

## The Important Mechanism for Fraud Detection in a Contemporary Organisation

Emmanuel Teitey

( Ph.D in Finance Candidate)

Swiss Management Centre University-Switzerland

**ABSTRACT:** Over the precedent decades, fraud has been the most important issue facing the Accounting Profession in the United States and all over the World. Financial Statement Fraud causes both economic and social consequences in our society. This paper discussed the fraud in Enron and the role played by its auditors (Arthur Andersen). The financial statement fraud erode public confidence and trust in the accounting and auditing profession. While auditors play crucial role in detecting financial reporting fraud, they sometimes appear to cover up these fraudulent deals. It's not enough for regulators to set auditing standards for public company auditors, they must be supported by ethnical tones and stringent financial reporting rules to ensure everyone plays by their rule. Auditors need to take a proactive role in detecting and deterring fraud by data analysis techniques.

**Keywords:** *Accounting, Profession, Fraudulent, Regulators, ethnical*

## Introduction:

The collapse of United States Corporate giants like Enron, WorldCom, Tyco and many others revealed unethical behavior by members of boards of directors and executives of major corporations. These wrongful acts have generated unwarranted and unfavorable publicity for the accounting profession. The credibility of the accounting and auditing Professions has been questioned. This brought into questions the effectiveness of financial statement audits and created a crisis of credibility for the accounting profession. These accounting scandals led to the establishment of some new auditing standard and law. Statement on Auditing Standard (SAS 99), Sarbanes-Oxley (SOX) and a host of many others with the aim of deterring and detecting financial statement and other unlawful or improper activity.

Again, while SAS 99 was in operation for several years, Sarbanes Oxley is a direct result of massive financial frauds. This act was designed to restore investor's confidence following the scandals of Enron, Tyco and others. There are sections to the Sarbanes-Oxley Act. Section 302 Corporate Responsibility of Financial and 404 Management Assessment of Internal Controls are the two main provisions in this act. According to the section 302 (13a) of SOX, the CEO and the chief financial Officer are Assigned responsibility for accurate financial reporting and all information concerning financial reporting must be complete, accurate or they face criminal penalties. Section 404 (13a) of the Act states that each annual report must contain an internal control report stating the responsibility of management for establishing and implementing adequate procedures, and it must also include assessment of effectiveness of internal control structure and procedures, any code of ethics and contents of that code.

## Enron Corporation

Enron Corporation was a Houston based energy and commodities trading company before its bankruptcy on December 2, 2001, the company was one of the world's leading electricity, natural gas, communications, and pulp and paper companies. Enron reported that its revenue grew from \$10 billion in the early 1990s to \$101 billion in 2000. It ranked as the seventh-largest company on the Fortune 500 list and the sixth-large energy company in the world. The company's stock price peaked at \$90 US (CBC News, 2006). At the end of 2001, the company announced it was going into Chapter 11 bankruptcy. The downfall of Enron is one of the most infamous in the United State History. This scandal demonstrates the need for significant reforms in accounting and corporate governance in the United States.

There are many factors that contributed to the collapse of this company. The two roles played by Arthur Andersen as the auditor and also as a consultant to Enron was one of the major factor behind this Scandal; the lack of attention shown by members of the Enron board of directors to the off-books financial entities with which Enron did business, and the lack of truthfulness by management about the health of the company and its business operations. In some ways, the culture at Enron was the primary cause of the collapse. The senior executives such as Kenneth Lay, Jeffrey Skilling and André Fastow fostered rule breaking and discourage problem report by protecting their reputation and their compensation as the most successful executives in the U.S. When some of business and

trading ventures began to perform poorly, they tried to cover up their own failures (Hanson, 2002).

### **Fraud**

Fraud is an intentional perversion of truth for the purpose of inducing another, in reliance upon it to part with some valuable thing belonging to him or to surrender a legal right i.e. a false Representation of fact intended to deceive another. Fraud is a legal determination, not an accounting or auditing decision. It requires intent, knowledge deceit and damage otherwise it is mistake (Nungua, 2003). There are two type of fraud to be considered: Misstatements arising from fraudulent financial reporting (e.g. falsification of accounting records) and misstatement of arising from misappropriation of asset, for example theft or misuse of assets or fraudulent expenditure. Both types of fraud causes economic and social consequences in our society and steps must be taken in order to detect it in a timely manner.

