

**THE IMPACT OF GOOD CORPORATE GOVERNANCE
MECHANISMS ON FIRM PERFORMANCE: EVIDENCE
FROM EGYPT**

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Abstract

This research aims to investigate the impact of good corporate governance mechanisms (board characteristics and audit committee characteristics) on firm performance (profitability and liquidity) using cross-sectional quantitative secondary data obtained from a sample size of 36 non-financial companies listed on the Egyptian Stock Exchange. Ordinary least squares regression (OLS), fixed effect (FE), and random effect (RE) regression analyses were used to test the hypotheses.

The results of regression are demonstrated in the form of four models. Model (1) shows the effect of board characteristics on

firm performance as measured by return on assets (ROA). Results show that board size and CEO duality have a positive and significant impact on a firm's profitability, while board independence and board gender diversity have a negative and significant impact on a firm's profitability. Model (2) shows the effect of board characteristics on firm performance as measured by the current ratio (CR). Results show that board size, board independence, board gender diversity, and CEO duality had a negative, significant impact on the firm's liquidity position. Model (3) shows the effect of audit committee characteristics on firm performance as measured by return on assets (ROA). Results show that audit committee meeting frequency and audit committee independence have a significant positive impact on a firm's profitability, while audit committee size has a significant negative impact on firms' profitability. Model (4) shows the effect of audit committee characteristics on firm performance as measured by the current ratio (CR). Results show that audit committee meeting frequency and audit committee independence have a significant positive effect on the firm's liquidity position, while financial leverage and firm size have a significant negative impact on the firm's liquidity position.

Key words: good corporate governance, firm performance, board size, board independence, board gender diversity, CEO duality, audit committee size, audit committee meeting frequency, and audit committee independence.

1. Introduction

As a result of the worldwide good corporate governance failures and financial scandals that have occurred over the past few years, there has been a growing interest in researching the effect that good corporate governance mechanisms have on the performance of companies (e.g., Brown et al., 2006; Dittmar et al., 2007; Gompers et al., 2003). Decision makers, policymakers, and researchers have placed a large focus, among the different components of corporate governance, on the supervisory roles of the board of directors and audit committees. This concentration is founded on the concept that boards of directors and audit committees that are independent, well-informed, and proactive should be the major factors in protecting the interests of shareholders (Sarbanes-Oxley Act, 2002 [SOX]). In this research, I will investigate the impact that the characteristics of boards and audit committees have on the firm performance of companies.

Good corporate governance is a system of laws, regulations, policies, and guidelines that affect how a company is governed and run with the aim of ensuring fairness and honesty in its interactions with shareholders. To prevent conflicts of interest, this framework, which is made up of both external and internal contracts between shareholders and employees, regulates how obligations, requirements, and rewards are allocated. In 2001, the Organization for Economic Co-operation and Development

(OECD) promoted a broader definition of corporate governance, stating that it "refers to the private and public institutions, including laws, regulations, and accepted business practices, which together control the relationship, in a mixed economy, between corporate executives and entrepreneurs (corporate internal stakeholders) on one hand, and those who invest resources in companies, on the other" (OECD, 2004). Therefore, corporate governance calls for a set of policies and guidelines that make shareholders' decision-making procedures simpler. Due to a rise in high-profile bankruptcies brought on by financial accounting mistakes or fraud and made worse by poor corporate governance practices, attention to corporate governance has grown over the past few decades. This led to the use of different accounting methods, biased reporting, and putting the interests of the managers ahead of those of the shareholders (Ioana, 2014).

In every country, the laws governing corporations require the creation of boards of directors, which are tasked with monitoring and advising executives on significant company decisions (Baldenius et al., 2014). To put it another way, it is the board's responsibility to ensure that all decisions are taken in accordance with the company's corporate governance to protect the interests of all parties involved. To contribute to the improvement of the effectiveness of governance, the board should establish several committees, such as the audit, nominating, and compensation

committees. Committees of this type will be responsible for seeing to it that the company complies with all applicable laws as well as its own policies and procedures and all rules related to good corporate governance. Not only will this improve corporate governance and possibly prevent a company from engaging in unethical behavior, but it will also lead to an increase in firm performance because of the increased confidence that all investors will have that their investments are being protected by the company (FRC, 2014, 2016).

The efficiency of the audit committee is becoming an increasingly essential component of the good corporate governance agenda for both established companies and those in emerging markets. The audit committee plays a crucial role in the process of selecting, managing, and guiding the work of the company's auditors, which is necessary for recalculating and reporting financial information (Shbeilat, 2018). As a result, the audit committee serves a consulting function and sets a higher standard for the level of reliability that investors expect to receive in financial reports. When investors have access to clear financial data, they can better monitor management and make their investments work better.

A strong performance from the company is necessary to give investors the assurance they need to keep their investments (Harrison & Wicks, 2013). Notification of improvements in

performance can be accomplished through the utilization of a wide variety of indicators, such as the characteristics of corporate governance. This has led a lot of scholars in the fields of accounting and finance to pay more attention to how important it is to figure out which parts of good corporate governance are best for making a company perform better.

In Egypt, good corporate governance within companies has recently become more significant, especially after the revolution that took place in 2011. The Egyptian Institute of Directors (EIOD) issued guidelines and rules for the application of firm corporate governance in 2003. These guidelines and rules were produced in accordance with the laws that control enterprises in Egypt. These principles and norms were derived from the most effective procedures used in other countries. The first version of the Egyptian Code of Corporate Governance (ECCG), which was published in 2005 and is written in Arabic, was issued by Egypt's Ministry of Investment and the General Authority for Investment and Free Zones. A code of conduct like this one was created to protect the interests of all investors and shareholders, as well as to ensure that companies operate at the highest possible level of sustainability and efficiency. It requires all publicly traded companies to comply with the guidelines for governance and disclosure. In later years, the EIOD came up with the Corporate Governance Code (2006) for publicly owned firms. The main

goal of this code was to make it easier to control and keep an eye on the public sector.

In 2011, the Egyptian government also adopted a new corporate governance code for banks and listed companies that was in accordance with regional and international guiding principles (Cigna, Djuric, & Sigheartau, 2017). The G20/OECD Principles of Corporate Governance (OECD, 2015), which have been accepted by several countries, including South Africa, Malaysia, and the Philippines, are comparable to the recommendations made by the Corporate Governance Code. They are not, however, required; in other words, whether companies comply with them is completely up to them. The "comply or explain" method is used in the corporate governance code; in the event of non-compliance, corporations should have a good justification.

The recommendations didn't seem to have much application because they weren't required. Few significant corporations in 2014 included a "comply or explain" declaration with their annual reports, and many of those that did have inefficient audit committees lacked the independence they needed to function properly. Because of this, the Egyptian Financial Supervision Authority (EFSA) updated its corporate governance guidelines in 2016, and all listed firms, including banks and financial institutions, were required to comply. It added a new criterion

that the audit committee members have at least three board members, two of whom must be independent (i.e., work outside of the company), and one of whom must have knowledge of finance or accounting (Cigna et al., 2017).

As a consequence of this, the current research will make use of the facts presented above in order to give an investigation of the effect of good corporate governance mechanisms on firm performance in Egyptian listed firms.

