Impact of Accounting Conservatism, Financial Reporting Quality, and Audit Committee Characteristics on the Voluntary Disclosure of Banks in Egypt

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Abstract

Accounting conservatism, financial reporting quality, and audit committee characteristics have garnered considerable attention in the banking sector, especially concerning their impact on voluntary disclosure policies. Although these factors are acknowledged as key influences on openness, their collective effect on banks' voluntary disclosure is still little examined in emerging markets. The current research investigates the influence of accounting conservatism, financial reporting quality, and audit committee characteristics on voluntary disclosure in Egyptian banks, with financial performance serving as a moderating variable. This research utilizes a sample of 25 Egyptian banks

across a five-year span (2020-2024) and performs panel data analysis to evaluate its hypotheses, while controlling for bank size, liquidity, and Tobin's Q. An extensive voluntary disclosure index was created to assess the degree of discretionary information presented in annual reports. The data indicate that accounting conservatism has a substantial negative correlation with voluntary disclosure, implying a substitution effect in which conservative reporting techniques diminish the necessity for supplementary volunteer disclosures. The quality of financial reporting exhibits a positive correlation with disclosure levels, and the size, independence, and meeting frequency of the audit committee, along with the involvement of the Big Four firms, also have a positive impact. The moderating effect of financial performance is notably considerable, since high-performing banks exhibit superior disclosure policies irrespective of conservative accounting approaches. These findings contribute to the current discourse regarding the interaction between required and voluntary reporting procedures within the banking sector. The research provides pragmatic insights for regulators aiming to reconcile financial stability issues with transparency obligations, and for bank executives formulating disclosure strategies that meet stakeholder expectations while upholding sound financial reporting standards. The findings indicate that voluntary disclosure in Egyptian banks is influenced by a complex interplay of reporting quality, governance frameworks, and

performance factors, significantly affecting banking sector openness in emerging markets.

Keywords: *Accounting Conservatism; Financial Reporting Quality; Audit Committee Characteristics; Voluntary Disclosure; Egyptian Banks*

تأثير التحفظ المحاسبي، وجودة التقارير المالية، وخصائص لجنة المراجعة على الإفصاح الطوعي للبنوك في مصر

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ماجستير العلوم في المحاسبة - كلية الإدارة والتكنولوجيا – القاهرة

الأكاديمية العربية للعلوم والتكنولوجيا والنقل البحري

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الملخص:

تحظى مفاهيم المحافظة المحاسبية وجودة التقارير المالية وخصائص لجنة المراجعة باهتمام كبير في القطاع المصرفي، نظراً لدورها كمحددات رئيسية للشفافية. ومع ذلك، فإن تأثيرها المشترك على الإفصاح الطوعي في سياق الأسواق الناشئة مثل مصر لا يزال بحاجة إلى مزيد من الدراسة. لذلك، تهدف هذه الدراسة إلى التحقق من تأثير هذه العوامل على ممارسات الإفصاح الطوعي في البنوك المصرية، مع افتراض أن الأداء المالي يلعب دوراً وسيطاً moderator. اعتمدت الدراسة على منهج كمي، حيث تم تحليل البيانات المالية لعينة مكونة من ٢٥ بنكاً مصرياً خلال الفترة من ٢٠٢٠ إلى ٢٠٢٤ باستخدام تحليل بيانات (panel data analysis). ولقياس الإفصاح الطوعي، تم تطوير مؤشر شامل يستند إلى تحليل التقارير السنوية.

كما تم أخذ متغيرات تحكم رئيسية في الاعتبار مثل حجم البنك، والسيولة، والقيمة السوقية (Tobin’s Q). كشفت النتائج عن وجود علاقة معقدة. حيث أظهرت وجود أثر سلبي ذو دلالة إحصائية للتحفظ المحاسبي على الإفصاح الطوعي، مما يشير إلى أن ممارسات التحفظ المحاسبي قد تقيد رغبة الإدارة في تقديم معلومات إضافية طوعية. في المقابل، أظهرت النتائج وجود علاقة إيجابية ذات دلالة إحصائية بين جودة التقارير المالية ومستويات الإفصاح. كما كان لخصائص لجنة المراجعة (كحجمها، استقلاليتها، تكرار اجتماعاتها، والتعاقد مع مكاتب المراجعة من الشركات الأربع الكبرى Big4) تأثير إيجابي ومعنوي على تعزيز الشفافية. الأهم من ذلك، أكدت النتائج أن الأداء المالي يلعب دوراً وسيطاً محورياً في تعزيز هذه العلاقات، حيث أظهرت البنوك ذات الأداء المرتفع ممارسات إفصاح أفضل بغض النظر عن نهجها المحاسبي. تقدم هذه الدراسة رؤى قيمة للجهات الرقابية في سعيها لتحقيق التوازن بين متطلبات الاستقرار المالي والشفافية، ولمديري البنوك لتطوير استراتيجيات إفصاح فعالة تلبي توقعات أصحاب المصلحة وتدعم ثقة المستثمرين في القطاع المصرفي المصري كسوق ناشئ.

