The Influence of Ownership Structure, CEO Duality, Audit Type, Board Independence and Triple Bottom Line on Reducing the Financial Distress of Egyptian Companies: Using Z-Score Model

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Abstract:

The study examines the impact of CG measures on corporate failure of 55 listed companies whose shares are among Egypt's 100 most actively traded shares from (2010-2018). The results can be used to identify which specific CG mechanisms (i.e., ownership structure, CEO duality, audit type, board independence) reduce corporate failure which can in return greatly contribute to the widespread awareness and implementation of these CG practices among listed companies.

Design/Methodology

The research methodology relies on using appropriate empirical and statistical analysis to test research hypothesis such as descriptive statistics, correlation analysis, path analysis and multi-group analysis using structured equation model using (AMOS), and panel least square regression analysis using E-views. Data about CG, accounting variables, and corporate failure was officially provided by the Egyptian Stock Market. The analysis used Egyptian Disclosure books, Coface Egypt Finance yearbooks and company's website provided to construct datasets.

Findings:

The study's results indicate that there is a negative significant correlation between CG measures (top management, institutions, private sector, audit type, board independence) and corporate failure. The main enthusiasm of this study is the limited research conducted on the area of financial distress in Egypt. In addition, the lack of research examining the usefulness of operating cash flow and Z-Score model when evaluating the financial position (failure) of Egyptian companies. First, the study documents an interaction effect of accounting variables, and CG on corporate failure

which CG measures and firm accounting variables can reduce the likelihood of companies' financial distress. Also, it examines whether or not firms engage in CSR activities with a good CG system, can help to prevent companies from failure.

Keywords: Corporate Governance, Corporate Social Responsibility, Financial Distress, Z-Score Model, Developing Countries.

1. Introduction

Since 2000, Egypt has been working on modifying its laws and listing additional CG regulations. On 23rd March 2010, Egypt initiated a new index for listed companies and called it *Standard and Poor's/Egypt Stock Exchange Economic Social and Governance Index* (S&P-EGX ESG). There is some recent evidence that organizations are trying to broaden the basis of their performance evaluation from a short-term financial focus to long-term social, environmental, and economic impacts and value added. CG is concerned with the establishment of an appropriate legal, economic, and institutional environment that would facilitate and allow business enterprises to grow, and survive. A firm's decision should also be compatible with the interests of different players within and outside the company (Jamali, et al., 2008). This should not contradict generating profits while maintaining the highest standards of governance internally.

Good CG is not simply about minimizing the risk of corporate failure and dealing with those accountable for fraud. It is also a fundamental prerequisite for improving economic performance, facilitating access to capital, and improving the general investment climate. While, poor CG weakens the company's position and can pave the way for financial difficulties and even fraud.

Recently, CG mechanisms became the center of business discussions and intellectual gatherings. This is attributed to the modern approach of ownership separation from management (Effiong, et al., 2012). Therefore, corporate collapse is a major reason to change CG regulations. As well as, Insolvency is getting a long-lasting threat for many companies irrespective of their size and operations. Evidence shows that in the last two decades, the frequency of business failures was higher than any time since the early 1930s (Rees, 1995).

Economists attribute business' failure to various factors, e.g., high interest rates, recession-squeezed profits, heavy debt burdens, government regulations and the nature of operations. Studies of corporate failures in the U.K, U.S, Canada and Australia found that small, private and new established companies with ineffective control procedures and poor cash flow planning are more exposed to financial distress than large well-established public firms (Charitou et al., 2004).

Evidence shows that the market value of the distressed firms declines substantially prior to their ultimate collapse. The suppliers of capital, investors and creditors, as well as management and employees, are severely affected by business failures. The auditors also face the threat of a potential lawsuit if they fail to provide early warning signals about failing firms through the issuance of qualified audit opinions. Thus, the need for reliable empirical models that predict corporate failure quickly and accurately is essential to enable concerned parties to take either preventive or corrective action (Charitou et al., 2004).

2. Research Problem

The World Bank Report (2004) stated that corporate failures, privatization, corruption, and new demand for foreign and domestic investment have increased the need for good CG in Egypt. The case of Egypt as a developing country seems to be challenge because of the increase in misconducting among different financial institutions, which results in the decrease of their financial performance.

Most researchers state reasons of failure as their inability to repay their debt and interest obligations, i.e. lack of sufficient cash flows from operating activities. Poor political and economic governance, including corruption and weak enforcement of law are the main reasons that weaken CG in several African Countries (ADB, 2007). The Egyptian case is even more complicated due to lack of enforced laws in general and for CG rules in particularly (McGee, 2010). Therefore, the paper examine to what extent, the CG measures, impact the incorporated failure of listed companies in Egypt, and how can it be developed to change corporate failure to better financial performance.

3. Literature Review and Hypotheses Development

According to Francis (2000), the concept of CG gained prominence in the 1980s because this period was characterized by stock market crashes in different parts of the world and failure of some corporations.

There was also a growing realization that managers are to run firms while boards are to ensure that firms are run in the right direction. Prevention of corporate failure was not the only reason that led to adoption of CG principles. But there was a growing acknowledgement that improved CG was crucial for the growth and development of the whole economy (Mulili et al, 2011).

CG is essential to continue operating in any organization. This is due to the developments brought by globalization; which is a multidimensional concept that includes economic, political, social, and cultural changes within and across countries. Furthermore, the open market concept triggers more economic growth.

However, weak CG can cause corporate failure for major corporations such as Enron and World.com (Almadani, 2014)**.** Good CG reduces risk, stimulates performance, improves access to capital markets, enhances the marketability of goods and services, improves leadership, and demonstrates transparency as well as social accountability.CG and corporate failure have been a hallmark in the literature of accounting and finance. The impacts of CG on firm performance and to what extents CG can prevent companies from falling into financial distress have been investigating in many studies (Abouelsood, 2007).

Kun (2007) and Abdel-Shahid (2001) stated that CG is nothing but the process and the structure used to run the business for increasing its value and also increasing accountability of the management, shareholder value in the long run, while taking into consideration the interests of the other stakeholders. However, Solomon & Solomon (2004) state that there is no single accepted definition of CG and their study explains two general approaches in defining CG based on two CG relevant theories.

The first approach reveals a specific perception that CG is limited to the association between a company and its shareholders. This is the conventional finance trend expressed in the agency theory. But the second approach reflects a broader insight for CG, where CG can be seen as a set of relationships, not only between a firm and its owner's (shareholders) but also between a firm and a broad range of other stakeholders' (e.g., employees, customers, suppliers, bondholders). This approach

perceived by the stakeholder theory. Kaplan (1997) suggested that CG is a relationship oriented rather than market-based.

According to Abdel-Shahid (2001), various internal and external factors contribute to the proper implementation of the CG system. The internal factors include a good Board of Directors, suppliers of capital, managers and stakeholders. External factors are relevant to the external environment and include laws, regulations, competitive markets, the media, transparency and reporting principles (AbouElsood, 2007).

Sound CG practices have become significant worldwide to stabilize and strengthen global capital markets and protect investors. Therefore, it helps companies improve their performance and attract investment (AbouElsood, 2007). In addition, strong CG system can make a considerable contribution to the prevention of corruption and fraud (Committee on Corporate Governance, 1998). The International Finance Corporation (IFC) expressed that good CG optimizes operational and financial efficiency, improves access to outside capital, and reduces the cost of acquiring capital and improves the company image (Abou Elsood, 2007).

CG theories started with the agency theory, stewardship theory, stakeholder theory and resource dependency theory, political theory, legitimacy theory and social contract theory. In general, these theories discuss the cause and consequence of variables, such as the formation of board structure, audit committee, independent non-executive directors and the organizational and social responsibilities of the organization rather than its regulatory structures.

In specific, agency theory emphasizes that the conflicts of interest between shareholders and managers are a core issue of the agency relationship (Jensen &Meckling, 1976; Fama, 1980). Poor CG can lead to agency problems which act as a driver in stock market crash. Also, agency problems arise when there is ownership concentration (Bhattacharya & Mishra, 2011).

This means, on the one hand, the owners require information to evaluate the performance which can result in information asymmetry. This can lead to agency problems and adverse selection because the managers may act in their own interests to maximize their personal wealth (Alghamdl, 2012). On the other hand, owners want to protect their interests by creating appropriate incentives for the managers and by imposing monitoring costs to limit the irregular activities of managers.

To sum up, CG has embraced agency theory for a long time as a framework.

In contrast, stewardship theory presents a different model of management, where managers act in the best interest of the owners. The fundamentals of stewardship theory are sociology and psychology, which focuses on the behavior of executives (Yusoff & Alhaji, 2012). This means that managers have main incentives e.g. reputation, social recognition and appropriate knowledge to make the correct decisions and to enhance shareholder value (Clark, 2004). Stewardship theory tries to find the explanation and solutions to the principal agent relationships.

However, according to stakeholder theory, society expects corporations to act in a manner which is beneficial in terms of their social or economic role. It stipulates a balance between the interests of the firm diverse stakeholders to ensure that each interest is satisfied. Nevertheless, scholars argue that stakeholder theory is limited because it identifies the shareholders as the only interest group of the firm. Yusoff & Alhaji (2012) suggested that stakeholder theory is closer to explain the role of CG than agency theory. This is because CG can guarantee the protection of all stakeholders' interests. In addition, the stakeholder perspective extends the scope of CG and accountability (Szabo & Sorensen, 2013).Also, Alghamdl (2012) suggests

that the stakeholder model may be a more beneficial CG model for a firm in complex situations and financial crises.

Therefore, enterprises should take into account all stakeholders' interests and treat them equally. Culpan and Trussel (2005) confirmed that agency theory clarifies the extent of unethical practices, while stakeholder theory is useful in explaining the unethical practices which cause to damage employees, creditors, investors, government and society.

In conclusion, a mixture of these theories describes a more effective and efficient CG system rather than assuming CG based only on one theory (Yusoff & Alhaji, 2012). The debate on the focus of management and; whether companies are managed for the best interests of shareholders and any other stakeholders; became a recurring question. This is due to the corporate financial crises and scandals of Enron, WorldCom, Tyco, and many others. These scandals attracted the attention of the public because of their effect not only on shareholders but on the community as a whole. The public was interested in CG mechanisms that can effectively maximize the welfare of stakeholders.

In the Egyptian Context many changes have happened in the last few years. For instances, adopting extensive economic reforms through the privatization policy of its public sector companies, issuing a necessary package of laws and regulations for more stability in the Egyptian economy. Moreover, the beginning of initiating CG rules to most listed corporations. Egypt's economy, as an economy in transition, is oriented towards market-based governance.

Egypt code of CG was drafted in October 2005 to establish the CG principles guidelines and standards in Egypt. The rules governing CG are neither obligatory nor legally binding. Corporate sector in Egypt is characterized by being closely held which means that it is controlled by individuals or by "family groups". Few companies could be defined as "widely held" and many listed companies meet the "closely-held". This is considered the main barrier to the implementation of CG principles as managers lack autonomy, flexibility, and objectivity to monitor company activities and to achieve its goals.

