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Detecting Fraudulent Manipulation of Accounting Ratios in Financial Reporting of Nigerian Corporations through Forensic Accounting Technique

Sunday O. Effiok
Department of Accounting, Faculty of Management Sciences, University of Calabar, Nigeria
EMAIL: sundayefiok@yahoo.com; Tel: +2347067052400

ABSTRACT

This study focused on forensic accounting techniques: A tool for detecting fraudulent manipulation of financial ratios in financial reporting. Financial manipulation takes different forms including abuse of materiality principle, round-tripping, back-to-back and swaps, timing of adoption of mandatory accounting standards, and voluntary accounting changes. The research design adopted for the study was a survey design. The data collected were tabulated and analyzed using the Ordinary Least Square (OLS). The study revealed that forensic accounting techniques mirrored by Computer Assisted Audit Technique (CAAT), Data Mining (DM), Relative Size Factor (RSF) and Benford Law (BL) have significant influence on fraudulent manipulation. It is observed that in view of the craze for money in Nigeria, misplace value judgment and the prevailing harsh economic environment, frauds are on the increase and the corporations are losing amount running into millions of naira through fraudulent manipulation of accounts. Based on the findings of the study, forensic experts are expected to consider whether the information presented in the financial statements is relevant, reliable, comparable and understandable. When forming an opinion on whether financial statements fairly represent the financial position, results of operations and cash flows of an entity, experts are required to discuss their judgment about the quality of an entity's financial statements with the audit committee. It is also recommended that quality assessment report that would add credibility to financial information for users should therefore be included in the statutory auditor's report.

Keywords: Computer Assisted Audit Technique, Data Mining, Relative Size Factor, Benford Law, Fraudulent Manipulation.

INTRODUCTION

Association of Certified Fund Examiners (2007) defines financial statement fraud as "the deliberate misrepresentation of financial condition of a corporate entity by intentionally misstating or omitting amounts or disclosures in the financial statement reports so as to deceive their users.

According to them, financial statement fraud is usually a means to an end rather than an end itself. Proven evidence abound in reports that when people manipulate accounting books, they do so with the intention of fixing problems that could prevent the company from meeting its expected earnings, complying with loan requirements, or even to obtain or renew financing agreements that would not be granted or would be smaller if genuine and transparent financial statements were provided. Without much argument, the difference between fraud and error is very clear. IFAC 2006; Zabihollah, 2002 and Wallace 1995 confirm that an error is considered to be unintentional while fraud is intentional. Most manipulative activities fall within the definition of earnings management which according to Crumbly, Heitger & Smith (2007) is the purposeful intervention in external reporting process, with the intent of obtaining some private gains.

Corroborating this view, Alghamdi (2012) defines it as a method or way of selecting or violating accounting standards in order to affect financial events. Aljifri (2007) in his studies suggested that earnings management can be manipulated in two basic ways namely; through accounting choices and discretionary accounts. These two ways are captured in the following techniques;

- Abuse of materiality principle

One of the ways used by accountants to manipulate the earnings is the application of materiality principle in the preparation of financial statements. The principle is very wide, flexible and has no specific range to determine whether the item is material or not.

- Round-tripping, back-to-back and Swaps

Round tripping is the practice of selling an unused asset to another company and at the same time agreed to buy back the same or similar assets at about the same price. Back-to-back is the same process but has a short time tag. Both transactions are not scheduled to occur at precisely the same time. Swaps on the other hand occur when two companies sell to each other virtually identical assets to recognize revenue. These techniques artificially inflate the revenue of both the buyer and the seller (Koh, 2003).

- Timing of adoption of mandatory accounting standards

The FASB standards are enacted with a two-to-three year transition period prior to mandatory adoption but with early adoption encouraged. According to Ayres (1994), while not all firms are affected by each standard issued, the relative frequency of new standards combined with long adoption windows provides an opportunity for managers to select an adoption year most favourable to firm's financial picture.