### **Asset Misappropriation**

An example of Asset Misappropriation is Yahoo's law suit against the CEO of its 2005 USD 1 billion acquisition, Alibaba Group Holdings Ltd ("Suit say Yahoo, 2011, para2). As Yahoo did not secure its prime asset in the acquisition, the e-payment company Alipay, the CEO Jack Ma discreetly sold or misappropriate the asset to another organisation that he run for an amount that was a lot less than its market value

### **Corruption**

The empirical study by the Association of Certified fraud Examiners (ACFE), defined corruption as the second most frequently occurring type of occupation fraud and only a third of the cases studies involved it (ACFE, 2010). In most countries however, public corruption, the wrongful use of public power abound and in developing countries, this can be a major hindrance to economic development (Perols, 2011). Also, empirical study shows that, in developed countries corruption in business impacts competition and can causes business decision-making to be affected by personal influences.

### **Financial Statement Fraud**

Apart from seriously destabilizing the trustworthiness, Corporate Financial Statement fraud also has a damaging impact on organisation stakeholders such as staff and investors (Perols, 2011). Consequently, market efficiency is reduced while transaction costs increase. In this very unstable environment of financial pressures, auditors are tasked with the duty of ensuring that financial statement are free of fraud, such fraud causes a material misstatement in the financials. However, despite the complex and highly developed fraud, auditors carry out this duty by ensuring compliance with corporate governance laws and by being self-regulation (SASes, COSO, Sarbanes-Oxley etc. (Perols, 2011). The internal audit function within an establishment is a part of its corporate governance (Coram, 2008). This fact is supported by a 2004 KPMG fraud Survey on both private and public sectors establishments in Austria and New Zealand which concluded that companies are more likely to notice and self-report fraudulent activities if there is an internal audit function

(Coram,2008).In contrast, the likelihood of fraud detection and self-reporting of fraudulent activity in companies that rely heavily upon an external audit function as an outsourced is significantly less.

### **Auditor**

The SEC (2002) defines an auditor as an independent certified public accountant who examines the financial statement that a company's management has prepared. A company's management has the responsibility for preparing the company's financial statement and related disclosures. The company's outside independent auditor then subjects the financial statements and disclosures to audit. During the audit, the outside auditor obtains an understanding of the company's internal controls and then applies "auditing procedures," which may include inspection of the company's books and records, observation, inquiries, and confirmations. The procedures the outside auditor uses must be sufficient to allow the auditor to obtain enough competent evidence to express an opinion on the fairness of the financial statements and whether they conform to GAAP in all material respects. If the auditor cannot reach conclusion, then the auditor must either require the company to change the financial statements or decline to issue a standard audit report (SEC, 2002).

An audit process provides the public with additional assurance beyond management's own assertions that a company's financial statements can be relied upon. Many of the financial statement disclosures including those in a company's annual report and those provided to shareholders in connection with the solicitation of proxies for annual general meeting must be examined and reported by an independent auditor (SEC, 2002). An audited financial statement has important implications for investors making investment decisions for banks and financial institutions that may extend credit or make loans to the company and for other businesses and members of the public who deal with the company (SEC,2002).

### **Problem Statement**

The Enron's objective that has resulted in the company's problems was to maintain shareholders' value and in order to do this it had to 'hide' all the borrowings which it desperately needed to function. This was due to the fact that Enron was seriously involved in the energy futures derivative market in which only creditworthy and reputable companies are successful. The diversified conglomerate was making a lot less money than it was spending for example from 1997 to 2001 when it declared bankruptcy. Enron was earning a lot less than it was spending as shown in the illustration below. Enron spent USD\$ .106 Billion more on operating activities than its earnings. This amount was USD\$.937 billion in 1998, USD\$335 Billion in 1999 and a massive USD\$ 3.8 Billion in 2000. Consequently, Enron had been borrowing heavily using inter alia prepay transactions which involved basically trading with itself using bank finance (Kroger, 2004).