Problems facing CG reform are (1) Poor political and economic governance as well as fraud and weak rule of law. (2) Low level of disclosure. (3) Low quality of the regulatory and institutional framework to enhance transparency and accountability. (4) Limited knowledge of stakeholder's responsibility to invest in CSR activities. (5) Global principles are not suitable for local market conditions and economic structures (ADB, 2007). CG reform is considered the core problem of the economic transition which is how to convince economic actors to act differently, to become efficient, to look outwards, and to search for new opportunities. Therefore, CG reform is a long-term process.

In June 2009, the World Bank issued the ROSC[1] report for Egypt. This ROSC proposes a number of reforms to regulations, and institutions that are considered essential in building a modern CG framework. In response to the revised OECD principles of 2004, as well as the current global financial crisis, the World Bank has updated its methodology, revising its old set and developing a new set of about 700 data points that can be considered a benchmark for a country's CG framework against the OECD principles of CG.

[1] Report on the Observance of Standards and Codes (ROSC): corporate governance country assessment. The World Bank conducted the ROSC report three times in 10 years (2001- 2004 - 2009).

According to the Egypt Code of CG in 2011, companies are required to prepare a CG report where they should disclose the degree of compliance to each CG rule in the code. If the companies failed to fulfill any of the CG rules, they are required to clarify the reasons (Abdel Nazir, 2014).

EGX is a pioneer in introducing corporate sustainability and social responsibility concepts. EGX was the first stock market in the MENA region to use the sustainability index[2](S&P/EGX ESG). EGX became a member of the Sustainable Stock Exchanges Initiative (SSEI)[3] in 2012. EGX seeks to improve the awareness of CSR in its 2013-2017 strategy, through encouraging listed companies' investors and other stakeholders to get more involved in their CSR. In addition, it seeks to participate in enhancing and developing the Economic Social and Governance (ESG) concept between stock exchanges regionally and worldwide. Several scholars have argued that CG is precondition for applying CSR.

The researcher concludes that applying CG rules and CSR could benefit the community as well as the business. Some companies prefer not to spend money on CSR activities because it is voluntary and consume a lot of money at the beginning. Moreover, several scholars (Solomon, 2013) believe that failures in applying CG may be one of the main important reasons for corporate problems. Therefore, a better understanding of the effect of CG in reducing financial distress in a difficult environment is needed. The global economy has changed as companies have started to operate in a global economy with a more severe competition. Bankruptcy rates have risen enormously in different countries and companies were more exposed to corporate failure.

Understanding corporate failure has been one of the central topics of business studies for decades driven by the concern of various stakeholders in organizations and its dramatic consequences. The initial work of Fitzpatrick (1932) following the stock market crash in 1929 has developed the prediction of business failure (Common Wealth of Australia, 2010).

The world has witnessed successive financial crises i.e., Mexico 1994-1995, Asia in 1997-1998, and Argentina in 2001. Financial crises and corporate failures are considered to be a problem to economic welfare (Abouelsood, 2007). Recently, the global financial crisis in 2007 was a major setback for governing many financial institutions. Many sectors in the economy went into recession causing decline in stock prices, losses in the firm's investments, and weak growth opportunities of many firms (Abouelsood, 2007).

Crowther and Aras (2009) stated that the agency problem may be one of the reasons of corporate failure. Corporate failure includes several parties and imposes large

[2]EGX introduce sustainability index in cooperation with S&P and EIoD in March 2010. EGX is a member of the Sustainability Working Group (SWG) since March 2014, one of the World Federation of Exchanges (WFE) working groups. SSEI is a peer-to-peer learning platform for exploring how exchanges, in collaboration with investors, regulators, and companies, can enhance corporate transparency and ultimately performance on ESG issues and encourage sustainable investment.

[3]The SSEI is co-convened by the UN-supported Principles for Responsible Investment, the UN Conference on Trade and Development, the UN Environment Programme Finance Initiative, and the UN Global Compact.

costs. At the macro level; costs of corporate failure do not affect internal stakeholders, management, and employees only but it extends to the direct environment of the firm, shareholders, creditors, suppliers and the economy as a whole (Wu, 2004). At the micro level, failed companies are obliged to engage in expensive actions such as selling assets at low prices. Therefore, the costs of corporate failure may cause a downward stream for the whole economy (Abou el sood, 2007).

Scholars stated that corporate failure imposes direct and indirect costs. Direct costs include lawyers' fees, accountants' fees, and value of time spent by the managers in dealing with failure. Indirect costs include loss of sales, profits and borrowing money (Abou el sood, 2007). Therefore, organizations have to exist in their social, economic and legal environment in which this association adds value to the resources of the corporations. Most researchers suggest that management is the source of problems in initiating corporate failure (Common Wealth of Australia, 2010).

Corporate failure begins to be clear as financial failure, first in weak performance then in signals warning of imminent failure and finally in insolvency or bankruptcy (Common Wealth of Australia, 2010). Business failure is not a result of a single deficiency but of a series of inadequacies. Thus, if the resources of the organizations are inadequate to respond to the internal and external pressures, the firm cannot create valuable strategic position. If no corrective actions are taken to restructure the resources with the environment requirements; the failing firm enters into an organizational downward spiral (Crutzen &Van Caillie, 2007).

Corporate failure can happen because of many reasons, e.g. (i) Ineffective financial risk assessment and management; (ii) Ineffective working capital management; (iii) Inadequate financial planning and budgetary control ;(iv) Poor industrial relations; (v) Entry of a new competitor and loss of customers; (vi) Quality problems and technical obsolescence, (vii) Unsuccessful mergers/acquisitions.

According to the IMF (2006) the reasons for Asian financial crises were the weak CG and regulatory systems. Kim (2008) stated that after the financial crises several regulations were developed for a better CG system. The regulations were to increase the number of independent directors on the board; to separate the positions of Chairman and CEO; to create an independent audit committee; or nomination committee; to increase performance evaluation of the committee and remuneration committee.

The external factors giving rise to corporate failure. The first factor is intense competition accompanied by lack of available resources. Second factor includes business fluctuations, changes in demand and periods of recession. Third factor involves regulatory and labor actions such as labor strikes, government issuing tax laws, price regulations, lowering or eliminating tariffs. Fourth factor refers to natural casualties such as earthquakes, fire, floods, etc (Abou el sood, 2007).

Subsequently, it is necessary to know the signals of the corporate failure phenomenon. Aiyabei (2002) stated that major corporate failure indicators can include company continuous losses, fluctuating profits, declining retained earnings, reduced dividends, inability to meet its obligations due to deficient cash flows, closure of some branches, decline of share price, and dismissals of employees. Some scholars specify other indicators such as legal bankruptcy, difficulty in obtaining credit even at a high interest rate, selling account receivable to creditors at discounted price, rapid depreciation of assets, unexplained decline in market value of securities, non payment of preferred stock dividend, and when Earnings Before Income Taxes, Depreciation and Amortization (EBITDA) less than interest expense and finally restructuring debts (Abou el sood, 2007).

Crutzen & Van Caillie (2007) stated that financial failure signs can also include (i) The low market share of the business, which leads to poor sales relative to high expenses; (ii) Decline in competitiveness and profit shown by financial ratios; (iii) Low profitability that slows cash flows; (iv) Lack of cash flow that leads to a lack of liquidity; (v) Management are obliged to seek external financing but weak relationships with stakeholders make raising equity difficult and increase debt and then the firm turns into a corporate failure. Corporate failure impacts the shareholders, creditors, and other stakeholders. However, understanding the difference between failure terms such as business failure, financial distress, and insolvency is essential. The corporate failure concept is defined from financial perspective by Beaver (1966) as the inability of a company to pay its financial obligations. From a legal perspective, corporate failure is the firm's inability to meet obligations of its creditors.

Wruck (1990) stated that financial distress is a situation where a firm's operating cash flows are not sufficient to satisfy current obligations. Firms enter into financial distress as a result of poor management, economic distress and decline in the firm's value (Wruck, 1990; Whitaker, 1999). Opler & Titman (1994) stated that financial distress[4] imposes costs on the firm as it creates pressures to take actions that can be harmful to shareholders, creditors and other stakeholders (Simpson & Gleason, 1999; Dowell et al., 2011; Solomon, 2013).

Andrade & Kaplan (1998) found out that financially distressed firms reduce capital expenditure and in some cases sell off assets at discounted prices. Furthermore, Jensen & Meckling (1976); suggest that financial distress increases the conflicts of interests between insiders (manager and controlling shareholders) and outside investors (Simpson & Gleason, 1999; Dowell et al., 2011).

Many scholars (Daily and Dalton, 1994; La Porta et al., 2000; Johnson et al., 2000; Mangena & Chamisa, 2008; Mangena et al., 2012) suggested that in such circumstances, effective CG arrangements become more critical for monitoring managerial opportunism in order to mitigate agency problems. The risk of corporate failure can be measured in this case as the probability that the company will enter a formal insolvency state. The managerial perspective of insolvency stresses the primary reasons for failure, which were identified as management failure, financial response (loss of long-term finance or lack of working capital/cash flow) and loss of market. If failure is due to the limitations of procedures derived to govern company operations, default may generate positive action by forcing management to reorganize the firm operations . Consequently, weak CG system can lead companies to financial distress. Also, customers are aware of the CSR of the enterprises towards the environment therefore, customer's opinion about firm activities may affect its financial performance. Hence, there is a relation between CG, CSR, and corporate failure. In conclusion, it has become clear that CG and CSR impact the company success and failure.

The purpose of reviewing and analyzing the literature is to highlight the CG measures that can be used to measure incorporated failure in Egypt. There has been a debate among researchers about what constitutes a better CG and whether there is a relation between CG and corporate failure.

Some empirical and theoretical literatures have examined the relationship between CG and financial performance. Some scholars have argued that CG affects

[4] Chan & Chen (1991) describe distressed firms as " they have lost market value because of poor performance, they are inefficient producers, and are likely to have high financial leverage and cash flow problems.

firm financial performance (Gompers et al., 2003, Lei & Song, 2004, Black et al., 2005, Zeitun, 2009, Bubbico et al., 2012, Lee et al., 2015, Cruz, et al., 2015).

Some scholars addressed the correlation between CG and firm performance. Firm performance is used as a proxy to reflect if a company has better performance or not, as a measure for success or fail. On the one hand, CG is measured as an independent variable. On the other hand, financial performance represents the dependent variable.

Black et al. (2005) examined the effect of CG practices on financial performance for 534 Korean public companies in 2001 using Ordinary Least Square (OLS). The researchers constructed a CG index called; KCGI. It consists of sub-indexes (shareholders rights, board structure, board procedure, disclosure, ownership parity) [5].The results show that there is a significant positive relationship between CG and firm market value. There is a causal relationship between an overall CG index and higher share prices in emerging markets. The researchers found out those Korean firms with 50% outside directors have 0.13 high Tobin's Q (which means 40% higher share price). However, Lei and Song (2004) investigated 17 variables measuring five CG mechanisms, such as board structure, executive compensation, ownership structure, executives' conflict of interest, and transparency standards. The researchers constructed a CG index to represent Hong Kong CG standards and ranked the listed companies according to this index. The results showed that companies with a better ranking in the CG model hold higher company value and investors are willing to pay premium for better CG standards.