2. Literature Review and Hypotheses Development

2.1 Board Size

The term "board size" describes the number of board members. Different theoretical viewpoints have been used to explain how the size of the board affects a company's performance. According to agency theory (Jensen & Meckling, 1976; Yawson, 2006), larger boards are less efficient at monitoring management and result in higher managerial compensation. Many directors may also cause coordination issues, poor decision-making, and poor communication, all of which have a negative impact on the operation of the company (Guest, 2009; Lane et al., 2006). Other theories, however, such as the resource dependency theory and the stewardship theory, contend that larger boards can increase company performance through the provision of a variety of skills, expertise, and

experiences that promote better decision-making and implementation (Setia-Atmaja et al., 2009). The number of inside directors is important from the viewpoint of the stewardship theory since they have greater knowledge of the company's operations (Nicholson & Kiel, 2003). Multi-member boards are better adapted for big, complicated, and universal institutions, Adams and Mehran (2003) claim. In a similar vein, resource dependency theory argues that powerful boards can easily secure crucial resources like money and corporate contracts (Goodstein et al., 1994; Pearce & Zahra, 1992). Additionally, bigger boards have a better possibility of properly representing stakeholders on the board of directors of the company (Ntim et al., 2013; Pfeffer, 1973). The common consensus is that the best board size for maximizing company performance is between seven and twelve members, although there is not universal agreement on this (Hermalin et al., 2003; Jensen, 1993; Koerniadi et al., 2012; Lane et al., 2006; Lipton & Lorsch, 1992).

In developed nations, there has been extensive research on the connection between firm performance and board size. There is no clear evidence of the nature of this link. According to Coles et al. (2008), there is a correlation between board size and company performance. They point out that large and complicated companies frequently have large boards, and the diversified skill sets of these big boards are probably going to enhance company performance. In a survey of Australian businesses, a similar

conclusion was reached (Nicholson & Kiel, 2003). (Wang, 2012) discovered in another study that companies with smaller boards make more risky investments, which have a negative impact on the performance of the company. This outcome supports the claim that bigger boards are better at making strategic decisions than smaller boards (Dalton et al., 1998).

However, De Andres et al. (2005) found a negative correlation between firm performance and board size after studying a significant number of businesses across 10 different OECD nations. The US and the UK share the same unfavorable relationship (Guest, 2009). (Upadhyay et al., 2014). These findings confirm Jensen's (1993) finding that a small board is more successful at overseeing managers' decisions. El-Faitouri (2014) discovered that the size of the board has no effect on company performance in a different study. According to Kumar and Singh (2012), there is no connection between the performance of the company and board size. (Desoky et al., 2012) and (E. Al-Matari et al., 2012) found no evidence of a substantial relationship between board size and firm performance in the Arab world.

2.2 Board Independence

According to agency theory (Al-Janadi et al., 2013; Berle et al., 1932), most board members should be independent to oversee and regulate management (Al-Janadi et al., 2013). According to

this viewpoint, managers are self-interested and only look out for themselves. Independent directors are required to safeguard the interests of shareholders since agency issues between managers and shareholders are predicted because of the separation of management and ownership (Padilla, 2002; Williamson, 1989). The performance of the company is expected to improve if the board has a significant percentage of independent directors, because this would control the managers' behavior. Also, Fields and Keys (2003) found that executive directors are better at choosing, rewarding, and getting rid of top executives than internal directors.

In contrast, stewardship theory argues that managers are better stewards and that their interests are in line with those of shareholders, rejecting the concept of self-interested managers (Clark, 2004). Inside directors, according to the stewardship hypothesis, have a deeper understanding and more relevant business experience, which helps them make better decisions and improve the company's performance (Davis et al., 1994; Donaldson, 1990). However, independent directors are less devoted to the company and lack the necessary knowledge and abilities, which has a negative impact on the success of the firm (Koerniadi et al., 2012; Muth et al., 1998).

Various studies on the relationship between board independence and firm performance have been conducted in developed countries,

with contradictory results. In 28 European nations from 2000 to 2010, Ferreira et al. (2013) investigated the effect of independent non-executive directors on corporate performance. They claim that independent directors have a significant impact on a company's performance. Studies from the US (Millstein et al., 1998), the UK (Weir et al., 2002), and France all discovered the same beneficial effect (Ammari et al., 2014).

On the other hand, between 1992 and 2002, Coles et al. (2008) investigated 8,165 listed companies in the US. They discovered a correlation between independent boards and low firm productivity and profitability. Australian and Canadian research also reported a similar outcome (Bozec, 2005). Insufficient evidence of a curved correlation between independent boards and firm performance was discovered in another study conducted by Barnhart et al. (1998). This finding suggests that if the proportion of independent boards is either too high or too low, it will have a negative impact on the firm's performance. But some research (Hermalin et al., 1991; Mehran, 1995; Wintoki et al., 2012) shows that there is no link between the makeup of the board and how well the company does.

2.3 Board Gender Diversity

According to (Catalyst, 2004), a company that has workforce diversity generates better firm performance. It is generally accepted that improved decision-making requires a diverse set of

capabilities, areas of expertise, and levels of experience. Utilizing a variety of theoretical viewpoints is one way to lend support to gender diversity on boards. In accordance with the agency theory, the board is tasked with the responsibility of monitoring the acts of management to minimize agency issues (Finegold et al., 2007). The supervision process benefits from having more than one perspective thanks to the presence of female directors, according to the theory that having people from different backgrounds increases efficiency (Low et al., 2015). According to the stakeholder theory, the board of directors should protect not just the interests of the company's shareholders but also those of other stakeholders, such as the company's customers, employees, and suppliers, as well as any other parties that are vital to the success of the business (Finegold et al., 2007). Because female directors tend to be more sensitive to issues relating to society and the environment, it is reasonable to expect that their companies will be more successful in these areas, which will lead to an improvement in the enterprises' reputations. In addition, the resource dependence theory proposes that the presence of female board directors is associated with an increase in the board's human and relational capital, as well as a better understanding of female consumer markets and wider and longer-lasting connections with external parties (Carter et al., 2003; Hillman et al., 2003). In addition, legitimacy theory proposes that companies can respond to the constraints brought on by investment firms and labor

markets, achieve higher legitimacy, and gain competitive advantages by adopting board compositions that include members from a wider range of genders (Singh et al., 2007). In turn, this can increase the performance of the company.

The empirical results of gender diversity's link to company value and performance are, to put it mildly, mixed (Finegold et al., 2007). The positive correlation is found by Carter et al. (2003) and Erhardt et al. (2003) in the framework of the United States of America, as well as by Campbell and Minguez-Vera (2008) and Julizaerma and Sori (2012) in the context of Spain and Malaysia, respectively. Nevertheless, several studies (Carter et al., 2010; Marimuthu et al., 2009; Wang et al., 2009) concluded that the results were either insignificant or even negative. Such insignificant and negative findings, despite having a strong theoretical foundation, give rise to a great deal of uncertainty (Low et al., 2015). In addition, Campbell et al. (2010) and Wang et al. (2009) explain that the contradictory findings may have been the result of inadequate estimation methods, a small sample size, a short-term view of performance, and an absence of control for omitted variables between board gender diversity and company performance. All these factors may have contributed to the findings. (Meah et al., 2019), (Muttakin et al., 2012), and (Rashid et al., 2019) all find that the presence of female directors has a beneficial impact on the overall performance of firms in Bangladesh.

