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CORPORATE GOVERNANCE AND STOCK MARKET REACTION TO SEASONED EQUITY OFFERING ANNOUNCEMENT BY FIRMS IN NIGERIA

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ABSTRACT

This study examined the effect of corporate governance variables of board independence, institutional ownership, managerial ownership, board size, and director expertise on the market reaction to seasoned equity offering (SEO) announcements by firms in the Nigerian stock market. The event study methodology was employed, and abnormal returns were computed using the market model. A total of 62 announcements by 38 firms listed on the Nigerian stock exchange from 1st January 2006 to 31st December 2016 were included in the analysis. The study recorded significant positive cumulative abnormal returns before and after the announcement day, and a significant negative cumulative abnormal return upon the announcement day

of SEOs. Similarly, significant positive cumulative abnormal returns were recorded six months before the SEO announcement day and negative significant cumulative abnormal returns six, twelve, and twenty-four months after the announcements. Furthermore, there were significant cumulative abnormal returns upon SEO announcements for all the proxies of corporate governance assessed by the study. The implication of the findings of negative significant cumulative abnormal returns on the day of the announcement and beyond was consistent with previous arguments that firms issuing SEOs earn negative abnormal returns on the day of the announcement was the result of the information asymmetry between managers and investors. By contrast, the significant cumulative abnormal returns based on corporate governance suggested that corporate governance significantly impacted on SEO announcement returns in Nigeria. These findings suggest that policy makers should pay more attention to directors' expertise, institutional ownership, board independence, and board size, as our results showed that investors might view them as dependable pointers of positive corporate information for the market, thus guaranteeing the best use of SEO proceeds.

Keywords: Corporate governance, event study, seasoned equity offering, stock market.

INTRODUCTION

The corporate governance concept is most significant for businesses today. Corporate governance includes the rules, structures, processes, cultures, and systems that produce the successful operation of the firm's contracts with its shareholders, employees, creditors, suppliers, customers, and government. This responsibility is legally entrusted to the company's board of directors, whose fiduciary duty is to serve the interests of the firm and not their personal interests, or the personal interests of the company's management.

The majority of studies on corporate governance in Nigeria have focused more on the link between corporate governance and the firms' performance; hence, the investigation of corporate governance and stock market reactions of seasoned equity offering (SEO) firms has

been neglected. However, corporate governance has been known to influence investors' pricing of other comprehensive income, mitigate reliability concerns associated with fair value earnings, and minimise agency costs (Usman et al., 2017). Consequently, investors may generally consider the corporate governance structure of the firm prior to their investment decisions. This affects the share prices of firms around the SEO announcements and the market reaction of the SEO firms in the future. Similarly, most studies on stock market reactions to SEO announcements obtained their data from the developed stock markets (e.g., Shivakumar, 2000; Loughran & Ritter, 1997; De Medeiros & Matsumoto, 2006, 2000; Dogu et al., 2010), thereby neglecting emerging markets such as Nigeria.

A search of the literature returned only three studies that had investigated stock market reaction to announcements of SEOs in Nigeria. They were Mohammed (2012), who investigated the reaction of stock prices to announcements of equity issues by deposit money banks in Nigeria, Bello (2014), who investigated the reaction of the stock market to the announcements of equity issue by companies in Nigeria, and Mohammed (2017), which was a report of the effect of firm investment opportunities on the responses of the stock market to the announcements of equity issue by firms in Nigeria. All three studies cited the "negative signal", as first highlighted in Leland and Pyle (1977), or the "adverse selection problem" as pointed out in Myers and Majluf (1984), as the main cause for the negative response of investors when SEOs were announced. However, whether corporate governance might cause any change in how the stock market reacted was not considered. Thus, to the best of our knowledge, no study has investigated the relationship between corporate governance and the stock market reaction of SEO firms in Nigeria.

This study therefore, was aimed at investigating the effect of corporate governance variables of board independence, institutional ownership, managerial ownership, board size, and director expertise on the stock market reaction to seasoned equity offering announcements by firms in the Nigerian stock market. The study was carried out on a sample of 62 announcements from 34 firms from the period between 2006-2016.