In addition, Zeitun (2009) examined the impact of CG mechanisms (i.e., ownership structure mix and concentrated ownership) on the company's performance and failure for 167 Jordanian companies from 1989-2006. The findings showed that a negative correlation between ownership concentration and firm performance measured by ROA, Tobin's Q, while, there is a positive impact of ownership concentration on firm performance using Market to Book Value (MBVR). In addition, the research found that there is an important negative link between government ownership and a company's accounting performance. The ownership structure mixes have a significant coefficient only in Tobin's Q. Furthermore, the findings reveal that ROA has negative and significant correlation with the fraction of institutional ownership; and positive and significant relation with the market performance measure MBVR. The study suggests that ownership structure can also be used to predict corporate failure. Therefore, in order to boost company's performance and decrease failure, it is reasonable to limit government ownership to some extent. In addition, a particular degree of ownership concentration is required to boost the company's performance and reduce the chance of default.[6] Moreover, the study argued that larger and older companies have lower corporate failure. This means a firm has a high concentration in its ownership structure will have a higher risk of failure, no matter what the ownership mix is (government or foreign or institutional).

Cruz, et al., (2015) stated that total ownership concentration is not significantly related to the likelihood of financial distress. Their study examines the

[5] Ownership parity means direct ownership by largest shareholders.

[6] In Jordan, default is defined as a firm that had a receiver or liquidator appointed, was delisted from the Amman Stock Exchange in the period 1989 to 2006, or that stopped issuing financial statements for two years or more, since firms are obliged by law to submit their annual financial statements.

impact of CG mechanisms for the 118 financially and non-financially distressed[7] companies of the Spanish listed companies from 2007[8]to 2012 using the conditional logistic regression approach. The findings show that non-institutional investors decrease the likelihood of financial distress because they are more effective monitors for organizational results. Moreover, ownership by directors, especially the inside directors, reduces financial distress. Whereas, outside directors increase the likelihood of financial distress. Regardless of the number of the board meeting and audit committee size, there is a negative relationship between financial distresses. Eventually, the presence of female directors is linked to the likelihood of financial distress.

In addition, Lee et al. (2015) examined the role of CG in defining the extent to which the Enterprise Risk Management practices (ERM)[9] was adopted for 316 Australian companies that were listed in the Top 400Australian Securities Exchange (ASX) for years 2006, 2007 and 2008[10]. The key CG mechanisms investigated include board independence, segregation of the roles of CEO and board chairman, audit committee structure and the frequency of the meeting, CEO tenure and ownership held by executive and nonexecutive directors. Each firm is given an ERM ranges from zero (Non-existent) to two (Strong Compliance). The ERM index is based on the level of compliance revealed in the CG section of the firm's annual report. The finding suggests that each CG variable shows a significant positive impact on the ERM compliance when variables were separately explored. In addition, the findings show the existence and independence of the audit committee and its meeting frequency to be the main factors defining ERM compliance. The high level of ownership held by executive directors shows a positive effect on ERM despite the fact that the long tenure of CEO exerts a negative influence. In addition, companies with higher ERM compliance show better future performance measured by ROA and can manage corporate risk better compared to firms without ERM. However, this positive relationship is found in firms with a strong CG system only.

Bubbico et al. (2012) examined the impact of the CG system on the market value of the 34 financial institutions listed on the Italian Stock Exchange in 2010, using a cross-sectional data regression analysis. Tobin's Q is used as a proxy for value, while the quality of the CG system is measured by the CG Index (CGI)[11]. The

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[7] Financial distress is a situation where cash flows from operations are insufficient to cover current obligations.

[8]This time period is during and following the global financial crisis. Spain suffered a greater number of financial distressed firms than any other European Country.

[9]ERM is a new paradigm known has gained popularity among corporate managers because of corporate failure. ERM is designed to assist corporate executives and board of directors to identify and manage risks of enterprises in an integrated manner.

[10]The sample period covers the Global Financial Crisis period of 2007 and 2008; the research found that those firms with strong CG who have adopted more compliant ERM suffered less from the downturn of the crisis compared to those firms with weak CG and less compliant ERM.

[11]CGI is a scoring model that analyzes four different elements of CG (i.e., Board, Compensation, Shareholders' and Stakeholders' Rights, and Disclosure).

results show that there is a positive and statistically significant correlation between CG and performance. The CGI difference between the best and the worst firm in terms of CG is 47.09, and Tobin's *Q* value for the best company is 77.33%. This result encourages investors to make their investments with greater awareness and reduced risk.

Gompers et al. (2003) investigated shareholder rights as the CG mechanism for U.S.A 1500 large firms from 1990 to 1999. The researchers use 24 governance rules by constructing a GI as a proxy for the level of shareholder rights. The finding showed that firms with stronger shareholder rights had higher firm value, higher profits, higher sales growth, lower capital expenditures, and made fewer corporate acquisitions. Also, the results stated that CG is strongly correlated with stock returns during the1990s.

Moustafa (2007) tested the impact of some internal and external CG mechanisms on firm performance using gradual regression analysis. The researcher investigated the size and independence of board of directors, block holders (i.e. shareholders own more than 5% of stocks), and whether firm stocks were traded in external stock exchanges. The study examined 85 nonfinancial Egyptian companies and used ROA, Tobin's Q and MBVR to measure financial performance. The results show that shareholders own more than 5% and stocks traded in external stock exchanges have a positive impact on financial performance while CEO duality have a negative effect. The findings of this study come in accordance with the results of Bhagat and Boiton (2008) which examine the impact of CG mechanisms on performance of American companies from 1990 to 2004 using regression analysis. The researchers used board independence, the number of board of directors, the stocks owned by the executive managers, and if the CEO is the Board Chairman to measure CG. The Tobin's Q, ROA, and the market value of stocks were used to measure financial performance. There was a positive relationship between CG mechanisms and financial performance using ROA and Tobin's Q. While, there was no relation between applying CG mechanisms and market value of stocks.

Heenetigala and Armstrong (2011) also acknowledged the previous findings. The researchers investigated the relationship between CG practices and firm performance of a sample of 37 companies selected from the top 50 listed companies in Sri Lanka from 2003[12] to 2007. The data were analyzed using Spearman's correlations and analysis of variance. CG practices were measured by (separate leadership, board composition, and board committee) while, performance was measured by ROE and Tobin's Q. There was a positive relationship between CG practices and firm performance which have resulted in higher profitability and share price performance. In contrast to the previous literature, Dabor et al., (2015) did not find that all CG mechanism have a positive impact on performance. The researchers investigate the effect of CG on firm performance of 248 Nigerian companies from 2004-2013 using panel analysis. CG was measured by board size, board independence, board gender diversity and ownership structure, while performance was measured by both ROA and ROE.The result of the study reveals that large board size reduces profitability, while board independence has a weak positive relationship with profitability. The research also discovered that board gender diversity does not have any significant impact on firm performance. Finally, the finding shows that ownership structure does not have any significant impact on performance.

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[12]In 2003 the Government had introduced CG guidelines for listed companies.

Both Dabor et al.(2015) and Alabdullah et al. (2014) reached similar findings. Alabdullah et al. (2014) examined the impact of CG mechanisms on firms' financial performance of 109[13] companies in Jordan for 2011 using cross section analysis. Their research explored the relationship of the firms' internal CG mechanism measured by board of directors (board size, board independence, and duality) and firm performance measured by market share. The results revealed that board size has a negative significant association with firm financial performance. Also, there was an insignificant relationship between independent board (outside directors) and firm performance. Similarly, the findings showed that CEO duality has no effect on firm financial performance.

Although; some scholars found that there is a positive relationship between CG and financial performance, other scholars found no association between CG and performance. Manaseer (2013) explored the effect of applying CG rules on the performance of 153 service companies in Jordan from 2009-2011. CG data was collected by distributing a questionnaire that includes questions about board of directors, shareholders rights, disclosure and transparency. Financial performance was measured by ROA, ROE, return on stocks, and MBVR. Collected data was analyzed using multiple linear regressions. The results showed that there is no significant relationship between applying CG principles and firm financial performance measured by ROA, ROE, MBVR, and percentage of stock price to its return.

Also, Zallum (2013) examined the impact of applying CG practices for 109 Jordan service companies for 2009 using multiple regression analysis. However, the researcher divides CG principles into four groups (shareholders rights, Board of Directors, disclosure and transparency) and investigates their effect on firm performance separately. Firm financial performance was measured by MBVR, market value, and Tobin's Q. The results revealed that there is no relationship between applying CG rules and firm financial performance.

Boonyawat (2013) provide empirical evidence on whether or not the CG mechanisms impact firm performance of Thailand firms from 1994 to 2007[14] . CG is measured by (ownership structure[15], the Board of Directors, CEO characteristics and external auditors). The results revealed that high ownership concentration, especially by families, enhances firm performance. He found evidence that Boards of Directors failed to enhance firm performance. Moreover, investors have a negative opinion about government and foreign company investors; therefore this perception undervalues the performance of firms with high ownership held by these shareholders. There is a significant positive effect of managerial ownership on firm performance but no relationship is found when only the ownership of executive directors is measured. There is a positive association between board independence and firm financial performance, but before CG reforms. Finally, CEO duality has a negative impact on firm value after the reforms.

There is little literature examining the relation between CG and CSR on the firm performance. Park (2004) found a significant positive relationship between CG and CSR on financial performance. While, Abdel Metal (2012) revealed a positive relationship between voluntary disclosure of CSR and CG mechanisms on firm value

[13]Industrial and service companies

[14] This period is before and after the reform of CG in Thailand.

[15]Ownership structure is categorized by six shareholders types (family, government, foreign company investors, domestic company investors, bank and non-bank financial institutional investors).

using future firm value but using another measure as present firm value change the findings to negative relationship.

The research hypothesis to be tested:

H_1: There is a significant association between the CG measures and corporate failure.

H_2: There is a significant association between CSR through CG on corporate failure.

4. Research Methodology

4.1-Measuring Variables

The variables employed in the present study are three-tiered. Variables include CSR, CG measures and Corporate Failure Measure (CFM). A thorough discussion of these variables is presented in the following section.

4.1.1- Measuring CSR

CSR is measured using different trends depending on the data available in each country. Some countries have a data base containing CSR information about each company. CSR has been measured as an index of CSR disclosure using a content analysis of company disclosures (Monteiro et al., 2010 and Post et al., 2011).

Rizk et al. (2008) examined CSR information by the disclosure index of 34 items covering the environment, energy, human resources, customers and the community. The content analysis approach used to measure and explore CSR practices of the five themes of CSR [16](Salama, (2009); Hussainey et al. (2011); Karagiorgos (2010); Ekhmar & Mustapha (2013)).

