

Does Corporate Governance affect Bank Profitability? Evidence from Nigeria

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Abstract

Understanding the issue of Governance goes beyond having political entities running an organization in order to maximize shareholders wealth to including the corporate players of that entity whose goal is to maximize profit. Corporate players are the major drivers of today's global economy, so much so that some organizations in developed countries have achieved turnovers that are higher than some countries GDP. However, the fundamental of corporate governance is to promote fairness, transparency, accountability as well as guide corporate bodies in their action and deed. This study therefore examines the relationship between corporate governance and banks profitability in Nigeria. The study discovered that good corporate governance and not assets value determine the profitability of banks in Nigeria. The study made four (4) recommendations, one of which is to encourage banks to have small but qualitative board size that is made up of financial and legal professionals .

Key Words: Corporate governance, Bank profitability, size of board, Loan impairment, Return on assets.

Introduction

Corporate governance has been an issue of global concern long before now. However, it came to the fore in the 1980's as fallout of the Cadbury report in the United Kingdom, which concentrated on the financial aspects of corporate governance. Immediately following suits, the subject of corporate governance reverberated round developed and developing countries - (King Report) South Africa, (Dey Report) Canada, (Bosch Report) Australia; in Armstrong (1997). Infact, James Wolfenschon in Boateng(2004) stated that proper governance of companies would become as crucial to the world economy as the proper governance of countries and will converge in associated issues of competitiveness, corporate citizenship, social and environmental responsibility. The Governance of banks becomes even more pronounced considering their role of financial intermediation in developing economies. Commercial banks are the main providers of funds to enterprise and where there is a thin or absent capital market, their failure becomes the failure of the system. According to Simpson (2004) the impact of failure of the banking system can have immense cost, as it has repeatedly been seen that bank failure cost developing countries up to 15% of their GDP and losses that far outstripped aids received.

In 2001, it was recorded that corporate governance was at its rudimentary state in Nigeria; as only about 40% of quoted companies including banks seems to have recognized corporate governance codes (Suberu and Aremu, 2010). Clearly, corporate governance aims at promoting competition, while allowing customers the option of making a choice. This concerns deregulation as reform measures that guarantees lower rates, provide customer choice and offer reliable services so that no one is literally left in the dark (Wilson,1986). However, corporate governance arrangement and institutions vary from place to place, though the focus is always to promote corporate fairness, transparency and accountability.

It allows corporate bodies to be properly directed, guided, controlled and by extension held accountable for their deeds. The hallmark of Modern Corporation is the separation of ownership from management, which sometimes brings about conflicts. Ownership changes arising from mergers and acquisition-consolidation have altered the Nigerian banking system, as driven by change in government policies and financial crisis. The banking system in Nigeria has undergone several reforms; studies have shown that the financial sector being at the center stage of efficient capital allocation needs to be visited more consciously with the subject of corporate governance (Levine, 2005). However, the fundamental issue of corporate governance and banks performance cannot be complete without proper understanding of the functions of shareholders and directors; the creation of an efficient and reliable board from among the shareholders to checkmate director's excesses if any becomes a sine qua non. This is so because even in some instances, we see corporations whose turnover are larger than the GDP of some developing countries. It becomes pertinent to ask if there is a link between corporate governance and performance.

This paper therefore seeks to explain the relationship between corporate governance and banks performance in Nigeria from 2005 – 2008; considering the Soludo's consolidation (reform) agenda. The paper will also determine explicitly what variables explain corporate governance and how they impact on banks performance in Nigeria, within the period under review. The paper is organized as follows, the next section reviews literature, followed by methodology of the study covering empirical modeling of variables. Discussion of result will be next; then conclusion and recommendations.

