

THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

Effect of Board Characteristics on the Value Relevance of Segment Earnings

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Abstract:

The paper investigated the effect of board characteristics on the value relevance of segment earnings of Nigerian listed deposit money banks. The characteristics examined were board size, board independence and frequency of board meetings. The study adopted ex post facto research design and derived the data from the annual reports of the listed deposit money banks for the period 2012 to 2016. It formulated and tested nine hypotheses using ordinary least square method of multiple regressions. The results of the test of hypothesis revealed that board size enhanced the value relevance of Segment 1 earnings. It also showed that board independence improved the value relevance of Segment 1 earnings and Segment 2 earnings. The result further showed that board size did not strengthen the value relevance of Segment 2 earnings and Segment 3 earnings. Similarly frequency of board meetings did not improve the value relevance of Segment 1 earnings, Segment 2 earnings and Segment 3 earnings. Board independence did not enhance the value relevance of Segment 3 earnings. This result that board characteristics did not enhance the value relevance could be because the directors are not truly independent in mind and appearance. It is recommended that shareholders conduct due diligence on prospective board members.

Keywords: Segment earnings, board characteristics, value relevance, deposit money banks, Nigerian stock exchange

1. Introduction

Segment reporting has long been recognized by accounting standard setters including the defunct Nigerian Accounting Standards Board. This is because users of financial statements demand that financial statements data be disaggregated since doing so would increase their ability to predict management actions that impact future cash flows. The demand for segment reporting is heightened by globalization and diversification as a result of which firms operate in complex and different markets with each market having unique economic dynamics necessitating adoption of different business models and corporate strategies. Hope, Kang, Thomas and Vasvari (2009) argue that in today's complex global operations, it is difficult for users of financial statements to identify differences in profitability, resources and returns across business and geographical segments and make sound decisions without enough segment information. Standard setters accept the demand of the financial statement users and issue accounting standards since the objective of financial reporting is to provide information to assist present and potential investors in assessing the timing and uncertainty of the entity cash inflows and cash outflows for rational investment decision. Prior US studies find that disclosure of segment information improves EPS forecast (Balakrishnan, Harris & Sen, 1990; Swaminathan, 1991; Tse, 1990) and enhances monitoring (Berger & Hann, 2003). This implies segment reporting is value relevant.

The quality of segment reporting is a critical determinant of value relevance of segment reporting. Prior studies find that the quality of earnings is affected by the incentives of the preparers of financial statements (Ball, Robin & Wu, 2003; Barker, Collins & Reitenga, 2009; Burgstahler, Hail & Leuz, 2006). The incentives are clearly evident in the standards on segment reporting. IFRS 8 allows managers to identify segments and related information using management approach. This means management discloses segment information based on the way management organizes the entity for the purpose of assessing the performance and making decisions. This discretion is subject to managerial opportunism. Indeed, Botosan and Stanford (2005) examine the manager's motive to withhold segment disclosures using US data and find evidence suggesting the motivation to be a desire to protect profits in less competitive industries. Managerial opportunism could be constrained by the board of directors on whom the Companies and Allied Matters Act, 2004 imposes the responsibility of preparing the financial statements. The purpose of this study therefore is to investigate the extent to which board characteristics influence the value relevance of segment earnings.

This study is motivated by the fact that prior studies using data from Europe and the US markets investigate the value relevance of segment disclosures without paying special consideration of the role of the board in the reporting process. Furthermore, there is paucity of empirical studies based on data from the Nigerian market. Indeed, Nigerian studies focus on determinants of segment disclosures (Ibrahim & Jaafar, 2013; Ibrahim, 2014; Otonkue, Esang, & Edu, 2009).

The study focuses on the banking industry. Since the recapitalization exercise mandated by the Central Bank of Nigeria ended in 2005, Nigerian deposit money banks (DMBs) became bigger and more diversified and began disclosing segment information. The banks play a critical role in the economic development of Nigeria and drive the activities on the Nigerian Stock Exchange.

