Audit Risk Assessment and Detection of Misstatements in Annual Reports: Empirical Evidence from Nigeria

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Abstract

Audit risk examines the relevant assertions related to balances, classes of transactions, or disclosures contain misstatements that could be material to the financial statements when aggregated with misstatements in other balances, classes, or disclosures and the risk that the auditor will not detect such misstatements. This paper examines audit risk assessment and detection of misstatements in annual reports. To achieve this objective, data was collected from primary and secondary sources. The secondary sources were from scholarly books and journals while the primary source involved a well structured questionnaire with an average reliability of 0.91. The data collected from the questionnaire were analyzed using relevant diagnostics tests, granger causality test and multiple regression models. The result revealed that the application of audit risk models statistically and significantly affects the detection of misstatement in financial statements. Hence, the paper concludes that audit risk models reduce the level of fraudulent financial reporting through the detection of misstatements in audit practice and relevant recommendations were provided that would enhance the application of audit risk assessments in the audit of financial statements.

Keywords: inherent risk, control risk, detection risk, engagement risk, detection misstatement, Nigeria.

INTRODUCTION

The audit of financial statements consists of evaluating the quality of assertions versus specific criteria which in the end results in auditors' opinion on the reliability of the financial statements (Amerongen, 2007). The auditor provides reasonable assurance that the financial statements under audit are free from material misstatements. The auditors' opinion on the reliability of the financial statement can be affected by misstatements from errors or fraud. Therefore an effective and efficient audit requires proper assessment of risk and proper allocation of effort subsequent to risk assessment (Blay, et. al., 2003). Bell et al (2005) stated that the relevance of risk assessment in auditing continues to be emphasized in literature as evidenced by issuance of new risk assessment standards. These standards suggest that a financial statement audit is a recursive process in which auditors make risk assessments related to various management assertions based on evidence. Thus the audit team must plan, collect and evaluate

audit evidence in response to assessed risks and aggregate the evidence to form an opinion regarding the fair presentation of financial statements (Gupta, 2005; Adeniji, 2004; Dechow et al, 2011).

The auditing profession is one of uncertainty and high level of business, financial and litigation risk and with the collapse of corporation such as Enron, Tyco International, WorldCom, Global Crossing, BCCI, there has been more stringent process to ensure that auditors excise due professional care and skill when performing audit assignments. Therefore, the requirement for professional judgment in assessing risk in this uncertain environment is a prerogative to the auditor. Therefore, many studies have been suspicious of the auditors' professional judgmental ability to distinguish audit evidence and proper responses to audit risk (Low, 2004; Khurana and Raman, 2004; Wustemann, 2004). It necessary for the auditor to ascertain and assess the nature of risk in the accounting records before giving an audit opinion. The level of uncertainty and risk in the audit environment influences audit strategy establishment and further increase the risk of audit failure. Hence auditors are required to make risk assessment as a basis for designing an audit plan that provides reasonable assurance of detecting misstatements in corporate financial statements (Asare and Wright, 2002). Monroe and Ng (2000) view the auditor risk assessment process as a belief revision task, with prior year assessment serving as a starting point.

There is currently a plethora and growing body of literature that seeks to examine the nature of audit risk assessment and detection of misstatements in financial statements (Messier and Austein, 2000; Dusenbury et al 2000; Vandervelde et. 2002; Bronson et al., 2008; Citron et al., 2008; Bhinmani et al., 2009). The audit risk model provides the framework for risk assessment. The auditor follows a risk assessment process to identify the risk of material misstatements in the annual reports of organizations (Adeniji, 2004; Hayes et al. 1999; Gupta, 2005; Whittington and Pany, 2001). The risk of material misstatements is made of up of two components of the audit risk model: inherent risk and control risk. The risk of material misstatements is used to ascertain the acceptable level of risk detection and to plan the audit procedure. According to Austen et al (2000), an assumption underlying risk-based audit is that the presence of certain types of risk factors is indicative of possible misstatements in the client's annual reports. Therefore, the auditor need to assess the risks that are likely to provide material misstatements, and then conduct audit procedures based on this assessments to ascertain the existence of misstatements (Dobler, 2003). It is on the basis of this assertion that the auditors' attempts to examine auditors risk assessment and the detection of misstatements in financial statements.