2.4 Chief Executive Officer (CEO)

When the same individual serves as both the CEO and the chairman of the board, this is referred to as "CEO duality." CEO duality is seen as a key corporate governance device because of how delicate the roles that the chairman and CEO can play in enhancing company performance are. There are two opposing theoretical stances on CEO duality focused on whether effective monitoring (agency theory) or consistent and strong leadership is beneficial for businesses (stewardship theory). According to agency theory, the CEO and chairman roles should be separated to effectively decrease the CEO's authority (Jensen, 1993). The theory proposes that poor supervision results in CEOs taking money from shareholders because of conflicts of interest between principals and agents (Chalevas, 2011; Jensen et al., 1976; Shleifer et al., 1997). Also, separating the roles of CEO and chairman makes the board work better because the CEO has less power over the board (Maassen, 2002).

On the other hand, stewardship theory contends that managers, especially CEOs, are dependable and act in the best interests of stakeholders (Davis et al., 1997). Stewardship theory suggests that the dual roles of chairman and CEO can lead to a better return for shareholders by focusing less on the supervision of the CEO and more on the frameworks that enable and encourage the CEO (Donaldson

et al., 1991). Given that both power and authority are centralized in one person, CEO duality also improves the consistency and clarity of leadership within the company (Donaldson & Davis, 1991). As a result, a company will benefit from strong control and a shared concept of direction, which enhance the performance of the firm.

Inconclusive findings from earlier research in industrialized nations address the relationship between CEO dualism and corporate performance. According to Faleye (2007), complex organizations with CEO duality outperform those without it in terms of performance. Furthermore, he claims that a CEO's reputation or ownership of a sizeable percentage of the company's shares increases the possibility of CEO duality. In such circumstances, the CEO is less likely to benefit personally at the expense of the interests of shareholders. Similar research by Donaldson et al. (1991) and Peni (2014) shows that CEO duality has a significant effect on corporate performance. In contrast, other studies (Dey et al., 2011; Veprauskait et al., 2013) indicate a negative correlation between CEO dualism and firm performance. According to a study by Dahya et al. (1996), businesses performed better in the years after the CEO and chairman split roles. According to Daily and Dalton (1994), CEO dualism was a crucial contributor to corporate failure. But some research (Baliga et al., 1996; Nicholson et al., 2003; Rodriguez-

Fernandez et al., 2014) shows that having two CEOs doesn't affect how well a business does.

2.5 Audit Committee Size

The size of the audit committee reflects the quantity and variety of knowledge and skill resources available to the audit committee (Karamanou et al., 2005). According to the theory of resource dependence, companies can perform better when their audit committees are larger because they can use their diverse knowledge and experience to enhance supervision and help shareholders and other parties (Pearce et al., 1992; Saleh et al., 2007).

According to agency theory, extremely big boards have less coordination and communication, which will certainly increase agency costs (Kholeif, 2008). According to agency theory authors (Hillman and Dalziel, 2003), a larger audit committee would decrease the supervision process and lead to poor company performance. (Vafeas, 1999) says that the performance of a company goes down when the audit committee is bigger.

From the discussion above, earlier research on audit committee size and good corporate governance had contradictory outcomes. According to Alqatamin (2018), the efficiency of an audit committee grows with its size since it has more resources and staff members with broader knowledge to monitor effective internal activities and manage firm reporting. Additionally, larger committees typically include members with diverse backgrounds

and perform much better (Al-Matari et al., 2014). (Zraiq et al., 2018) showed a positive relationship between audit committee size, ROA, and EPS in their examination of 228 non-financial enterprises trading on the Stock Exchange of Amman in 2015 and 2016, but the finding was strongest with EPS alone. (Danoshana and Ravivathani, 2013) studied 25 financial institutions in Sri Lanka from 2008 to 2012. They found that the size of an audit committee has a positive effect on the ROA and ROE of a company.

According to a study conducted by Detthamrong et al. (2017) on non-financial enterprises operating in Thailand between 2001 and 2014, the size of the audit committee and the presence of large firms have a negative correlation with ROA and ROE. Their findings confirm the claim made by Aldamen et al. (2012) that firm performance is more effectively encouraged by a small audit committee size with a high level of financial expertise. Additionally, according to Bouaine et al. (2019), the size of the audit committee damages publicly traded French companies' firm performance as measured by ROA due to the increase in the audit committee professionals' fees. Amer et al. (2014) found the same thing and concluded that the size of the audit committee has a significant negative relationship with both Tobin's Q and ROA.

On the other hand, Darko, Aribi, and Uzonwanne's (2015) research on a five-year analysis of 20 businesses listed on

Ghana's Stock Exchange from 2008 to 2012 concluded that there is no strong correlation between the size of the audit committee and the performance measures ROA, ROE, or Tobin's Q (Al-Matari et al., 2014; Ghabayen, 2012; and Reddy et al., 2013, all found a non-significant relationship in 2010). In Oman, listed firms must select a minimum of three audit committee members, one of whom must be an authority on financial matters. This is in line with what the Cadbury Commission has recommended (Cadbury, 1992).

2.6 Audit Committee Meeting Frequency

For the audit committee to fulfill its monitoring duties, it is required to have meetings. According to Bedard and Gendron (2010), the number of meetings held by the audit committee is a good indicator of the diligence, level of commitment, and amount of time spent monitoring, while fewer meetings are interpreted as a lack of commitment on the part of the audit committee and/or an insufficient amount of time spent monitoring. According to the CGC 2018, the advisory committee of each listed company is required to have meetings at least four times each year (BSEC, 2018).

On the other hand, Bedard et al. (2010) discovered conflicting results when they investigated the relationship between the number of meetings and the efficiency of the audit committee. It has been discovered that the frequency of audit committee meetings has a positive effect on financial reporting (Sultana,

2015), the quality of financial information (Vafeas, 2005), and internal control. (Krishnan et al., 2007). In addition, frequent audit committee meetings allow for the active monitoring of financial reporting, which ultimately results in a reduced cost of debt for businesses (Anderson et al., 2003). Next, Al-Okaily et al. (2019) discover that the frequency of audit committee meetings has a considerable positive influence on the performance of non-family enterprises but has no effect on the performance of family enterprises (see also Bédard et al. (2004, 2005)). On the other hand, certain research (such as the one conducted by Alqatamin in 2018) concludes that firm performance is negatively impacted, and sometimes even insignificantly so. Rahman et al. (2019) demonstrates that there is a negative association between the frequency of audit committee meetings and the performance of firms in Bangladesh. This suggests that a higher frequency of meetings does not directly correlate to good monitoring and that it can sometimes imply inefficiency on the part of the audit committee. However, the frequency of audit committee meetings might not improve the monitoring of family businesses because informal mechanisms like family gatherings and the family board are used more frequently for monitoring company operations among family directors. These mechanisms allow for the discussion and sharing of valuable information among family members (Habbershon & Williams, 1999). Family get-togethers serve as a vehicle for conflict resolution amongst members of a

family business, and the family council serves as a good corporate governance mechanism in family-owned businesses (Dana & Smyrnios, 2010). Furthermore, Khan et al. (2015) reveals that family owners themselves act as more efficient controllers than other types of large shareholders due to their greater interest in the company, long-term investment horizon, and concern for reputation. This is because family owners are more concerned with maintaining the company's reputation. In addition to this, family owners have unlimited access to information regarding the company's operations. As a consequence of this, one line of reasoning suggests that these companies rely more on normal conversations among family members as a means of monitoring their operations than they do on official meetings.