The rest of the paper is organized as follows: Section 2 presents literature review and develops hypotheses. Section 3 discusses the research methodology while the results are discussed in Section 4. The conclusion is in Section 5.

2. Literature Review

2.1. Conceptual Review

2.1.1. Segment Reporting

Segment reporting entails disclosure of the operations of the firm based on the nature of business and the location of businesses. It provides information about the different types of product and services a firm produces and the different geographical areas in which the firm operates. In Nigeria, segment reporting is guided by IFRS 8 – Operating segment. Prior to the adoption of IFRS in 2012, segment reporting was in accordance with the requirements of Statement of Accounting Standard (SAS) 24 issued by the defunct Nigerian Accounting Standards Board. The objective of segment reporting as captured succinctly by SAS 24 is to help users of financial statements:

- Better understand the entity's past performance,
- Better assess the entity's risks and returns; and
- Make more informed judgments about the entity as a whole.

Segment reporting arises because firms operate in different and complex market segments and users of financial statements need segmental information to understand companies' unique economic dynamics, business models and corporate strategy so as to make informed investment decisions. Hope, Kang, Thomas and Vasvari (2009) argue that in today's complex global operation, it is difficult for users of financial statements to identify differences in profitability, resources and returns across business and geographical segments and make sound decisions without enough segment information. IFRS 8 requires firms, through the chief operating decision makers, to identify operating segments. An operating segment is defined as a component of an entity: that engages in business activities from which it can earn revenues and incur expenses; whose operating results are regularly reviewed by the entity's chief operating decision maker to assess performance and allocate resources; and for which discrete financial information is available. IFRS 8 clarified the term 'chief operating decision maker' stating that it identifies a function as opposed to a person and that function is allocating the entity's resources and assessing the performance of the entity.

2.1.2. Board of Directors

The formation of board of governors (later board of directors) following the emergence of corporations in the era of Renaissance and Industrial Revolution was a voluntary affair of each corporation (Morck, 2006). It is now mandatory for each limited liability company to establish a board of directors according to the Companies and Allied Matters Act, 2004. The Companies and Allied Matters Act, 2004 vests the board of directors with the authority to exercise all of its powers and perform any of the functions of the company. Though the responsibilities of the board vary from one company to another, according to the Securities and Exchange Commission (2011) the explicit duties of the board should include amongst others the:

- Formulation of policies and overseeing the management and conduct of the business;
- Overseeing the maintenance of the company's communication and information dissemination policy.

Prior studies of the board as the custodian of corporate governance show that the effectiveness of the board is influenced by the characteristics of the board as well as firm characteristics (Klein, 2002; Li, Mangena & Pike, 2012). Such characteristics include, size, independence, frequency of meetings.

2.2. Value Relevance

Barth, Beaver, and Landsman, (2001) and Kothari (2001) define value relevance as the association between market and accounting numbers. Barth and Beaver (2000) also define value relevance as the association between accounting amounts and security values. The IASB Conceptual Framework classifies value relevance as a fundamental characteristic of accounting information and states that financial information is regarded as value relevant if it influences the economic decisions of users by helping them evaluate past, present or future events or confirming or correcting their evaluations. If capital market participants find segment earnings value relevant, it is expected that they would factor it into their market valuation of the firm. Ball and Brown (1968) document that reported earnings have an explanatory power and ability to change the stock prices. Accounting amounts are therefore seen as providing best measures for market prices. Consequently past research for example, Francis and Schipper (1999) suggest that value relevance implies that accounting information and stock prices have statistical association. Value relevance is also established by linking accounting numbers and share prices to book value of equities because of the very prominent role of book value of equities in firm valuation (Ohlson, 1995).

2.3. Theoretical Review

The study is based on Agency theory. Agency theory is used to explain agency relationship. According to Jensen and Meckling (1976, p. 308), agency relationship is "a contract under which one or (principals) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent". Under the agency relationship, the managers (agents) perform day to day management of the firm on behalf of the shareholders thereby having information advantage relative to the shareholders (principal). Manager exploits this information advantage which Healy and Palepu, (2001) termed information asymmetry opportunistically. Agency theory contends that the manager would therefore pursue his self-interest at the expense of the shareholders (Watts & Zimmerman, 1986). It therefore recommends corporate governance mechanisms to alleviate agency costs (Bushman & Smith, 2001). The board is the custodian of corporate governance and therefore Agency theory is considered germane for this study.