Therefore the objective of this paper was to examine audit risk assessment and detection of misstatements in annual reports in Niger Delta of Nigeria. To achieve this objective, the paper was divided into five interconnected sections. The next section presents the literature review. The third section examines the materials and methods. The fourth section presents the results and discussions and the final section presents the conclusion and recommendations.

LITERATURE REVIEW

Theoretical framework

Context Theory

The context theory of classification states that judgments are assumed to be derived exclusively from stored exemplar information. The general idea of the context model is that classification judgments are based on the retrieval of stored information. The context model attempts to represents the effects of strategies and hypotheses on the ease of storage and retrieval of information associated with the stimulus dimension. The context model of classification as applied in this study is assumed that the ability to detect the likelihood of misstatements is derived from the auditors' stored exemplar information on the occurrence of misstatements. It is assumed that the level of misstatements of a clients company serves as a stimulus that the auditors will rely on to decide the likelihood of misstatements in the client's organization (Jaffar, 2009).

Attribution Theory

This theory explains that the expected level of future performance in a particular task depends mainly on the particular causes to which prior success or failure in the same task are attributed. Jaffar et al (2008) explains that attribution theory is used to suggest the effect of auditor's ability to assess the risk on his/her ability to detect misstatements.

Fuzzy Theory

The Fuzzy theory introduced the concept of membership function in order to deal with the differences of linguistic variables was proposed by Zadeh (1965). He thought that there was a certain degree of fuzziness in terms of people perception and inference. The purpose of this theory is to solve the uncertainty of data or fuzziness in the environment. The theory is also used in risk assessment (Akhter et al. 2005).

Audit Risk Model (Theory)

The audit risk model ($AR = IR \times CR \times DR$) is the conceptual model that underlies the risk-based audit approach. The combination of inherent risk and control risk components ($IR \times CR$) is called "auditee risk" or "occurrence risk". The two risks mean the risk before the audit, which implies that the misstatement has already existed in the financial statement (Low, 2004; Khurana and Raman, 2004). The auditor could not control these two risks; hence they must assess their levels in order to determine the scale of audit test in the regulated audit risk level. Detection risk can be determined in the risk model as $DR = AR/(IR \times CR)$. Rittenburg et al (2010) stated that audit risk model consists of inherent risk, control risk and detection risk. The audit risk model shows that the amount, nature and timing of audit procedures depends on the level of audit risk an auditor assumes, and the level of client-related risks. Smieliaauskas (2007) stated that a risk model should incorporate both misstatements of current audit standards and the forecasting errors of GAAP accounting estimates. He argued that the risk model is:

$PMM = AudR + \{(1 + AudR) \times AccR\}$ Where PMM is the probability of material misstatement; AudR is the current audit risk and AccR is the risk of material forecasts errors in the reported amount.

The nature of Audit Risk

Adeniji (2004) defined audit risk as the risk that auditors may give an inappropriate opinion on the financial statement. It is the probability that the auditor would draw invalid audit conclusions and therefore express invalid opinion. It is the risk that the auditor may unknowingly fail to appropriately modify the opinion on financial statements that are materially misstated. It is simply seen as the risk that an auditor will issue unqualified opinion on materially misstated financial statements. Therefore audit risk consists of the risk that the relevant assertions related to balances, classes of transactions, or disclosures contain misstatements that could be material to the financial statements when aggregated with misstatements in other balances, classes, or disclosures (inherent risk and control risk) and the risk that the auditor will not detect such misstatements (detection risk). The risk that the auditor is exposed to financial loss or damage to his reputation from litigation, adverse publicity, or other events arising in connection with financial statements audited and reported.