الكلمات المفتاحية: *التحفظ المحاسبي؛ جودة التقارير المالية؛ خصائص لجنة المراجعة؛ الإفصاح الطوعي؛ البنوك المصرية*

1. Introduction

Accounting conservatism is the practice of a bank's management ignoring "good news" and responding quickly to "bad news". A trustworthy method of distinguishing between positive and negative earnings news is necessary for accounting conservatism (Watts, 2003). Protecting against management's temptation to distort financial outcomes for its own gain is the primary goal of accounting conservatism.

Based on the definition outlined previously, the pertinent question is whether the adoption of conservative financial reporting will influence the bank's voluntary disclosure practices. Enhancements in the quality of financial reporting can lessen information asymmetries and enhance the capacity of regulators, auditors, and other external stakeholders to oversee banks' performance and risk (Bushman & Smith, 2001). Nevertheless, evaluating the financial reporting quality of banks poses a considerable challenge due to the fact that assets possessed by financial institutions are frequently intricate, unclear, and challenging to evaluate (Flannery et al., 2013; Jiang et al., 2016; Jones et al., 2012; Morgan, 2002). In order for external stakeholders (depositors, equity holders, bondholders, and regulators) to accurately evaluate and track the financial health of banks, it is important that disclosed financial information be accurate and transparent, given the vital role that banks play in the financial system and real economy.

An indication of proper integrity, quality, credibility, and objectivity will be provided by audit committees with the ideal composition (Klein, 2002).

Information disclosure is viewed as a means of putting into practice an open business process that guarantees investors and shareholders have equitable and contemporaneous access to information (Healy & Palepu, 2001).

Stakeholders prefer voluntary disclosure (VD) as it provides essential information, mitigates uncertainty, and facilitates informed financial and economic decision-making. Furthermore, the openness of voluntary disclosure promotes corporate promotion of sustained high-quality investment and achieving the goal of economic stability (Hussein et al., 2015). Banks may utilize annual reports to share quantitative and qualitative business report facts with their stakeholders or other interested parties. In addition, there is typically a high correlation between a bank's financial reporting quality and the quality of voluntary disclosure. Thus, sound governance may be achieved, and the efficiency of the bank can be enhanced when accountability and disclosure standards are strong.

The board of directors established the audit committee, a permanent group, to supervise and keep an eye on the firm's internal control, accounting, and auditing operations. Additionally, the audit committee is one of the corporate governance instruments that has drawn more attention (Sen et al., 2014), with numerous earlier studies highlighting the committees' importance. Based on the importance of the audit committee's function, this research will investigate how the audit committee's attributes affect voluntary disclosure in Egyptian banks. Therefore, this research aims to investigate if accounting conservatism, financial reporting quality, and audit committee characteristics on the voluntary disclosure of banks have a positive or negative effect on voluntary disclosure of banks in Egypt.

2. Literature Review

2.1Voluntary Disclosure

Additional information that is voluntarily disclosed in addition to required disclosure information is known as voluntary disclosure (VD) (Awadh & Alareeni, 2018). VD enhances stakeholders' understanding of business sustainability and mitigates information asymmetry and conflicts of interest between management and investors (Healy & Palepu, 2001). Cotter et al. (2011) categorized voluntary disclosures into three types. The first type encompasses strategic and prospective information, the second pertains to financial data, which includes analyses of financial relationships, segment information, and details regarding stock prices, market share, and trading volumes. The third category consists of non-financial information, such as governance practices and corporate social responsibility initiatives.

Reducing the difference between the firm's present market value and its potential intrinsic value is the main goal of VD. In fact, it overcomes the drawbacks of conventional financial reports from a capital market perspective. By minimizing stock price swings, it lowers the cost of financing through ownership (Botosan & Plumlee, 2002; Kristandl & Bontis, 2007). However, a lack of transparency damages the integrity of the market and slows its ability to function, resulting in significant costs for the business, its shareholders, and the economy at large.

2.2 Accounting Conservatism and Banks' Voluntary Disclosure

Accounting conservatism is a fundamental financial reporting principle that emphasizes the earlier recognition of losses and expenses compared to gains and revenues, providing a more cautious and realistic view of business financial performance, particularly during uncertain times. This principle is crucial in the banking industry where lending and investment activities carry inherent risks, and it has gained international acceptance through standards such as IAS 36, IAS 37, and IFRS 9. The literature identifies several key advantages of accounting conservatism: timely loss recognition that enhances financial statement accuracy (Mora & Walker, 2015), reduction of information asymmetry between management and stakeholders, improved contracting efficiency that reduces capital costs by providing reliable information to lenders and investors, and enhanced financial reporting quality through the prevention of asset and income overstatement. According to Watts (2003), accounting conservatism serves four primary purposes: debt contracting by providing creditors with reliable information about net asset changes, litigation avoidance by preventing overstatement of net assets and earnings that could lead to shareholder lawsuits, income tax reduction, and regulatory compliance requirements.