LITERATURE REVIEW

The Nigerian Communication Commission (NCC) associated the failure of some companies in Nigeria with a weak or complete absence of corporate governance structures (NCC, 2017). Similarly, the Nigeria Deposit Insurance Company (NDIC) stated that the most fundamental issue that has caused and is still posing a major risk to the financial strength of businesses in Nigeria is the issue of poor corporate governance (NDIC, 2018). Gross neglect of corporate governance was first reported in the late 1990s, which included the cases of Lever Brothers PLC and Cadbury Nigeria PLC. According to Sanusi (2003), "the widespread (sic) of corporate scandals and failures that were seen in the late 1990s and the early 2000s had their roots in fraudulent management decisions and in some cases, total conspiracy of illicit activities". These led to the collapse of many companies and, consequently, millions of innocent Nigerians with stakes in such firms were adversely affected.

The case of financial misconduct by the former managing directors of the Union Bank of Nigeria PLC, Oceanic Bank of Nigeria PLC, and the Intercontinental Bank of Nigeria PLC, as well as the Director General of the Nigerian Stock Exchange (NSE), and the Nigerian Securities and Exchange Commission (SEC), were amongst the other cases of severe violation of corporate governance codes in Nigeria. Furthermore, the alleged corporate frauds perpetuated by the Director General of the SEC and OANDO PLC in November 2017 were all cases of poor corporate governance in Nigeria.

The number of corporate frauds has been on the increase in Nigeria, from 18.2 percent in 2008 to 31.0 percent in 2012 (NDIC, 2013). Similarly, in terms of corruption, Nigeria ranks 144th in the world ranking order of corrupt countries in 2012, and corruption was identified as one of the major issues of corporate governance in Nigeria (NDIC, 2016). Regarding the level of poor corporate governance in Nigeria, Fadairo et al. (2014) found a high incidence and rate of corporate fraud in all sectors of the economy. These were serious issues of concern that affected the shareholders of the firms concerned, the performance of the firms, and the nation's economy as a whole. Records showed that

over 75 banks have been lost in Nigeria since 1914, and the available evidence suggested that the failure of these banks was mostly linked to weak corporate governance. Reports on the Nigerian financial services sector by the Central Bank of Nigeria (CBN) and NDIC had identified the issues that caused distress in the banking industry as economic depression (25 %), political crises (17.9 %), bad credit policy (25 %), and corporate governance (32.1 %) (Olutuyi, 2017). Similarly, Adurogboye (2017) showed that records of the defunct Federal Civil Aviation Authority (FCAA) suggested that 150 airlines actively operating before 2016 were no longer operational as a result of corporate governance failures.

The Global Competitiveness Index of the World Economic Forum in 2015 ranked Nigeria as the 132nd of the 148 countries assessed; on specific indicators of corporate governance, Nigeria ranked 132nd in terms of the ethical behaviour of firms, 106th in auditing and reporting standards, 108th in efficacy of board, 101st in minority shareholders protection and 57th in the protection of investors. Overall, South Africa performed better than Nigeria owing largely to its perceived strong corporate governance track record, as it globally ranks highest in three of the corporate governance sub-indices (SEC, 2015).

As a result of the agony experienced by many businesses in Nigeria and across the globe, various plans were put in place to increase awareness of good corporate governance by the IMF, Commonwealth Association for Corporate Governance, Central Banks, United Nations Development Program, the World Bank, and the Organization for Economic Cooperative Development, among many others (CBN Code, 2006).

To lessen the danger of corporate governance failures, Nigeria has made some effort through the CBN to adopt the Code of Corporate Governance for Banks in 2006 (revised in 2014) and introduced the Corporate Governance Index through the NSE. However, the effects of these regulations have yet to be felt in the system, taking into consideration the latest corporate failure by Skye Bank PLC (CBN, 2016) and the alleged mismanagement of OANDO's PLC financial affairs and distortion of its shareholding structure in November 2017.

Additionally, the removal of some corporate executives because of bad governance, unnecessary risk taking, and corporate financial misconduct (Tengo, 2016; Akande, 2016) provided further evidence that the reforms have yet to yield any concrete result. A legal framework exists n Nigeria's corporate governance structure, but compliance and enforcement were largely absent (Oyejide & Soyibo, 2011). A survey conducted by the SEC in 2013 found that most of the firms did not comply with the provisions. According to the CBN (2006), "only 40 percent of the quoted companies complied with the provisions of the Code of Corporate Governance in Nigeria". Therefore, poor corporate governance was the major cause of business distress in Nigeria (Miko, 2016).