2.4. Empirical Review

2.4.1. Board Size

The Companies and Allied Matters Act, 2004 which requires firms to establish board of directors stipulates a minimum of two directors for non-quoted firms but is silent on the maximum number of board members. However, the Code of Corporate Governance for Banks in Nigeria post consolidation effective April 2006 mandates deposit money banks to have a maximum of twenty directors. There is unresolved controversy over what size is appropriate for a DMB (Coles, Daniels, & Naveen, 2008; Dalton, Catherine, Jonathan, & Alan, 1999; Eisenberg, Sundgren, & Wells, 1998; Jensen, 1993; Klein, 2002; Yemarck, 1996)

Jensen, 1993). Some argue that a large board is appropriate because large sized board would benefit from large pool of expertise and robust discussions (Gul & Leung, 2004; Li, Mangena, & Pike, 2012). With a larger board size, a company is likely to understand and address the diversity of various stakeholders' interests (Welford, 2007). There is a counter argument that cost may constrain a firm from having a large-sized board despite the potential benefits of large-sized boards. It is also contended that even large firms with sufficient resources might opt for small-sized boards because small-sized boards are more effective than large-sized boards. Yermack (1996) provides evidence that small board are more effective than large board as the later suffers from free rider problem and deficient co-ordination amongst others. Though the arguments fail to specify what constitutes large or small board size, it is indisputable that board size is critical to the determination of earnings quality. The above leads to the first hypothesis thus

- Ho1: There is no positive relationship between board size and the value relevance of segment earnings.
- Ho1a: There is no positive relationship between board size and the value relevance of segment 1 earnings
- Ho1b: There is no positive relationship between board size and the value relevance of segment 2 earnings.
- Ho1c: There is no positive relationship between board size and the value relevance of segment 3 earnings.

2.4.2. Board Independence

The Code of Corporate Governance for Banks in Nigeria post consolidation and the Securities & Exchange Commission Code of Corporate Governance for Public Companies in Nigeria (2011) provide that the board should be comprised of executive and non-executive directors with non-executive directors forming the majority. It is contended that non-executive directors are good monitors who would insist on more credible segmental earnings disclosure to protect their reputational capital but empirical evidence is inconclusive. Abbot, Parker and Peters (2004) find a significant negative association between board independence and financial restatement. Beasley (1996) documents that the inclusion of a larger proportion of outside directors on the board significantly reduces the likelihood of fraud. Using Greek data covering a period of five years (2000-2004), Dimitropoulos and Asteriou (2010) present evidence of a positive association between board independence and the value relevance of earnings. However, Agrawal and Chadha (2005) find no significant positive relationship between board independence and financial reporting quality. Based on the discussion, the second hypothesis is stated thus:

- Ho2. There is no positive relationship between board independence and the value relevance of segment earnings.
- Ho2a. There is no positive relationship between board independence and the value relevance of segment 1 earnings.
- Ho2b. There is no positive relationship between board independence and the value relevance of segment 2 earnings.
- Ho2c. There is no positive relationship between board independence and the value relevance of segment 3 earnings.

2.4.3. Board Meeting Frequency

Frequency of board meetings held annually is considered a proxy for board diligence (Abbot & Parker, 2000; Karamanou & Vafeas, 2005; Cornett, McNutt & Tehranian, 2009). Following prior research, a board that meets frequently remains informed and knowledgeable about serious issues confronting the firm (Conger, Finegold, & Lawler, 1998) including segment reporting issues and is likely to take prompt actions to resolve them. The Nigerian listed DMBs have become larger, more diversified with branches in other countries and more complex than was the case before the consolidation exercise which began in 2004 and ended in 2005. The boards therefore need to meet frequently to address myriad of issues including segment reporting. Consequently the third hypothesis is formulated thus:

- Ho3: There is no positive relationship between the frequency of board meetings and the value relevance of segment earnings.
- Ho3a: There is no positive relationship between the frequency of board meetings and the value relevance of segment 1 earnings.
- Ho3b: There is no positive relationship between the frequency of board meetings and the value relevance of segment 2 earnings.
- Ho3c: There is no positive relationship between the frequency of board meetings and the value relevance of segment 3 earnings.