The practice of accounting conservatism can be influenced by various factors including antitakeover legislation (Cheng et al., 2017), national culture, accounting values, social values, and institutional frameworks (Salter et al., 2013). Accounting conservatism manifests in two distinct forms: unconditional conservatism (ex ante conservatism), which is an independent reporting strategy that understates accounting values without a specific economic event justifying the understatement, such as expensing R&D costs or accelerated depreciation; and conditional conservatism (ex post conservatism), which is a dependent reporting strategy that understates accounting values in response to justified economic events or bad news, exemplified by fixed asset impairment recognition and lower-of-cost-or-market inventory valuation policies (Penman & Zhang, 2002). Ultimately, accounting conservatism serves as a protective mechanism against management's potential tendency to manipulate financial results for personal interests, thereby preserving financial stability and protecting stakeholder interests.

Based on the previously illustrated literature, the researcher formed the following hypothesis:

H1. There is a statistical association between accounting conservatism and voluntary disclosure of banks in Egypt.

2.3 Financial Reporting Quality and Banks' Voluntary Disclosure

Several notable businesses have recently experienced financial crises and accounting scandals, which have damaged investors' confidence in the financial reports and raised a number of concerns regarding financial reporting quality (FRQ) (Akeju and Babatunde, 2017). It is widely acknowledged that the main cause of these financial crises is the lack of adequate governance practices and high-quality financial disclosure (Fung, 2014).

Accordingly, the widespread failure in financial disclosure has led to the demand from investors, regulators, and other stakeholders to improve the quality of financial information and strengthen manager control through the implementation of suitable governance structures (Klai and Omri, 2011). In order to address failure in the financial condition of firms, boards of directors will be able to evaluate the efficacy of management and, if necessary, take prompt corrective action (Fung, 2014).

Therefore, businesses need to prepare better quality financial information (Asegdew, 2016). That is, in order to help users of financial reports make decisions, information must be relevant and trustworthy (Fathi, 2013). The firm benefits from this high level of disclosure quality since it may lower the expense of the debt and increase the value of the stock (Soheilyfar et al., 2014). All banks must thus provide a clear, comprehensive, and trustworthy representation of their financial performance (Schnackenberg, 2009). In particular, bank reporting these days includes a wide range of other information that must also be disclosed in order to provide investors with the essential information they need to assess their investments, rather than just the financial statements (Asegdew, 2016; Thalassinos and Liapis, 2014; Allegret et al., 2016).

Based on the previously illustrated literature, the researcher formed the following hypothesis:

H2. There is a statistical association between financial reporting quality and voluntary disclosure of banks in Egypt.

2.4 Audit Committee Characteristics and Banks' Voluntary Disclosure

Disclosures made by businesses beyond required disclosure requirements are referred to as voluntary disclosures (Qu et al., 2012). In developing nations with emerging markets like Egypt, where closing the information gap between investors and management is crucial to the growth and sustainability of capital markets, voluntary disclosure—which can be divided into three categories: strategic, financial, and non-financial information is a major concern. Rouf (2011) discovered that a number of factors, including behavioral factors like corporate culture, changes in society's attitudes, and economic factors, affect the extent of voluntary disclosure. Prior research has demonstrated that increasing voluntary disclosures can increase a firm's value (Peters et al. 2001). The problem of inadequate disclosure has drawn significant attention from researchers, regulators, and investors (Akhtaruddin et al., 2009; Akhtaruddin & Haron, 2010). Investor confidence is damaged by inadequate disclosure, which is the cause of many corporate scandals. The audit committee is a corporate governance tool that makes sure businesses follow moral standards and take ethics seriously. The function of the audit committee within corporate governance is garnering heightened attention from regulators (Abbott et al., 2003).

2.4.1 Audit Committee Frequencies Meetings and Banks' Voluntary Disclosure

The number of meetings held by the audit committee is commonly viewed as a crucial indicator of its diligence and oversight effectiveness. This frequency reflects the committee's active engagement in monitoring financial reporting and disclosures. Qamhan et al., (2018) propose that a higher frequency of meetings signifies greater due diligence and financial oversight from audit committees. According to Karamanou and Vafeas (2005), more frequent meetings contribute to a better governance framework and enhanced monitoring of the firm. Talpur et al. (2018) argue that regular meetings are a sign of active involvement and effectiveness of the audit committee. Ebirien et al. (2018) mention that frequent meetings provide the audit committee with additional opportunities to oversee the financial reporting process, which includes both voluntary and required disclosures.

2.4.2 Audit Committee Independence and Banks' Voluntary Disclosure

Numerous studies have shown a significant and positive impact of board independence on the extent of voluntary disclosures. Likewise, Akhtaruddin and Haron (2010) found that an independent audit committee can proficiently oversee management and lessen information asymmetry, ultimately improving voluntary disclosures.

On the other hand, some studies have noted a negative or negligible association between audit committee independence and voluntary disclosures. Nguyen et al. (2020) found that the link between board independence and voluntary disclosure is not consistently significant. Furthermore, Allegrini and Greco (2013) did not identify a meaningful relationship between audit committee independence and voluntary disclosures in their study of companies listed in Italy.

2.4.3 Audit Committee Size and Banks' Voluntary Disclosure

The size of an audit committee (AC) is crucial for overseeing the financial reporting process. Audit committees with more members are typically linked to improved oversight due to a wider pool of knowledge and varied skills among the members, which can enhance monitoring effectiveness (Vafeas, 2005). This viewpoint is in line with resource dependency theory, which posits that a larger committee brings a diversity of experiences, thus bolstering its capability to pinpoint and address potential challenges in financial reporting (Bedard et al., 2004; Sultana et al., 2015).