Moreover, Velte (2015) examined CSR impact on sustainability reporting quality according to the standards of the GRI. Rusmanto et al. (2014) and Tsoutsoura (2004) analyzed CSR using community involvement, environmental, employee information, product or service information and value-added information. The researcher measures CSR using the KLD rating data for the companies.

In addition Saleh et al. (2011) and Sabri et al. (2013) measured CSR by a separate report issued by companies. If the company issues CSR reports it takes the value of one, otherwise, zero. Crisotomo et al. (2010) measured CSR according to 4 areas (the relation with employees, society, taking care of environment, and products quality)by the money invested on the CSR activities related to net sales. Furthermore, Hirigoyen & Poulain-rehm (2014) investigated the causal relationships between the diverse dimensions of CSR (i.e., human resources, human rights in the workplace, societal commitment, respect for the environment, market behavior).

4.1.2-Measuring CG

There is a variety of measures that have been used to investigate the impact of CG in the literature such as board characteristics including: board independence measured by the percentage of independent directors in the board (Alzoubi (2016); Amer (2016). Board size was measured by the number of directors in the board (Abata, and Migiro, 2016; Singn et al., 2017; Kao et al., 2019). CEO duality means the separation of duties between the board chairman and the chief executive officer (Nosheen and chonglerttham (2013); Issarawornrawanich (2015); Salihi and

[16] The five themes include the environment, human resource, community involvement, energy, and customer/product.

Kamardin (2015).Another CG variable examined in the studies was the presence of audit committee and number of meeting held during the year as in (Zalata, Tauringana, and Tingbani, 2018; Zalata et al., 2019). Audit committees improve the quality of financial management and company performance.

Consequently, ownership structure as one of the main internal CG mechanisms is measured in the constructed CG indexes (Al-Ghamdi (2012); Abata and Migiro (2016), Iqbal and Strong, (2010).

Black et al. (2005) and Bubbico et al. (2012) examined CG practices using a CG Index (CGI). It is consists of sub-indexes (shareholders rights, board structure, board procedure, disclosure, ownership parity[17]).However, Lei & Song (2004) investigated 17 variables measuring five CG mechanisms such as board structure, executive compensation, ownership structure, executives' conflict of interest, and transparency standards. The researchers constructed a CGI to represent Hong Kong CG standards and ranked the listed companies according to this index.

In addition, Lee et al. (2015) examined the key CG mechanisms include board independence, segregation of the roles of CEO and board chairman, audit committee structure and the frequency of the meeting, CEO tenure and ownership held by executive and nonexecutive directors. While, Bhagat & Boiton (2008) and Alabdullah et al. (2014) examined CG mechanisms using board independence, the number of board of directors, the stocks owned by the executive managers, and if the CEO is the board chairman.

Moreover, Dabor et al. (2015) measured CG by board size, board independence, board gender diversity and ownership structure. Also, Zallum (2013) examined the impact of applying CG practices by dividing CG principles into four groups (shareholders rights, board of directors, disclosure and transparency). Boonyawat (2013) measured CG by (ownership structure[18], the board of directors, CEO characteristics and external auditors).

Thus, it is clear that scholars choose various mechanisms to measure CG depending on the data available in each country. For the current study, CG is measured using four categories for ownership structure: top management, Institutions, private sector, and others. In addition, the current study measure CG using audit type, board independence, and CEO.

Top Management Ownership: measured by the percentage of shares owned by top management. **Institutional Ownership:** measured by the percentage of shares owned by the governmental institutions, financial institutions, corporate institutions, mutual funds, foreign financial institutions, foreign institutions, foreign mutual funds and other institutions (Al-Ghamdi, (2012)

Private Sector: measured by the percentage of shares owned by private companies, banks, holding companies and any private institutions. **Others:** measured the percentage owned by employee associations, treasury stocks, non-depository shares, GDRs, free float, and physical shares.

Audit Type: is measured by a dummy variable take the value of one if it is measured by big four and zero otherwise. **Board Independence:** is measured by the percentage of outside independent directors in the board. **CEO:** is measured by a dummy variable take the value of one if the CEO is also the chairman of the board and zero otherwise.

[17] Ownership parity means direct ownership by largest shareholders.
[18]Ownership structure is categorized by six shareholders types (family, government, foreign company investors, domestic company investors, bank and non-bank financial institutional investors).

4.1.3-Measuring Corporate Failure

Drtina & Mishra (2004) classified models of identifying organizations financial distress into accounting measures, cash flow measures, market-based measures and statistical measures. In this research, measuring corporate failure of the Egyptian companies depends on cash flow measures and statistical measures.

Cash flow measures are based on cash flow from operations as it is the base to estimate the value of the firm. Researchers stated that cash flow may be more reliable than accounting ratio because it is verifiable asset and its evaluation is not subject to analysis and judgment. While, statistical measures are an index that depends on data collected from accounting, market and cash flow measures.

The most popular model is the Z-Score which is created by Altman (1968). The Z-Score is a discriminant analysis function that uses the financial data in a model that best explains which firm goes into corporate failure. The model is used by investors and analysts to notify them of the financial risk associated with their investments.

$$\mathbf{Z= 1.2x_1+1.4x_2+3.3x_3+0.6x_4+1.0x_5}$$

Where $X_1$is working capital / total assets, X_2 retained earnings / total assets, X_3 is Earnings before interest and taxes (EBIT)/ total assets, X_4 is market value of equity / total liability, and X_5 is sales/total assets.

Z-Score Interpretation is as follows: if the value is more or equal to 2.99, this means that there is no failure. However, if the value is between1.81 and 2.98 means a warning sign that failure is possible. Nevertheless, if the value is less than 1.81 failures is likely. Researchers stated that Z-Score properly predicted 72% of corporate failure two years before bankruptcy (Eidleman, 1995).

For the purpose of the current study cash flow and Z-Score used to measure corporate failure. Cash flow from operations is calculated by net cash flow from operations divided by total assets as in Cruz, et al.(2015) and Lee et al. (2003). Z-Score model is used in trying to accurately classify failed and unfailed companies. Consequently, cash flow measures and Z-Score are used to investigate the impact of accounting variables, CG measures, and CSR on corporate failure. The current study variables and their measurement are summarized in appendix (1).

4.2-The Study Sample

The sample includes 55 listed companies whose shares are among Egypt's 100 most actively traded shares from the years 2010 to 2018. Accordingly, the sample companies include 495 observations.

5. Results

Table-1-The correlation between CG and Corporate Failure									
Probability		CFM	Top Mangt	Institutions	private	others	Board independence	Audit type	CEO Duality
CFM	correlation coefficient								
	Significant	-----							
Top Mangt	correlation coefficient	-0.423							
	Significant	0.000	-----						
Institutions	Correlation coefficient	-0.405	0.589	1					
	Significant	0.000	0.000	-----					
private	Correlation coefficient	-0.685	0.617	0.670					
	Significant	0.000	0.000	0.000	----				
others	correlation coefficient	-0.373	0.485	0.528	.553				
	Significant	0.000	0.000	0.000	.000	----			
Board Independence	Correlation coefficient	-0.265	0.150	0.260	.326	.444	1		
	Significant	0.000	0.001	0.000	.000	.000	---- -		
Audit Type	correlation coefficient	0.391	-0.070	-0.224	0.346	0.002	-0.195		
	Significant	0.000	0.121	0.000	.000	.961	0.000	----	
CEO Duality	correlation coefficient	-0.642	0.187	0.303	.539	.196	0.484	0.535	
	Significant	0.000	0.000	0.000	.000	.000	0.000	.000	---

Table (1) shows that the correlation between CFM, and CG. There is a negative significant relationship between CFM and (ownership structure, Board independence, CEO duality). The correlation value was between (-0.265,-0.685) all correlations are significant at confidence level (0.99). Moreover, there is a positive significant relationship between CFM and audit type at confidence level (0.99) this correlation (0.391).

Estimated Results using E-views

Table 2 -Coefficient of Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Top Mangt	0.0003	0.000	1.217	0.224
Institutions	0.0007	0.000	3.769	0.000
private	-0.0040	0.000	-10.726	0.000
others	-0.0003	0.000	-1.515	0.131
Board Independence	0.0242	0.009	2.757	0.006
Audit Type	-0.0085	0.010	-0.873	0.383
CEO Duality	-0.1770	0.054	-3.303	0.001
Constant	0.3504	0.041	8.469	0.000

Where beta coefficients equal to zero (β = 0) The alternative hypothesis: -beta coefficients are not equal to zero (β≠0). Table No (2) shows the values of independent variables coefficient and shows that the model variables statistically significant at a confidence level (0.99) for (institutions, others, board independence, CEO duality).

Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted that the independent variables (CG) have real value coefficients are different from zero and have a real impact on the corporate failure with the impact of sectors and period.

This means that:

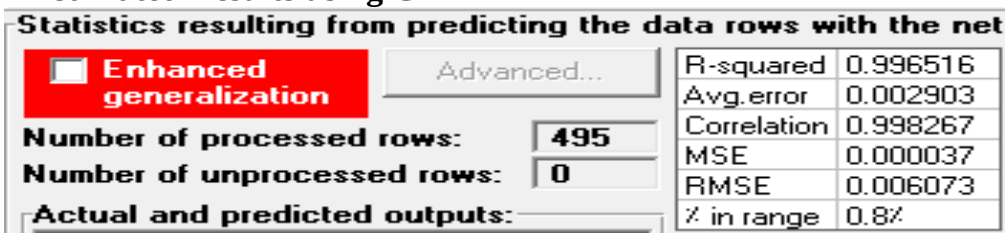
Corporate failure= 0.136+0.0003(top management) + 0.0007(institutions) - 0.0039(others) - 0.0003(private) + 0.0242(board independence) - 0.0085(audit type) - 0.1770(CEO duality)

Consequently, the estimated results suggest that the hypothesis is valid and there is a significant association between CG and CFM.

- There is a positive significant Impact of institutions on CFM.
- There is a negative significant Impact of others ownership structure on CFM.
- There is a positive significant impact of board independence on CFM.
- There is a positive significant impact of CEO duality on CFM.

The results was estimated using the coefficient of determination (R square) equal to (0.763), and this indicates that the independent variables (CG) explain (76.3%) of any change in the corporate failure. In addition, the regression model statistically significant when the F test is significant at level of confidence (0.99). The model can predict other years with high perceptions as theil coefficient equal (0.024) is smaller than (0.10) so this model can used to predict future value as shown in appendix (1) Prediction for CFM with CG. However, to compare these results GA is used.