3. Methodology

3.1. Research Design

The study adopts an Ex-post facto research design and obtains secondary data from annual reports of DMBs listed on the Nigerian Stock Exchange for the period 2012 to 2016. The study chooses the start period, 2012, to coincide with the commencement of mandatory adoption of IFRS in Nigeria.

3.2. Population and Sample

All the DMBs listed on the Nigerian Stock Exchange during the period constitute the population of the study. The FactBook of the Nigerian Stock Exchange showed that Nigerian listed DMBs stood at 15 as at December 31, 2016. Therefore the population of this study is 15 DMBs. To form the sample for the study, the DMB must in each sample year have annual report with complete data for regression. Four DMBs have incomplete data and were consequently excluded from the study thereby yielding a sample size of 11 DMBs.

Table 1 presents the sample selection procedure.

| Year | Description | No of DMB | Firm Years |
|-----------|--------------------------------|-----------|------------|
| 2012-2016 | Population | 15 | 75 |
| | Less DMBs with incomplete data | 4 | 20 |
| | Final sample | 11 | 55 |

Table 1: Sample Selection Procedure

3.3. Empirical Model

The empirical model for this study follows extant literature and uses Ohlson (1995) price model stated thus:

$$P = f(\text{SEGAT1}, \text{SEGAT2}, \text{SEGAT3}, \text{SEGEN1}, \text{SEGEN2}, \text{SEGEN3}).$$

Explicitly, the model can be written thus:

$$P_{i,t} = \beta_0 + \beta_1 \text{SEGAT1}_{i,t} + \beta_2 \text{SEGAT2}_{i,t} + \beta_3 \text{SEGAT3}_{i,t} + \beta_4 \text{SEGEN1}_{i,t} + \beta_5 \text{SEGEN2}_{i,t} + \beta_6 \text{SEGEN3}_{i,t} + \varepsilon_{it} \quad (1)$$

Where:

$P_{i,t}$ = share price of DMB i at three months after year end. The choice of three months after year follows Barth, Landsman, and Lang, (2008) to allow published account data to become available. CAMA 2004 requires listed firms to publish their financial statements within three months after year end. All the DMBs have common year end of 31st December.

| | | |
|------------------------|---|--|
| $\text{SEGAT1}_{i,t}$ | = | Segment 1 book value of bank i at year t |
| $\text{SEGAT2}_{i,t}$ | = | Segment 2 book value of bank i at year t |
| $\text{SEGAT3}_{i,t}$ | = | Segment 3 book value of bank i at year t |
| $\text{SEGEN1}_{i,t}$ | = | Segment 1 net income of bank i at year t . |
| $\text{SEGEN2}_{i,t}$ | = | Segment 2 net income of bank i at year t . |
| $\text{SEGEN3}_{i,t}$ | = | Segment 3 net income of bank i at year t . |
| β_0 | = | Intercept |
| β_1 to β_6 | = | regression coefficients |
| ε_{it} | = | error term |

The model shows price as a function of book value of segment equity and earnings. The book value of equity and net income of DMBs are value relevant if the coefficients on SEGAT1 + SEGAT2 + SEGAT3 + SEGEN1 + SEGEN2 + SEGEN3 are positive and significant. Where a DMB reports more than three segments, the data of all other segments are accumulated with segment 3. This is consistent with Givoly, Hayn and D'Souza (1999).