Consequent upon the above-mentioned cases, enormous losses in shareholders' value were recorded, and this has become a major concern for any economy that desires to be recognised by serious-minded investors within and outside the country. Unfortunately, this awkward sequence of business failures appears to continue in Nigeria. All these are serious issues that require the urgent attention of well-designed empirical research.

Hypotheses Development

Board Independence

Independent directors were the people who were assigned by shareholders to represent them and could help to trim down agency problems (Fuzia et al., 2016). The literature has long established that the existence of independent directors on the board worked as a tough monitoring mechanism (e.g., Cotter et al., 1997; Cravens & Wallace, 2001). Conversely, other researchers argued that boards with a high percentage of independent directors might be less effective because they usually lacked corporate information and often did not demonstrate the required skills for the job; for this reason, they often chose responsibilities that were less offensive (Florackis, 2008). Emeka-Nwokeji (2017) found that board independence had a significant negative effect on the market value of firms in Nigeria. Ogbeide and Evbayiro-Osagie (2019) examined how certain corporate

governance mechanisms engendered share price volatility in Nigeria and found board independence to have a positive link between stock price volatility lag and share price volatility. In this study, board independence was considered as the ratio of outside board members to the size of the board, or the number of independent directors on the board to the total number of board members. It was, therefore, hypothesized that:

H_{O1}: Board independence has no significant effect on market reaction of seasoned equity offering firms in the Nigerian stock market.

Institutional Ownership

Institutional ownership was the ownership of other corporate institutions or organisations in the firm (Koh, 2003). Less resources were expended on monitoring with the participation of institutional owners, as compared to minority shareholders because of the advantage of economies of scale (Huang et al., 2015). Therefore, any increase in institutional ownership of a firm can effectively decrease agency problems and increase the operating performance of the firm. O'Brien and Bhashan (1990) suggested that the larger the number of shareholdings owned by institutional investors, the greater the increases in performance. Aanu (2016) found no significant relationship between institutional shareholding and financial performance of selected listed firms in Nigeria. Conversely, Abubakar et al. (2019) found a positive relationship between institutional ownership and performance of firms in Nigeria. Therefore, following Huang et al. (2015) and Miko (2016), this study measured institutional ownership as the ratio of shares held by institutional investors at the end of the year. Based on this circumstance, it was hypothesised that:

H_{O2}: Institutional ownership has no significant effect on the market reaction of seasoned equity offering firms in the Nigerian stock market.

Managerial Ownership

Managerial ownership helps to capture the level of CEO power. Extant literature has shown that the relationship between CEO ownership

and abnormal returns of SEO firms was uncertain. Osamwonyi and Ogbeide (2015) examined the relationship between corporate governance mechanisms and movement of stock prices in Nigeria and found that managerial ownership exerted significant changes in share prices in Nigeria. Tompkins et al. (2009) argued that the interests of the CEO and other shareholders would be aligned; when the CEO owned a large percentage of the company, and abnormal returns on the day of the SEO announcement might have a more positive effect. Large CEO ownership signified additional power, which further consolidated power on the CEO, making it more difficult to strip him of his post even when lavish spending of shareholder funds was observed. Ogbeide and Evbayiro-Osagie (2019) found that managerial ownership has had a negative impact on share price volatility in Nigeria and was significant to such a higher level of managerial ownership that it could stimulate conditional volatility of stock prices. This consequently resulted in more negative abnormal returns when the SEO was announced. Following Khan et al. (2007), Ruan and Tian (2009), and Dufour (2011), managerial ownership was considered as the percentage of total shares held by the directors of the firm at the end of the year. The third hypothesis was, therefore, expressed as:

H_{O3}: Managerial ownership has no significant effect on the market reaction of seasoned equity offering firms in the Nigerian stock market.