2. Literature Review

Spon and Sullivan (2007) examines the relationship between banks ownership and several governance aspects and found out that increasing ownership stakes for hired managers and boards improves banks performance. However, for banks to perform its intermediating functions, certain issues like their objectives for being in existence must be considered. Mitchel (1984) identified these three objectives– to protect depositors, to promote stable money supply by preventing financial panic, and foster and efficient and competitive banking system that facilitate financial intermediation. Fundamentally corporate governance issue is more about leadership, as the public is now demanding accountability and responsibility in corporate behavior more than ever before. It also involves effective government action in the form of reformed regulatory systems; improve quality of service delivery and stepped-up in law enforcement by regulatory agencies. (Coglimesse, Keating, Michael and Healery, 2004) Boateny (2004), added that good institutional and political governance had long been a development issue, the connection to the corporate governance agenda has not always been explicit. In fact, prior to this time bank governance has had a lower profile than corporate governance. The truth is that bank governance is the one that actually raises all the good governance questions. For instance, instability in banks would lead to financial instability and by extension a significant impact on the entire economy. It is in this vein that Blide(2004), confirms that there is a direct link between improved bank governance, financial stability and sustainable economic development, particularly in developing and emerging market.

The Nigerian banking and economic growth issues is a very complex one. Over the years the objective and vision of the banking system has metamorphosed in such a way that the focus at a point in time was the allocation of credit for long term infrastructural development and product based rather than security based lending. The system was characterized by low productivity, bureaucracy, lack of loan supervision especially for small loans, lack of flexibility and choice for customer, decreased profitability and poor manpower holding. A new path was therefore inevitable and leveraged was found in the Basle Accord i & ii framework considering capital requirement relative to asset through a risk management principles that relies heavily on the parties with access to the best information. Notwithstanding , the Basle Accord, Charkam (2004), confirms that banking is littered with failure-cause by ignorance, fraud, misjudgment political and societal pressures, that he is unsure if better governance would saved them.

However, bank failures convinced government of the necessity to establish minimum capital requirement for insured banks. Oluyemi(2007), assert that sound capital creates reasonable assurance of protection to depositors as well as creditors. In Nigeria, the regulatory or capital cushion model allows banks to maintain a cushion that would prevent stochastic capital ratio from reaching values below the permitted minimum in order to avoid sanctions. This informs the CBN's conditions for banks to have a minimum of 25 billion naira capital base for global competition.

Even though a lot of consolidation strategies basically through mergers and acquisitions has taken place, however, reducing the number of banks from eighty nine to twenty five (89 to 25) in Nigeria, as at 2006 the banking industry still has not lived up to its objectives of ensuring good and proper corporate governance (Kama, 2006). The reform agenda introduced a new code of corporate governance for banks in Nigeria in April, 2006. The code covers equity ownership, transparency, and disclosure requirement, organizational structure as well as some of the roles of the auditors.

Others include:

- Government direct and indirect equity holding in any bank shall be limited to 10% by the end of 2007.
- Responsibility of the board chairman shall be clearly separated from that of the managing director/ chief executive officer.
- No two members of the same extended family should occupy the position of chairman and that of CEO or executive director of a bank at the same time.
- Institutions should be headed by executive board composed of qualified individuals that are conversant with its oversight functions.
- At least two non-executives board members who do not represent any particular shareholders interest and hold no special business interest within the bank should be appointed on merit.
- Any director whose facility or that of his or her related interest remains non-performing for more than one year should cease to be on the board of the bank and could be black listed from sitting on the board of any other banks.

It was also within the ambit of strengthening corporate governance that Herring and Safar(2004), advocated the use of market forces to help achieve supervisory objectives as a logical way forward in strengthening corporate governance and self discipline by opening all lines of communication with the board, as an additional pillar of financial stability. Studies of bank governance with respect to their performance have looked at issues from different perspectives ranging from static to dynamic governance.

Begger, Hanweek and Humphery(1987), using US data found very little scale economies or diseconomies on account of static differences in performance between domestically owned banks and their foreign and state owned counterparts. Deniser and Strahan(1997), actually found possible revenue benefits for large banks than small banks in 1990's. Deyoung, Hunter and Udell(2004), found that large and small banks serve different groups of customers, use different technologies and /or have different effects on competition.