Inherent Risk: According to ISA 400, in developing the overall audit plan, the auditor should assess inherent risk at the financial statement level. In developing the audit program, the auditor should relate such assessments of material account balances and classes of transactions at the assertion level. Hayes et al (1999) noted that inherent risk is the risk that an account balances or class of transactions contains material misstatements, assuming no related internal controls exist. To assess inherent risk, the auditor uses professional judgment to evaluate numerous factors at the financial statement and the account balance and class of transaction levels. At the financial statement levels these factors include the integrity of management, organization and management structure, pressures on management to

report certain financial results , the nature of the entity business and factors affecting the industry in which the entity operates (Whittington and Pany, 2001; Adeniji, 2004; Gupta, 2005). At the account balance and class of transaction these factors include financial statement accounts to be susceptible to misstatements, the complexity of the underlying transactions and other events, the degree of judgment involved in determining account balances, susceptibility of assets to loss misappropriation, the completion of unusual and complex transactions and transactions not subjected to ordinary processing. Wustemann (2004) noted that inherent risk is influenced with following factors: asset flow, the assessment method used according to accounting assumption; general economic situation and technical development. O'Leary 2000; Wah 2000 and Hunton et al, 2004) stated that inherent risk is often heightened because issues such as inadequate trained personnel, improper data input, and interdependencies among business processes can arise.

Control Risk: Control risk is the risk that a material misstatement that could occur in a relevant assertion will not be prevented, or detected and corrected on a timely basis by the entity's internal control. It is a function of the effectiveness of the design and operation of internal control in achieving the entity's objectives relevant to preparation of the entity's financial statements. Bedard and Graham (2002) indicated that the following factors would influence the assessment of control risk: the organizations and staff of accounting department of auditees; the internal conditions of auditees; safety of EDP system; management information for detecting corporate activities. Brazel and Agoglia (2007), Wright and Wright (2002), Bulkeley (2006) noted that control risk can also increase as the focus shifts from segregation of duties to greater access to information, supervisory review and supplemental internal control applications.

Detection Risk: Detection risk is the risk that the auditor will not detect a misstatement that exists in a relevant assertion that could be material either individually or when aggregated with other statements. Detection risk is determined by the effectiveness of the audit procedure and how well the procedure is applied by the auditor. Detection risk assessments would be influenced with the following factors: selecting improper audit process; error execution, misunderstanding the audit results; and the adoption of random inspection (Gupta, 2005; Okezie, 2008).

Prior Empirical Studies

According to Eilifsen and Messier (2000), research findings on the association between auditors' assessments of audit risk to detected misstatements are mixed.

Kizirian and Sneathen (2003) documented a strong association between overall misstatement risk and the three characteristics of audit evidence using audit file data. However, they did not address pervasive audit risks. Bedard and Johnstone (2004) documents that auditors increase their engagement efforts and billing rates for clients when corporate governance is weak and when earnings manipulation risk is relatively high. Elder et al (2009) find that auditors are more likely to issue modified opinions for firms with internal control weakness. Jaffar (2009) study on fraud detection: moderating role of fraud risk level reveals that the contextual of fraud risk level has a significant effect on the relationship between the external auditors' ability to assess fraud risk and their ability to detect the likelihood of fraud. Mock and Turner (2005) study found that extent, staffing, and nature of audit tests are associated with risk and overall risk assessments. De Martins (2005) found evidence that client business and strategic risks affect audit production outcomes such as aggregate audit hours, disaggregate audit hours and audit fees. Ruhnke, Buszac and Schmidt (2011) study on detecting misstatements in financial statements revealed that a number factors influencing inherent and control risk have significant impact on the number and size of audit adjustments. Therefore, Lemon et al (2000) stated that many audit firms that once employed separate risk assessment now use combine risk assessment.

On the basis of the reviewed literature, the authors proposed the following research questions and hypotheses:

Research Questions

1. To what extent do auditors assessments of inherent risk factors at the financial statement level relate to the incidence and magnitude of auditor detected misstatements?
2. To what extent do auditors assessments of inherent risk factors at the account level associated with the incidence and magnitude of auditor detected misstatements?
3. To what extent is the assessed level of control risk related to the incidence and magnitude of auditor detected misstatements?
4. To what extent do auditors assessments of engagement risk related to the incidence and magnitude of auditor detected misstatements?
5. To what extent do auditors assessments of detection risk associated to the incidence and magnitude of auditors detected misstatements?

Hypotheses:

Ho1: There is no significant relationship between inherent risk factors at the financial statement level and the incidence and magnitude of auditor detected misstatements in Nigeria.