- Voluntary accounting changes

According to Stimpson (2007), these techniques involve the switching from one generally accepted accounting method to another. The assumption here is that a firm cannot make the same type of accounting changes too frequently, but it is possible to make several different types of accounting changes either together or individually over several periods. All these mar the efforts of the examiner in detecting major irregularities in the system. These scenarios have led to several litigations in the courts thereby making professionals culpable.

It is against this backdrop that the advent of forensic and investigative accounting technique in business operations has come as a panacea for this pandemic. Silverstone & Michael (2004) stressed that forensic accounting process involves checking of details and tracing an item of transaction from the origin to the point of book entry. It allows quality standards to be the watch words in both the procedures and the personnel's carrying out the operation (Michelle, 2002).

The transactions that are prone to frauds in business includes fictitious or overstated revenues and assets (Martinez, 2005), fictitious reductions of expenses and liabilities (Graham, Harvey & Rajgopal, 2005), premature revenue recognition (Margrath, & Weld 2002), Misclassified revenues and assets (Perry, 2002), Omitted liabilities (Smith, 2004) and Omitted or improper disclosures (Berton, & Edwards 2004). Ratios that are most susceptible to fraud are profitability ratio, liquidity ratio, current ratio and gearing ratio.

Problem of the study

Financial ratios are powerful indicators of Strengths, Weaknesses, Opportunities and Threats (SWOT). They are bricks upon which financial statements are built. Financial statements are prone to all sorts of manipulations and every manipulation which is out of tune with GAAP amount to fraud (Razaee, 2002). Techniques of manipulation includes; abuse of materiality principle, round-tripping, back-to-back and swaps, timing of adopting of mandatory accounting standards and voluntary accounting changes. All these manifest in the following scenarios fictitious or overstated revenue and assets (Louis & Sun, 2005), reduction of expenses and liabilities (Green, 2003). Premature revenue recognition Magrath & Weld (2002) misclassified revenue and assets Peary (2002) overvalued assets and undervalued expenses and liabilities, omitted liabilities Smith (2004) and omitted or improper disclosures Berton (2004). In each of these cases corporate governance is called to question.

Objective of the study

The main objective of the study is to examine the influence of forensic accounting techniques on fraudulent manipulation of financial ratios. The specific objectives are as follows:

1. To evaluate the influence of computer assisted auditing technique on fraudulent manipulation.
2. To ascertain the influence of data mining technique on fraudulent manipulation
3. To examine the influence of relative size factor technique on fraudulent manipulation.
4. To evaluate the influence of Benford's Law technique on fraudulent manipulation.

Scope of the study

The study focuses on the application of forensic accounting technique: A tool for detecting fraudulent manipulation of financial ratios in financial reporting with references to financial institutions listed in the Nigerian Stock Exchange (NSE).

Literature review

Theoretical development

Occupational fraud is a global phenomenon. The reason for it's perpetuity and ways of curbing it have beaten human imagination especially with the advent of information and communication technology (Ramamoorti & Weidenmier, 2004). This is why in this article, corporate governance theory and occupational fraud theory offer a basis for research into the area of financial misrepresentation or fraudulent financial reporting and that of sound management. In various public debate sessions, it is generally admitted that failure in corporate governance is a major source of financial misrepresentations. Accordingly, the theories mentioned above are further explained below.

Corporate governance theories

Agency theory:

In agency theory, the manager as one party acts as the agent of the principal who is the other party (Mallin, 2007). Agency economic theory and institutional agency were originated by Ross (1972) and Mitnick (1973) respectively. In their separate defense, while Mitnick concluded that institution evolves around the relationship of employer – employee, Ross argued that this relationship revolves around job incentives to the employees. In a thesis defended at the University of Pennsylvania in an economic meeting in December 1972, Ross argued that the agency problem and incentives are identified as macroeconomic problems besides being microeconomics ones. This paper launched the idea of agency theory. Mitnick, a doctoral student in political science at the University, presented a similar dissertation on agency in 1973. He believed that institutions and social mechanisms guide the agent as well as principal relationship or preferences (Mitnick, 2006).