Profit efficiency studies found that mergers and acquisition improve profit, which comes as a result of portfolio shifts. (Akhavain, Berger and Humphery, 1997). In considering performance, the main question is always on credit availability and portfolio allocation, as well as efficiency. This is because the objectives of states owned banks in particular centers on developing specific industries or region, export expansion and always engaged in directed lending. Studies for individual nations particularly with respect of changing fro state ownership to foreign ownership. Metico(Haber, 2005), Nigeria (Beck, Cull and Jerome, 2005), Brazil (Beck, Crivelli and Summerhill, 2005).

Yung (2009), using panel regression methods, confirm board size has a great impact on bank performance. While Love and Rachinsky(2009), using a sample of 107 banks in Russia and 50 banks in Ukraine found some significant, but economically unimportant relationship between governance and contemporaneous operating performance and a weaker link with subsequent performance. They also ascertained that banks with more concentrated ownership have lower ranking on corporate governance. However, this work would consider corporate governance variables of board size, shareholders size, mergers and acquisition as in Berger, Clarke, Cull, Klapper and Udell,(2004) and bank performance variable as in Love and Rachinsky(2008) , Young (2009) . Availability of data for Nigeria would provide opportunity to test our propositions.

3. Methodology of Research

This section describes the variable of interest used in this study. We also attempted to formulate a model that will guide the study in its analysis. The study used Return on Assets (ROA), Return on Equity (ROE and Non-Performing loans (NPL) as the variables that measure bank performance.

The number/size of Board of Directors (SBOD) and the Number of Shareholders (CBOD) measures the corporate governance index, while total Assets and Total Equity served as control variables (Berger et al, 2004). These variables will be defined shortly. The study shall utilize the descriptive and correlation analysis to examine the relationship between Corporate Governance and Bank Performance in Nigeria.

Data

Data used for this study were obtained from the annual reports of 11 out of 24 banks (46%) operating in Nigeria. The study encountered several constraints while processing these data. The banks approached showed unwillingness in providing the requested data while referring the researchers to their individual web addresses. Also due to the ongoing structural reforms in the banking system some banks were on the processes of updating their web site, thus data could not be obtained from such banks. Data found on the web were however limiting as most of the years were not available. Consequently, the study was constrained to consider data from 2005 – 2008.

Definition of Variables

1. Bank Performance

The measures of bank performance used in this study are: Return on assets (ROA), Return on equity (ROE), Non-performing Loans (NPL)

Return on Assets

ROA equals after tax net income divided by average total assets of a bank. This aims to examine the amount of after tax net income that can be earned for every naira of assets in the bank. The ratio reflects whether the bank uses assets effectively in order to produce its income, so it is an important profitability indicator

Return on Equity (ROE)

ROE equals after tax net income divided by average total equity of a bank. This aims to examine the amount of after tax net income that can be earned for every naira of equity.

It indicates the amount of income that shareholders will earn in a bank. It must be understood that an increase in ROE due to an increase in leverage may be an issue of concern for the bank's management.

Non-Performing Loans

Credit business is the main business for commercial banks. Since banks use a large portion of their funds for providing credit to firms and individuals, so they face the possibility that firms or individuals may sometimes show unwillingness to repay such borrowed funds promptly. This attitude often exposes banks to losses from providing credit business.

2. Corporate Governance Variables

The measure of corporate governance used in this study are size of the board of directors (SCOS) and number of shareholders (SHOD) in the firm.

Size of Board of Directors

Size of board of directors is the total number of members within the board of directors. This study will examine the extent to which the bank performance will be affected by the size of the board of directors. It is expected that banks with smaller size of board will exhibit more corporate governance responsibility than banks with larger size of board member.

Number of Shareholders

This represents the total number of shareholders within a bank. It is also known that banks are expected to have their AGM at the least once every year. Thus the number of shareholders will determine the strength of decision reached at the end of each year's meeting

3. Control Variables

The control variables used in this study are total assets of the bank and total equity of the banks.

Total Assets

This variable could also be used to measure the size of the bank. It is expected that larger banks will perform better, because they may have more diversified investment opportunities, better management, and employ better technology

Total Equity

This variable can also measure the amount of shareholders fund in the bank compared to the average shareholders funds in the industry. It is expected that banks with greater equity should perform better than banks with smaller equity.