Ho2: There is no significant relationship between control risk factors to the incidence and magnitude of auditor detected misstatements in Nigeria.

Ho3: There is no significant relationship between engagement risk factors to the incidence and magnitude of auditor detected misstatements in Nigeria.

Ho4: There is no significant relationship between detection risk factors to the incidence and magnitude of auditor detected misstatements in Nigeria.

MATERIALS AND METHODS

The primary data for the study were generated through the administration of questionnaires conducted to evaluate auditors risk assessment and detection of misstatements in South-South, Nigeria. The target population includes all accounting firms in Nigeria while the accessible population includes accounting firms in the South-South Region of Nigeria. Three hundred and sixty (360) respondents on the sampled twenty (20) accounting firms (see appendix 1) in six cities (Port Harcourt, Warri, Yenagoa, Calabar, Uyo and Benin) from the accessible population of fifty eight (58) accounting firms (see appendix 1) from the period March 2011 – April, 2012. The sample of twenty (20) accounting firms was reached via systematic sampling. Here, haven decided on the number of firms that will make up the sample (n), this was used to divide the population (N) to give the interval (K) within which accounting firms were selected. The research instrument was designed and developed based on the questionnaires used by Bell et al (1998), Austen et al (2000). The first part of the questionnaire contains questions on organization' and respondents' characteristics. The second part of the questionnaire examined thirty seven (37) audit risk factors group into management characteristics, engagement characteristics and auditing characteristics using five point scale of 5-strongly agree (SA), 4- agree (A), 3- undecided (U), 2- disagree (D) and 1-strongly disagree (SD). The third part of the questionnaire examines five largest misstatements detected by auditors. A total of two hundred and one (201) usable questionnaires were completed and used for the analysis. The questionnaire were pre-tested using twenty five (25) respondents in five of the accounting firms in Port Harcourt, Nigeria and a reliability test was done on the data collected using Cronbach Alpha model, to explore the internal consistency of the questionnaire (kothari, 2004;

Krishnaswamy, Sivakumar and Mathirajan, 2004; Ndiyo, 2005; Osuola, 2005; Baridam, 2008). The result of the reliability test shows that the designed questionnaire is highly reliable at 0.91. Excel software helped us to transform the variables into format suitable for analysis, after which the econometric view (E-view) was used for data analysis. The ordinary least square was adopted for the purpose of hypothesis testing. The ordinary least square was guided by the following linear model:

$$Yi = f(X_1, X_2, X_3, X_{4,}) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots.. \quad (1)$$

$$DM = f(IR, CR, ER, DR) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots. \quad (2)$$

$$DM = \beta_0 + \beta_1 IR_1 + \beta_2 CR_2 + \beta_3 ER_3 + \beta_4 DR_4 + \varepsilon \dots\dots\dots\dots\dots\dots.. \quad (3)$$

That is $B_1 - \beta_4 > 0$

$Y1$ = Detected misstatements, $X1-X4$ = Audit risk, IR =inherent risk, CR =control risk, ER = engagement risk and DR = Detection risk and $\beta1, \beta2, \beta3, \beta4$, are the coefficients of the regression, while ε is the error term capturing other explanatory variables not explicitly included in the model. However, the model was tested using the diagnostic tests of heteroskedasitcity, serial correlation, normality and misspecification (Gujarati and Porter, 2009; Asterious and Hall, 2007). Augmented Dickey-Fuller was also used in the study for stationarity of data.

RESULTS AND DISCUSSION

This section of the paper presents the results and discussion obtained from questionnaires administered to respondents from the sampled accounting firms in six cities in the Niger Delta of Nigeria.

Table one shows the Breusch – Godfrey Serial Correlation LM test for the presence of auto correlation. The result reveals that the probability values of about 0.374632 (37%) and 0.219473 (22%) is greater than the critical value of 0.05 (5%), that is (37% & 22%>5%). This implies that there is no evidence for the presence of serial correlation.

Table two shows the White Heteroskedasticity test for the presence of heteroskedasticity. The econometric result reveals that the probability values of about 0.780651 (78%) and 0.771415 (77%) are considerably in excess of 0.05 (5%), that is (78% & 77%>5%). Therefore, there is no evidence for the presence of heteroskedasticity in the model.