Owners of firms contract agents to manage their firms on their behalf, thus becoming principals. The agents accept this responsibility with the aim of maximizing their personal utility as well as the owners' wealth. When agency utility and shareholders wealth converge, the agency problem is considered to be absent (Davis, 1997a). Another related prior study Jensen and Meckling (1976) investigates the agency costs that come into being as a result of existence of debt and outside equity claims in a company, and furthermore answers the questions as to who bears such agency costs? The study concludes that agency costs are the total of bonding costs incurred by the agent, residual loss, and monitoring costs incurred by the principal. This conclusion remark generated the controversies surrounding agency theory and raised the following issues:

- The variables in the relationship of agent-principal are not measurable (Bruton, 2000 and Busenitz, 2001)
- A partial share ownership by the agent in a firm does not motivate the agent to behave as a principal would (Pierce, 1991)
- The explanatory power of agency theory is reduced if and when the principal decides to divest to a new business. Further, an agent must be motivated and monitored to create wealth; this arrangement portrays agents as potentially fraudulent and principals as policemen enforcing the Law (Arthurs and Busenitz, 2003)

Stewardship theory

A second theory, considered as filling the gaps left by agency theory, is stewardship theory. It suggests that once the principal has invested in a new venture, stewardship theory explains thee behavior between the principal and the agent better than the agency Davis, Schoorman & Donaldson, 1997a & 1997b. In this section, the roles of the board chairperson and managing director are combined. Such combination ensures a better return on assets (ROA) than that ensured by agency theory. In agency theory the board chair is independent of the managing director. Donaldson and Davis (1991) developed the organizational stewardship theory in 1991 and 1993. They considered the principal/agent relationship at one point in time, ignoring the learning curve effect that occurs as agent and principal interact over time (Pastoriza and Arino, 2008). Prior studies on fraud based on agency are: Palliam and Shalhoub (2003), who conclude that owners tend to diversify ownership across various firms, as they are considered to be risk averse. This characteristic makes agents misstate the result of financial statements (i.e earnings management practices), Elias (2002).

Reinstein, Lander & Jennings (2001), conclude that after using the agency model, international accounting firms divested from consulting engagements in order to restore public confidence in the profession, thus enhancing auditor's independence. For example, Arthur Anderson divested from Anderson consulting (changed its name Accenture) in 2001, and Ernest and Young sold a consulting unit to Cap Gramini in February 2000. Hemingway (2003) describes how complexities in an agency led to Enron's public financial misstatements and omissions.

Robinson and Santore (2008) revealed that the likelihood of fraud is proportional to attractiveness of equity compensation and the value of the firm. Further, equity compensation motivates managers to work hard at the same time as to irregularity inflate the firm's share price. Finally, Matsumura and Tucker (1992) conclude that in a client (manager) – auditor relationship, the auditor must choose whether to audit for unintentional errors or for fraud, whereas the manager must choose whether to commit a fixed level of fraud or not. The study reveals that increasing the auditor's penalty decreases fraud and increasing the auditor's substantive tests, managers committed fraud less frequently. Matsuura and Tucker developed their theory by mixing game-theory analysis and experiment.

Occupational fraud theory

Wells (2003) set forth various theories: first, Sutherland in 1983 defined white collar crime as criminal acts of companies and administrators in corporate capacity. His theory of differential association indicates that crime is learned from fellow group members; second, Donald R. Cressey (Sutherland's student) undertook a separate research into causes of fraud in the 1940s in the US. From interviewing 200 incarcerated embezzlers, he developed what is now called "Fraud Triangle" made of a perceived non-sharable financial need or pressure, an opportunity to commit fraud, and a rationalization mechanism to permit it; third, Steve Albrecht: surveyed 212 actual frauds committed in the early 1980s. he developed fraud-scale theory made up of three characteristics: a) situational pressures (financial oriented), b) perceived opportunities (causes by poor controls) and c) personal integrity (individuals ethics); fourth, Hollinger Clark in 1983 studies 10,000 cases of American employees, concluding that fraud is caused by a lack of job inspiration and that the actual cost of dissatisfaction is greatly understated Clark also portends that the higher the position held in a company the bigger the level of fraud. Dissatisfied workers are likely to break rules irrespective of age or position. This theory also emphasizes the contribution of policy development in curtailing theft. Further, Madhogarhiaa, Suttonb & Kohersc (2009) developed a general theory of crime including murder and shoplifting, arguing that they result from low self-control and desire for gratification. This theory is criticized over its inability to explain those forms of corporate fraud where the entity benefits instead of the offender, and that most frauds are committed by individuals and not by corporate bodies. Another shortcoming is its explanation of much of street crime beside a smaller portion of white collar crime.