Figure1-Estimated Results using GA



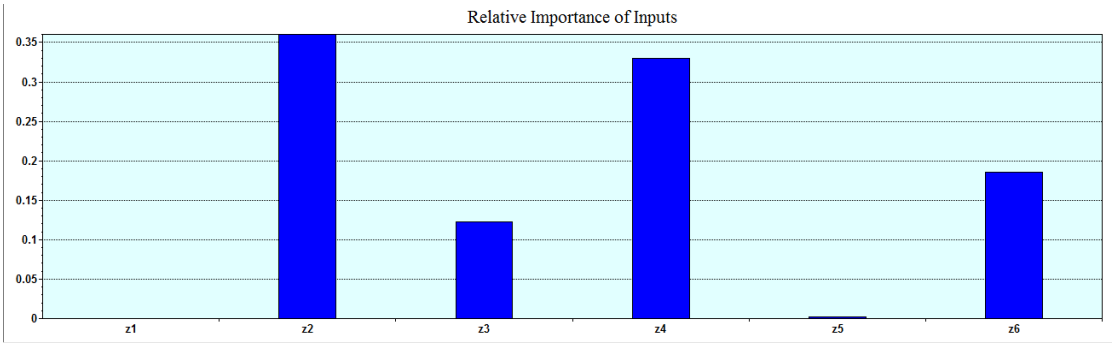
From the above graph it is clear that the coefficient of determination (R square) equal to (0.997), and this indicates that the independent variables (accounting variables) explain (99.7%) of any change in the CFM. In addition, it is clear from the output of GA that Mean Square Error was (0.000) and Root mean square Error was (0.006).

	GA	E.-Views
R square	99.7%	76.3%
RMSE	0.006	0.061

The results were in favor of the results of GA model and GA do not put any restrictions on the model like panel least squares. However, it can be taking the results of the GA with determination coefficient (99.7%) with Root mean square error

(0.006). Although, the determination coefficient for E-Views output was (76.3%) with Root mean square error (0.061). The relative importance for CG measures is shown in Figure 2.

Figure 2-The Relative Importance of the CG Measures



The results indicated that:

- The institution ownership structure impact CFM with importance equal (36.0%).
- The others ownership structure impact CFM with importance equal (33.0%).
- The audit type impact CFM with importance equal (18.5%).
- The private ownership structure impact CFM with importance equal (12.3%).
  CG on CFM using Z-Score by using logistic regression model

The Impact of CG on CFM using Z-Score by Logistic and GA

The value of "chi square test" is (88.168) with significant at the (0.000) level therefore, the overall independent variables statistically significant impact on the dependent variable or the model is fitted to logistic regression use appendix (13) for the logistic regression model results.

It would be useful in determining the significant value of each of the individual independent variables coefficient in the logistic regression model. The ratio of B to S.E., squared, equals the Wald statistic. If the Wald statistic is significant (i.e., less than 0.05) then the parameter is useful to the model. The significant independent variable is institutions ownership structure and audit type with significant at less than (0.001) level.

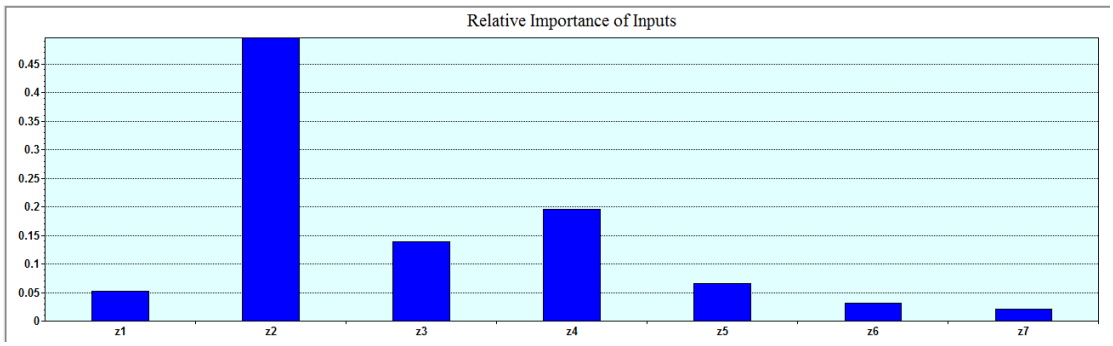
The Probability event of each independent variable is the odds ratio divided by odds ratio plus one, then the important variable is Institutions ownership structure with probabilities (0.502), audit type with probability (0.341), and board independence with probability (0.001). More information about the classification table to assess the model performance and logistic regression model are shown in appendix.

The Estimated Results using GA

The model by GA proved that all variables are important, it is clear from Figure (4.2). The results indicated that:

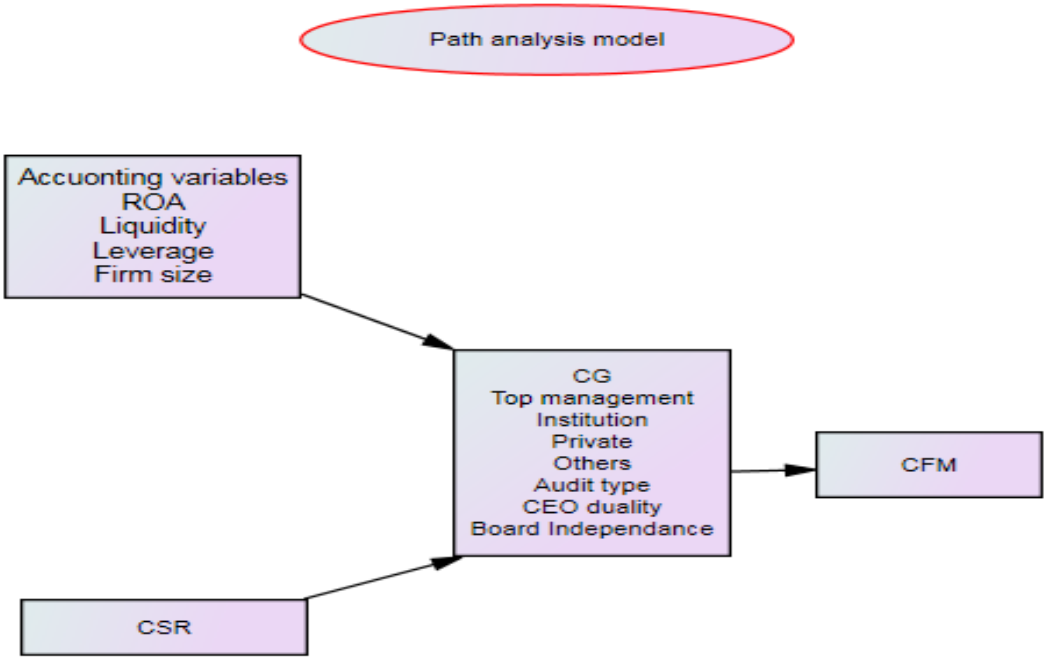
- The Institutions ownership structure impact CFM using Z-Score with importance (49.6%).
- The others ownership structure impact CFM using Z-Score with importance (19.6%).
- The private ownership structure impact CFM using Z-Score with importance (13.8%).
- The audit type impact CFM using Z-Score with importance (6.6%).
- The CEO duality impact CFM using Z-Score with importance (3.1%).
- The board independence impact CFM using Z-Score with importance (2.1%).

Figure 3: The Relative Importance of the CG on the CFM using Z-Score



Testing Hypothesis using Path Analysis

In this section the hypotheses will be examined using path analysis. Moreover, E-views and GA are better because they take time and industry into considerations**.** Hypotheses seven and eight only will be examined using path analysis.



(Figure 4- Research model)

H_2: There is a significant association between CSR through CG on corporate failure.

The model will examine the impact of CSR through CG on corporate failure. The model will be examined by path analysis using AMOS Software. There are several non-significant paths between variables in the structural model; therefore, it is necessity to eliminate the non-significant paths between variables to improve the fit measures of the SEM model. Figure no (5) show the structural model after excluding non-significant paths. The results of the measures of goodness fit and the regression weight analysis as indicated in table (4) imply that the final structural model has the best goodness of fit measures and can be considered the standard model for the study.

Figure (5) Structural Model after Excluding Non-Significant Paths between Variables

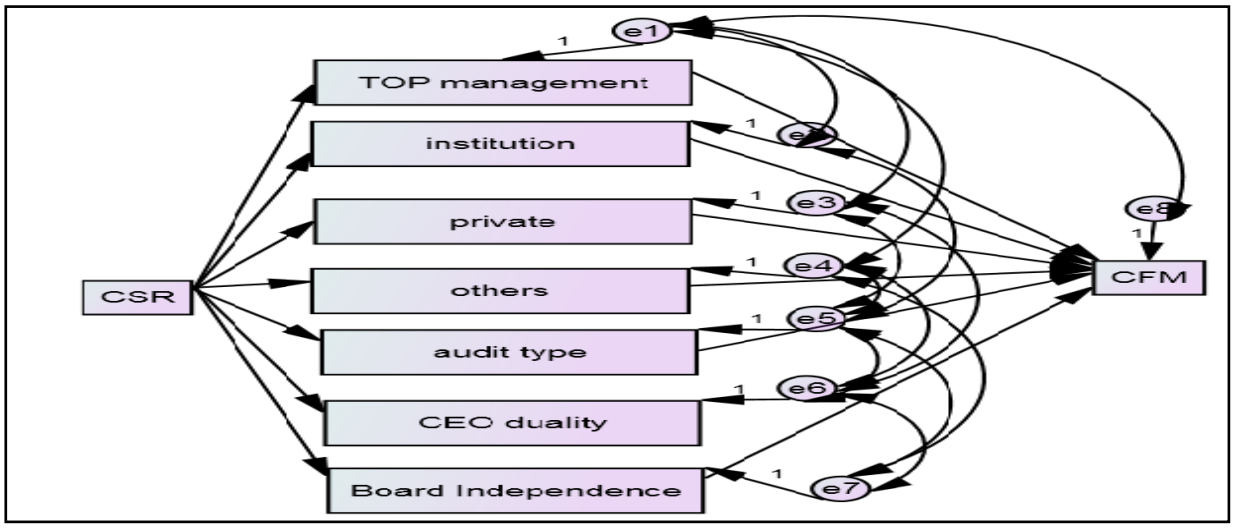


Table (4) Descriptive Goodness-of-Fit Measures		
	Index	Value
1	Normed Chi-Square	3.101
2	Goodness of Fit Index	0.986
3	Normed Fit Index	0.990
4	Incremental Fit Index	0.994
5	RFI	0.966
6	Tucker Lewis Index	0.977
7	Comparative Fit Index	0.993
8	Root Mean Square Error of Approximation	0.065

Table (4) shows Descriptive Goodness-of-Fit Measures and it is clear that all of the indicators greater than (0.90). Moreover, the root mean square error of approximation less than (0.08).These measures of fit indices indicated that fit model of the structural model has been developed after eliminating some non-significant paths between study variables. The fit measures indicate the goodness fit of the final structural model in its ability to measure the effect of CSR through CG on CFM.