2.7 Audit Committee Independence

There are several studies that can be found in the published research that investigate the relationship between the independence of the audit committee and the performance of the company (Alqatamin, 2018; Amer et al., 2014; Arslan et al., 2014; Leung et al., 2014). According to the data obtained by Alqatamin (2018), there is a significant and positive relationship between the independence of audit committees and the performance of firms in Jordan. As a result, the findings provide confidence in the agency theory approach and suggest that independent directors can provide efficient managerial oversight. Because of this,

profitability increases, and the likelihood that managers will engage in opportunistic behavior reduces, which ultimately leads to greater performance. In addition, Leung et al. (2014) conducted research on a sample that included 487 non-financial firms that were listed on the Stock Exchange of Hong Kong (HKSE) during the years 2005 and 2006. Their findings indicate that the presence of independent directors is correlated with significant improvements in ROA and stock market returns (SMR) indicators. As a result of the debates that came before, it is possible to say that the independence of an audit committee is argued to enhance company performance. This is because (Arslan et al., 2014; Yasser et al., 2015) independent members are thought to help the committee analyze and keep an eye on things.

On the other hand, many academics believe that there is an inverse correlation between the independence of the audit committee and the performance of the company, while others maintain that the factors do not make a difference. For instance, Bansal et al. (2016) outlined that audit committee independence has a negative influence on Tobin's Q owing to the inaccurate valuation of a firm's assets when there are several independent individuals on the audit committee. This was discovered to be the case when there were a greater number of independent individuals on the audit committee. Furthermore, according to Bouaine et al. (2019), independent board members demand high fees, which are unfavorable to the ROA and ROE. In France,

Barka et al. (2017) studied 43 companies that were listed on the Paris Stock Exchange between 2002 and 2006 and concluded that 75 percent of the companies had fully independent directors on their audit committee. Furthermore, they discovered that having a fully independent audit committee is linked to lower performance when measured by ROA and ROE. Based on his studies on 20 non-financial companies that were listed on the Nigerian Stock Exchange between the years 2000 and 2006, Kajola (2008) revealed that independent audit committee members have no impact on the ROE in emerging economies such as Nigeria. His findings were based on the period from 2000 to 2006. In the meantime, Zhou et al. (2018) observed no strong association between audit committee independence and ROA, owing to the adoption of the new good corporate governance code in Greece. This is most likely due to the fact that any new good corporate governance code takes time to have a significant impact on performance.

Based on the previous illustrated literature, the researcher formed the following two hypotheses:

H1: There is a significant relationship between board characteristics and firm performance (profitability).

H2: There is a significant relationship between board characteristics and firm performance (liquidity).

H3: There is a significant relationship between audit committee characteristics and firm performance (profitability).

H4: There is a significant relationship between audit committee characteristics and firm performance (liquidity).

3. Research Methodology

3.1 Data Collection

The data of the Egyptian companies was manually gathered from the websites of Mubashir Egypt (<https://www.mubasher.info/countries/eg/stock-prices>) and the Egyptian Stock Exchange (<https://www.egx.com.eg/en/ListedStocks.aspx>). The board data, including board size, board independence, board diversity, and CEO duality, as well as audit committee data, including audit committee size, audit committee meeting frequency, and audit committee independence, are gathered from the company website or the EGX as secondary data. The data is analyzed using STATA to test the hypothesis, and the results are interpreted.

Table (1)
The Research Sample Sector Distribution

Land Reclamation and Agriculture	3
Chemicals, Oil, and Gas	3
Construction and Building materials	5

Food and Beverages	5
Industrial Goods, Services and Automobiles	5
Media Production and Entertainment	1
Pharmaceuticals	1
Real Estate Development	7
Telecommunication	2
Tourism	3
Transport and Logistics	1

3.2 Population and Sample Size

The research population includes all non-financial companies listed on the Egyptian Stock Exchange. The financial statements are collected from 2015 to 2021. The sample size consists of 36 companies from the Egyptian Stock Exchange.

3.3 Research Variables and Measurement Tools

The research consists of independent variables related to board characteristics to examine corporate governance practices (CGP), which are board independence (BI), board size (BS), CEO duality (CEOD), and board gender diversity (BGD), in addition to three independent variables that examine audit committee characteristics, such as audit committee size (ACS), audit committee meeting frequency (ACMF), and audit committee independence (ACI). Finally, three control variables

were added by the researcher to increase data accuracy, including firm size (FS), which is viewed as an important factor that can affect the firm's relationship with its external environment. That is why the research takes the size of the firm into consideration, measuring it using the natural log of total assets. Further, the researcher used Tobin's Q (TQ) and financial leverage (FL) as the other two control variables.

The performance of the selected firms was measured using return on assets (ROA) as a proxy for profitability. Moreover, the performance of the firm cannot be completely analyzed using only profitability ratios. The firm's liquidity position was measured by the current ratio, which represents the available liquidity of the firm to cover any short-term obligations (CR). In other words, the firm's current assets are greater than its current liabilities.

The following table lists the variables of the research, their definitions, and the formula used to calculate each variable.

Table (2)
Summary of the Variables used in the Research

Variables	Abbreviations	Definitions	Formula
Board Characteristics Independent Variables			
Board size	BS	It is number of members in board of directors	$BS = \text{total number of directors serving on the board}$
Board independence	BI	It is the proportion of independent (non-executive), or external, directors.	$BI = (\text{total number of independent directors on board} / \text{total number of directors on board}) \times 100$