METHODOLOGY

This study employed the survey research design. The data collected from the selected sample at a given point described the nature, characteristic and experience of the universe or population, as well as determine the nature of relationships between variables in the study. The population of the study constitutes all the financial corporations in Nigeria. A simple random sampling technique was adopted to effectively select the sample from the banks and insurance companies. The method used in collecting data for the study was questionnaire survey. The data collected from the questionnaire were summarized and tabulated. These were picked in line with the variables in the hypotheses of the study. Both primary and secondary sources of data information were used in the course of this study.

The items of the instrument were scored based on the five point Likert scale, beginning with all positively worded items. Strongly Agreed (SA) scored 5 points, Agreed (A) 4 points, Undecided (U) 3points, Disagreed (D) 2 points and Strongly Disagreed (SD) 1 point. This order was reversed for all negatively worded items. That is Strongly Agreed (SA) scored 1 points, Agreed (A) 2 points, Undecided (U) 3 points, Disagreed (D) 4 points and Strongly Disagreed (SD) 5 points. The secondary sources were obtained from textbooks, publications, journals and annual reports of the selected companies.

RESULTS AND DISCUSSION

Table 1: Regression results of the influence of forensic accounting techniques on fraudulent manipulation.

Variable	Estimated Coefficients	Standard Error	T-Statistic	P-Value
Constant	29.231	4.120	7.095	.000
CAAT	.138	.039	3.538	.010
DM	.219	.093	2.355	.034
RSF	.548	.133	4.120	.001
BL	.128	.050	2.560	.021

R = 0.944; R-Square = 0.891; Adjusted R-Square = 0.882; SEE = 15.946; F-Statistic = 14.328 (P .000); Durbin Watson Statistic =1.918.

Source: Researcher's Estimation, 2013

Table 1 shows the Regression results of the influence of forensic accounting techniques on fraudulent manipulation. The regression results showed that the estimated coefficient of the regression parameters have positive sign and thus conform to our a priori expectation. The implication of this sign is that the dependent variable Fraudulent Manipulation (FM) is influenced by Assisted Auditing Technique (CAAT), Data Mining (DM), Relative Size Factor (RSF) and Benford Law (BL). This means that an increase in the independent variables will bring about credibility in the dependent variable.

The coefficient of determination R-square of 0.891 implied that 89.1% sample variation in the dependent variable fraud (F) is explained or caused by the explanatory variable while 10.9% is unexplained. This remaining 10.9% could be caused by other factors or variables not built into the model. The high value of R-square is an indication of a good relationship between the dependent and independent variables. The value of the adjusted R-square is 0.882. This shows that the regression line captures more than 88.2 percent of the total variation in fraud caused by variation for the stochastic error term.

The F-statistic was used in testing the statistical significant of the overall model. The F-statistics value of 14.328 with a probability value of .000 indicates that the model is statistically significant at 5% level. The test of autocorrelation using DW test shows that the D.W value of 1.918 falls within the inconclusive region of DW partition curve. Hence, we can clearly say that there exists no degree of autocorrelation.

Based on the analysis and the empirical results the study revealed that the estimated coefficient of the regression parameters have positive signs and thus conforms to our priori economic expectation. The implication of this sign is that the dependent variable Fraudulent Manipulation (FM) is positively influenced by Assisted Technique (CAAT), Data Mining (DM), Relative Size Factor (RSF) and Benford Law (BL). The study revealed that Assisted Auditing Technique (CAAT), Data Mining (DM), Relative Size Factor (RSF) and Benford Law (BL) have a significant influence on fraudulent manipulation.