Again, Enron did not wish to show a debt amount for example USD\$ 5 million on its balance sheet, it would offer a futures transaction for the same amount and buy for example USD\$ 5 million plus a small percentage in interest to cover the time value of money and back the futures transaction within a year. Enron disguised such financial transactions by stating these as commercial transactions in its financial statement rather than debt financing. Enron indulged in a lot of other Financial Statement 'fiction', this includes inter alia, keeping

debt off the balance sheet, using tax havens to 'hide' financing affiliations with SPEs, giving out company shares freely to executives and recording the transaction as equity, inappropriately "influencing" its auditing with large fee payments and hiding losses from failed business ventures.(Reinstein & Weirich,2002).

### **Research Framework and Methodology**

Data on Fraud detection was collected from Secondary sources like Articles, Journals, Empirical literatures, Textbooks and Internet sources for analysis on fraud detection in a contemporary organisation. Qualitative methodology was applied for this research paper. Descriptive research design and analysis on the mechanism for fraud detection were employed to investigate the organisation fraud. For the purpose of analysis, a secondary data was used to analyse the various literature on fraud detection and important mechanism for fraud detection in an organisation.

The researcher obtained both primary and secondary data from the various case studies for the analysis of the fraud detection. The primary data was in the form of interviews with the concern officials. Secondary data was in the form of documents obtained from the internet, literatures reviewed and other articles for the analysis of the of fraud detection in an organisation.

The research used qualitative data analysis methods, and trend analysis was also used in analyzing the fraud detection. Trend analysis refers to an analysis of the fraud detection for some conservative years, comparing the differences years within those stipulated periods and an analysis was performed to evaluate the important mechanism for fraud detection.

### **Research Framework**

According to (Kroger, 2004) fraud is a broad legal concept that generally refers to an intentional act committed to secure an unfair or unlawful gain. Fraud generally constitutes violation of trust according to the Association of Certified Fraud Examiners (ACFE, 2010). According to a two year study of 1843 cases between January 2008 and December 2009 by ACFE 2010 report an average companies lose about 5% of their revenues through fraud, most of which comes in the area of occupational fraud, with assets misappropriation scheme constituting the largest of the known vehicles of fraud. Asset misappropriation scheme represented about 90% of the cases that were studied. The ACFE according to their 2010 fraud report, a chronological order starting from 1997 and ending in 2001, some of the key events at Enron are given below. It must be noted that some of the fraudulent activities at Enron might have occurred before 1997 but for purposes of analysis, due to time constraints this paper limits the analysis to periods between 1997 and 2001. In 1997 Chewco, one of Enron's main subsidiaries or investment partnerships worth 383 million US dollars was allegedly created by Andrew Fastow, former Enron's Chief Financial Officer.

Secondly, the Company was managed by Michael Copper who presided over attempts to hide the company's debts and inflate profits and keep them off the balance sheets of Enron, as noted by (Lehrer, 2002). In the same year 1997, Enron in acquired Portland General Electric for 2 billion US dollars paid for by stock swap. Chewco according to (Lehrer 2002) was funded by money- invested in Enron, in a partnership deal with an off-shore financial group controlled by Andrew Fastow. The investment was done without the knowledge of

Enron's investors, according to (Lehrer, 2002). In fact, Chewco's development is reported by (Lehrer, 2002) to have begun in 1993 when Enron entered into a 50/50 partnership deal called Joint Energy Development Investment Limited (JEDI) with California Public Retirement System (Calpers). Earnings from JEDI were not reported in Enron's earnings because the latter, at the material time, did not own over 50% share of JEDI. Fastow and Enron together were reported to be the owners of JEDI.

Thirdly, all the operations of Chewco and for that matter JEDI were kept off the balance sheet of Enron. It is reported by (Lehrer,2002) that Enron managed to keep 600 million US dollars off the balance sheet of Enron thanks to Chewco partnership arrangement. (Lehrer,2002) noted that when Federal Investigators of the US and the SEC found out later that Chewco was actually part of Enron, the latter was compelled to restate its earnings since 1997. Enron was also reported by the Washington Post Newspaper to have disclosed that it overstated its earnings by a whopping US\$567million since 1997. In 1998, Enron acquired Wessex Water, a British utility company which was renamed Azurix. Other several acquisitions were made including a water distribution scheme and power plant in Brazil. Most of these acquisitions which were very capital intensive failed financially and commercially. In 1998 Andrew Fastow got his promotion to Chief Financial Officer (CFO) position at Enron.