Many corporate governance frameworks in various jurisdictions stipulate a minimum number of members for audit committees. For example, the Malaysian Code of Corporate Governance (MCCG, 2012) mandates that audit committees consist of at least three directors. Similarly, the Egyptian Corporate Governance Code (2011) requires a minimum of three directors. These stipulations highlight the belief that a specific committee size is vital for effective monitoring and supervision.

2.4.4 Big4 Audit Firms and Banks Voluntary Disclosure

The Big Four audit firms—PwC, Deloitte, EY, and KPMG—are frequently linked to higher voluntary disclosure by banks and better financial reporting quality. These firms usually have a lot of resources, international experience, and reputational capital, all of which promote greater transparency and adherence to global best practices. To demonstrate credibility and lessen information asymmetry with stakeholders, banks audited by Big Four firms are more likely to voluntarily disclose information (Barako et al., 2006; Al-Shammari et al., 2008). Management may be encouraged to make more thorough and timely disclosures by the Big Four's strong monitoring roles and strict auditing standards (Ghosh & Moon, 2005). Therefore, the bank's reputation and access to capital markets may be improved by the affiliation with a Big Four auditor, which may increase stakeholders' confidence in both financial and non-financial disclosures.

Globally, Big4 auditing firms are highly regarded for their ability to analyze data. The Big Four has a significant impact on information quality (Al-Shaer & Zaman, 2016; Belal et al., 2017; Khan et al., 2016). Disclosures that have been audited or certified by one of the Big4 are more likely to be believed by investors, which can raise a bank's value. Since Big4-audited banks are thought to be less likely to be involved in corporate scandals or misreporting, research suggests that their presence can enhance investor perceptions of voluntary disclosures. Therefore, employing Big4 auditors may improve banks' earnings quality because, it can be argued, they can offer extra oversight to guarantee that reported earnings accurately reflect the underlying economic reality (Ozili, 2022).

Based on the previous illustrated literature, the researcher formed the following hypothesis:

H3. There is a statistical association between audit committee characteristics and voluntary disclosure of banks in Egypt.

2.5Banks' Voluntary Disclosure, Accounting Conservatism and the Moderating Role of Financial Performance

This research aims to explore the complex relationship between the voluntary disclosure practices of banks and their financial performance. Voluntary disclosure pertains to the information disclosed by companies that exceeds the basic requirements set by accounting standards. In the banking industry, this covers a broad spectrum of disclosures, such as details on risk management, governance, social responsibilities, and future outlooks. Performance assessment includes both financial and non-financial metrics. In accounting, financial performance has traditionally been prominent, as its quantitative methods are directly linked to financial data (Neely, 2002).

For instance, measures of financial performance, such as profit and return on investment, demonstrate how well a bank meets its goals. In contrast, there are various approaches to measuring non-financial performance. For the purposes of this study, financial performance is preferred over non-financial metrics, as it better addresses a gap in existing literature. In this investigation, profitability serves as the indicator of the bank's financial performance. Typically, a bank's profitability reflects its annual performance. Therefore, managers often prefer to reveal favorable information rather than unfavorable findings, and some may do so for personal interests (Bribesh, 2006). The influence of voluntary disclosure on banks' profitability (including ROE, ROA, and NIM) has been analyzed in multiple studies, yielding varied results. Some research indicated a positive significant relationship between voluntary disclosure and bank profitability, while other studies found no significant correlation.

Based on the previous illustrated literature, the researcher formed the following hypothesis:

H4. There is a statistical association between accounting conservatism and voluntary disclosure of banks in Egypt using financial performance as a moderator.

2.6 Banks' Voluntary Disclosure, Financial Reporting Quality and the Moderating Role of Financial Performance

Many people believe that financial performance plays a significant role in deciding whether to make voluntary disclosures (Ellili, 2022). Because they are better able to communicate their financial stability and growth prospects to external stakeholders, banks that perform better financially are more likely to participate in voluntary disclosure. A strong financial record indicates that the bank is efficiently allocating its resources and is less likely to conceal negative information.

Given the moderating effect of financial performance, banks with better financial performance may be more affected by the quality of financial reporting on voluntary disclosure. Profitable firms tend to make more voluntary disclosures because they have less to conceal and are more assured of their financial situation, according to studies like those by Harun et al. (2020). Furthermore, strong financial results can supply the funds required to put comprehensive disclosure plans into action (Healy & Palepu, 2001).

Based on the previous illustrated literature, the researcher formed the following hypothesis:

H5. There is a positive association between financial reporting quality and voluntary disclosure of banks in Egypt using financial performance as a moderator.

2.7 Banks' Voluntary Disclosure, Audit Committee Characteristics, and and the Moderating Role of Financial Performance

Numerous studies have been conducted in the literature on the connection between banks' voluntary disclosure and their financial performance. Financially successful banks frequently use voluntary disclosure as a signaling tool to keep investors confident and draw in new stakeholders. A bank's reputation is strengthened by transparent disclosure practices, which also lower capital costs and improves market perceptions (Ahmed & Courtis, 2020). However, in order to defend their performance, lay out recovery plans, and win back investor confidence, financially troubled banks may also turn to voluntary disclosure (Elshandidy & Neri, 2015).