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Board gender diversity	BGD	It is a dummy variable that has a value of 1 when there are one or more female members and a value of 0 when there are none.	$BGD = (\text{total number of female directors} / \text{Total number of board members}) \times 100$
CEO duality	CEOD	It is a dummy variable that has a value of 1 when there is duality in the roles of CEO and Chairman of the board members and a value of 0 when there are none.	CEOD = carries the value 1 if it is present, and 0 if it is not.
Audit Committee Characteristics Independent Variables			
Audit committee size	ACS	It is a dummy variable that has a value of 1 when the audit committee has at least 3 members and a value of 0 when it does not	$ACS = \text{Number of audit committee directors}$
Audit committee meeting frequency	ACMF	It is a dummy variable that has a value of 1 if there are more than 4 meetings, and 0 if there are none	ACMF = Number of annual audit committee meetings
Audit committee independence	ACI	It refers to the number of non-executive members on the audit committee.	$ACI = (\text{total number of independent directors} / \text{audit committee size}) \times 100$
Firm Performance Dependent Variables			
Return on assets (Profitability)	ROA	It is calculated as the ratio of net income after paying preferred dividends to the average annual total assets	$ROA = (\text{EBIT} / \text{Total assets}) \times 100$
Current ratio (Liquidity)	CR	A measure of the proportion of a company's current assets to its current liabilities.	$CR = \text{Current assets} / \text{Current liabilities}$
Control Variables			
Tobin's Q (market – based measurement)	TQ	It is the market value of a company divided by its total asset value.	$TQ = (\text{Total market value of firm} / \text{Total book value of assets}) \times 100$
Financial leverage (debt to equity ratio)	FL	It is the ratio of total shareholder equity to total non-current liabilities.	$FL = \text{Total debt} / \text{Total equity}$
Firm size	FS	It is the total assets owned by the firm	$FS = \text{Natural logarithm} / \text{total firm's assets}$

Source: done by the researcher

3.4 The Research Models

The statistical relationship between good corporate governance mechanisms (board of directors' characteristics and audit committee characteristics) on firm performance (profitability and liquidity) was tested using the following **four multiple regression models**:

$$\text{Model (1): } ROA_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 BGD_{it} + \beta_4 CEOD_{it} + \beta_5 TQ_{it} + \beta_6 FL_{it} + \beta_7 FS_{it} + \varepsilon_{it}$$

$$\text{Model (2): } CR_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 BGD_{it} + \beta_4 CEOD_{it} + \beta_5 TQ_{it} + \beta_6 FL_{it} + \beta_7 FS_{it} + \varepsilon_{it}$$

$$\text{Model (3): } ROA_{it} = \beta_0 + \beta_1 ACS_{it} + \beta_2 ACMF_{it} + \beta_3 ACI_{it} + \beta_4 TQ_{it} + \beta_5 FL_{it} + \beta_6 FS_{it} + \varepsilon_{it}$$

$$\text{Model (4): } CR_{it} = \beta_0 + \beta_1 ACS_{it} + \beta_2 ACMF_{it} + \beta_3 ACI_{it} + \beta_4 TQ_{it} + \beta_5 FL_{it} + \beta_6 FS_{it} + \varepsilon_{it}$$

3.5 Results and Discussion

In determining the most appropriate method among ordinary least squares regression (OLS), fixed effect (FE), and random effect (RE) to make useful inferences and conclusions in this research, several criteria are applied. First, the F-test of the joint significance of the fixed effects intercepts is used to make a choice between the OLS and FE. In other words, we must test for time-fixed effects to make sure that no time effect is needed. The null hypothesis is that all the FE intercepts are zero. If the null

hypothesis is rejected, then the FE method is considered a good fit to produce unbiased estimates and is therefore chosen over the OLS (Woodridge, 2006).

Table (3)
Summary of Joint F-Test Statistical Results

Model	F - test
Model 1	0.7921
Model 2	0.5037
Model 3	0.8939
Model 4	0.3756

Source: calculated by the researcher

The results showed that since the probability was greater than F and greater than 0.05, we failed to reject the null hypothesis that the coefficients for all years are jointly equal to zero, and therefore no time-fixed effects are needed in all regression models.

Secondly, to decide between RE and OLS, the Breusch-Pagan Lagrange Multiplier (LM) test is applied. In the LM test, the null hypothesis is that the variance across industries is zero, implying that there are no significant differences between industries (i.e., no panel effect) (Prob > Chibar2 0.05). If we fail to reject the null, then the conclusion is that RE is not appropriate. That is, there is no evidence of significant differences across industries; therefore, a simple OLS regression is appropriate (Green, 2008).

Table (4)
Summary of LM Test Statistical Results

Model	Chi-square	p- value
Model 1	5.49	0.0096
Model 2	294.78	0.0003
Model 3	265.97	0.0038
Model 4	22.15	0.0000

Source: calculated by the researcher

We reject the null of $\text{Prob} > \text{chibar}^2$; so, we conclude that the random effect is appropriate, which means that there is significant evidence of differences among panel "firms." Thus, we cannot pool the data but select the RE model. We have seen earlier that in the context of pooled regression vs. the FE model, we have favored the FE model, and now in the context of pooled regression vs. the RE model, we have selected the RE model for all regression models. Now the question is: Which one is better, FE or RE?

Finally, to determine which model between FE and RE is appropriate, Hausman tests are conducted, where the null hypothesis is that the preferred model is RE versus the alternative, FE. These tests determine whether the unique errors (1) are correlated with the regressors, and the null hypothesis is that they are not (Green, 2008). The Hausman test statistic ($\text{Prob} > \text{Chi}^2 0.05$) indicates that the RE method may give biased and inconsistent estimators; hence, the FE model is considered to give unbiased and consistent estimators. The following is the null hypothesis:

H₀: Random models are more appropriate than fixed models

Table (5)
Summary of Hausman Test Statistical Results

Model	Hausman test
Model 1	0.7335
Model 2	0.9384
Model 3	0.5482
Model 4	0.6072

Source: calculated by the researcher

The results of the Hausman test revealed that the random effect model is appropriate for all seven regression models since the probability $> \chi^2$ is greater than 0.05, so we accept the null hypothesis that random models are the appropriate models.

3.5.1 Panel data Diagnostic Tests

Panel Root Unit Test

The panel unit root test was applied to all variables used in the analysis to determine whether the panel data was stationary. This involved solving for the value of ρ in the general equation:

$$Y_{it} = \alpha + \rho Y_{it-1} + \mu_{it}$$

Where: $t = 1 \dots 7$ years and $i = 36$ firms

If $\rho = 1$, it implied that the observation Y_{it} was dependent on its lag value Y_{it-1} , and hence the data was non-stationary. The

converse would be true if $\rho < 1$. The necessity of this procedure was to avoid a situation where spurious regression results were obtained, thereby jeopardizing testing of hypotheses (Granger & Newbold, 1974). The research applied the Fisher-type test (with trend) because it has more advantages than other panel unit root tests. The Fisher-type unit root test requires a specification of Dickey-Fuller to test whether a variable has a unit root. The following is the null hypothesis:

H₀: All panels contain unit roots; the data are not stationary

Table (6)
Unit Root Statistical Summary

Variable	Statistics	P-Value
ROA	250.8151	0.0000
Board Independence (BI)	195.0788	0.0000
Board Size (BS)	195.0788	0.0000
Audit committee size (ACS)	228.5791	0.0000
Audit committee meeting frequency (ACMF)	319.9185	0.0000
Audit committee independence (ACI)	319.9185	0.0000
Firm size (FS)	114.3347	0.0011
Tobin's Q (TQ)	76.1652	0.3461
Financial leverage	60.4901	0.8313

Source: calculated by the researcher

Based on the results displayed in Table 4–5, the research rejected the null hypothesis that the panel data contained unit roots at the 5% significance level for all variables except Tobin's Q and financial leverage. As a result, all variables are tested at

level, except for these two variables, which were tested at their first difference to ensure data stationarity.