Board Size

Earlier studies have argued that small-sized boards were associated with less free-rider problems and efficiency in coordination and communication; consequently, decisions and control became more effective (Jensen, 1993; Vafeas, 2000). Furthermore, the lesser the free-rider problems in a board, the more the board was likely to take risks on investments that could best serve the interests of its shareholders (Huang & Tompkins, 2010). Sufficient empirical evidence has suggested that small boards could monitor more effectively and were usually associated with an enhanced market and better operating performance as compared with larger boards (Yermack, 1996;

Eisenberg et al. 1998; Vafeas, 2000; Dasilas & Leventis, 2013). Emeka-Nwokeji (2017) assessed the effect of corporate governance mechanisms on firm market value in Nigeria and found that board size had a significant positive effect on firm market value. Conversely, some studies have shown that large boards were influential and have been found to assist in tactical corporate decisions (Pearce & Zahra, 1991). Bebeji et al. (2007) found that board size has had a significant negative impact on the performance of banks in Nigeria. Similarly, Ujunwa (2014) found that board size, among other variables, was negatively linked with performance of firms in Nigeria. In the present study, board size was measured following Yasser et al. (2011) as the natural log of the number of members on the board. In this context, it was hypothesised that:

H_{O4}**:** Board size has no significant effect on the market reaction of seasoned equity offering firms in the Nigerian stock market.

Directors' Expertise

The literature has shown that the expertise of directors on boards was critical to sound corporate governance because of their vast experience. Their professionalism would guarantee sound decisions and reduced probable conflicts, which would eventually convey a positive signal to the market. These capable and independent experts closely supervised the organisation's activities and support the strategic decision-making of the organisation. Al-Shaer and Zaman (2018), Ferguson (2017), and Agrawal and Knoeber (2001) argued that the presence of accounting experts on the board would increase the reliability of information disclosure of a firm, the presence of lawyers on the board played a vital role in reducing corruption, and at the same time increasing the negotiating power of the firm. In addition, the presence of politicians could increase the firm's lobbying power. All these were achieved at no cost to the firm because of the inherent skills and expertise of such members. Akpan and Amran (2014) examined board member characteristics and company performance in Nigeria and found that board expertise was positively and significantly related to company performance. This study, therefore, assumed that:

H_{O5}: Directors' expertise has no significant effect on market reaction of seasoned equity offering firms in the Nigerian stock market.

METHODOLOGY

The event study methodology was employed in this study. The events of this study were the announcements of SEO by firms listed on the floor of the NSE. The announcement date was the first date that the intention of the board of directors was released either through a press release or through the website of the SEC or NSE. The parameter estimation window for the study was 120 days, which was in line with MacKinlay (1997) and Sostrup (2010). The event window was 43 days. This was the time period in the region of the event of interest (SEO announcements) that was used in the calculation of abnormal returns of the firms.

Data and Sampling Method

This study considered all SEO announcements by firms listed on the floor of the NSE during the study period, which was between 2006–2016. However, for an observation to be part of the sample, the following conditions were imposed: the issuing company had to be listed on the NSE; daily share prices for the company had to be available over the event study periodof the present study; data on corporate governance had to be available in the year preceding the SEO announcement; the issue had to be by means of ordinary stock; if there were any mixed offers by the same company at one time, it was taken as one offer; and where a firm made several issues within the period of the study, only the first issue was kept in the sample (Loughran & Ritter, 1995). Additionally, SEOs that were announced together with other company's events were removed from the sample to avoid smear effects. The company's' shares that were not traded for more than 100 days around the SEO announcement were dropped, which was consistent with Dasilas and Leventis (2013). Lastly, in line with previous research, SEOs that were announced in a three-year period after the company's listing with the NSE did not form part of the study sample.

The study initially obtained 150 SEO announcements from 88 firms. However, application of the above filter had resulted in the retention of 62 SEO announcements from 34 firms, which represented 21 percent of the population of listed firms in the NSE.

Model of the Study

The following logistic regression model was used to test the hypothesised relationships:

$$3DAYSCAR = \alpha_0 + \beta_1 Bindependence_i + \beta_2 Iownership_i + \beta_3 Mownership_i + \beta_4 Bsize_i + \beta_5 Dexpertise + \beta_6 ROA_i + \beta_7 ROEi + \beta_8 BTM_i + \varepsilon_i \quad (1)$$

where 3DAYSCAR was the three-day announcement abnormal returns (-1, 0 and +1), α_0 was the intercept of the model, *Bindependence* was the level of board independence in firm *i*, $Iownership_i$ was the institutional ownership of firm *i*, and $Mownership_i$ was the managerial ownership of firm *i*. $Bsize_i$ was the board size of firm *i*, *Dexpertise* was the number of directors with professional expertise in the board, ROA_i was the return on asset of firm *i*, BTM_i was book-to-market ratio in firm *i*, and ROE_i as return on equity in firm *i*, served as control variables in the model. ε_i was the stochastic error term of firm *i*, and $\beta_1 \_ \beta_8$ were the parameters estimated for the different explanatory and control variables in the model. Given that the model was an ordinary least square (OLS) model, all the residuals were diagnosed to meet the assumptions that were usually associated with the least square models.