Table 5- Regression Weights according to Maximum Likelihood Estimates after Excluding Non-Significant Paths							
			Standardized estimate	Unstandardized estimate	S.E.	C.R.	P-value
Top Management	<---	CSR	0.836	0.911	0.027	33.855	***
Institutions	<---	CSR	0.787	1.183	0.042	28.331	***
Private	<---	CSR	0.686	0.881	0.042	20.938	***
Others	<---	CSR	0.836	0.868	0.026	33.856	***
Audit Type	<---	CSR	0.213	0.005	0.001	4.851	***
Board Independence	<---	CSR	0.332	0.002	0.000	7.834	***
CFM	<---	Others	-0.329	-0.002	0.000	-6.109	***
CFM	<---	Audit Type	0.128	0.032	0.009	3.478	***
CFM	<---	Board Independence	-0.460	-0.527	0.044	-11.994	***
CFM	<---	Top Management	-0.313	-0.002	0.000	-5.654	***
CFM	<---	Institutions	0.153	0.001	0.000	3.531	***
CFM	<---	Private	-0.090	0.000	0.000	-2.152	0.031
CEO Duality	<---	CSR	-0.203	-0.004	0.001	-4.597	***

- There is a positive impact of CSR on top management, institutions, private, others, audit type and board independence with coefficient (0.836),(0.787), (o.686), (0.836), (0.213), and (0.332) respectively.
- There is a negative impact of others ownership structure, board independence, top management and private ownership structure on CFM with coefficient (-0.329), (-0.460), (-0.313) and (0.090) respectively.
- There is a positive impact of audit type and institutions ownership structure on CFM with coefficient (0.128), (0.153) respectively.

Table 6- Standardized Direct and Indirect Effects between CSR through CG on CFM

		CSR	Private	Institutions	Top Management	Board Independence	Audit Type	Others Ownership
Total Effect	Private	0.686	0.000	0.000	0.000	0.000	0.000	0.000
	Institutions	0.787	0.000	0.000	0.000	0.000	0.000	0.000
	Top Management	0.836	0.000	0.000	0.000	0.000	0.000	0.000
	Board independence	0.332	0.000	0.000	0.000	0.000	0.000	0.000
	Audit Type	0.213	0.000	0.000	0.000	0.000	0.000	0.000
	others	0.836	0.000	0.000	0.000	0.000	0.000	0.000
	CEO Duality	-0.203	0.000	0.000	0.000	0.000	0.000	0.000
	CFM	-0.604	-0.090	0.153	-0.313	-0.460	0.128	-0.329
Direct Effect	Private	0.686	0.000	0.000	0.000	0.000	.000	0.000
	Institutions	0.787	0.000	0.000	0.000	0.000	.000	0.000
	Top Management	0.836	0.000	0.000	0.000	0.000	.000	0.000
	Board independence	0.332	0.000	0.000	0.000	0.000	.000	0.000
	Audit Type	0.213	0.000	0.000	0.000	0.000	.000	0.000
	Others	0.836	0.000	0.000	0.000	0.000	.000	0.000
	CEO Duality	-0.203	0.000	0.000	0.000	0.000	.000	0.000
	CFM	0.000	-0.090	0.153	-0.313	-0.460	.128	-0.329
Indirect Effects	Private	0.000	0.000	0.000	0.000	0.000	.000	0.000
	Institutions	0.000	0.000	0.000	0.000	0.000	.000	0.000
	Top Management	0.000	0.000	0.000	0.000	0.000	.000	0.000
	Board Independence	.000	0.000	0.000	0.000	0.000	.000	0.000
	Audit Type	0.000	0.000	0.000	0.000	0.000	.000	0.000
	Others	0.000	0.000	0.000	0.000	0.000	.000	0.000
	CEO Duality	0.000	0.000	0.000	0.000	0.000	.000	0.000
	CFM	-0.604	0.000	0.000	0.000	0.000	.000	0.000

Table (7) shows that there is indirect negative effect of CSR on CFM with coefficient

Table (7) One Way Anova Analysis)						
	Mean	Std. Deviation	Levene Statistic	P_value		P_value
Agribusiness, Food & Beverages	0.07775	0.13577	5.228	0.000	9.123	0.000
Personal and Household Products	0.09720	0.13661				
Chemical	0.07913	0.15693				
Industrial Goods	0.02952	0.08398				
Construction and materials	0.13030	0.13375				
Contracting and Real state	0.00487	0.08552				
Tourism and travel	0.00746	0.07856				
Utilities , Transport , and Energy	0.13543	0.11393				
IT telecommunication and media	0.10563	0.10420				
Health and pharmaceuticals	0.14312	0.04039				
Basic Resources	0.11483	0.12568				
Egyptian iron and steel	-0.04480	0.13367				
Total	0.06846	0.12516				

(0.604).

Examining the Impact of Industry on Corporate Failure using One Way Anova
One way Anova examine if there is difference between different industries and the level of corporate failure.

It is clear from the results of table (8), regarding (CFM), that there is statistically significance differences between the responses of the sectors at a level of confidence (0.99).

Table(8): The Level of Difference between Industries and Corporate Failure			
(I) group2		Mean Difference (I-J)	Sig.
Agribusiness, Food & Beverages	Contracting and Real state	0.072882235229*	0.033
Personal and Household Products	Contracting and Real state	0.092336843553*	0.001
	Tourism and travel	0.089741413194*	0.022
Industrial Goods	Construction and materials	-0.100782754083*	0.001
	Utilities , Transport , and Energy	-0.105913588000*	0.002
	IT telecommunication and media	-0.076113099994*	0.031

	Health and pharmaceuticals	-0.113598717194*	0.000
Construction and materials	Industrial Goods	0.100782754083*	0.001
	Contracting and Real state	0.125437554692*	0.000
	Tourism and travel	0.122842124333*	0.000
Contracting and Real state	Personal and Household Products	-0.092336843553*	0.001
	Utilities , Transport , and Energy	-0.130568388609*	0.000
	IT telecommunication and media	-0.100767900603*	0.000
	Health and pharmaceuticals	-0.138253517803*	0.000
Tourism and travel	Utilities , Transport , and Energy	-0.127972958250*	0.000
	IT telecommunication and media	-0.098172470244*	0.002
	Health and pharmaceuticals	-0.135658087444*	0.000

- At Industry level regarding (CFM), that there are statistically significance differences between the responses of the Agribusiness, Food & Beverages group and Contracting and Real estate group in favor of the Agribusiness, Food & Beverages group at a level of confidence (0.95) where the responses' mean difference was (0.073).
- There are statistically significance differences between the responses of the Personal and Household Products group and (Contracting and Real estate, Tourism and travel) group in favor of the Personal and Household Products group at a level of confidence (0.99, 0.95) respectively where the responses' mean difference was (0.092,0.089) respectively.
- There are statistically significance differences between the responses of the Industrial Goods group and (Construction and materials ,Utilities , Transport , and Energy - IT telecommunication and media - Health and pharmaceuticals) group in favor of the (Construction and materials - Utilities , Transport , and Energy - IT telecommunication and media - Health and pharmaceuticals) group at a level of confidence (0.99, 0.95) where the responses' mean difference was (-0.101,- 0.106, - 076, -0.114) respectively.
- There are statistically significance differences between the responses of the Construction and materials group and (Industrial Goods, Contracting and Real estate, Tourism and travel) group in favor of the Construction and materials group at a level of confidence (0.99) where the responses' mean difference was (0.101, 0.125,0.123) respectively.
- There are statistically significance differences between the responses of the Tourism and travel group and (Utilities, Transport, and Energy, IT telecommunication and media, Health and pharmaceuticals) group in favor of the (Utilities , Transport , and Energy, IT telecommunication and media, Health and pharmaceuticals) group at a level of confidence (0.99) where the responses' mean difference was (-0.128,-0.089,-0.136) respectively.

6. Conclusion

In light of theoretical study and empirical analysis, the main conclusions can be summarized as follows:

First, this research reached to several conclusions derived from reviewing the literature as follows:

a. There is no clear definition of CG system due to difference in cultural, political, economic, and social changes among different countries.
b. There is no clear agreement in the literatures concerning specific definition for CSR.
c. The literature review shows that the Middle East Region has not been given attention regarding the effect of CG on reducing the likelihood of corporate failure.
d. Most of the studies concerning corporate failure focus on prediction models other than what strategies can help the companies to reduce its financial distress.
e. Studies that examined the effect of CG on financial performance have conflicting results. Some researchers found that CG have either positive or negative impact on the performance while, other scholars stated that CG have no impact on the financial performance.
f. Findings from the literature concerning the impact of CSR on the firm performance are relatively inconsistent. The variation in the findings is partially due to lack of data available about CSR in developing countries. Moreover, the use of different statistical methods as well as the available data about CSR in developed countries.
g. Reviewing existing literatures did not give specific conclusions and provided mixed results regarding the impact of accounting variables, CG, CSR, on the corporate failure measures. This is because there is a gap in the literature examining CG, CSR along with the accounting variables on corporate failure as most of the studies examine CG only or CG with CSR on financial performance.

Second, Conclusions from the Empirical Study

- The study utilizes several statistical methods (E-views, GA, path analysis, multi-group analysis, and logistic) to compare and measure the difference between the models results.

First, E-views is used to examine the comprehensive model which investigates the impact of accounting variables, CG, CSR on corporate failure. The cash flow ratio is used to measure corporate failure. The results stated that:

- There is a positive significant impact from top management and institutions as ownership structure to corporate failure. This result means that when the company ownership structure as top management increase the company likelihood of failure increase also. This result contradicts with the results in the literature concerning top management as ownership structure. While, the positive impact of institutions ownership structure to CFM is common with the results in the literature as most of the studies stated as institutions ownership structure increase possibility of failure. While, some other studies found out that institution ownership structure to certain percent can reduce failure.
- There is a negative significant impact from others to corporate failure.

Second, GA is used to compare its result with E-views**,** the GA do not put any restrictions on the variables. GA results indicate that accounting variables can explain 99% of any change in CFM. The most important variables according to GA are:

- Liquidity impact corporate failure with importance equal (32.1%).
- Firm size impact corporate failure with importance equal (32.1%).
- Leverage impact corporate failure with importance equal (32.0%).

These results indicates that liquidity, firm size, leverage as accounting variables impact failure while, CSR have no impact on corporate failure. Moreover, top management as CG ownership structure impact CFM with importance (0.9%).

Third, Measuring CFM using Z-Score by GA

- The audit type impact to CFM using Z-Score with importance (26.0%).
- The Firm size impact to CFM using Z-Score with importance (21.9%).
- The private ownership structure impact to CFM using Z-Score with importance (19.1%).

The measure of the sensitivity of the model has reached almost (0.889) which is higher than the value from logistic model (0.737) this means that the logistic regression classified good by GA is the better.

For the empirical study, it is clear thatthere is no significant relationship between CSR and CG ownership structure (i.e. top management, institutions, private, others) at significant level (.05). Moreover, there is significant relationship between CSR and CFM using Z-Score by Pearson Chi-Square at confidence level 0.99%.

Therefore, it is concluded that CSR as one variable cannot have a clear impact on CG or CFM but the results differ when it is examined with other variables.

Consequently, ROA, firm size is the most important variables impact audit type and CEO duality for CG using Pearson Chi-Square.

Fourth, path analysis is used to assess the validity of structural model to form the basis for accepting or rejecting models.

If the covariance/variance matrix estimated by the model does not adequately reproduce the sample covariance/variance matrix, and measures of goodness fit do not provide satisfactory results for the structural model. Thus, structural model needs to be adjusted and improves to reach to optimal model that can be convenient for the analysis.