Fourthly, in 1999 Andrew Faslow created his own private company called LJM (Lea, Jeffery and Michael - names of Mr Fawtow's wife and children). The company was used to buy Enron's poorly performing stocks to strengthen the company's financial statements. The conflict of interest clauses involved in the deal were waived by Enron's board of directors to allow LJM's operations with Enron. UM was used to flat Enron's profits and hide its debts in order to prop up its share prices. Some analysts believe this period marked the genesis of the fraudulent accounting practices of Enron. In the same year of 1999 Enron launched its online internet-based commodity trading, Enron Online. Online, internet-based trading enabled Enron to further develop and extend its abilities to arrange, negotiate and manage its trading activities.

Again, in 2000 Enron entered into a partnership with Blockbuster to create video-on-demand service over high-speed internet. The announced 20-year deal collapsed just after about eight (8) months of the announcement. In the same year, Enron started its credit risk business whereby the company bought and sold credit risks from other companies in a bid to helping those companies to manage their risks. This division of Enron was run under what was called EnronCrcdit.com. Enron's revenues increased by more than 750%, rising from US\$13.3 billion in 1996 to USS100.8 billion in 2000 according to the Taipei Times (11<sup>th</sup> November, 2001). In the same year 2000, the Chairperson of Azurix, the Water Utility Company by name Rebecca Mark- Jusbasche, resigned from Enron. Enron's CEO, Kenneth Lay was noted to have tiled fraudulent 10-K report for Enron at the SEC.

Furthermore, Arthur Andersen LLP served as Enron's sole auditor throughout the energy giant's sixteen (16) years of operation before the bankruptcy. The company also conducted internal audit and consulting services for Enron while serving as the external auditor. In 2000, it was reported that Arthur Andersen earned a whopping 25 million US dollars and 27 million US dollars for audit work and non-audit fees respectively from Enron, according to records published by Online News Hour. The Auditor's lead partner, David Duncan, was

noted to have instructed the shredding of a huge chunk of Enron's documents upon the announcement of SEC's investigations into Enron's operations and transactions in 2000. The Washington Post Newsweek reported in 2002 that the shares of Enron sank by 20% following admission by Enron to the SEC's enquiry that there were conflicts of interest between Enron and several of the partnerships through which and with which the company operated.

In mid-2000 the company's market capitalization was as high as US\$60 billion (about 70 times its earnings and 6 times its book value) according to (Berenson, 2001). These remarkable results were indicative of stock market's high expectation about Enron's future prospects at the time. As indicated above, the shares of Enron plummeted in 2001 from the high of US\$90 per share recorded in mid-2000 to as low as US\$1 per share in November 2001, causing shareholders to lose nearly US\$11 billion. This massive drop in the share price occurred after the SEC began investigation into the company's activities. Enron could hardly explain to its shareholders and bond rating agencies, the transactions that led to the major share price fall, according to the Business News of the New York Times. Enron was also noted by (Berenson,2001) of the New York Times, to have used its USD\$3.3billion credit line due to some major liquidity challenges that it faced, and was ever asking for more. (Berenson, 2001) also reported that some energy companies were also avoiding certain trades that had closure periods exceeding a few weeks with Enron.

Lastly, the SEC began investigations into Enron's operations in November 2001 according to (Berenson, 2001) of the New York Time newspaper. Jeffrey Skilling resigned as Chief Executive Officer (CEO) of Enron in August 2001. He was then replaced by his predecessor Kenneth Lay. The company also ousted Andrew Fastow, its Chief Financial Officer in October, 2001. According to the Business section of the Washington Post Newspaper in 2001, Enron field revised financial statements with the SEC for the previous five (5) years in November 2001. The revision involved accounting for USD\$586million in losses as noted by the Washington Post (September 30. 2004). On December 2, 2001, Enron filed for bankruptcy under Chapter 11 of the United States Bankruptcy Protection Code. At this time, the assets of the company were valued at US\$63.4 billion according to the New York Times. This meant that the collapse was noted as the biggest corporate bankruptcy in the history of the United States at the time. A bigger corporate collapse however occurred later in 2002. The case of WorldCom refers.