To examine the effect of corporate governance on the market reaction of SEO firms, a cross-sectional regression was conducted. The cross-sectional regression was the fundamental test on the effect of corporate governance on SEO announcement returns. Moreover, to better identify the factors that would accurately explain the reaction of the stock market to SEO announcements in Nigeria, the control variables selected by the study were also included in the regression model. The three-day announcement return (-1, +1) was used as the dependent variable, as was shown in the regression model used in the study.

The outcome of the event study was used to examine the elements that affected the abnormal returns and the direction of the effect. To this end, the study initially changed the abnormal returns from cumulative abnormal returns (CARs) across firms (cross-sectional approach) for event day(s) to CARs for each firm using the event windows. Following Torben (2010), the study used Equation (2) and calculated the CARs for each of the sampled firms for the study's event window:

$$CAR_i = \frac{\sum_{t=+1}^{t=-1} AR_{it}}{n} \quad (2)$$

where AR_{it} was the abnormal return for share i, and t = -1 to t = +1 was the announcement day from day -1 to +1, given as an example. *N* was the number of announcement days, that was in the context of the present study, three days.

The application of the formula produced one CAR for each firm. The focal point of the present study was the announcement date of the SEOs; therefore, the abnormal returns (ARs) calculated for the three days surrounding the announcement day, which was defined as day 0, were used for the regression model.

Method of Analysis

The rationale behind the cross-sectional regression model was to determine the factors that could explain the abnormal returns of firms on the announcement day of SEOs in Nigeria. Similarly, the addition of the control variables of return on asset (ROA), return on equity (ROE) and market to book (MTB) examined whether investors' reactions were not merely a result of the corporate governance variables. Consistent with previous studies, such as Booth and Chang (2011), Huang and Tompkins (2010), Kim and Purnanandam (2006), and Tsangarakis (1996), the control variables used in the study were as follows: ROA was defined as the percentage of net income after tax

to total assets (Khrawish, 2011). This variable showed how well a firm was using its assets in the generation of income for the firm. ROA, therefore, showed the capability of management in the utilisation of the firm's resources to generate income for the shareholders. Wen (2010) also maintained that higher ROA indicated a bank's efficiency in the utilisation of resources and thus led to more profit for the firm. ROE was the ratio of profit after taxes by total equity. ROE showed the amount of profit a firm generated in relation to the shareholders' equity, as shown in the balance sheet (Ongore & Kusa, 2013). BTM was the book-to-market ratio in the year.

The reported *t*-statistics were computed using White's (1980) heteroskedasticity-consistent standard errors, which fully controlled the problem of heteroskedasticity. Nonetheless, the model was cross-sectional in nature, and therefore, auto-correlation was not in any way a problem.

RESULTS AND DISCUSSION

Descriptive Statistics

The abnormal returns of the individual sampled firms were combined across firms to arrive at the abnormal return. Furthermore, the abnormal return was aggregated across time to arrive at the cumulative abnormal return. Table 1 presents a summary of the descriptive statistics for the average abnormal return and cumulative abnormal return for the 62 SEO announcements from 34 firms in the sample. It became clear that the mean or average values for the abnormal return and cumulative abnormal return were approximately -4.652 percent and -0.034 percent, respectively.

Furthermore, the standard deviation, which measured the disdpersion of observation around the mean, stood at 0.886 for AAR and 0.677 for CAR. The results indicated that the standard deviation of AR and CAR were highly dispersed away from the mean, which indicated high stock return volatility in the series.

Table 1

Descriptive Statistics of Event Window AAR, CAR, and Estimation Window AAR

Statistics	Event Window AAR	Event Window CAR	Estimation Window AAR
Mean	-4.652	-0.034	2.591
Median	0.077	-0.016	0.005
Maximum	2.167	1.404	3.315
Minimum	2.230	-2.153	-2.955
Std. Dev	0.885	0.677	0.865
Skewness	-0.267	-0.576	0.218
Kurtosis	4.315	3.984	6.922
Jarque-Bera	3.605	4.116	77.860
Probability	0.165	0.128	0.000
Sum	-1.610	-1.451	1.550
Sum Sq. Dev.	32.935	19.275	89.104
Observations	42	42	120

Note: AAR and CAR refers to average abnormal returns and cumulative abnormal returns respectively.