The degree and type of voluntary disclosure can therefore be influenced by financial performance. In order to stand out from rivals and keep a strong market presence, profitable banks are more likely to voluntarily disclose non-mandatory financial and non-financial information. To prevent harm to their reputation, banks in financial trouble, however, might purposefully hide unfavorable information or reveal only certain information (Dilling, 2010).

Based on the previous illustrated literature, the researcher formed the following hypothesis:

H6. There is a statistical association between audit committee characteristics and voluntary disclosure of banks in Egypt using financial performance as a moderator.

2.8Research Theoretical Framework and Hypotheses

In the research framework presented in Figure (1) six research hypotheses are examined to show the impact of the three main independent variables—accounting conservatism, financial reporting quality, and audit committee characteristics—on the dependent variable—voluntary disclosure, using financial performance as a moderator.

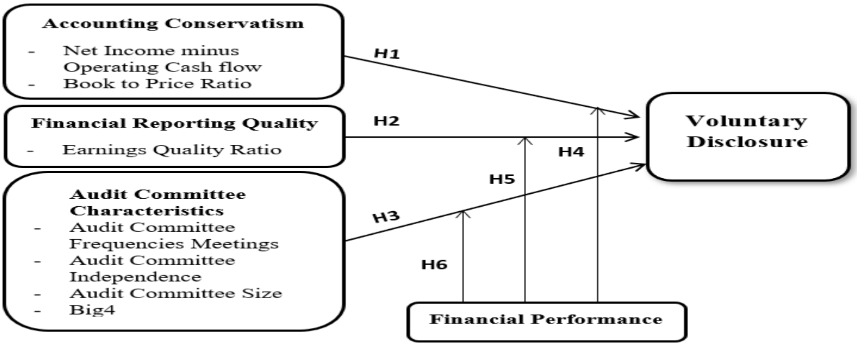

Figure (1) Research Theoretical Framework

3. Research Methodology

3.1 Research Population and Sample

The research used a quantitative research design to examine relationships among variables. The research sample, observed from 2020 to 2024, consists of 25 active banks selected from a population of 37 active banks (both listed and non-listed on the Egyptian Stock Exchange). This sample proportionally represents the Islamic and conventional banks within the total population. The research sample of the selected banks is shown in Table (1).

Table (1) The Research Sample Selected

Listed / Unlisted	No.	Bank Name	Percentage
Listed Islamic Banks	**1**	Faisal Islamic Bank of Egypt	**16%**
	2	Abu Dhabi Islamic Bank – Egypt	
	3	Al Baraka Bank – Egypt	

	4	The United Bank of Egypt	
Unlisted Islamic Banks	**5**	Nasser Social Bank	**8%**
	6	Banque Misr – Islamic Branches	
Listed Conventional Banks	**7**	Commercial International Bank (CIB)	**36%**
	8	QNB AlAhli	
	9	Crédit Agricole Egypt	
	10	National Bank of Kuwait – Egypt (NBK)	
	11	Suez Canal Bank	
	12	EG Bank	
	13	Housing and Development Bank (HD Bank)	
	14	EBank	
	15	SAIB Bank	
Unlisted Conventional Banks	**16**	National Bank of Egypt	**40%**
	17	Banque Misr	
	18	Banque du Caire	
	19	Alex Bank	
	20	Arab African International Bank (AAIB)	
	21	HSBC Egypt	
	22	Arab Bank	
	23	Emirates NBD Egypt	
	24	Mashreq Bank	
	25	Industrial Development Bank (IDB)	
Total		**25**	**100%**

3.2Data Collection

All essential information is encompassed within the financial reports. The research sample comprises 25 active banks listed and non-listed on the Egyptian Stock Exchange, spanning the period from 2020 to 2024. By examining the websites, financial statements and annual reports of the banks in the sample, the researcher collected the necessary information. The analysis relied on the Egyptian Stock Exchange and bank websites as the primary sources of data. To select the sample of listed commercial and Islamic banks, the researcher utilized the Egyptian Stock Exchange and Mubashir Miser websites. Additionally, yearly reports from the chosen banks' websites were obtained to gather data on research factors. The statistical impact of accounting conservatism, financial reporting quality, and audit committee characteristics on the voluntary disclosure of banks in Egypt were examined using the following six multiple regression models All essential information is encompassed within the financial reports. The research sample comprises 25 active banks listed and non-listed on the Egyptian Stock Exchange, spanning the period from 2020 to 2024. By examining the websites, financial statements and annual reports of the banks in the sample, the researcher collected the necessary information. The analysis relied on the Egyptian Stock Exchange and bank websites as the primary sources of data. To select the sample of listed conventional and Islamic banks, the researcher utilized the Egyptian Stock Exchange and Mubashir Miser websites. Additionally, yearly reports from the chosen banks' websites were obtained to gather data on research factors. The statistical impact of accounting conservatism, financial reporting quality, and audit committee characteristics on the voluntary disclosure of banks in Egypt were examined using the following six multiple regression models:

1- **Voluntary disclosure**: measured using an index.
2- **Accounting conservatism**: were measured by summing up the two variables: net income minus operating cash flow, and book to price ratio.
3- **Financial reporting quality**: were measured by earnings quality ratio.
4- **Audit committee characteristics**: measured by summing up the four variables: audit committee frequencies meetings, audit committee independence, audit committee size, and big4.