Panel Level Heteroscedasticity Test

To test for panel-level heteroscedasticity, the research adopted the Wald test for heteroscedasticity. This involved first estimating the specified empirical model by OLS and then running the test against the null hypothesis of homoscedastic (constant) error variance (Torres-Reyna, 2007). The following is the null hypothesis:

$$H_0: \text{All panels are homoscedastic.}$$

The test results could be summarized in the following table:

Table (4-7)
Heteroscedasticity Statistical Results

Model	Chi-square probability
Model 1	0.0000
Model 2	0.0000
Model 3	0.0000
Model 4	0.0000

Source: calculated by the researcher

The results signify that the chi-square statistic was significant at the 5 percent level, and hence the null hypothesis of constant variance was rejected. This indicated the presence of panel-level

heteroscedasticity in the research data, as recommended by (Wiggins & Poi, 2001). To correct this violation of classical linear regression assumptions, robust standard errors were used instead.

Panel Level Serial Correlation Test

Although serial correlation may not be a problem in small time panels (less than 30 years), we have applied serial autocorrelation tests to make sure that the results are not biased if the problem exists. More specifically, when there are more panels (firms) than years, it is strongly advised to run the test because there is a high probability of a serial autocorrelation problem. We tested for the serial autocorrelation problem using the Wooldridge test for autocorrelation. The following is the null hypothesis:

$$H_0: \text{No serial autocorrelation}$$

The test results could be summarized in the following table:

Table (8)
Serial Autocorrelation Test Statistical Results

Model	Chi square prob
Model 1	0.0974
Model 2	0.0000
Model 3	0.1399
Model 4	0.0000

Source: calculated by the researcher

The results signify that the probability $> F$ statistic is greater than 0.05 in all models except models 1&3, and hence the null hypothesis of no serial correlation is accepted in this model. This indicated the presence of serial correlation among all models, and thus the null hypothesis is rejected except for models 1&3. Instead, robust standard errors were used (Wiggins & Poi, 2001) to fix the fact that this didn't match the assumptions of classical linear regression.

Panel Cross-Sectional Dependence Test

Cross-sectional dependence is a more serious problem in long macro panels that are older than 30 years than in short macro panels. To ensure data reliability and accuracy, we test for the presence of residual correlation across entities. If this problem exists, there will be bias in the results. The following is the null hypothesis:

H_0 : Residuals are not correlated.

Table (9)
Panel Cross Sectional Dependence Test

Model	P - value
Model 1	1.3057
Model 2	0.9500
Model 3	1.5417
Model 4	1.7335

Source: calculated by the researcher

The results showed that there was no cross-sectional dependence in all regression models. This result indicates that for the regression models with cross-sectional dependence problems that exist, Driscoll-Kraay standard errors should be used to have robust results.

Panel Data Regression Results

To establish which panel effects (between fixed and random) provided better estimation results for the research, a Hausman test was carried out for the specified panel regression model, as mentioned earlier in Chapter 4. Moreover, for accurate, reliable, and valid results, we test for heteroscedasticity, serial correlation, and cross-dependence correlation for each of the 4 regression models, and all the required data treatment was taken as shown above. (See the appendix for details.)

Model 1: Investigate the impact of good corporate governance mechanisms related to board characteristics on firm performance related to profitability.

H1: There is a significant relationship between board characteristics and firm performance (profitability).

Table (10)

Model 1: Pooled OLS, using 252 observations.

Included 36 cross-sectional units.

Time-series length = 7

Dependent variable: ROA

Model 1: Pooled OLS				Decision
Dependent variable: ROA				
Independent variables	Coefficient	Drisc/Kraay Standard errors	P – value	
Board Size (BS)	0.1353394	0.1129007	0.039	Significant
Board Independence (BI)	-0.4947642	0.1041727	0.000	Significant
Board gender diversity (BGD)	-0.2449625	0.1078375	0.029	Significant
CEO Duality (CEOD)	0.3050912	0.1184349	0.014	Significant
Tobin`s Q (TQ)	0.008556	0.0057411	0.145	Insignificant
Financial Leverage (FL)	-0.0052581	0.0071303	0.466	Insignificant
Firm size (FS)	0.0347146	0.2200124	0.876	Insignificant
R – squared			0.0527	
Prob. (F – test)			0.0000	
Modified Wald test for group wise heteroscedasticity		Chi-square		P – value
		86935.72		0.0000
Wooldridge test for autocorrelation		F-test		P – value
		2.901		0.0000
Cross sectional dependence Test				P – value
				1.3057

Source: calculated by the researcher

Table 10 shows the results of panel regression for model 1 estimated using pooled OLS where cross-sectional dependence proved to exist and thus Driscoll–Kraay standard errors were used. In this model, return on assets is the dependent variable, while board size, board independence, board gender diversity (BGD), CEO duality, Tobin`s Q, financial leverage, and firm size are the independent variables. The model examined the impact of good corporate governance related to board characteristics on return on assets from the aspect of "profitability." The results

displayed on Table 10 further show that 4 out of 7 variables are significant. In other words, board size, board independence, board gender diversity (BGD), and CEO duality have a significant impact on a firm's performance from a profitability aspect at a 1% level of significance.

Model 2: Investigate the impact of good corporate governance mechanisms related to board characteristics on firm performance (liquidity).

H2: There is a significant relationship between board characteristics and firm performance (liquidity).

Table (11)

Model 2: Pooled OLS, using 252 observations.

Included 36 cross-sectional units.

Time-series length = 7

Dependent variable: CR

Model 2: Pooled OLS Dependent variable: CR				Decision
Independent variables	Coefficient	Drisc/Kraay Standard errors	P – value	
Board Size (BS)	-3.483443	1.656725	0.043	Significant
Board Independence (BI)	-2.183049	1.431548	0.099	Significant
Board gender diversity (BGD)	-4.701444	2.226265	0.042	Significant
CEO Duality (CEOD)	-2.267988	3.415665	0.516	Insignificant
Tobin's Q (TQ)	-0.1055942	0.0933528	0.266	Insignificant
Financial Leverage (FL)	-0.2065001	0.0976913	0.042	Significant
Firm size (FS)	-4.073279	1.7731082	0.028	Significant
R – squared			0.0381	
Prob. (F – test)			0.0000	
Modified Wald test for group wise heteroscedasticity		Chi-square	P – value	
		4.8e+08	0.0000	
Wooldridge test for autocorrelation		F-test	P – value	
		85950.510	0.0000	
Cross sectional dependence Test			P – value	
			0.9500	

Source: calculated by the researcher

Table 11 shows the results of panel regression for model 2 estimated using pooled OLS where cross-sectional dependence proved to exist and thus Driscoll–Kraay standard errors were used. In this model, the current ratio (CR) is the dependent variable, while board size, board independence, board gender diversity (BGD), CEO duality, Tobin`s Q, financial leverage, and firm size are the independent variables. The model examined the impact of good corporate governance related to board characteristics on return on assets from the aspect of "liquidity." The results displayed on Table 11 further show that 5 out of 7 variables are significant. In other words, all variables except CEO duality and Tobin Q have been shown to be significant.

Model 3: Investigate the impact of good corporate governance mechanisms related to audit committee characteristics on firm performance (profitability).