Table 1 also reveals the minimum AAR and CAR values of 2.230 percent and -2.153 percent, respectively. However, the maximum value recorded for AAR was 2.167 percent, whereas that of CAR was 1.404 percent. The relative gap between the minimum and maximum values of abnormal return and cumulative abnormal return showed the rate of variability among the return series.

The table also shows the skewness of the distribution of AAR and CAR. Skewness measured the length of the tail of the distribution. The skewness value of –0.267 indicated that the distribution of AAR was negatively skewed and thus had a longer tail to the left of the distribution. However, the distribution of CAR had a skewness value of -0.576, which was also evidence that the distribution was more negatively skewed and thus had a longer tail to the left. Table 1 also indicates a kurtosis of approximately 4.315 for AAR, which implied that the distribution was flat at the surface and was therefore platykurtic; whereas the kurtosis of the CAR series was approximately

3.984, which also suggested flatness of the distribution at the surface. The skewness of the distribution of AAR stood at 0.218, indicating that the distribution of CAR was slightly positively skewed and thus, had a shorter right tail. The kurtosis was approximately 6.922, implying that the distribution exhibited flatness at the surface and was therefore, platykurtic. In terms of normality, Table 1 showed an approximate Jarque-Bera probability of 77.860, which was statistically not significant. This resulted in the failure to reject the null hypothesis, which had stated that the CAR series was normally distributed. Thus, results from the various normality tests revealed that the CAR series was normally distributed.

Table 2

AR and CAR of SEO Firms on Announcement Day

Days	AR	CAR
-1	-0.0061	-0.0062
+1	-2.0430	-3.5481
+1	-2.0430	-3.5481

Table 2 depicts the AR and CAR of SEO firms on announcement day. The results showed that the stock returns of SEO firms recorded negative AR and CAR on the days of the SEO announcement, which was in contrast to the positive abnormal returns recorded before the SEO announcement, signifying that the market interpreted the announcement as bad news.

Cross-Sectional Regression Analysis

The results of the cross-sectional regression of the effect of corporate governance on the market reaction of SEO firms in Nigeria are as presented in Table 3. In the model, corporate governance variables of board independence, institutional ownership, managerial ownership, board size and director's expertise, and the control variables of ROA, ROE and BTM were all combined.

Table 3

Cross-Sectional Regression Results

Variable	Coefficient	Standard Error	*t*-Statistics	*p*-value
Constant	0.91	0.42	0.31	0.09*
Bindependence	0.23	1.02	0.11	0.08*
Iownership	0.09	0.05	0.04	0.05**
Mownership	0.04	0.07	0.01	0.05**
Bsize	-0.08	0.40	-0.03	0.08*
Dexpertise	0.60	0.62	0.04	0.00***
ROA	-1.08	4.07	-0.95	0.79
ROE	0.27	2.07	0.12	0.90
BMT	1.70	1.65	1.26	0.31
No. of Observations	34			
R-Squared (R^2)	0.39			
Adjusted R^2	0.15			
F-Statistics	1.22			
Prob. (F-Statistics)	0.03**			

Note: *, **, and *** indicate significant at the 10%, 5%, and 1% levels, respectively.

Table 3 presents the cross-sectional regression outcome of corporate governance on the market reaction of SEO from 34 firms on announcement day. The coefficients of all variables, except ROA, ROE and BMT, were statistically significant at 10, 5 and 1 percents level for Bindependence, Iownership, Mownership, Bsize and Dexpertise, respectively. Therefore, Bindependence, Iownership, Mownership, Bsize and Dexpertise had statistically significant effect on the 3DAYSCAR.