Table three shows the Ramsey RESET test for misspecification. The econometric result suggests that the probability values of about 0.570524 (57%) and 0.564123 (56%) are in excess of the critical value of 0.05 (5%), that is (57% & 56%>5%). Therefore, it can be seen that there is apparent linearity in the regression equation and so it would be concluded that the linear model for the detection of misstatements are appropriate.

Table four shows the Augmented Dickey-Fuller unit root test for stationarity of the variables. The result suggests that detection of misstatement with ADF of -3.061063 is stationary at 5% (-2.8767), but not stationary at 1% (-3.4660); inherent risk with ADF of -4.050250 is stationary at both 1% (-3.4660) and 5% (-2.8767); control risk with ADF of -3.934474 is stationary at 1% (-3.4660) and 5% (-2.8767); engagement risk with ADF of -3.496188 is stationary at 1% (-3.4760) and 5% (-2.8767); and detection risk with ADF of -3.529842 is stationary at 1% (-3.4760) and 5% (-2.8767). The result reveals that the variables are stationary at I(0). Therefore, ordinary least square can be applied in the analysis of data when data is stationary at I(0) (Greene, 2002; Wooldridge, 2006; Asterious and Hall, 2007; Brooks 2008; Gujarati and Porter, 2009; Kozhan, 2010).

Table five (5) shows the multiple regression analysis for audit risk assessment and detection of misstatements in the annual reports. The result suggests that inherent risk with a probability of 0.0013<0.05, therefore, there is a significant relationship between inherent risk factors at the financial statement level and the incidence and magnitude of auditor detected misstatements; control risks with a probability of 0.0391<0.05, therefore, there is significant relationship between control risk factors to the incidence and magnitude of auditor detected misstatements; engagement risk factors with a probability of 0.0104<0.05, therefore, there is a significant relationship between engagement risk factors to the incidence and magnitude of auditors detected misstatements; and detection risk with a p-value of 0.0116 is less than the critical value of 0.05 (1.16%<5%), therefore, there is a significant relationship between detection risk factors to the incidence and magnitude of auditors detected misstatements. Hence, we deduce that there is a significant relationship between auditors' risk assessments and the detection of material misstatements in the annual reports of Nigerian companies. The R^2 (coefficient of determination) of 0.112048 and adjusted R^2 of 0.093834 shows that the variables combined determines about 11% and 9% of materials misstatements can be explained by control risk, inherent risk, engagement risks and detection risk. The F-statistics and its probability shows that the regression equation is well formulated explaining that the relationship between the variables combined of audit risk assessments and detection of material misstatements in the annual reports are statistically significant (F-stat = 6.151623; F-pro. = 0.000011). This result is consistent with the study conducted by Kizirian and Sneathen (2003) that a strong association between overall misstatement risk and the three characteristics of audit evidence using audit file data. The results also conforms with Ruhnke, Buszac and Schmidt (2011) study on detecting misstatements in financial statements that a number factors influence inherent and control risk have significant impact on the number and size of audit adjustments. Also, Lemon et al (2000) that many audit firms that once employed separate risk assessment now use combine risk assessment.

Table six (6) presents the econometric analysis of auditors' assessment of risk and detection of misstatements in Nigeria using Granger Causality test. The result suggests that inherent risk granger cause detection of misstatements (0.03756<0.05), but detection of misstatements does not granger cause inherent risk (0.06330>0.05); control risk granger cause detection misstatements (0.02464<0.05), but detection misstatement does granger cause control risk (0.01435<0.05); engagement risk does granger cause detection misstatements (0.0448<0.05), but detection misstatements does not granger cause engagement risk (0.18057>0.05); also detection risk does granger cause detection misstatements (0.04101<0.05); detection misstatement does granger cause budget deficit (0.03924<0.05). Therefore, the Granger Causality analysis suggests that the application of the relevant audit risk models of inherent risk, control risk, engagement risk and detection risk affects the level of misstatements that will be reported in annual reports. The effective and efficient implementation of the various audit risk model ensures that auditors reduces the level of risk in the published financial statements and the possibility of future corporate failure. Austen et al (2000) stated that an assumption underlying risk-based audit is that the presence of certain types of risk factors is indicative of possible misstatements in the client's annual reports. The auditor follows a risk assessment process to identify the risk of material misstatements in the annual reports of organizations (Adeniji, 2004; Hayes et al. 1999; Gupta, 2005; Whittington and Pany, 2001).