### **Main Findings of the Study**

The empirical data analysis from the primary, secondary sources and the other literature reviewed sources has shown that fraud detection and examination as well as financial statement fraud and assets misappropriation and others were possible due to the results from the study enumerated as below:

The paper uses Non-financial and financial measures like the financial statement analysis, gross margin analysis, Altman's Z-score Bankruptcy predictor and the modified Altman's Z-score to determine show soon Enron's Fraud could have been determined.

### **Non-Financial Measures for Enron**

The nonfinancial measures such as reported increases in revenue without a corresponding increase in operations should be seen as an alert to the possibility of fraudulent activity. Enron's revenue in 1996 was USD\$ 13.3 Billion and this drastically increased to USD\$100 Billion in 2000 (Enron, 2000). This has indicated 751% increased and if auditors were doing proper audit, this should have alerted the auditors about Enron's practices. On an annual basis, the 50% increases in revenue from 1998 to 1998 and the 30% increases in revenue from 1998 to 1999 and then greater increases of 250% in Revenue from 1999 to 2000 should have been backed by some significant productivity changes in business operation (Nugent, 2003). However, although Enron was expending through aggressive diversification, it was making significant losses in the new areas which should have been a "red flag" for auditors if were to be doing proper auditing (Enron, 2000).

### **Altman's Z-Score Bankruptcy Predictor**

A bankruptcy prediction implies that there could be fraudulent activity on-going or yet occurs. This is because Altman's Z-Score bankruptcy predictor uses a combination of financial ratios to determine whether bankruptcy is on horizon. If the financial ratios are not high enough, it shows business inefficiency that could have caused by fraudulent activity. And since from analysis expenditure/Sale ratio would be high because Enron is expending not in operation but purchases of business and this could help to predict fraudulent act of bankruptcy in the business, (Caouette et al., 2008). The illustration in table 1 shows that, 1997 and 1998, Enron's Z-score was well below 'distress' level, although this increased slightly in 1999 and 2000, the Z-Score still remained well below the 'safe zone'. The table 1 illustrates the Enron's Z-score trend from 1997 to 2001 support this fact and presented as the below;

Altman's Z-Score for Corporate Bankruptcy Prediction

The Altman's Discriminant Function Algorithm, Z-score is given by the following formulae

$$Z = (1.2 * X1) + (1.4 * X2) + (3.3 * X3) + (0.6 * X4) + (1.0 * X5)$$



**Tabel 1**

## Altman's Z-Score for Corporate Bankruptcy Prediction

	2001	2000	1999	1998	1997
X1=Working Capital/Total Asset	-0.03/3.4 =-0.008	0.02/3 =-0.006	-0.02/2.6 =-0.007	-0.02/3 =-0.09	-0.01/2.7 =-0.003
X2= Retained Earnings/Total Asset	1.6/3.4 =0.47	0.63/2.6 =-0.23	0.93/2.6 =0.242	0.84/3 =0.28	0.69/2.7 =0.255
X3=EBIT/Total Asset	0.67/3.4 =0.197	0.69/3 =-0.23	0.63/2.6 =0.242	0.11/3 =0.036	0.91/2.7 =0.337
X4=Market Value of Equity/Book value of Total Debt	1.64/1.77 =0.926	1.38/1.62 =-0.851	1.13/1.48 =-0.763	1.2/1.73 =-0.739	1.28/1.4 =0.888
X5=Net Sales/Total Assets	1.65/3.4 =0.485	1.49/3 =-0.496	0.84/2.6 =0.323	0.81/3 =0.27	0.82/2.7 =0.303
Z=Overall Index of Corporate Health	1.2(-0.008)	1.2(0.006)	1.2(-0.007)	1.2(-0.009)	1.2(-0.003)
Z=(1.2*X1)+(1.4*X2)	+1.4(0.47)	+1.4(0.433)	+1.4(0.357)	+1.4(0.28)	+1.4(0.255)
)+	+3.3(0.197)	+3.3(0.23)	+3.3(0.242)	+3.3(0.036)	+3.3(0.337)
(3.3*X3)+(0.6*X4)+	+0.6(0.926)	+0.6(0.851)	+0.6(0.763)	+0.6(0.739)	+0.6(0.888)
(1.0*X5)	+1.0(0.485)	+1.0(0.496)	+1.0(0.323)	+1.0(0.27)	+1.0(0.303)
=	=	=	=	=	=
-0.0096+	0.0072+0.6062+0.759+0.5106+0.496	-0.0084+	-0.0108+	-	-
0.658+0.6501	0.4998+0.7986+0.4578+0.323	0.392+0.1188+0.4434+0.27	0.0036+0.357+1.1122+0.5328+0.303		
+0.5556+0.485					
=2.3391	= 2.379	=2.0708	=1.2134	=2.3014	