3.3 Regression Models without Moderator

First regression model, adopted to investigate the impact of accounting conservatism on voluntary disclosure in Egyptian banks

H1. There is a statistical association between accounting conservatism and voluntary disclosure in Egyptian banks.

<u>To test the first hypothesis, the following regression model was stated:</u>

$$\boldsymbol{VD_{t+1} = f\ (AC_t, Controls)}$$

$$\mathbf{VD_{it} = \alpha + \beta_1\, NIOCF_{it} + \beta_2\, BPR_{it} + \beta_3\, BS_{it} + \beta_4\, LIQ_{it} + \beta_5\, TQ_{it} + \varepsilon_{it}}$$

Where,

α = Constant of the regression model

VD = Voluntary disclosure of the bank (i) within the time period (t)

β_1 = Accounting conservatism (AC) of the bank (i) within the time period (t) measured by the value of net income after tax minus operating cash flow (NIOCF)

β_2 = Accounting conservatism (**AC)** of the bank (i) within the time period (t) measured by the book-to-price ratio (BPR)

β_3 = Bank size (BS) of the bank (i) within the time period (t)

β_4 = Liquidity (LIQ) of the bank (i) within the time period (t)

β_5 = Tobin's Q (TQ) – Market value of the bank (i) within the time period (t)

It = Bank i - time t.

ε_{it} = Error term

Second regression model, adopted to investigate the impact of financial reporting quality on voluntary disclosure in Egyptian banks

H2. There is a statistical association between financial reporting quality and voluntary disclosure in Egyptian banks.

To test the second hypothesis, the following regression model was stated:

$$VD_{t+1} = f\ (FRQ_t, Controls)$$

$$VD_{it} = \alpha + \beta_1\, EQR_{it} + \beta_2\, BS_{it} + \beta_3\, LIQ_{it} + \beta_4\, TQ_{it} + \varepsilon_{it}$$

Where,

α = Constant of the regression model

VD = Voluntary disclosure of the bank (i) within the time period (t)

β_1 **=** Financial reporting quality (FRQ) of the bank (i) within the time period (t) measured by the earnings quality ratio (EQR)

β_2 = Bank size (BS) of the bank (i) within the time period (t)

β_3 = Liquidity (LIQ) of the bank (i) within the time period (t)

β_4 **=** Tobin's Q (TQ) – Market value of the bank (i) within the time period (t)

It = Bank i - time t.

ε_{it} = Error term

Third regression model, adopted to investigate the impact of audit committee characteristics on voluntary disclosure in Egyptian banks

H3. There is a statistical association between audit committee characteristics and voluntary disclosure in Egyptian banks.

To test the third hypothesis, the following regression model was stated:

$$VD_{t+1} = f\ (ACC_t, Controls)$$

$$\mathbf{VD_{it} = = \alpha + \beta_1\, ACFM_{it} + \beta_2\, ACI_{it} + \beta_3\, ACS_{it} + \beta_4\, B4_{it} + \beta_5\, BS_{it} + \beta_6\, LIQ_{it} + \beta_7\, TQ_{it} + \varepsilon_{it}}$$

Where,

α = Constant of the regression model

VD = Voluntary disclosure of the bank (i) within the time period (t)

β_1 **=** Audit committee characteristics (ACC) of the bank (i) within the time period (t) measured by the audit committee frequencies meetings (ACFM)

β_2 **=** Audit committee characteristics (ACC) of the bank (i) within the time period (t) measured by the audit committee independence (ACI)

β_3 **=** Audit committee characteristics (ACC) of the bank (i) within the time period (t) measured by the audit committee size (ACS)

β_4 **=** Audit committee characteristics (ACC) of the bank (i) within the time period (t) measured Big4 (B4) of the bank (i) within the time period (t)

β_5 = Bank size (BS) of the bank (i) within the time period (t)

β_6 = Liquidity (LIQ) of the bank (i) within the time period (t)

β_7 **=** Tobin's Q (TQ) – Market value of the bank (i) within the time period (t)

It = Bank i - time t.

ε_{it} = Error term

3.4 Regression Models with Moderator

To include profitability measured by **Return on Equity (ROE)** as a **moderator** in the regression models, we **interact ROE with the independent variables** whose effects on the dependent variable (voluntary disclosure).

Fourth regression model, adopted to investigate the impact of accounting conservatism on voluntary disclosure in Egyptian banks using financial performance as a moderator

H4. There is a statistical association between accounting conservatism and voluntary disclosure in Egyptian banks using financial performance as a moderator.