CONCLUSION AND RECOMMENDATIONS

This paper examined the auditors' assessments and detection of risk in the annual reports in Nigeria. The paper reviewed relevant literatures that provide strong evidence of the effectiveness of audit risk model on detection misstatements in financial reports. Our research empirically substantiated the results of prior studies of the relationship between audit risk and material misstatements. The study highlights the various variables in the audit risk model and architecture on detection of misstatements. The empirical analysis provided a strong correlation between the various audit risk and detection misstatements in financial statements. On the basis of the empirical result, the paper concludes that audit risk model provides auditors with sufficient evidence that modify their judgment in providing the level of opinion on a given financial report. The paper there recommends among others

that: auditors should provide sufficient training to their auditors to reduce individual's risk propensity. Carpenter, Durtschi and Gaynor (2006) state that training improves initial sensitivity to fraud, and training that stimulates experience with fraud can possibly be a substitute for actual experience. They suggest that audit firms may want to consider incorporating this alternative training methodology in their programs to improve auditor fraud judgments; audit firms should allocate audit work according to auditor's propensity to risk; managers of audit firms should not be put under pressure prior to planning audit; managers of audit firms should adhere to the codes of professional practice and relevant audit standards.

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APPENDIX

Table 1: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	3.05174	Probability	0.374632
Obs*R-squared	1.24078	Probability	0.219473

Source: e-view output

Table 2: White Heteroskedasticity Test:

F-statistic	0.595820	Probability	0.780651
Obs*R-squared	4.869633	Probability	0.771415

Source¨-view output

Table 3: Ramsey RESET Test:

F-statistic	0.322906	Probability	0.570524
Log likelihood ratio	0.332616	Probability	0.564123

Source: e-view output

Table 4: Augmented Dickey-Fuller Unit Root Test

Variable	ADF	1%	5%	Test for Unit root
Detection of misstatements	-3.061063	-3.4660	-2.8767	I(0)
Inherent risk	-4.050250	-3.4660	-2.8767	I(0)
Control risk	-3.934474	-3.4660	-2.8767	I(0)
Engagement risk	-3.496188	-3.4760	-2.8767	I(0)
Detection risk	-3.529842	-3.4760	-2.8767	I(0)

Source: e-view output

Table 5: Multiple Regression

Dependent Variable: DM
Method: Least Squares
Date: 06/25/12   Time: 20:57
Sample: 1 201
Included observations: 200
Excluded observations: 1

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.377440	1.807268	2.975453	0.0033
IR	0.277167	0.085124	3.256044	0.0013
CR	0.163377	0.079982	2.042672	0.0391
ER	0.246060	0.095096	2.587479	0.0104
DR	0.204225	0.087579	2.331895	0.0116

R-squared	0.112048	Mean dependent var	13.15500
Adjusted R-squared	0.093834	S.D. dependent var	3.206616
S.E. of regression	3.052467	Akaike info criterion	5.094459
Sum squared resid	1816.923	Schwarz criterion	5.176917
Log likelihood	-504.4459	F-statistic	6.151623
Durbin-Watson stat	2.012395	Prob(F-statistic)	0.000011

Source: e-view output

Table 6: Pairwise Granger Causality Tests
Date: 06/25/12   Time: 21:09
Sample: 1 201
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
IR does not Granger Cause DM	196	1.03401	0.03756
DM does not Granger Cause IR		2.80007	0.06330
CR does not Granger Cause DM	196	1.10706	0.02464
DM does not Granger Cause CR		4.33947	0.01435
ER does not Granger Cause DM	196	0.75272	0.04248
DM does not Granger Cause ER		1.72705	0.18057
DR does not Granger Cause DM	196	0.69365	0.04101
DM does not Granger Cause DR		2.44729	0.03924

Source: e-view output

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