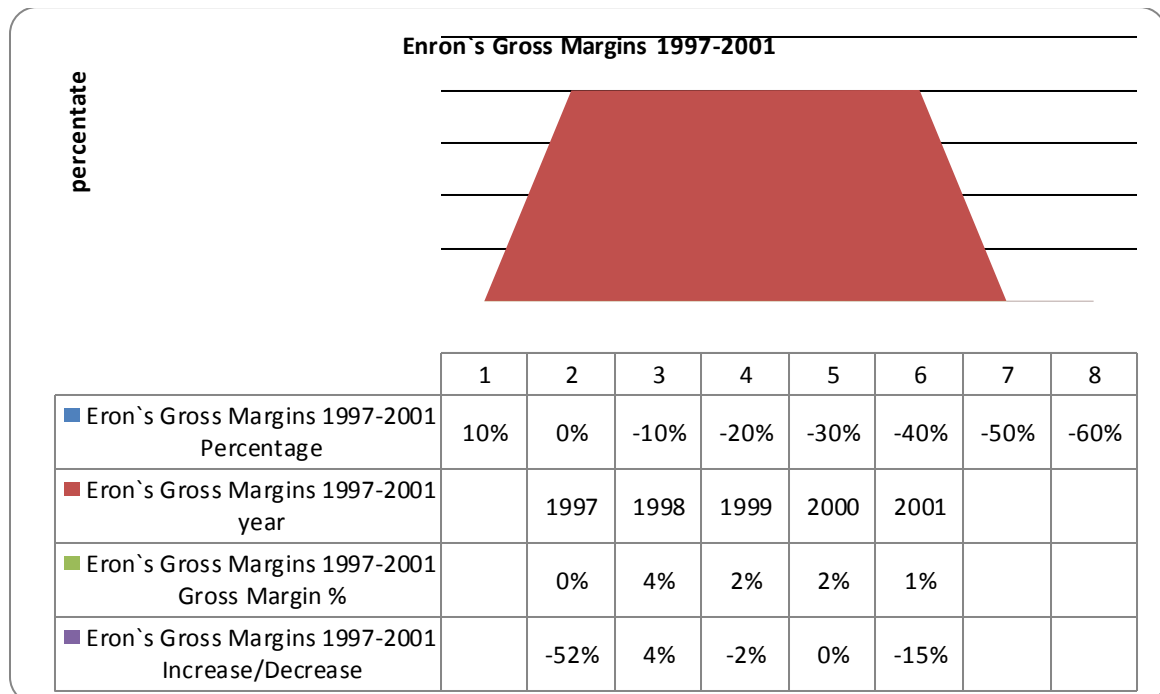
Furthermore, as mentioned in this paper above, Enron was spending more than it was making by conventional methods i.e. revenue. Therefore, if Enron was showing the source of funding for its high operations financings, then the source should be 'audited' to ensure compliance with accounting regulations.

### Gross Margin Test

A gross Margin: Is simply net sales minus cost of goods sold. The test is a crucial determinant of business success as it measures operational efficiency. An increasing gross margin or converging is an indication of increasing profitability and operational efficiency. Additionally, a diverging gross margin can also imply fraudulent activity (Nugent, 2003). However, as illustrated in figure 1, Enron gross margin test, sales divided by gross margin shows a decrease of 52% from 1996 to 1997, diverging and indicating operational inefficiencies, an increase of 4% from 1997 to 1998, a decrease of 2% from 1998 to 1999, no movement from 1999 to 2000 and a decrease of 1% from 2000-2001, (Nugent, 2003).