To test the effect of board characteristics on the value relevance of segment earnings, the board characteristics – board size, board independence and board meeting frequency – are incorporated in Equation 1 and interacted with segment earnings yielding Equation 2 as follows:

$$P_{i,t} = \beta_0 + \beta_1 \text{SEGAT1}_{i,t} + \beta_2 \text{SEGAT2}_{i,t} + \beta_3 \text{SEGAT3}_{i,t} + \beta_4 \text{SEGEN1}_{i,t} + \beta_5 \text{SEGEN2}_{i,t} + \beta_6 \text{SEGEN3}_{i,t} + \beta_7 \text{BODSZ}_{i,t} + \beta_8 \text{BODIN}_{i,t} + \beta_9 \text{BMEET}_{i,t} + \beta_{10} \text{SEGEN1} * \text{BDSZ}_{i,t} + \beta_{11} \text{SEGEN2} * \text{BDSZ}_{i,t} + \beta_{12} \text{SEGEN3} * \text{BDSZ}_{i,t} + \beta_{13} \text{SEGEN1} * \text{BODIN}_{i,t} + \beta_{14} \text{SEGEN2} * \text{BODIN}_{i,t} + \beta_{15} \text{SEGEN3} * \text{BODIN}_{i,t} + \beta_{16} \text{SEGEN1} * \text{BMEET}_{i,t} + \beta_{17} \text{SEGEN2} * \text{BMEET}_{i,t} + \beta_{18} \text{SEGEN3} * \text{BMEET}_{i,t} + \varepsilon_{it} \quad (2)$$

Where

| | | |
|-------|---|--|
| BSZ | = | Board size, measured by the number of directors on the board |
| BODIN | = | Board independence, measured by the proportion of non-executive directors on the board |
| BMEET | = | Frequency of board meeting, measured as the number of meetings held annually by the board: |

All other terms are as defined earlier. All the variables in all the Equations are reported on share basis to mitigate scale bias and heteroskedasticity (Barth & Clinch, 1996). The interactive terms on earnings are value relevant and the value relevance is improved by the board characteristics if the coefficients $-\beta_{10}, \beta_{11}, \beta_{12}, \beta_{13}, \beta_{14}, \beta_{15}, \beta_{16}, \beta_{17}, \beta_{18}$ are positive and significantly different from zero.

4. Results and Findings

4.1. Descriptive Statistics

Table 2 displays the descriptive statistics of the study. The average share price of the DMBs was N9.10 while highest price was N28.68. The mean segment earnings of segment 1 was N31.6 billion compared to N10.3 billion of segment 2. The negative value of minimum segment earnings suggests that some segments incurred losses. The average board size was 14 and the boards on average have majority of non-executive directors implying high independence. The boards held an average of 6 meetings annually. This exceeds the minimum of 4 suggested by the Securities & Exchange Commission Code of Corporate Governance for Public Companies in Nigeria (2011)

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|--------------|-----|----------|-----------|----------|----------|
| price | 55 | 9.107091 | 8.022233 | .72 | 28.68 |
| Segat1 (Nmn) | 55 | 1111646 | 1306780 | 8218.492 | 4469601 |
| Segat2 (Nmn) | 55 | 412055.7 | 420614.9 | 18372 | 1886823 |
| Segat3 (Nbn) | 55 | 427806.1 | 322589 | 11604 | 1310212 |
| Segen1 (Nmn) | 55 | 31623.13 | 44297.21 | -8782 | 161473 |
| Segen2 (Nmn) | 55 | 10325739 | 1.20e+07 | -1987000 | 47314951 |
| Segen3 (Nbn) | 55 | 9622.285 | 17713.78 | -60178 | 47671.22 |
| bodsize | 55 | 14.07273 | 2.834017 | 9 | 19 |
| bodin | 55 | .6266828 | .0935478 | .466667 | .9 |
| bmeet | 55 | 5.763636 | 1.895058 | 2 | 12 |

Table 2: Descriptive Statistics

We conducted a correlation analysis and the result is in Table 3. The result shows that segment earnings are significantly and positively correlated with share price. Segment 2 book value is negatively correlated with share price but is not significant. The significant correlation suggests multi-collinearity poses a serious concern but careful examination of the values in the correlation matrix shows that no value exceeds 0.8 beyond which rule of thumb suggests multi correlation could be a concern (Belsley, Kuh, & Welsch, 1980).

