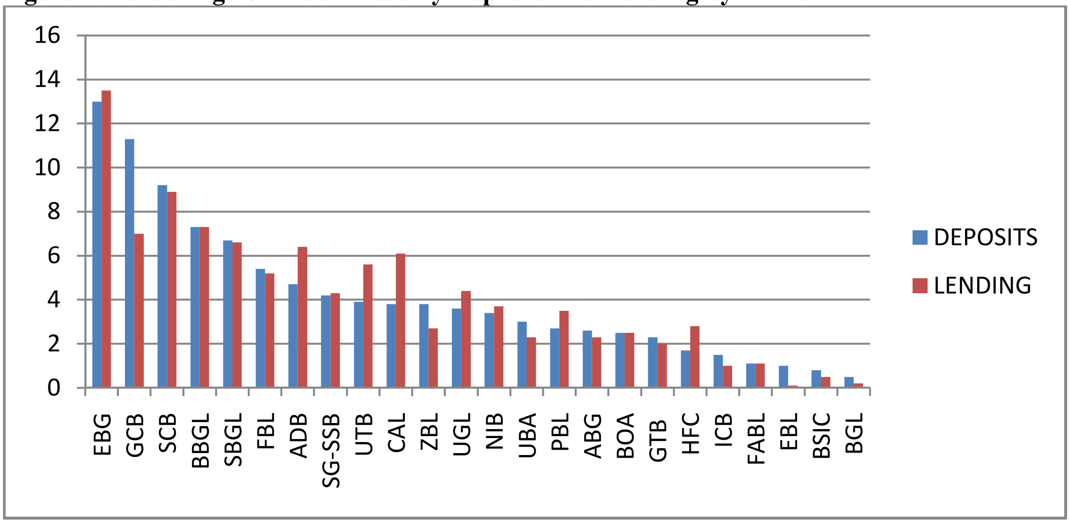
Data analysis, comprising both descriptive and inferential data analysis as well as exploratory analysis were performed. The exploratory analysis involved the use of graphical displays of the data to help identify and analyze trends and patterns in the data. These included the use of multiple bar charts and scatter diagram to explore and establish the relationships.

With respect to the descriptive analysis, correlation coefficients, standard errors, were also computed and interpreted through the application of regression and correlation analyses to find the relationship and the strength thereof between the share of total bank deposits and the share of total bank loans and advances. The dependent variable was loan and advances (LENDING); while the independent variable was deposit (DEPOSITS). Finally, with regard to the inferential analysis, hypothesis tests were performed using the computed p-values in which decisions and conclusions were arrived at an alpha value of 0.05.