CONCLUSION

In view of the craze for money in Nigeria, misplace value judgment and the prevailing harsh economic environment, frauds are on the increase and the banks are losing amount running into millions of naira to fraudsters almost on daily bases. In most cases when the frauds are detected early, amount already drawn are usually difficult to recover. This study has identified some manipulative behavior on the part of preparers of financial statements and operators of banking industries, taking into account some important ethical concerns. From an ethical perspective these manipulations can be regarded as morally reprehensible. They are not fair to users, they involve an unjust exercise of power, and they tend to weaken the authority of the regulators. Where regulation is breached with impunity, a diminution of respect for it and its procedures is likely to ensue.

RECOMMENDATIONS

Based on the findings of the study, it is recommended that auditors are expected to consider whether the information presented in the financial statements is relevant, reliable, comparable and understandable when forming an opinion on whether financial statements fairly present the financial position, results of operations and cash flows of an entity and are required to discuss their judgment about the quality of an entity's financial statements with the audit committee. It is recommended that this quality assessment will enhance the usefulness of financial information for all users and should therefore be included in the statutory auditor's report.

REFERENCES

ACFE (2007). Fraud examiners manual: supporting the profession, educating the professional, association of certified fraud examiners, Austin, Texas, USA, United States edition.

Arthur, J. D. and L. W. Busenitz (2003). The boundaries and limitations of agency theory and stewardship theory in venture capitalist/entrepreneur relationship Winter, Baylor University.

Alghamdi, S. A. L. (2012). Investigation into Earnings Management Practices and the Role of Corporate Governance and External Audit in emerging markets: evidence from Saudi listed companies. An unpublished PhD Thesis

Aljifri, K. (2007). Measurement and Motivations of Earnings Management: A critical perspective. Journal of Accounting, Business and Management 14:75-95.

Barth, M. E., W. Landsman and M. Lang (2007). International Accounting Standards and Accounting Quality Graduate School of Business, Stanford University, Research paper No. 1976, http://papers.ssrn.com, accessed on 24 May 2008.

Beneish, M. (1999). Incentives and penalties related to earnings overstatements that violets GAAP. The Accounting Review 73(4): 425-57.

Berton, L. and J. H. Edwards (2004). US Accounting Watchdogs Try to Shut Barn Door"' Bloomberg.com "Audit Committees: The last Best Hope. Journal of Forensic Accounting 1-20.

Busenitz, L., J. Fiet and D. Moesel (2001). Signaling Theory and New Venture evaluations paper presented at the Babson-Kaufman Research conference Jonkoping, Sweden.

Bruton, G., V. Fried and R. D. Hisrich (2000). CEO dismissal in venture capital- backed firms: further evidence from an agency perspective, entrepreneurial theory and practice 24(4): 67-77.

CBSK (2006). Central Bureau of statistics of Kenya, consumer price indices and inflation, http://www.knbs.qo.ke, accessed on 15 February 2008

Comer, J. M. (1998). Corporate fraud 3rd ed., Gower Publishing, Aldershot.

Crumbly, D. R., L. E. Heitger and G. S. Smith (2007). Forensic and Investigative Accounting. 3rd edition. Welters business: Chicago, USA.

Davis, J. H., F. D. Schoorman and L. Donaldson (1997) toward a stewardship theory of management. Academy of Management Review 22(1): 20-47.

Donaldson, L. and J. H. Davis (1991). Stewardship theory or agency CEO governance and shareholders returns. Australian Journal of Management 16(1): 49-65.

Elias, R. Z. (2002). Determinants of earnings management ethics among accountants. Journal of Business Ethics 40:33-45.

Heminway, W. J. (2003). Enron's tangled web: complex relationships; unanswered questions, University of Cincinnati Law review, vol.71, p.1167, http://papers.ssrn.com/abstract=491962, accessed on 19 January 2009.

Graham, J. R., Harvey, C. R., Rajgopal, S. (2005) the Economic Implications of Corporate Financial Reporting. Journal of Accounting and Economics 40:3-73.

IFAC (2006). International Federation of Accountants International Standards on Auditing (ISA) No.200, Auditors plan and programs, Handbook of International; Auditing Assurance, and Ethics pronouncement, international Federation of Accountants, New York, USA.