4. Model Specification

The study considered bank's performance variables as the dependent variable (ROE, ROA and NPL) while corporate governance variables (SBOD and CBOD) and the control variables (TA and TE) are the independent variables. Each individual performance variables are regressed against both the control and governance variables per time. The functional form of the model is as follows,

$$\text{Perf}_{it} = f(\text{Gov}_{it}, \text{Cont}_{it})$$

Where Perf indicates the performance variables, Gov is the governance variables and Cont refers to the control variables as previously defined. The subscript it , represent the i th bank at time t . The above could be further represented as

$$\text{Perf}_{it} = \beta_0 + \beta_{1t} + \beta_{2t} + \delta_{1t} + \delta_{2t}$$

Where β_{1t} and β_{2t} represent Size of the Board of Director (SCOD) and Number of Shareholders (SHOD) δ_{1t} and δ_{2t} represent total assets (TA) and total equity (TE) of the banks.

5. Interpretation of Descriptive Results**Return on Assets**

The result is presented in table i. The data shows that for the period under review the mean return on assets of 0.02 percent in 2008 compared to 0.0238 in 2006 and had the maximum of 0.09 (9 percent) in the same year. The overall standard deviation of 0.03 was noticed in 2006. The result presented above indicated that the returns on asset of the bank under review were quite unstable and below the minimum required standard in the industry. This signifies that the banks trading and investment had not significantly improved the assets of the banks. However, from the ranking presented, UBA, First Bank, Zenith Bank and GTBank had a higher return on assets that other bank. Ecobank, Sterling Bank and Unity bank are some of the worse performing banks in terms of return on assets.

Return on Equity (ROE)

The result is presented in Table ii. Return on Equity from the data shows that the banks had a maximum of equity returns of 0.20 percent in 2006 and a minimum return of 0.03 in 2008. The standard deviation ranged from 0.084 in 2006 to 0.01 in 2008. A mean return on equity of 0.06 was observed in 2008 as against 0.03 in 2007. Generally, the banking industry experienced a poor return on equity within the sample year. Also from the data it was observed that according to the order of ranking, UBA, First Bank, Zenith Bank and GTBank had the highest returns on equity while Ecobank, Sterling Bank, Unity Bank and Afribank had poor returns on equity according to the order of ranking. These results simultaneously agree with result on the return of assets as the ranking of the banks mentioned were similarly correlated.

Non-Performing Loans (NPL)

The result of the Non-Performing Loan is presented in table iii. The result reveals that the mean average of 15 percent on loan impairment allowance was noticed in 2006. However, the loan impairment was observed to have reduced to 10 percent by 2008. Maximum loan impairment among the bank was noticed at 60 percent in 2006. From the ranking of the performance of loan, Unity bank, First Bank, Sterling Bank and Afribank were observed to show little tolerance to poor loan performance. Zenith bank, GTBank and Intercontinental banks were observed as banks that had poor loan performance. This result shows that some of the so-called large banks exhibited poor loan management ability. Also, the result further shows that the smaller banks were afraid of giving large that might not be easily redeemable, while considering cost of loan recoveries.

Correlation Analysis

The correlation result is presented in table iv. The correlation analysis reveals that bank performance variables of ROE and ROA had 75 percent positive relationship with the governance variable size of board of directors, while the bank performance variable of ROE and ROA also exhibited a 61 percent positive relationship with the number of shareholders. However, a negative relationship was observed between the size of board of directors and the bank performance variable of Non-Performance loans (NPL). This result shows that the size of board of directors negatively affect the loan performance of the banks in Nigeria.

Regression Analysis

From the result of our study as shown on table v-vii from SPSS version 17.0, and using semi-log linear OLS regression method, we found out that return on asset (ROA) and (ROE) which measure for bank performance has R^2 of 84 and 85 per cent respectively, indicating a good model fit. The Corporate Governance variable, Size of Board of Directors (SCOD) and size of shareholders (SHOD) were statistically significant at 10 percent level in determining bank performance variables of ROA and ROE. However, the control variables (Total Assets and Total equity) did not significantly impact bank performance variables of ROA and ROE indicating that the amount of Assets or equity does not determine the performance of banks within the study period, rather, corporate governance. It is pertinent to note (from the coefficient of number of shareholders) a 1 percent improvement in the coefficient of the number of shareholders (SHOD) will improve both ROA and ROE up to a maximum of 18 percent, whereas a 1 percent improvement on the size of the board of directors will lead to a maximum improvement of 5 percent on both ROA and ROE.