4.0 Empirical Results

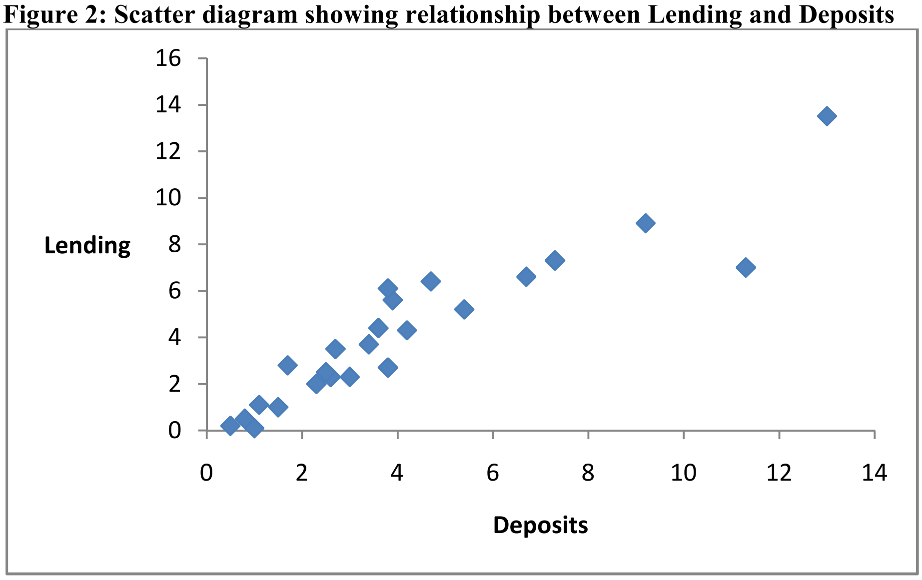
4.1 Exploratory data analyses

Figure 1: Percentage Share of Industry Deposits and Lending by Banks



The figure 1 above displays the percentage share of industry deposits and lending of the selected financial institutions. It can clearly be seen that there exist some kind of association between the percentage share of industry deposits and lending by the institutions under study. Specifically, with respect to institutions where the share of industry deposits was very high, it resulted in a corresponding high percentage share of industry lending and vice versa, except in some few cases that deposits rose more than the corresponding rise in lending. Mention can be made of GCB, ICB, BSIC and BGL. It can therefore be concluded that a rise in the share of industry deposits will result in a corresponding rise in the share of industry lending. Another robust approach of establishing relationship is by the use of a scatter plot which is illustrated in figure 2 below.

Figure 2: Scatter diagram showing relationship between Lending and Deposits



The Figure 2 above is a scatter diagram depicting the relationship between the percentage share of industry lending and deposits as given by the institutions involved in the study. Clearly, there appears to be a positive correlation between the two variables. It is clear from the figure that as the percentage share of industry deposits increases, the percentage share of industry lending also increases, thereby resulting in the movement in the same direction by the two variables and for that matter the positive association between them. The exact strength of the relationship would be made clearer by the calculation of the correlation coefficient and other important statistics in the subsequent analysis.

Table 1: Summary of Regression coefficients

Predictor	Coef	SE Coef	T	P
Constant	0.423	0.413	1.024	0.317
Industry deposit(X)	0.899	0.079	11.413	0.000

The Table 1 above reports the regression parameters comprising of the regression coefficients, standard errors of the coefficients, the t values and the p values as well. Based on the regression coefficients, the exact regression model which establishes the relationship between percentage share of industry deposits and lending is given as $Y = 0.423 + 0.899X$, where Y is the percentage share of industry lending and X being the percentage share of industry deposits. The intercept or constant value of 0.423 is interpreted to be the percentage share of industry lending when the percentage share of industry deposits is zero and all other factors are held constant, whilst the coefficient of X of 0.899 is the rate or magnitude of change in the percentage share of industry lending as a result of a unit change in the percentage share of industry deposits. Its positive sign is an indication of the fact that there is a positive correlation or association between percentage share of industry lending and percentage share of industry deposits, thereby corroborating with earlier conclusions drawn regarding figures 1 and 2 above with the p-values indicating that the predictor variable (X) is statistically significant since it is less than the chosen alpha level of 0.05.

Table 2: Summary of Model statistics

Model statistic	Value
R	0.925
R-square	85.6%
R-square (adj)	84.9%
Standard error	1.2276

The model statistics are necessary indicators in determining the exact nature of the relationship between percentage share of industry deposits and percentage share of industry lending. Given the correlation coefficient of (R=0.925) indicates that there exist a very strong and in fact almost a perfect positive association or relationship between percentage share of industry deposits and percentage share of industry lending. Also, the coefficient of determination (R-sq) which is a measure of the explanatory power of the model with regard to the percentage share of industry deposits indicate percentage share of industry deposits is able to account for or explain 85.6% of the changes in the percentage share of industry lending in the Ghanaian banking sector. This of course also implies that there are other unknown variables or factors that have effect on percentage share of industry lending as far as the banking institutions and the financial sector of the Ghanaian economy are concerned, representing approximately 14.4%.

Table 3: Analysis of Variance and test of hypothesis

Source	SS	DF	MS	F	P
Regression	196.318	1	196.318	130.266	.000
Residual Error	33.155	22	1.507		
Total	229.473	23			

The analysis of variance table is used here to test the hypothesis for the study claimed earlier on that there is no significant relationship between percentage share of industry lending and percentage share of industry deposits in Ghana or otherwise. This claim is been investigated at this moment by the test of hypothesis with the aid of the analysis of variance table above in order to draw reasonable conclusions.