This means that as early as 1997 there was a major sign that Enron was experiencing serious operational inefficiencies. Also while the annual difference from 1998 to 2001 were only minor as shown by the graph trend line, the fact that they were fluctuating up one year, and down then next and so on, indicates that the financial statements were being manipulated and window dressing in terms of items not being reported in the correct period, (Nugent, 2003). The figures in Figure 1 were diagrammatically presented as follows:

**Figure 1**

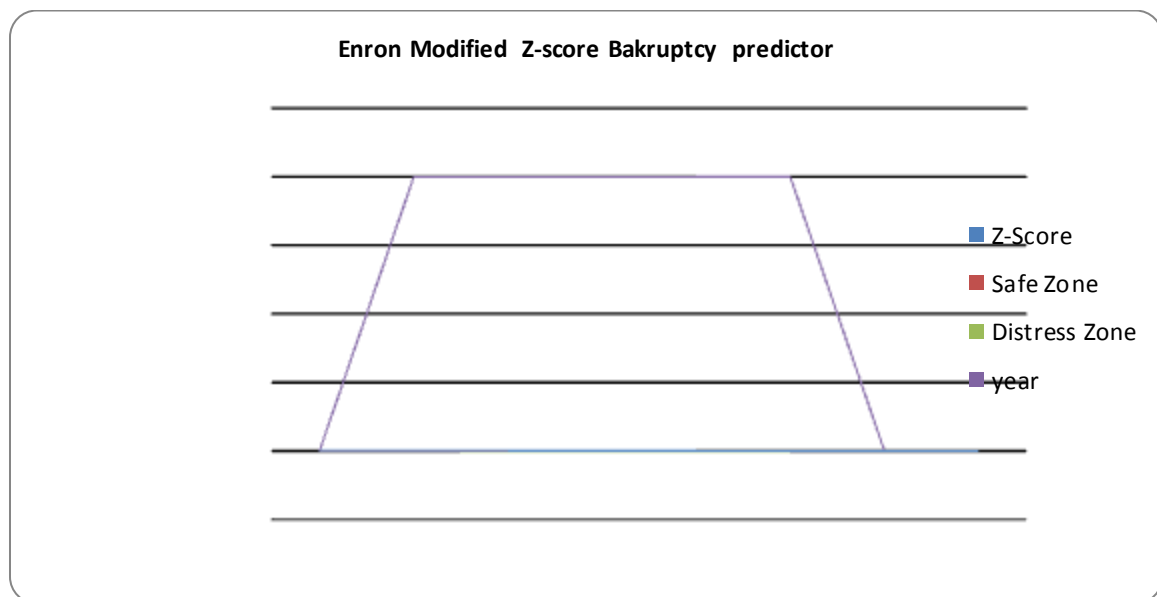


## Modified Altman Z-Score

The modified Altman Z-score can be used with an adjusted  $x_4$  – Market Value of Equity/Book Value of Total liabilities value, if the gross margin is divulging as it also shows a more accurate determination of credit risk in terms of identify changing condition (Nugent, 2003). Consequently, the adjustments for  $x_4$  which is usually .6 are illustrated in figure 2 and as shown, the 1997 was left as .6-no adjustment as the starting points of the trend analysis and as the 1998 gross margin was an increment from 1997 -4% this was also left as .6. However, there was a negative gross margin of -2% movements from 1998 to 1999 and as such,  $x_4$  were adjusted by 200% to -.6 as explained.

Again, as there is no gross margin movement from 1999 to 2000 and because the movement from 2000 to 2001 is still a decline, the same  $x_4$  adjustment i.e.-.6 is employed. This is explained in figure .2 as Enron's Modified Altman Z-Score. As clearly shown, the adjusted  $x_4$  makes Enron's vulnerability much clearer as the Z-score were all dangerously below the distress zone. The figure 2 could be diagrammatically presented as below:

**Figure 2**



As such it is very clear that a good or scrutinizing auditor who would employ forensic auditing techniques could have spotted Enron's inconsistencies as early as 1997. However, for some reason this was not the case. All the tools employed above, indicate that Enron's difficulties were apparent a lot earlier than 2001.