The study observed that bank performance measure of Non-performing Loan (Loan Management) and corporate governance variables had a R^2 of 17 percent indicating a very poor fit. In fact, all the variables that explained the NPL model did not show any statistical significance. However, the corporate governance variables of number of shareholders (SHOD) has a positive relationship with NPL indicating that a 1 percent improvement in shareholding capacity will lead to a 2 percent improvement in loan management capability of banks in Nigeria. From our result, there is a negative and non significance impact of size of bank directors (SCOD) and Non-performing loans (NPL). This shows that a 1 percent reduction in the size of board of directors (SCOD) will lead to a 18 percent improvement of loan management ability. Eisenberg, Sundgren and Wells (1998) and Mak and Kusnadi (2005) also report that small size boards are positively related to high firm performance. Furthermore, a previous work done in Nigeria by Sanda et al (2003), Kajola (2008) reported that firm performance is positively correlated with small, as opposed to large boards.

6. Conclusion and Recommendation

The study tested for the relationship between corporate governance and Bank performance in Nigeria between 2005 and 2008 using pool data which represent an expansion of existing research literature that can be equally applied elsewhere. The relationship between corporate governance and bank performance in Nigeria is quite commendable as the study identified that a unit change in the size of the board of directors of the bank and the size of shareholders (Corporate Governance) increases return on assets and return on equity (Bank performance) between 2percent and 18 percent within the study period. The study also showed that it is not really the quantum of total assets or total equity that determines bank performance in Nigeria. Rather the quality of the asset, equity providers and managers that actually influences bank performance.

Following the above argument, the study therefore recommends that the board size of banks in Nigeria should not be too large and must be made up of qualified professional who are conversant with oversight function. There should also be a combination of self government regulation so as to detect rule violations and also monitor systemic problems for early solutions. The study frowns at the poor disclosure attitude of banks annual reporting. During the course of this study, the research did not find any element of disclosure regarding the amount of loans granted to bank directors. Thus, to enforce corporate governance principles, the banks should take the issue of transparency, accountability and disclosure more seriously.

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Table i. Descriptive analysis for ROA

| | ROA | | | | Average | Rank |
|-------------------------|---------------|--------|--------|--------|----------|------|
| | 2008 | 2007 | 2006 | 2005 | | |
| UNITY BANK | 0.0152 | 0.0012 | 0.0031 | 0.0015 | 0.00525 | |
| Diamond | 0.0135 | 0.0119 | 0.0089 | 0.0096 | 0.010975 | |
| ECOBANK | 0.0001 | 0.0002 | 0.0002 | 0.0001 | 0.00015 | 1 |
| First Bank | 0.0309 | 0.0021 | 0.0706 | 0.0698 | 0.04335 | |
| UBA | 0.0024 | 0.0222 | 0.0927 | 0.0755 | 0.0482 | |
| Zenith Bank | 0.0534 | 0.0301 | 0.0266 | 0.0272 | 0.034325 | |
| GTBank | 0.0322 | 0.037 | 0.0304 | 0.033 | 0.03315 | |
| Access Bank | 0.0184 | 0.0104 | 0.0017 | 0.0019 | 0.0081 | |
| Intercontinental | 0.0377 | 0.0255 | 0.0199 | 0.0191 | 0.02555 | |
| Afribank | 0.0155 | 0.0089 | 0.0062 | 0.0024 | 0.00825 | |
| Sterling Bank | 0.0075 | 0.0032 | 0.0024 | 0.0005 | 0.0034 | 1 |
| Mean | 0.0206 | 0.0138 | 0.0238 | 0.0218 | | |
| Maximum | 0.0534 | 0.037 | 0.0927 | 0.0755 | | |
| Minimum | 0.0001 | 0.0002 | 0.0002 | 0.0001 | | |
| Standard Deviation | 0.0162 | 0.0128 | 0.0307 | 0.0275 | | |