4.2. Multivariate Analysis

The results of the empirical test of hypotheses are presented in Table 4. Table 4 reveals that the models have excellent fit (F-statistics = 10.52; p-value = 0.000 for Model 1 and F-statistics = 18.17; p-value = 0.000 for Model 2). In Model 1, segment book values and earnings explain 56% variation in share prices. The independent variables in Model 2 account for 81% change in share price. This means that the explanatory power of Model 2 is greater than that of Model 1. The segment book values in Model 1 are negatively related to share price suggesting that the book value is not value relevant. The coefficients of segment earnings are different from zero and positively related to share price. The relationship is significant implying that segment earnings are value relevant. It means market participants incorporate segment earnings into their valuation of the DMBs. This is in agreement with prior US studies which found that disclosure of segment information improved EPS forecast (Balakrishnan, Harris & Sen, 1990; Swaminathan, 1991; Tse, 1990).

| variable | price | segat1 | segat2 | segat3 | Segen1 | Segen2 | Segen3 | bodsz | bodin | bmeet |
|----------|----------|----------|----------|----------|----------|---------|--------|----------|--------|--------|
| price | 1.0000 | | | | | | | | | |
| segat1 | 0.3823* | 1.0000 | | | | | | | | |
| segat2 | 0.1915 | -0.1667 | 1.0000 | | | | | | | |
| segat3 | -0.2694* | -0.5245* | -0.3367* | 1.0000 | | | | | | |
| Segen1 | 0.4993* | 0.7350* | -0.2417 | -0.2468 | 1.0000 | | | | | |
| Segen2 | 0.4587* | 0.0865 | 0.7339* | -0.3842* | -0.0591 | 1.0000 | | | | |
| Segen3 | 0.0419 | -0.3893* | 0.2577 | 0.3318* | -0.4811* | 0.1789 | 1.0000 | | | |
| bodsz | -0.0435 | -0.0868 | 0.0114 | 0.1495 | 0.0554 | -0.1548 | 0.1018 | 1.0000 | | |
| bodin | -0.1032 | -0.0418 | -0.0115 | -0.0830 | 0.2841* | -0.0988 | 0.1955 | -0.4228* | 1.0000 | |
| bmeet | -0.3169* | -0.0853 | 0.1832 | 0.0756 | -0.2067 | 0.0398 | 0.0184 | 0.3067* | - | 1.0000 |
| | | | | | | | | | 0.2076 | |

Table 3: Correlation Matrix

Model 2 presents the results of tests of the effect of board characteristics on the value relevance of segment earnings.

4.3. Board Size and Value Relevance of Segment Earnings

Ho1 tests the effect of board size on the value relevance of segment earnings. Model 2 shows that the interaction of board size and segment 1 earnings has a positive coefficient and is different from zero ($\beta_{10} = 769.65$). This shows the relationship is significant at the 1% level (p-value = 0.014). Therefore Ho1a is rejected. The coefficient on segment 2 earnings and board size is negative ($\beta_{11} = -1378.347$) and highly significant (p-value = 0.000). Therefore Ho2a is accepted. The coefficient on the interaction of Segment 3 earnings and board size is positive ($\beta_{12} = 341.3259$) but the relationship is statistically insignificant (p-value = 0.401). Consequently, Ho3 is accepted.