## Discussion the Implication of the Study

This section forms the conclusion of this study and aims of the study as well as what has been discussed in the literature will be discussed in relation to the secondary and primary research that has been carried out. The chapter is going to take a conclusion view on the study based on the analysis, information and result that has evolved during the course of

the study. Recommendations are also given at the end along with a proposal of areas that will need further development and attention.

The end of this research has been to generally fit the aims and objectives of this study. Recommendation for the future is however made to further improvement upon the findings of this research. Based on the findings of the research, it is recommended that:

Enron was engulf with a whole lot of operational inefficiency, therefore, a business that aim to be successful should not tolerated any operational inefficiency, this research paper recommend that top executives and auditors who wish to maintain their reputations and shareholders value must deployed forensic accounting methods(Bawaneh,2011).

External auditors contracted to do audit work must not be allowed to perform any or other duty or function. They must solely perform only audit responsibilities in other to ensure their independence and objectivity.

Auditors auditing financial statement should adapt forensic auditing techniques or work with forensic accountants to enhance their ability to detect financial statement fraud in a timely and cost-effective manner. They should also acquaint themselves with data analysis tools and fraud-detection software.

The regulatory authorities, financial institution and the organizations must ensure that law instituted after the collapse of Enron and other world leading organisation are adhere to so as regulate the activities of auditors and the financial systems.

On the whole, the research feels that the objectives of this research have been met and the recommendation for the fraud detection and examination would introduce a paradigm shift to the individual organisation and corporate investors.

## Reference

- ACFE (2010, December).Report to the national on occupation fraud and abuse. Retrieved 5<sup>th</sup> December, 2016 from; [http://www.acfe.com/uploadedFiles/ACFE\\_Website/Content/documents/2008-rtnn.pdf](http://www.acfe.com/uploadedFiles/ACFE_Website/Content/documents/2008-rtnn.pdf). Association of Certified Fraud Examiners.
- Altman, E.I.,Caouette, J.B.,Narayanan P., & Nimmo R. (2008).Managing credit risk: the great challenge for global financial markets,(2<sup>nd</sup> Eds) New Jersey, USA: John wiley & Sons
- Bawaneh, S.S., (2011). Forensic accountant in the digital age interdisciplinary. *Journal of Contemporary Research in Business*,3 (3).75-86
- Berenson, A.(2001).SEC open investigation into Enron business day. The New YouthTimes(June,1st,2016.<http://www.bauer.uh.edu/swhiesenant/beneish%20earnings%20mgmt%20score.phf>.
- CBC(2006, April).Enron-corporate governance scandal. Retrieved from <http://www.cbc.ca/news/business/story/2016/05/27/entron-bkgd.Canadian> Broadcasting Corporation.

- Coram, P., Ferguson, C., & Moroney, R., (2008). Internal audit, alternative internal audit structures and the level of misappropriation of assets fraud. *Accounting & Finance*. 48 (4). 543-559
- Enron (1998, December, 31st). Annual Report
- Enron (2000 a, March, 30th). From, 10-k
- Enron (2000, December, 31st). Annual Report
- Hanson, K. (2002). Enron scandals from anti essays your source for research papers, pp. 1-15.
- Kroger, J. (2005) Enron, fraud and securities reform: An Enron prosecutors perspective, *University of Colorado Law Review* 76, 57-137.
- Lehrer, J., (2002). Enron: After the collapse, OnlineNewsHour, MacNeil/Lehrer Production, (1996-2011). <http://www.pbs.org/newshours/bb/business/enron/player6.html>
- Petrols J., (2011). Financial statement fraud detection: An Analysis of Statistical and Machine Learning Algorithms. *Auditing*. 30 (2) 18-24
- Nugent, J.H., (2003). plan to win: Analytical and Operational Tools, Gaining Competitive Advantage, (2<sup>nd</sup> Eds). USA: McGraw Hill.
- Reinstein, A. & Weirich, T. (2002). Accounting issues at Enron, *CPC Journal*, 72(12) 20-25.
- SEC (2002, June). All about auditors: what investors need to know, Retrieved 3<sup>rd</sup> June, 2016 from <http://www.sec.gov/investor/pubs/aboutauditors.htm>. U.S. Securities and Exchange Commission.