Table ii. Descriptive analysis of Return on Equity (ROE)

| | 2008 | 2007 | 2006 | 2005 | Average | Rank |
|-------------------------|-------------------|--------|--------|--------|----------|----------|
| | UNITY BANK | 0.0458 | 0.0029 | 0.0086 | 0.0042 | 0.015375 |
| Diamond | 0.0409 | 0.0281 | 0.0244 | 0.0262 | 0.0299 | 6 |
| ECOBANK | 0.0003 | 0.0005 | 0.0005 | 0.0005 | 0.00045 | 11 |
| First Bank | 0.0933 | 0.0051 | 0.1934 | 0.1904 | 0.12055 | 2 |
| UBA | 0.0075 | 0.0522 | 0.2538 | 0.2057 | 0.1298 | 1 |
| Zenith Bank | 0.1612 | 0.0709 | 0.0729 | 0.0742 | 0.0948 | 3 |
| GTBank | 0.0937 | 0.0871 | 0.0832 | 0.09 | 0.0885 | 4 |
| Access Bank | 0.0556 | 0.0246 | 0.0046 | 0.0051 | 0.022475 | 7 |
| Intercontinental | 0.1138 | 0.06 | 0.0545 | 0.0521 | 0.0701 | 5 |
| Afribank | 0.0347 | 0.021 | 0.017 | 0.0067 | 0.01985 | 8 |
| Sterling Bank | 0.0227 | 0.0075 | 0.0066 | 0.0013 | 0.009525 | 10 |
| Mean | 0.0608 | 0.0327 | 0.0654 | 0.0596 | | |
| Maximum | 0.1612 | 0.0871 | 0.0871 | 0.2057 | | |
| Minimum | 0.0003 | 0.0005 | 0.0005 | 0.0005 | | |
| Standard Deviation | 0.0493 | 0.0301 | 0.0842 | 0.0751 | | |

Table iii. Descriptive analysis of Non-Performing Loans (NPL)

| | 2008 | 2007 | 2006 | 2005 | Average | Rank |
|-------------------------|--------|--------|--------|--------|----------|------|
| UNITY BANK | 0.5652 | 0.6041 | 0.4664 | 0.4636 | 0.524825 | 1 |
| Diamond | 0.0042 | 0.0704 | 0.0492 | 0.048 | 0.04295 | 8 |
| ECOBANK | 0.0546 | 0.0445 | 0.1397 | 0.1043 | 0.085775 | 6 |
| First Bank | 0.0822 | 0.0818 | 0.5255 | 0.448 | 0.284375 | 2 |
| UBA | 0.135 | 0.0647 | 0.0357 | 0.042 | 0.06935 | 7 |
| Zenith Bank | 0.0215 | 0.0179 | 0.0113 | 0.0166 | 0.016825 | 11 |
| GTBank | 0.0173 | 0.0196 | 0.0334 | 0.0202 | 0.022625 | 10 |
| Access Bank | 0.0374 | 0.0907 | 0.1327 | 0.0976 | 0.0896 | 5 |
| Intercontinental | 0.035 | 0.0464 | 0.0562 | 0.0298 | 0.04185 | 9 |
| Afribank | 0.1212 | 0.1553 | 0.1243 | 0.0973 | 0.124525 | 4 |
| Sterling Bank | 0.0981 | 0.2618 | 0.116 | 0.1698 | 0.161425 | 3 |
| Mean | 0.1065 | 0.1324 | 0.1536 | 0.1397 | | |
| Maximum | 0.5652 | 0.6041 | 0.0525 | 0.4636 | | |
| Minimum | 0.0042 | 0.0179 | 0.0113 | 0.016 | | |
| Standard Deviation | 0.1582 | 0.1714 | 0.1755 | 0.1628 | | |