Jensen, M. C., & Meckling, W. H. (1976). theory of the managerial behavior, agency costs and ownership structure. Journal of Financial Economics vol.3, No.4, http://ssrn.com/abstract=94043, accessed on 16 June 2009.

Kathleen, A. K., Sterling, T. W. & Liming, G. (2004), can financial ratios detect fraudulent reporting. Managerial Auditing Journal 19(1): 15-28.

Koh, P. S. (2003). On the Association between Institutional Ownership and Aggressive Corporate Earnings Management in Australia. The British Accounting Review Vol. 35:105-128.

Louis, G. G. L. and A. Sun (2008). Earnings Management, Lawsuit and Stock-for-Stock Acquires, Market Performance. Journal of Accounting and Economic, 46:62-77

Mallin, A. C. (2007). Corporate governance. Oxford University press Inc. New York, second ed. 11-19.

Matsumura, M. E. and R. R. Tucker (1992), fraud detection: a theoretical foundation, the Accounting Review Vol. 67, No.4, pp. 753-783, October.

Martinez, A. L. (2005). Earnings Management in Brazil: Motivation and Consequences. Electronic copy available at: http://ssrn.com.

Mark, M. (2003). Tyco is likely to report new woes. The Wall Street Journal (April 30, p. C-1 journal).

Madhogarhiaa, P., K. Suttonb and T. Kohersc (2009). Earnings Management Practices among Growth and Value Firms. Applied Financial Economic 19:1767-1778.

Magrath Weld. (2002). Abusive Earnings Management and Early Warning Signs. The CPA Journal.

Michelle P. (2002). Corporate Fraud-Unusual suspects," Management Consultancy. www.managementconsultantcy.co.uk.

Mitnick, B. M. (2006). origin of the theory of agency: an account by one of the theory's originators. Social sciences research network, working paper series, University of Pittsburgh, January, http://www.ssrn.com/abstract=1020378 accessed on 6 January 2009.

Nilson, (2001). Organizational principles for co-operative firms, department of economics, Scandinavian journal of managing, Swedish University of Agricultural Sciences, http://www.sciencedirect.comscience?ob. Accessed on 7 January 2009.

Palliam, R. and Z. Shalhoub (2003), The phenomenology of earnings management within the confines of agency theory. International journal of value-based management, Kluwer Academic publishers-Netherlands, 16:75-88.

Pastoriza, D. and M. N. Arino (2008), when agents become stewards: introducing learning in stewardship theory, working paper series, 1st IESE conference, Humanizing the firm and management profession, University of Navarre, 1 December, http://ssrn.com/abstract=1295320, accessed on 20 January 2009.

Pierce, J. L., S. A. Rubenfeld and S. Morgan (1991). Employee ownership: a conceptual model of process and effects. Academy of Management Review 16(1): 121-144.

Ramamoorti, S. and M. Weidenmier (2004). The pervasive impact of information technology on internal auditing. Supplemental chapter forResearchOpportunities in Internal Auditing, edited by A. Bailey, A. Gramling, & S. Ramamoorti. Altomate Springs, FL: IIA Research Foundation.

Reinstein, A., G. H. Lander and P. J. Jennings (2001), Auditor independence: An Agency Theory Perspective, Academy of Business Conference.

Robinson, D. H., and R. Santore (2008). Managerial incentives, fraud and monitoring, working paper series, http://www.ssrn.com/abstract=770924, accessed on 19 January, 2009.

Razaee, Z. (2002). Financial Statement Fraud (New York: John Wiley & Sons), p.26

Silverstone, H. and S. Michael (2004). Forensic Accounting and Fraud Investigation for Non- Experts. Hoboken, NJ: Wiley.

Smith, A. (1993). Earnings and Management Incentives. Journal of Accounting and Economics 16:337-347.

Stimpson J. (2007). Forensic Accounting: Exponential Growth," WEBCPA, p.3.

Wallace, W. A. (1995). Auditing, South Western College Publishing, Cincinnati, OH.

Wells, K. J. (2003). Fraud exposed: what you don't know could you're your