The first model using AMOS examines the impact of accounting variables through CG on Corporate failure.

- There is a positive impact from firm size to board independence, audit type, others ownership structure, private, top management, and institutions with coefficient (0.991), (0.544), (0.529),(0.991), (0.187), and (0.365) respectively.
- There is a negative impact from firm size to CFM, and CEO duality with coefficient (-0.695) and .523).
- There is a positive impact from liquidity to board independence, others ownership structure, private, top management and institutions with coefficient (.024), (0.445),(0.412),(0.478),and (0.391).
- There is a negative impact from liquidity to CFM with coefficient (-0.147).
- There is a positive impact from leverage to institutions with coefficient (0.106).
- There is a negative impact from board independence to CFM with coefficient (-0.584).
- There is a positive impact from other ownership structure to CFM with coefficient (-0.297).

There is indirect negative effect for firm size and liquidity on CFM with coefficient (0.039, 0.147) respectively. In addition, there is positive indirect effect from ROA on CFM at (o.167).

The second model using AMOS examines the impact of CSR through CG on Corporate failure.

- There is a positive impact from CSR to top management, institutions, private, others, audit type and board independence with coefficient (0.836), (0.787), (o.686), (0.836), (0.213), and (0.332) respectively.
- There is a negative impact from others, board independence, top management and private ownership structure to CFM with coefficient (-0.329), (-0.460), (-0.313) and (0.090) respectively.
- There is a positive impact from audit type and institutions ownership structure to CFM with coefficient (0.128), (0.153) respectively.
- There is indirect negative effect from CSR to CFM with coefficient (0.604).

Recommendations

- Public supervisory bodies should seek to enhance the actual implementation of CG practices mainly through increasing listed companies managers awareness of the benefits that could be attained through the effective adoption of the Egyptian CG guidelines instead of forcing compliance through the provision of penalties in case of incompliance.
- Changing the existing culture concerning CSR and let the managers and board members aware of its benefits to the community as a whole.
- Increasing Egyptian investor's awareness of the importance of CG and CSR practices in protecting their rights and increase their wealth. This is because shareholders awareness put pressure on listed companies towards complying with the Egyptian CG principles and applying CSR activities to increase their wealth in the long term.
- The Egyptian government should enforce CG guidelines to be obligatory not voluntary.
- The audit committee should review social and environmental practices of the companies as well as financial practices.
- The Egyptian Stock Exchange should require from the listed companies to provide separate report about the CSR practices and CG guidelines.

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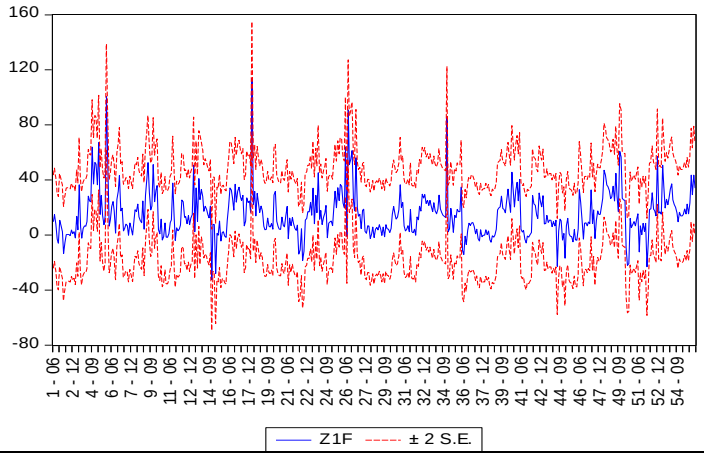
Appendices :

Appendix (1) Variables Measurement	
Variables	**Measurement**
Accounting Variables	
Firm size	Measured by the natural logarithm of total assets.
Gearing(leverage)	Measured by the total liability to total equity.
Liquidity	Measured by the ratio of current liabilities to current assets.
Profitability	Measured by ROA=Net Profit after Tax/ Total Assets
CSR	
CSR	Measured by dummy variable 1 if the company is ranked in the index and zero otherwise.
CG Measures	
Ownership type	There are four categories for ownership structure: top management, Institutions, private sector, others. • Top Management measured by percentage of shares owned by top management. • Institutions measured by percentage of shares owned by public institutions. • Private Sector measured by percentage of shares owned by any private institutions.
Audit type	Measured by a dummy variable that equals 1 if the company is audited by the big 4 and zero otherwise.
Board Independence	Measured by the proportion of outside independent directors
CEO Duality	Measured by a dummy variable which takes the value of one if the CEO of the firm is also the Chairman of the board and zero otherwise.
Corporate Failure	
Corporate Failure Measures	Operating cash flow: Measured by the ratio of cash flow from operations to total assets
	Z-score

Appendix (2) Sample of Companies Classified according to Industry		
Sector	**Company**	**% Sample**
1-Building Material and Construction	1. Orascom Construction Industries (OCI) 2. Delta Constriction and Rebuilding 3. Upper Egypt Contracting 4. Lecico-Egypt 5. Sinia Cement 6. El-Nasr Transformers 7. South Valley Cement 8. El Ezz Steel Rebars 9. Misr Cement (Qena) 10. ezzAldekhela Steel Alexandria	18%

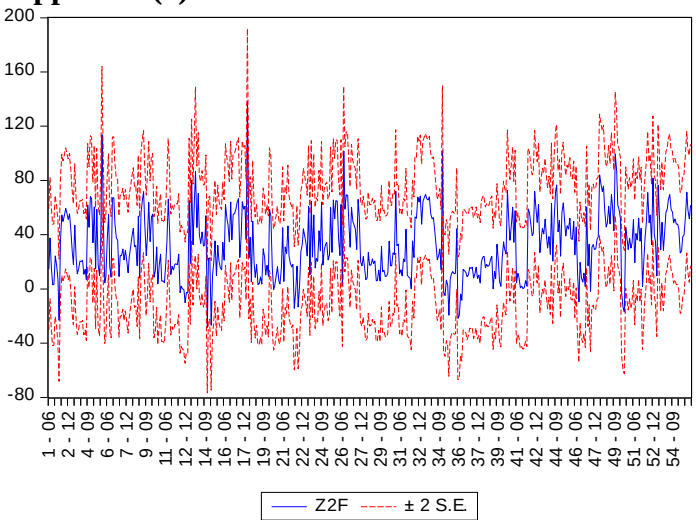
2. Chemicals	1. Misr Chemical Industries. 2. Alexandria Mineral Oil Company (AMOC). 3. Sidi-Kerir Petrochemicals. 4. Maridif for Oil and Maritime Services. 5. Egyptian Financial and Industrial. 6. SamadMisr – Egyfert 7. Canal Shipping Agencies	12.7%
3.Telecommunication and technology	1. Raya Holdings for Technology And Communications. 2. Orascom Telecom Holding (OST). 3. Telecom Egypt. 4. Egyptian Company for Mobile Services (Mobinil).	7.3%
4. Food and beverage	1. International Agricultural Products 2. Egyptian Poultry 3. Northern Upper Egypt Development and Agriculture Production 4. Mansoura Poultry 5. Extracted Oils and Derivatives. 6. Cairo poultry 7. Delta Sugar	12.7%
5.Personal and household products	1. Arab Cotton Ginning 2. Nile Cotton Ginning 3. Arab Polvara Spinning & Weaving Co. 4. El Nasr Clothes and Textiles (Kapo) 5. Alexandria Spinning and Weaving 6. Oriental Weavers 7. Eastern Tobacco	12.7%
6. Travel and leisure	1. Egyptian For Tourism Resort 2. Rowad Tourism (Al Rowad)	3.6%
7. Industrial Goods, Services and Automobiles	1. El Sewedy Cables. 2. Egyptian Transport (Egytrans). 3. Egyptian Electrical Cables.	5.5%
8. Real estate and housing	1. Palm Hills Development Company 2. Gharbia Islamic Housing and Development 3. Helioplis Housing 4. El Shams Housing 5. Medinet Nasr Housing 6. Six Of October Development and Investment (SODIC) 7. TMG Holding 8. Al Kahera Housing 9. Egyptians For Housing and Development 10. United Housing and Development 11. Giza General Contracting 12. Developing and Engineering Consultation. 13. Upper Egyptian Contracting	23.6%
9.Media	1. Egyptian Media Production City	2%
10.Health & Pharmaceuticals	1.Egyptian International Pharmaceuticals (EIPICO)	2%
11.Basic Resources	1.Asek Company for Mining Ascom 2. Egyptian Iron and Steel	3.6%
Total sample	55 company	100%

Appendix (3) Prediction for Top Management



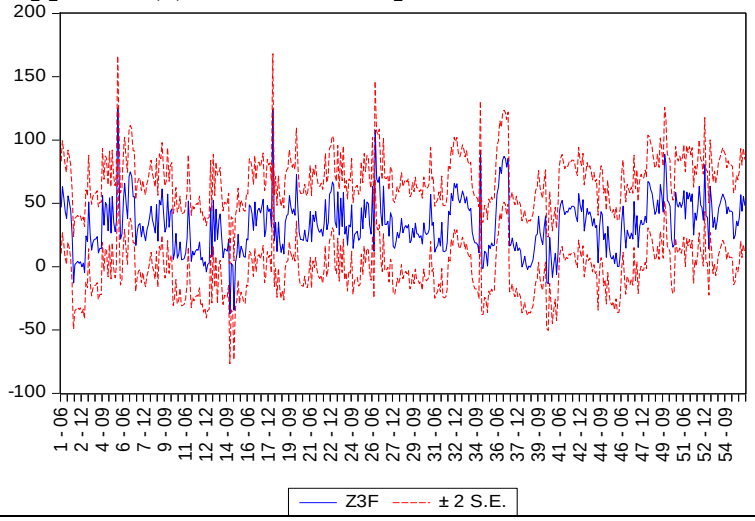
Forecast: Z1F	
Actual: Z1	
Forecast sample: 2006 2014	
Included observations: 495	
Root Mean Squared Error	15.71538
Mean Absolute Error	11.37509
Mean Abs. Percent Error	2800.675
Theil Inequality Coefficient	0.013395
Bias Proportion	0.000000
Variance Proportion	0.157205
Covariance Proportion	0.842795