The general model statistics showed the coefficient of determination (R^2). This R^2 revealed the overall variation in CAR of SEO announcing firms in Nigeria, which were accounted for by the variables in the model. It was 39 percent. This indicated that all the independent variables in the model could explain almost 39 percent of the deviation in the dependent variable (CARs), whereas about 61 percent might be explained by other factors not captured by the model. Given that the stock market was susceptible to all information that was of economic

significance, and considering the fact that this study utilised only five measures of corporate governance out of 15, the R^2 obtained in the study could be considered to be very high for the cross-section data. In any regression model, the higher the value of R^2, the greater the percentage of variation of the dependent variable (in this case CAR) could be explained by the regression model, which also indicated the better the goodness of fit of the regression model for the observed sampled. Furthermore, the adjusted R^2, which determined the degree of the variance of the dependent variable and could be explained by the independent variable, was 15 percent. The adjusted R^2 value could be used to judge whether the regression equation data was a good fit or otherwise. Although a higher adjusted R^2 reflected a better regression equation, the 15 percent value of adjusted R^2 versus the 39 percent value of R^2 found in this study did not constitute any problem, as the adjusted R^2 was a modification of the R^2 that had been adjusted for the number of predictors in the model. It therefore, decreased when a predictor by chance improved the model by less than expected. Of course, the model was influenced by both variables; thus, the R^2 might be lower in the multiple regressions than in a linear regression with only one of the corporate governance variables.

Furthermore, Table 2 showed an overall model standard error, which measured the standard deviation around the regression line of 0.466. The overall fitness of the model, which was is measured by the F-statistics, had a value of 1.22 that was statistically significant at the 5 percent level.

It might be argued that the number of observations in the regression was small. However, the results were not affected by the observation size, considering the fact that the regression was mainly concerned with the announcement day returns, which were obtained from the event study methodology. This was also in line with the central limit theorem that the mean of all samples from the same population would be approximately equal to the mean of the population in a sufficiently large sample taken from a population that had a finite level of variance.

Furthermore, the use of 10 events per variable as a rule of thumb has been sharply criticised (Emmanuel et al., 2016). Subsequently,

some simulation studies have examined more multifaceted scenarios by varying the number of predictors in fixed regression models. Vittinghoff and McCulloch (2007) have suggested that "the 10-event rule can be relaxed" and Courvoisier et al. (2011) also suggested that "no single event rule of thumb can guarantee accurate estimates of regression coefficients".

Estimation of Abnormal Returns Using the Market Model

The study had estimated simple linear regressions using the market model in the event window. The parameters that were earlier estimated using the series of firms' share returns and market returns in the parameter estimation window were accordingly substituted. Consistent with MacKinlay (1997), this study utilised the residuals, which were the resultant prediction errors, as the abnormal returns over the event window. Furthermore, the cross-sectional regression model used the three-day announcement day returns and investigated the effect of corporate governance on the market reaction of SEO firms in Nigeria as follows.

Board Independence

The coefficient of board independence was 0.23, which was statistically significant at the 10 percent level; therefore, the null hypothesis H_{01} was rejected. This meant that there was a significant relationship between board independence and the 3DAYSCAR on the announcement day of SEOs in Nigeria. This implied that investors of these firms' stock experienced an increase in the value of their investments on the day of the announcement. This was perhaps because the independent directors helped monitor corporate executives and/or play certification roles (Huang & Tompkins, 2010). The result was consistent with those of Becker-Blease and Irani (2008) and Huang and Tompkins (2010), who found board independence to be significantly related to the market reaction of SEOs. Similarly, Ogbeide and Evbayiro-Osagie (2019) also found board independence to be significantly related to performance in Nigeria. The result was however, inconsistent with Emeka-Nwokeji (2017), who found a negative relationship.

Institutional Ownership

The coefficient of institutional ownership was 0.09, which was statistically significant at the 5 percent level; therefore, the null hypothesis H_{02} is rejected. This finding showed that there was a significant relationship between institutional ownership and the 3DAYSCAR of SEO announcements in Nigeria, and confirmed that a high level of institutional ownership was positively related to the cumulative abnormal returns of SEO firms in Nigeria. These findings were in line with those of Becker-Blease and Irani (2008), Huang and Tompkins (2010), and Abubakar et al. (2019). The findings also supported the argument that firms with a high percentage of institutional ownership were rewarded by the stock market, so long as their presence were assumed to lessen the adverse selection that was typically linked with SEOs, could effectively supervise the decisions of the board, and shareholders had the strong belief that their actions were in their best interest (Dasilas & Leventis, 2013). The result of positive market reaction was consistent with the findings of Tsangarakis (1996) and Dasilas and Leventis (2013), but was in contrasts with other well-known proofs that SEOs were related to a negative share-price reaction. The major divergence following the negative share-price response was the existence of information asymmetry between shareholders and managers. The finding was also inconsistent with the findings of Aanu (2016), which showed no significant relationship between institutional ownership and firm performance in Nigeria.