H3: There is a significant relationship between audit committee characteristics and firm performance (profitability).

Table (12)

Model 3: GLS, using 216 observations.

Included 36 cross-sectional units.

Time-series length = 7

Dependent variable: ROA

Model 3: Generalized Least Squares (GLS)				Decision
Dependent variable: ROA				
Independent variables	Coefficient	Standard errors	P – value	
Audit committee size (ACS)	-0.4348769	0.2598931	0.094	Significant
Audit committee meeting frequency (ACFM)	0.3884868	0.2170154	0.073	Significant
Audit committee independence (IAC)	0.2250914	0.2194991	0.069	Significant
Tobin's Q (TQ)	0.0137828	0.0159729	0.388	Insignificant
Financial Leverage (FL)	-0.0073785	0.0070688	0.297	Insignificant
Firm size (FS)	0.0032675	0.3234864	0.992	Insignificant
R – squared			0.3985	
Prob. (F – test)			0.0000	
Modified Wald test for group wise heteroscedasticity		Chi-square	P – value	
		60680.05	0.0000	
Wooldridge test for autocorrelation		F-test	P – value	
		2.281	0.1399	
Cross sectional dependence Test			P – value	
			1.5417	

Source: calculated by the researcher

Table 12 shows the results of panel regression for Model 3 using the estimated generalized least squares (GLS) method, with return on assets as the dependent variable. This method was chosen because it demonstrated not only heteroskedasticity but also cross-dependence correlation with no serial autocorrelation issues. In this model, return on assets is the dependent variable, while audit committee size (ACS), audit committee meeting frequency (ACMF), audit committee independence (ACI), Tobin's Q, financial leverage, and firm size are the independent

variables. The model examined the impact of good corporate governance related to board characteristics and audit committee characteristics on firm performance from the aspect of "profitability." The results displayed on Table 12 further show that 3 out of 6 variables are significant. In other words, audit committee size (ACS), audit committee meeting frequency (ACMF), and audit committee independence (ACI) have a significant impact on a firm`s performance from profitability aspects at the 1% level of significance.

Model 4: Investigate the impact of good corporate governance mechanisms related to audit committee characteristics on firm performance (liquidity).

H4: There is a significant relationship between audit committee characteristics and firm performance (liquidity).

Table (13)

Model 4: Pooled OLS, using 252 observations.

Included 36 cross-sectional units.

Time-series length = 7

Dependent variable: CR

Model 4: Pooled OLS Dependent variable: CR				Decision
Independent variables	Coefficient	Drisc/Kraay Standard errors	P – value	
Audit committee size (ACS)	-11.48988	10.1164	0.264	Insignificant
Audit committee meeting frequency (ACFM)	3.459018	1.936829	0.083	Significant
Audit committee independence (IAC)	3.755091	2.477341	0.093	Significant
Tobin's Q (TQ)	0.0727335	0.074443	0.335	Insignificant
Financial Leverage (FL)	-0.101319	0.0471218	0.039	Significant
Firm size (FS)	-2.232752	0.9139199	0.020	Significant
R – squared			0.0390	
Prob. (F – test)			0.0000	
Modified Wald test for group wise heteroscedasticity		Chi-square	P – value	
		2.2e+08	0.0000	
Wooldridge test for autocorrelation		F-test	P – value	
		6290.097	0.0000	
Cross sectional dependence Test			P – value	
			1.7335	

Source: calculated by the researcher

Table 13 shows the results of panel regression for model 4 estimated using pooled OLS with the current ratio as the dependent variable. This method was used because all OLS assumptions were violated where there was evidence of heteroskedasticity along with cross-dependence correlation and serial autocorrelation problems. In this model, the current ratio is the dependent variable, while audit committee size (ACS), audit committee meeting frequency (ACMF), audit committee independence (ACI), Tobin`s Q, financial leverage,

and firm size are the independent variables. The model examined the impact of good corporate governance related to board characteristics and audit committee characteristics on firm performance from the aspect of "liquidity." The results displayed on Table 13 further show that 4 out of 6 variables are significant. In other words, audit committee meeting frequency (ACMF), audit committee independence (ACI), financial leverage (FL), and firm size (FS) have significant impacts on a firm`s performance from profitability aspects at the 1%, 5%, and 10% level of significance.

4. Conclusion and Recommendations

Good corporate governance is becoming an increasingly valued characteristic of a well-run company. Considering investors' hesitance to invest in companies that do not adhere to good corporate governance principles, the world's economies have become aware of the importance of good corporate governance. By looking at different theories of good corporate governance, it has become clear that the board of directors and audit committees are important parts of internal governance that help management reach goals and improve the performance of Egyptian listed companies.

Adopting good corporate governance practices increases the transparency of a business's operations, ensures accountability, and helps improve the profitability and liquidity of the business.

It also protects the shareholders' interests by aligning their interests with those of the managers. The main objective of this research is to investigate the impact of good corporate governance mechanisms (board of directors' characteristics such as board size, board independence, board gender diversity, and CEO duality, and audit committee characteristics such as audit committee size, audit committee meeting frequency, and audit committee independence) on firm performance (profitability and liquidity). considering three control variables (Tobin's Q, financial leverage, and firm size). The research employs sample data from 36 non-financial companies listed on the Egyptian Stock Exchange and covers a period from 2015 to 2021. This research has tested four hypotheses, as follows:

H1: There is a significant relationship between Board characteristics and Firm performance (Profitability).

Model (1) shows the impact of board characteristics on firm performance as measured by ROA. The findings revealed that board size and CEO duality have a positive and significant impact on a firm's performance, while board independence and board gender diversity have a negative and significant impact on firm performance. The results indicated that, for board size, as the size of the board increases, firms' performance also increases. Several past studies, such as (Fama et al., 1983; Gupta and Sachdeva, 2017; and Jensen and Meckling, 1976), show that the

size of a company's board has a positive effect on its firm performance. In addition, findings showed that CEO duality has a positive and significant impact on a firm's performance, which indicates that firms where a single individual serves as both CEO and board chair affect firm performance positively. The supporters of agency theory argue that separating the roles of CEO and chairperson will result in a significant positive relationship with firm performance (Balatbat et al., 2004; Rechner and Dalton, 1991).

Moreover, findings showed that board independence has a negative and significant effect on a firm's profitability, which indicates that firms where a single individual serves as both board chair and CEO affect profitability negatively. Insufficient evidence of a curved correlation between independent boards and firm performance was discovered in another study conducted by Barnhart et al. (1998). This finding suggests that if the proportion of independent boards is either too high or too low, it will have a negative impact on the firm's performance. Also, board gender diversity (BGD) has a negative effect on a firm's profitability. In 151 German-listed companies, Joecks et al. (2013) concluded that board diversity had a negative impact on the firm's performance.

Finally, firm size had an insignificant impact on the performance of the firm, which implies that firm size does not play a significant role in determining firms' profitability.

Similarly, Tobin's Q and firm financial leverage were not significant, meaning that they had no effect on the firm's performance. In conclusion, model (1) is statistically significant.