Null Hypothesis (Ho): There is no significant relationship between percentage share of industry deposits and lending in the banking sector in the Ghanaian economy.

Alternative Hypothesis (H_1): There is a significant relationship between percentage share of industry deposits and lending in the banking sector in the Ghanaian economy.

The test statistic used in this case is the p-value. The p-value of 0.000 as reported in the analysis of variance table indicates that the test is significant at 0.05 since it is less than 0.05. Therefore, we fail to accept the null hypothesis and conclude that there is a significant relationship between percentage share of industry deposits and lending in the banking sector in the Ghanaian economy.

5.0 Discussions

This paper sought to establish and describe the relationship between the share of industry deposits taken by a bank and the share of industry loan and advances given by such bank, using 2012 fiscal year as a reference point in Ghana.

The following are the findings of the study based on the above objective and the analysis performed.

Firstly, the study revealed that based on the data on percentage share of deposits and lending by the banks regarding the 2012 fiscal year, there exist a relationship between the percentage share of industry deposits and lending as revealed by the value of the correlation coefficient of (R=0.925).
Secondly, this relationship can be described as a strong positive relationship with percentage share of industry deposits accounting for about 85.6% of the changes in the percentage share of industry lending as given by the coefficient of determination.
Therefore, a more robust and parsimonious linear model developed is given as; $Y = 0.423+ 0.899X$. where X and Y denote the percentage share of industry deposits and lending respectively.
Finally, model built was validated by the conclusion from the test of hypothesis and as a result can be used for estimating, predicting or forecasting the percentage share of industry lending based on percentage share of industry deposits.

6.0 Conclusion

The study concludes that there is a statistically significant strong positive relationship between the percentage share of industry deposits and lending and as a result, a change in deposits would lead to a corresponding change in lending. This implies that the percentage share of lending given by banks would largely depend on the percentage share of deposits taken by the bank. In other words, the higher the deposits taken by a bank, the higher the loans and advances given by that bank. The study therefore confirms the findings by Olokoyo (2011) that commercial banks deposits have the greatest impacts on their lending, and for that matter commercial banks should focus on mobilizing more deposits as this will enhance their lending performance and should formulate critical, realistic and comprehensive strategic and financial plans.

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Appendix: 1 Banks, Their Abbreviations, Percentage Share of Industry Deposits and Lending

Bank	**Abbreviation**	**Industry Deposit (Independent)%**	**Industry Lending (Dependent) %**
Ecobank Ghana Limited	EBG	13.0	13.5
GCB Limited	GCB	11.3	7.0
Standard Chartered Bank Ghana Ltd	SCB	9.2	8.9
Barclays Bank of Ghana Limited	BBGL	7.3	7.3
Stanbic Bank Ghana Limited	SBGL	6.7	6.6
Fidelity Bank Limited	FBL	5.4	5.2
Agricultural Development Bank Ltd	ADB	4.7	6.4
SociétéGénérale Ghana Limited	SG-SSB	4.2	4.3
UT Bank Limited	UTB	3.9	5.6
CAL Bank Limited	CAL	3.8	6.1
Zenith Bank (Ghana) Limited	ZBL	3.8	2.7
UniBank Ghana Limited	UGL	3.6	4.4
National Investment Bank Limited	NIB	3.4	3.7
United Bank for Africa (Ghana) Ltd	UBA	3.0	2.3
Fidelity Bank Limited	PBL	2.7	3.5
Access Bank (Ghana) Limited	ABG	2.6	2.3
Bank of Africa	BOA	2.5	2.5
Guaranty Trust Bank (Ghana) Limited	GTB	2.3	2.0
HFC Bank (Ghana) Limited	HFC	1.7	2.8
International Commercial Bank Ltd	ICB	1.5	1.0
First Atlantic Bank Limited	FABL	1.1	1.1
Energy Bank (Ghana) Limited	EBL	1.0	0.1
Sahel -Sahara Bank Limited	BSIC	0.8	0.5
Bank of Baroda Limited	BGL	0.5	0.2
TOTAL	**-**	**100**	**100**

(Source: Adapted from 2013 Ghana Banking Survey)