Managerial Ownership

This study also investigated the effect of managerial ownership on SEO announcements. A coefficient of 0.04 was obtained, which was statistically significant at the 5 percent level; therefore, the null hypothesis H_{03} was rejected. This implied that there was a significant relationship between managerial ownership and the 3DAYSCAR of SEO announcements in Nigeria. The findings of this study seemed to suggest that investors reacted positively to SEOs of firms that had a low proportion of managerial ownership and vice versa, and were in line with the study by Rongbing and Tompkins (2009), who found

that abnormal returns on the day of the SEO announcement might have a more positive effect with a high level of managerial ownership. Similarly, the finding was consistent with those of Osamwonyi and Ogbeide (2015), who documented a positive significant relationship between managerial ownership and performance in Nigeria, but this was in contrast with the findings of a negative relationship reported by Ogbeide and Evbayiro-Osagie (2019).

Board Size

The coefficient of board size was -0.08, which was statistically significant at the 10 percent level; therefore, the result confirmed the rejection of the null hypothesis H_{04} of the present stufy. The findings showed instead that there was a significant relationship between board size and the 3DAYSCAR of SEO announcements in Nigeria. The finding indicated that the market had punished firms with large board sizes, confirming previous research results that large boards were less likely to effectively keep an eye on the activities of the management of a firm. Therefore, board size was negatively related to the abnormal returns of SEO firms in Nigeria, and thus confirmed the rejection of the null hypothesis in H_{04}. The findings of this study were consistent with those of Jensen (1993), Vafeas (2000), Huang and Tompkins (2010), Yermack (1996), and Eisenberg et al. (1998) and Dasilas and Leventis (2013). The overwhelming empirical evidence thus, pointed to the obeservationed that small boards monitored more effectively and were usually associated with enhanced market and operating performance as compared with large boards. Similarly, Bebeji et al. (2007) and Ujunwa (2014) documented that board size was negatively linked to the performance of firms in Nigeria. However, these findings seemed to contradict those of Emeka-Nwokeji (2017), who documented a significant positive impact of board size on the performance of firms in Nigeria.

Directors' Expertise

Lastly, the coefficient of directors' expertise was 0.60, which was statistically significant at the 1 percent level; thus, the result confirmed

the rejection of the null hypothesis H_{05}, there was no significant relationship between directors' expertise and the 3DAYSCAR. The results indicated the existence of a significant relationship between directors' expertise and the 3DAYSCAR of SEO announcements in Nigeria, implying that the market rewarded firms with high levels of expertise. This was in line with the empirical evidence provided by previous studies such as Al-Shaer and Zaman (2018), Ferguson (2017), Agrawal and Knoeber (2001) and Akpan and Amran (2014), whose findings showed that the professionalism of expert directors guaranteed sound decisions and reduced probable conflicts, which eventually conveyed a positive signal to the market.

CONCLUSION

Previous research on stock market reactions and SEO announcements established that the stock markets reacted negatively when SEOs were announced. The main reason posited for this observation was that SEOs sent out a negative signal to prospective investors because of information asymmetry, although the agency explanation was that the markets believed that management of the issuing firm would abuse the SEO proceeds. The major gap in previous investigations, particularly in emerging markets, was that studies had not controlled for corporate governance. This study, therefore, investigated the impact of corporate governance on the market reaction of seasoned equity offering firms in the Nigerian stock market in the period of 2006–2016. The methodology that was used in this study was exceptional. It considered not only event study, but also used the results from the event study in a regression model to additionally identify and shed more light on factors that were actually linked to and affecting the abnormal returns of SEO firms in Nigeria.

The findings of the study have significant implications for management and investors. First, policy makers should make sure that strong corporate governance exists in firms, as our results showed that their existence could lessen the information lop-sidedness between management and shareholders when SEOs were announced. The

findings from the present stufy also seemed to suggest that policy makers should pay more attention to the need for high levels of director expertise, high institutional ownership, high board independence, and low board size, as investors might view them as dependable pointers of positive corporate information for the market, thus providing the guarantee for the best use of SEO proceeds.

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