| Variable | Model 1 | | Model2 | |
|---------------|-----------|---------|-----------|---------|
| | coef | p-value | Coef | p-value |
| Segat1 | -44.16316 | 0.237 | -50.10809 | 0.153 |
| Segat2 | -85.93878 | 0.210 | -52.80061 | 0.442 |
| Segat3 | -76.69923 | 0.268 | 63.4195 | 0.327 |
| Segen1 | 4186.733 | 0.000 | 2924.456 | 0.643 |
| Segen2 | 6926.245 | 0.001 | -11006.58 | 0.476 |
| Segen3 | 3049.122 | 0.008 | 28479.13 | 0.055 |
| bodsz | | | .4200471 | 0.357 |
| bodin | | | 7.002819 | 0.593 |
| bmeet | | | .3122086 | 0.523 |
| Segen1*bdsz | | | 769.6543 | 0.014 |
| Segen2*bdsz | | | -1378.347 | 0.000 |
| Segen3*bdsz | | | 341.3259 | 0.401 |
| Segen1*bodin | | | 1569.556 | 0.859 |
| Segen2*bodin | | | 52196.38 | 0.017 |
| Segen3*bodin | | | -32982.03 | 0.082 |
| Segen1*bmeet | | | -2034.367 | 0.009 |
| Segen2*bmeet | | | 1042.42 | 0.294 |
| Segen3*bmeet | | | -2345.318 | 0.016 |
| cons | 4.644486 | 0.085 | -8.669849 | 0.426 |
| Number of obs | 55 | | 55 | |
| F statistics | 10.52 | 0.0000 | 18.17 | 0.0000 |
| R-squared | 0.5681 | | 0.8194 | |

Table 4 :Regression Result

4.4. Board Independence and Value Relevance of Segment Earnings

Ho2 states that there is no positive and significant relationship between board independence and the value relevance of segment earnings. Model 2 in Table 4 reports the results of test of Ho2s, Ho2b and Ho2c. Model 2 shows that the coefficient on the interaction between board independence and segment 1 earnings is positive ($\beta_{13} = 1569.556$) but not significant (p-value = 0.859). As a result of lack of statistical significance, Ho2a is accepted. Segment 2 earnings interacted with board independence and produced a positive coefficient ($\beta_{14} = 52196.38$) and this is significant at the 5% level (p-value = 0.017). Ho2b is rejected. The coefficient on the interaction of segment 3 earnings and board independence is negative ($\beta_{14} = -32982.03$) and significant (p-value = 0.082). Therefore Ho2c is supported.

4.5. Board Meetings and Value Relevance of Segment Earnings.

Ho3 tested the relationship between frequency of board meetings and the value relevance of segment earnings. Model 2 of Table 4 shows the results. Model 2 indicates a negative coefficient on the interaction of Segment 1 earnings and frequency of board meetings ($\beta_{15} = -2034.367$) and this is statistically significant (p-value = 0.009). Ho3a is therefore accepted. The coefficient on the interaction of Segment 2 earnings with frequency of board meetings is positive ($\beta_{16} = 1042.42$) but is not statistically significant (p-value = 0.294). Ho3b is therefore accepted. A further check on Model 2 reveals a negative coefficient on the interaction of frequency of board meetings with segment 3 earnings ($\beta_{17} = -2345.318$). It is significant at the 5% level (p-value = 0.016). Consequently Ho3c is accepted.

5. Discussion of Findings

The positive coefficient on board size and segment 1 earnings in Model 2 suggests that with an addition of one board member, segment 1 earnings is predicted to increase by approximately N770million, all other factors held constant. This implies that board size strengthens the value relevance of segment 1 earnings of Nigeria listed DMBs. This result is consistent with Vafeas (2005). Vafeas (2005) finds that board size is significantly associated with high earnings quality. With respect to segment 2 earnings in Model 2, the implication of the negative coefficient on the interaction between board size and segment 2 earnings ($\beta_{11} = -1378.347$) is that as board size increases by one board member,, segment 2 earnings declines by N1378million, ceteris paribus. In contrast the positive coefficient on Segment 3 earnings and board size suggests that an addition of one more board member is associated with an increase in Segment 3 earnings by approximately N341million. While the coefficient of the interactive term on Segment 2 is significant that of Segment 3 is

insignificant. Taken together, the findings confirm the unresolved controversy over the effect of board size on earnings quality (Coles et al, 2008; Dalton et al, 1999; Eisenberg et al, 1998; Klein, 2002; Vafeas, 2005; Yemarck, 1996).