***H2:** There is a significant relationship between board characteristics and firm performance (liquidity).*

Model (2) shows the impact of board characteristics on firm performance as measured by CR. According to the findings, all the variables had a significant negative impact on the firm's liquidity position. Concerning the board size, the results proved that it has a significant negative impact on the firm's liquidity position, which means that as the board size increases, the firm's liquidity position deteriorates. One possible explanation is that, based on agency theory, researchers believe that the relationship between board size and company performance is negative. A larger board will have more agency costs, and as the board becomes larger, issues such as coordination and communication costs will increase. According to Bonn et al. (2004), the size of the board has a significant negative effect on the firm's performance. In which case, a larger board size will have negative consequences due to a lack of consistency and will increase the level of conflicting thoughts and coordination difficulties, whereas when the company forms and maintains a small board size, more expertise will be required to improve the firm's performance.

In addition, findings revealed that board independence and gender diversity have a negative, significant impact on firm performance. Moreover, findings showed that board

independence has a negative effect on a firm's liquidity, which indicates that firms where a single individual serves as both chairman and CEO affect the liquidity of the firm negatively. The results may indicate that, despite having the most independent directors, the companies' performance would not improve through increased liquidity, and vice versa. Thus, the existence of independent directors on the board should be monitored to enhance shareholder value and the firm's liquidity position. Based on other studies, independent directors are less committed to the company and lack the necessary skills and knowledge, which has a significant negative effect on the firm's performance (Koerniadi et al., 2012; Muth et al., 1998).

Also, board gender diversity has a negative effect on a firm's liquidity. In accordance with other studies, Shrader et al. (1997) examined the relationship between the proportion of female directors on the board and firm performance in a sample of US firms and concluded that gender diversity on boards decreased firm performance. In addition, Adams, and Ferreira (2009) discovered that the presence of female directors had a negative impact on firm value, despite the improved board effectiveness of U.S. companies. Further, firm size had a significant negative effect on the firm's performance, indicating that firm size plays an important part in determining firms' liquidity positions. In other words, it is an important factor that affects the performance of businesses. According to the research of Agrawal and Knoeber

from 1996, there is an inverse relationship between firm size and performance. Similarly, firm financial leverage was significant with a negative coefficient, indicating that as the firm becomes more indebted and, consequently, leveraged, the current ratio deteriorates, and the firm faces liquidity issues. This result was explained by the fact that the more indebted the firms are, the riskier they become, and thus, any internal or external shock could cause them to experience short-term liquidity issues. In accordance with Campbell and Mnguez-Vera (2008), who suggested a significant negative relationship between financial leverage and firm performance.

Finally, CEO duality and Tobin's Q showed an insignificant impact on the performance of the firm, which implies that CEO duality and Tobin's Q do not play a significant role in determining firms' liquidity. In conclusion, model (2) is statistically significant.

H3: There is a significant relationship between audit committee characteristics and firm performance (profitability).

Model (3) shows the impact of audit committee characteristics on firm performance as measured by ROA. The findings revealed that the independence of audit committees has a significant positive effect on a company's performance, as measured by profitability. This finding suggests that companies with many internal directors and an audit committee are less likely to be involved in the committee against financial fraud than their governed colleagues in

the same industry and size. This remains good regardless of the size of the companies. As a result, audit quality independence boosts a company's profitability. One possible explanation is that the existence of independent audit committee members will increase the monitoring role of the audit committee and enhance the effectiveness of good corporate governance. In accordance with Tabash & Yameen (2019), they concluded that audit committee independence has a significant positive impact on a firm's performance. Concerning audit committee meeting frequency, the results came in significant with a positive coefficient, which means that as the number of audit committee meetings increases, the firm's performance enhances as profitability increases. This result indicates that the frequency of audit committee meetings is directly related to a company's level of success. In other words, holding regular meetings of audit committees could significantly decrease agency problems and information asymmetry within a company. This is because effective communication with investors will safeguard their interests. Yunos et al. (2014) find that audit committee meeting frequency has a significant positive impact on firm performance.

On the contrary, the size of the audit committee significantly impacted the firm's performance in a negative way. This result indicates that the firm's performance decreases as the size of the audit committee increases. Other research has found that the size of the audit committee is negatively related to firm performance (Kalbers and Fogarty, 1996; Kipkoech and Rono, 2016).

Finally, firm size showed an insignificant impact on the financial performance of the firm, which indicates that firm size does not play a significant role in determining firms' profitability. In other words, it is not a significant factor that affects the performance of companies. Similarly, Tobin's Q and firm financial leverage were not significant, meaning that they all had no impact on the firm's performance. In conclusion, model (3) is statistically significant.

***H4:** There is a significant relationship between audit committee characteristics and firm performance (liquidity).*

Model (4) shows the impact of audit committee characteristics on firm performance as measured by CR. The findings revealed that the independence of the audit committee has a significant positive effect on a firm's performance. In other words, a possible explanation is that the presence of independent directors on audit committees will enhance the monitoring function of the audit committee and enhance the quality of good corporate governance. According to the findings of Aanu et al. (2014), audit committee independence has a significant positive effect on a company's performance. Concerning the frequency of audit committee meetings, the results were significant, with a positive coefficient, indicating that firm performance improves as the number of audit committee meetings increases. This result indicates that the frequency of audit committee meetings is directly proportional to a company's performance. This is because effective communication

with investors will protect their interests. Other studies (Al-Okaily & Naueihed, 2020; Rashidah, 2006; and Sarpal, 2017) have concluded that the frequency of audit committee meetings has a significant positive effect on firm performance.

Lastly, firm size and financial leverage had a significant negative effect on the firm's performance, indicating that both variables play a substantial role in determining firms' liquidity positions. In other words, it is an important factor that affects the performance of companies. The results indicate that a company's liquidity position becomes riskier as its debt level and size increase. According to previous research (De Oliveira Gondrige et al., 2012; Eriotis et al., 2014), firm size and financial leverage have a negative effect on a firm's performance. On the other hand, the size of the audit committee and Tobin's Q were not significant, meaning that they had no effect on the firm's performance. In conclusion, model (4) is statistically significant.

In the future, there are several different opportunities that can be considered to carry out additional research and make improvements.

First, future research could examine good corporate governance mechanisms in the Egyptian financial sector, which plays an important role in Egypt's economic growth. Given the significant differences between financial non-financial firms and financial firms in terms of good corporate governance

mechanisms and operations, such studies are necessary to provide a better understanding of good corporate governance practices in financial firms.

It is also recommended that future researchers may be able to compare listed and unlisted companies to determine if their good corporate governance practices are comparable.

Thirdly, future studies and additional research could investigate the impact of external good corporate governance mechanisms, such as the market for company control, the managerial labor market, and the law. Interest rate policy, foreign exchange, the macroeconomy, inflation, and other external factors impact firm performance. In addition, it is suggested that future research consider the interdependence or interconnection between external and internal mechanisms, as well as their impact on firm performance.

Finally, to fully understand how good corporate governance affects a company's performance, future research should take into consideration a variety of legal, social, economic, and political issues. These include the board's commitment, the attending rewards, compensation for the board and committee members, the risk committee, the remuneration committee, and corporate social responsibility.

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