Table iv. Correlation Result

| | ROA | ROE | NPL | LnTA | LNTE | LNSCOD | LNShOD |
|--------|----------|----------|----------|----------|----------|----------|--------|
| ROA | 1 | | | | | | |
| ROE | 0.999516 | 1 | | | | | |
| NPL | -0.2208 | -0.20758 | 1 | | | | |
| LNNTA | 0.779532 | 0.781144 | -0.05655 | 1 | | | |
| LNTE | 0.664132 | 0.66609 | -0.10848 | 0.947482 | 1 | | |
| LNSCOD | 0.750169 | 0.753283 | -0.29269 | 0.671034 | 0.605239 | 1 | |
| LNShOD | 0.602407 | 0.613237 | 0.081431 | 0.387374 | 0.285671 | 0.181363 | 1 |

Table vi: Summary of result for ROE

SUMMARY OUTPUT ROE

| <i>Regression Statistics</i> | |
|------------------------------|----------|
| Multiple R | 0.923981 |
| R Square | 0.853741 |
| Adjusted R Square | 0.756236 |
| Standard Error | 0.023348 |
| Observations | 11 |

ANOVA

| | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> | <i>Significance F</i> |
|------------|-----------|-----------|-----------|----------|-----------------------|
| Regression | 4 | 0.019091 | 0.004773 | 8.755813 | 0.011142 |
| Residual | 6 | 0.003271 | 0.000545 | | |
| Total | 10 | 0.022362 | | | |

| | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> | <i>Lower 95%</i> | <i>Upper 95%</i> | <i>Lower 95.0%</i> | <i>Upper 95.0%</i> |
|-----------|---------------------|-----------------------|---------------|----------------|------------------|------------------|--------------------|--------------------|
| Intercept | -0.55968 | 0.120436 | -4.64713 | 0.003514 | -0.85438 | -0.26499 | -0.85438 | -0.26499 |
| LNTA | 0.041841 | 0.040457 | 1.0342 | 0.340915 | -0.05715 | 0.140837 | -0.05715 | 0.140837 |
| LNTE | -0.01935 | 0.034954 | -0.55372 | 0.59978 | -0.10488 | 0.066175 | -0.10488 | 0.066175 |
| LNSCOD | 0.050273 | 0.023746 | 2.11709 | 0.078599 | -0.00783 | 0.108378 | -0.00783 | 0.108378 |
| LNSHOD | 0.180536 | 0.084712 | 2.131161 | 0.077086 | -0.02675 | 0.38782 | -0.02675 | 0.38782 |

Table vii. Summary of Output ROA

SUMMARY OUTPUT FOR
ROA

| <i>Regression Statistics</i> | |
|------------------------------|----------|
| Multiple R | 0.91762 |
| R Square | 0.842027 |
| Adjusted R Square | 0.736711 |
| Standard Error | 0.008884 |
| Observations | 11 |

ANOVA

| | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> | <i>Significance F</i> |
|------------|-----------|-----------|-----------|----------|-----------------------|
| Regression | 4 | 0.002524 | 0.000631 | 7.99528 | 0.013901 |
| Residual | 6 | 0.000474 | 7.89E-05 | | |
| Total | 10 | 0.002998 | | | |

| | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> | <i>Lower 95%</i> | <i>Upper 95%</i> | <i>Lower 95.0%</i> | <i>Upper 95.0%</i> |
|-----------|---------------------|-----------------------|---------------|----------------|------------------|------------------|--------------------|--------------------|
| Intercept | -0.20199 | 0.045827 | -4.40775 | 0.00453 | -0.31413 | -0.08986 | 0.31413 | -0.08986 |
| LNTA | 0.015962 | 0.015394 | 1.036876 | 0.339763 | -0.02171 | 0.053631 | 0.02171 | 0.053631 |
| LNTE | -0.00752 | 0.0133 | -0.56567 | 0.592125 | -0.04007 | 0.025021 | 0.04007 | 0.025021 |
| LNSCOD | 0.018134 | 0.009036 | 2.007004 | 0.091534 | -0.00397 | 0.040244 | 0.00397 | 0.040244 |
| LNSHOD | 0.063611 | 0.032234 | 1.973435 | 0.095892 | -0.01526 | 0.142484 | 0.01526 | 0.142484 |