To test the fourth hypothesis, whether ROE moderates the relationship between each independent variable and voluntary disclosure, the following regression model was stated:

$$VD_{t+1} = f\,(AC_t * \mathrm{PROF}_t, Controls)$$

$$VD_{it} = \alpha + \beta_1\, NIOCF_{it} + \beta_2\, BPR_{it} + \beta_3\, BS_{it} + \beta_4\, LIQ_{it} + \beta_5\, TQ_{it} + \beta_6\, ROE_{it} + \beta_7\, (NIOC_{it} \times ROE_{it}) + \beta_8\, (BPR_{it} \times ROE_{it}) + \beta_9\, (BS_{it} \times ROE_{it}) + \beta_{10}\, (LIQ_{it} \times ROE_{it}) + \beta_{11}\, (TQ_{it} \times ROE_{it}) + \varepsilon_{it}$$

Where,

α = Constant of the regression model

VD = Voluntary disclosure of the bank (i) within the time period (t)

The variable ROE (Return on Equity) is introduced as a moderating variable to examine its interaction effects with key independent and control variables. The coefficients are interpreted as follows:

$\boldsymbol{\beta_6}$ **=** The moderator, profitability measured by return on equity **(ROE)** on the relationship between independent and control variables and voluntary disclosure **(VD)** for bank *i* in time period *t*.

$\boldsymbol{\beta_7}$ = The moderating effect of profitability **(ROE)** on the relationship between accounting conservatism **(AC)** measured by net income after tax minus operating cash flow **(NIOCF)** and voluntary disclosure **(VD)** for bank *i* in time period *t*.

$\boldsymbol{\beta_8}$ = The moderating effect of profitability **(ROE)** on the relationship between accounting conservatism (**AC**) measured by the book-to-price ratio **(BPR)** and voluntary disclosure **(VD)** for bank *i* in time period *t*.

$\boldsymbol{\beta_9}$ = The moderating effect of profitability **(ROE)** on the relationship between bank size **(BS)** and voluntary disclosure **(VD)** for bank *i* in time period *t*.

$\boldsymbol{\beta_{10}}$ = The moderating effect of profitability **(ROE)** on the relationship between liquidity **(LIQ)** and voluntary disclosure (**VD**) for bank *i* in time period *t*.

$\boldsymbol{\beta_{11}}$ = The moderating effect of profitability **(ROE)** on the relationship between Tobin's Q (**TQ**), representing market value, and voluntary disclosure **(VD)** for bank *i* in time period *t*.

It = Bank i - time t.

ε_{it} = Error term

Fifth regression model, adopted to investigate the impact of accounting conservatism on voluntary disclosure in Egyptian banks using financial performance as a moderator

H5. There is a statistical association between financial reporting quality and voluntary disclosure in Egyptian banks using financial performance as a moderator.

To test the fifth hypothesis, whether ROE moderates the relationship between each independent variable and voluntary disclosure, the following regression model was stated:

$$VD_{t+1} = f\,(FRQ_t * \mathrm{PROF}_t, Controls)$$

$$VD_{it} = \alpha + \beta_1 EQR_{it} + \beta_2 BS_{it} + \beta_3 LIQ_{it} + \beta_4 TQ_{it} + \beta_5 ROE_{it} + \beta_6 (EQR_{it} \text{ x } ROE_{it}) + \beta_7 BS_{it} \text{ x } ROE_{it}) + \beta_8 (LIQ_{it} \text{ x } ROE_{it}) + \beta_9 (TQ_{it} \text{ x } ROE_{it}) + \varepsilon_{it}$$

Where,

α = Constant of the regression model

VD = Voluntary disclosure of the bank (i) within the time period (t)

β_5 **=** The moderator, profitability measured by return on equity **(ROE)** on the relationship between independent and control variables and voluntary disclosure **(VD)** for bank *i* in time period *t*.

β_6 **=** The moderating effect of profitability **(ROE)** on the relationship between financial reporting quality (FRQ) measured by the earnings quality ratio (EQR) and voluntary disclosure **(VD)** for bank *i* in time period *t*.

β_7 = The moderating effect of profitability **(ROE)** on the relationship between bank size **(BS)** and voluntary disclosure **(VD)** for bank *i* in time period *t*.

β_8 = The moderating effect of profitability **(ROE)** on the relationship between liquidity **(LIQ)** and voluntary disclosure (**VD**) for bank *i* in time period *t*.

β_9 = The moderating effect of profitability **(ROE)** on the relationship between Tobin's Q (**TQ**), representing market value, and voluntary disclosure **(VD)** for bank *i* in time period *t*.

It = Bank i - time t.

$\boldsymbol{\varepsilon_{it}}$ = Error term

Sixth regression model, adopted to investigate the impact of audit committee characteristics on voluntary disclosure in Egyptian banks using financial performance as a moderator

H6. There is a statistical association between audit committee characteristics and voluntary disclosure in Egyptian banks using financial performance as a moderator.