With respect to the effect of board independence on the value relevance of segment earnings, Model 2 shows positive coefficients on the interaction of board independence with Segment 1 earnings and Segment 2 earnings respectively. Though the coefficient on Segment 1 earnings is statistically insignificant, its positive sign supports the evidence in prior studies that board independence enhances financial reporting. The coefficient on the interaction of board independence and Segment 2 earnings is statistically significant at the 5% level. The positive coefficient suggests that as one non-executive/independent director joins the board, Segment 2 earnings increases by approximately N52196million, all other variables held constant. The result suggests that board independence improves the value relevance of segment 2 earnings. The coefficient on the interaction of board independence with Segment 3 earnings is negative and statistically significant at the 10% level. The negative coefficient implies that as the board becomes more independent by virtue of having additional non-executive/independent directors, the value relevance of segment 3 earnings declines. This is inconsistent with the preponderance of evidence of the monitoring benefits of independent boards with respect to earnings quality (Anderson, Mansi, & Reeb, 2004; Agrawal & Chadha, 2005; Cohen, Krishnamoorthy, & Wright, 2004; Klein 2002; Vafeas, 2005). A possible explanation for this result is that some board members may not be both independent in appearance and mind given the critical role CEOs play in selection of board members (Carcello, Neal, Palmrose & Scholz, 2011). Indeed, Carcello et al (2011) provide empirical evidence that CEO involvement in the selection process of board members compromises directors' independence. In Nigeria, CEOs are directly and actively involved in selecting board members. The effectiveness of non-executive/independent directors could be negatively affected by other factors such as board of director's busyness and length of board tenure (Ferris, Jagannathan, & Pritchard, 2003; Vafeas, 2005). In Nigeria, there is dearth of independent directors leading to the available independent directors holding multiple directorships.

Model 2 shows inverse relationship between frequency of board meetings and Segment 1 earnings as well as Segment 3 earnings. This implies that as the frequency of board meetings increases, the value relevance of Segment 1 earnings and Segment 3 earnings decrease. This relationship is statistically significant. Though the coefficient on the interaction between frequency of board meetings with Segment 2 earnings is positive, it is not significant. Overall, the results reveal that frequency of board meetings does not enhance the value relevance of segment earnings. The results contradict the evidence in Beasley (1996) and Vafeas as well as the expectations of Code of Corporate Governance for Banks in Nigeria post consolidation and the Securities & Exchange Commission Code of Corporate Governance for Public Companies in Nigeria (2011). The result may be explained by the fact that the board could be meeting to address issues other than segment reporting. This argument finds support in Vafeas (1999) who provide evidence that boards meet frequently is driven by share price decline. In times of crisis, distress and/or controversial decisions, the frequency of board meetings may increase.

6. Conclusions

The paper examined the effect of board characteristics on the value relevance of segment earnings. It selected board size, board independence and frequency of board meetings as board characteristics and formulated nine hypotheses. Based on Ohlson (1995) model, the paper tested the hypotheses using ordinary least square multiple regressions. The results of the test of hypothesis revealed that board size enhanced the value relevance of Segment 1 earnings. It also showed that board independence improved the value relevance of Segment 1 earnings and Segment 2 earnings. The result further showed that while board size did not strengthen the value relevance of Segment 2 earnings and Segment 3 earnings, frequency of board meetings did not improve the value relevance of Segment 1 earnings, Segment 2 earnings and Segment 3 earnings. Board independence did not enhance the value relevance of Segment 3 earnings. From the above it is safe to state that the regression results of test of hypothesis fail to provide consistent evidence that board characteristics, viz, board size, board independence and frequency of board meetings – enhance the value relevance of segment earnings. This result could be because the directors are not truly independent in mind and appearance. Lack of independence suggests non-executive directors care less about their reputational capital possibly because of weak regulatory enforcement in Nigeria. As discussed in the empirical review, boards could meet frequently for issues other than financial reporting.

In view of the foregoing, it is recommended that shareholders should conduct due diligence on the prospective non-executive and/or independent directors. Regulatory enforcement on membership of the boards should be intensified.

7. References

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