Appendix (4) Prediction for Institutions



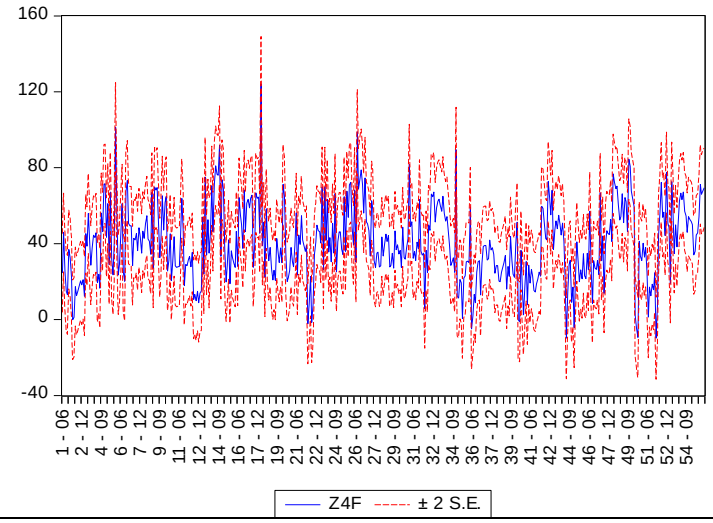
Forecast: Z2F	
Actual: Z2	
Forecast sample: 2006 2014	
Included observations: 495	
Root Mean Squared Error	20.71311
Mean Absolute Error	15.47899
Mean Abs. Percent Error	515.3820
Theil Inequality Coefficient	0.041351
Bias Proportion	0.000000
Variance Proportion	0.139102
Covariance Proportion	0.860898

Appendix (5) Prediction for private



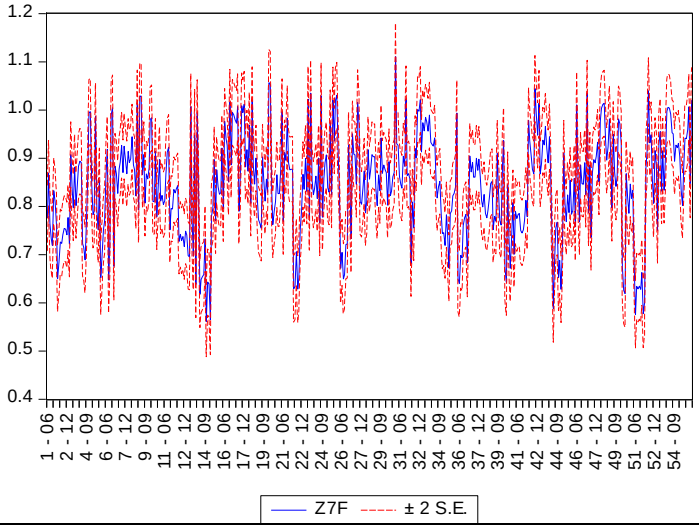
Forecast: Z3F	
Actual: Z3	
Forecast sample: 2006 2014	
Included observations: 495	
Root Mean Squared Error	16.85982
Mean Absolute Error	12.66203
Mean Abs. Percent Error	154.5295
Theil Inequality Coefficient	0.025391
Bias Proportion	0.000000
Variance Proportion	0.123450
Covariance Proportion	0.876550

Appendix (6) Prediction for Others



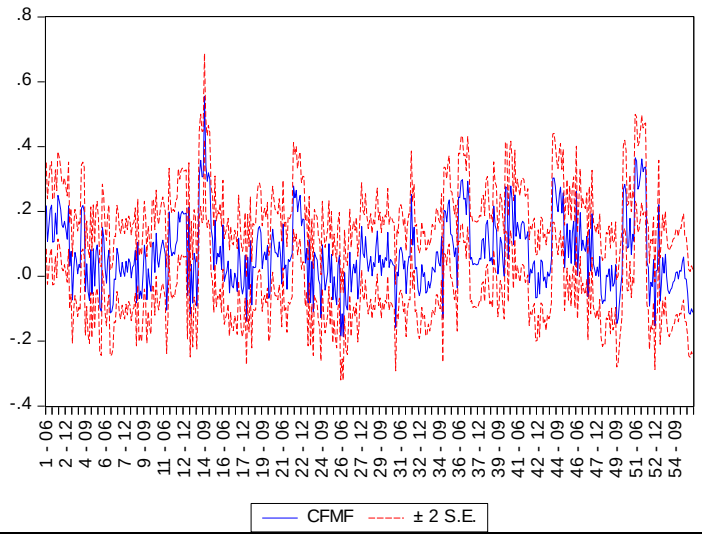
Forecast: Z4F	
Actual: Z4	
Forecast sample: 2006 2014	
Included observations: 495	
Root Mean Squared Error	9.631220
Mean Absolute Error	5.791178
Mean Abs. Percent Error	27.14348
Theil Inequality Coefficient	0.106470
Bias Proportion	0.000000
Variance Proportion	0.053376
Covariance Proportion	0.946624

Appendix (7) Prediction for Board Independence



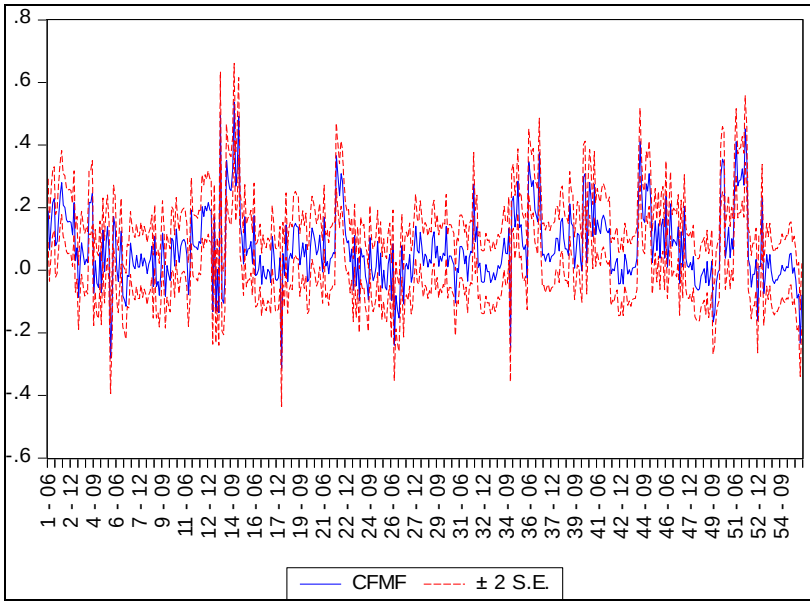
Forecast: Z7F	
Actual: Z7	
Forecast sample: 2006 2014	
Included observations: 495	
Root Mean Squared Error	0.031479
Mean Absolute Error	0.018593
Mean Abs. Percent Error	2.341501
Theil Inequality Coefficient	0.018530
Bias Proportion	0.000000
Variance Proportion	0.021885
Covariance Proportion	0.978115

Appendix (8) Prediction for CFM



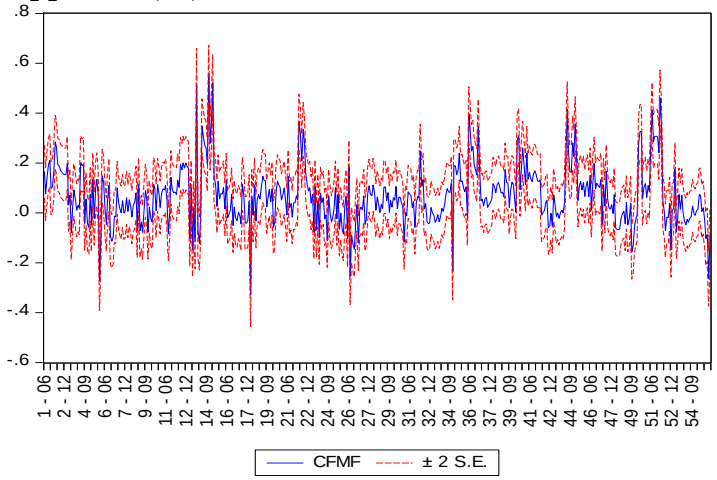
Forecast: CFMF	
Actual: CFM	
Forecast sample: 2006 2014	
Included observations: 495	
Root Mean Squared Error	0.060863
Mean Absolute Error	0.029998
Mean Abs. Percent Error	125.3521
Theil Inequality Coefficient	0.024217
Bias Proportion	0.000000
Variance Proportion	0.067506
Covariance Proportion	0.932494

Appendix (9)Prediction for CFM



Forecast: CFMF	
Actual: CFM	
Forecast sample: 2006 2014	
Included observations: 495	
Root Mean Squared Error	0.045786
Mean Absolute Error	0.021758
Mean Abs. Percent Error	80.30220
Theil Inequality Coefficient	0.064971
Bias Proportion	0.000000
Variance Proportion	0.035980
Covariance Proportion	0.964020

Appendix (10)-Prediction for CFM



Forecast: CFMF	
Actual: CFM	
Forecast sample: 2006 2014	
Included observations: 495	
Root Mean Squared Error	0.049356
Mean Absolute Error	0.025107
Mean Abs. Percent Error	88.85423
Theil Inequality Coefficient	0.078650
Bias Proportion	0.000000
Variance Proportion	0.042324
Covariance Proportion	0.957676

Appendix-11-Stepwise Logistic Regression Model to Determine the Impact of the Accounting Variable on the Z-Score

No	Independent Variables	Estimated coefficient	Wald test		Chi –square test		R^2	Exp(B)
			Sig.	value	Sig.	value		
1	Constant	-0.574	***0.000	65.206	***0.000	82.396	20.50%	0.563
2	Firm size	7.72	***0.000	61.999				2253.25

* Parameter is significant at the (0.00) level,** Parameter is significant at the (.001) level,***Parameter is significant at the (0.001) level

Appendix-(12)-The classification Table to Assess the Model Performance and Logistic Regression Model.

The percentage correct (Failure) for Z-Score is (75.0), percentage correct (success) for Z- Score is (56.4%), and overall percentage correct scores is (66.5%).

Observed			Predicted		
			Z-Score		Percentage Correct
			Failure	Success	
Step 1	Z-Score	Failure	201	67	75.0
		success	99	128	56.4
	Overall Percentage				66.5

$$P(Y)=\left[1+e^{-(-0.574+7.720Firmsize)}\right]^{-1}$$

By substituting the values of independent variables, then the dependent variableCan be predicted by Z-Score

Appendix-13- Stepwise Logistic Regression Model to Determine the Impact of the CG on the CFM using Z-Score

No	Independent Variables	Estimated coefficient	Wald test		Chi –square test		R^2	Exp(B)
			Sig.	**Value**	**Sig.**	**value**		
1	Institutions	0.010	**0.006	7.418	***0.000	88.168	21.80%	1.010
2	Audit Type	-0.660	**0.003	8.617				0.517
3	Board independence	-7.475	***0.000	40.356				0.001
4	Constant	8.895	***0.000	44.014				499.314

*Parameter is significant at the (.00) level,** Parameter is significant at the (.01) level,***Parameter is significant at the (.001) level

Appendix-(14):The classification Table to Assess the Model Performance and Logistic Regression Model.

The % correct (success) for zscore is (80.6), % correct (failure) for Zscore is (56.4%), and overall % correct scores is (69.5%).

Observed			Predicted		
			Z-Score		Percentage Correct
			success	**failure**	
Step 3	Z-Score	Success	216	52	80.6
		Failure	99	128	56.4
	Overall Percentage				69.5

$$P(Y) = \left[1 + e^{-(6.213 + 0.010Z2 - .660Z5 - 7.475Z3)}\right]^{-1}$$

By substituting the values of independent variables, we can then predict the dependent variable: zscore.