To test the sixth hypothesis, whether ROE moderates the relationship between each independent variable and voluntary disclosure, the following regression model was stated:

$$VD_{t+1} = f\,(ACC_t * \mathrm{PROF}_t, Controls)$$

$$\mathrm{VD}_{it} = \alpha + \beta_1\,\mathrm{ACFM}_{it} + \beta_2\,\mathrm{ACI}_{it} + \beta_3\,\mathrm{ACS}_{it} + \beta_4\,\mathrm{B4}_{it} + \beta_5\,\mathrm{BS}_{it} + \beta_6\,\mathrm{LIQ}_{it} + \beta_7\,\mathrm{TQ}_{it} + \beta_8\,\mathrm{ROE}_{it} + \beta_9\,(\mathrm{ACFM\ x\ ROE}_{it}) + \beta_{10}\,(\mathrm{ACI\ x\ ROE}_{it}) + \beta_{11}\,(\mathrm{ACS\ x\ ROE}_{it}) + \beta_{12}\,\mathrm{B4\ x\ ROE}_{it}) + \beta_{13}\,(\mathrm{BS}_{it}\ \mathrm{x\ ROE}_{it}) + \beta_{14}\,(\mathrm{LIQ}_{it}\ \mathrm{x\ ROE}_{it}) + \beta_{15}\,(\mathrm{TQ}_{it}\ \mathrm{x\ ROE}_{it}) + \varepsilon_{it}$$

Where,

α = Constant of the regression model
VD = Voluntary disclosure of the bank (i) within the time period (t)

β_8 **=** The moderator, profitability measured by return on equity **(ROE)** on the relationship between independent and control variables and voluntary disclosure **(VD)** for bank *i* in time period *t*.

β_9 **=** The moderating effect of profitability **(ROE)** on the relationship between audit committee characteristics (ACC) measured by the audit committee frequencies meetings (ACFM) and voluntary disclosure **(VD)** for bank *i* in time period *t*.

β_{10} **=** The moderating effect of profitability **(ROE)** on the relationship between audit committee characteristics (ACC) measured by the audit committee independence (ACI) and voluntary disclosure **(VD)** for bank *i* in time period *t*.

$\boldsymbol{\beta_{11}}$ **=** The moderating effect of profitability **(ROE)** on the relationship between audit committee characteristics (ACC) measured by the audit committee size (ACS) and voluntary disclosure **(VD)** for bank *i* in time period *t*.

$\boldsymbol{\beta_{12}}$ **=** The moderating effect of profitability **(ROE)** on the relationship between audit committee characteristics (ACC) measured by the Big4 (B4) and voluntary disclosure **(VD)** for bank *i* in time period *t*.

$\boldsymbol{\beta_{13}}$ = The moderating effect of profitability **(ROE)** on the relationship between bank size **(BS)** and voluntary disclosure **(VD)** for bank *i* in time period *t*.

$\boldsymbol{\beta_{14}}$ = The moderating effect of profitability **(ROE)** on the relationship between liquidity **(LIQ)** and voluntary disclosure (**VD**) for bank *i* in time period *t*.

$\boldsymbol{\beta_{15}}$ = The moderating effect of profitability **(ROE)** on the relationship between Tobin's Q (**TQ**), representing market value, and voluntary disclosure **(VD)** for bank *i* in time period *t*.

It = Bank i - time t.

$\boldsymbol{\varepsilon_{it}}$ = Error term

4. Research Variables Definitions and Measurements

As shown in Table (2), it displays the definitions and measurements of the dependent, independent, and control variables for the six panel regression models.

Table (2) Definition and Measurement of Research Variables

Variables		Definition	Measurement
Dependent Variable	**Voluntary Disclosure (VD)**	The extent to which banks provide information beyond mandatory requirements in financial reports.	Voluntary Disclosure Index (VDI)
Independent Variable Accounting Conservatism (AC)	**Net Income minus Operating Cash Flow (NIOCF)**	Measures the gap between accrual and cash accounting to capture conservative reporting.	Net Income – Operating Cash Flow (scaled by total assets).
	Book to Price Ratio (BPR)	A valuation metric that reflects conservative valuation of assets. is a key metric in evaluating bank valuations. It is the inverse of the Price-to-Book (P/B) ratio. A higher B/M ratio (or lower P/B ratio) may indicate that a bank is undervalued, while a lower B/M ratio (or higher P/B ratio) could suggest overvaluation.	Book Value of Equity / Market Value of Equity.
Independent Variable Financial Reporting Quality (FRQ)	**Earnings Quality Ratio (EQR)**	Assesses the quality and reliability of reported earnings. This ratio gives insight into the **quality of earnings**—a ratio close to or greater than 1 indicates that reported net income is supported by actual cash flow from operations.	Ratio of Cash Flow from Operations / Net Income.
Independent Variable Audit Committee Characteristics (ACC)	**Audit Committee Frequency of Meetings (ACFOM)**	Reflects the diligence and oversight capacity of the audit committee.	Number of audit committee meetings per year.
	Audit Committee Independence (ACI)	Proportion of independent directors on the audit committee.	Number of independent directors / Total audit committee

			members.
	Audit Committee Size (ACS)	Number of directors serving on the audit committee.	A dummy variable that takes the value of 1 if the audit committee consists of at least 3 members, 0 otherwise.
	Big 4	Indicates the presence of a top-tier external auditor.	Dummy variable that equals one when the company hires one of the big4 (the firm's external auditor is Deloitte, Ernst & Young, KPMG, or PwC), and zero otherwise.
Control Variables	**Bank Size (BS)**	Reflects the scale of a bank’s operations.	Natural logarithm of total assets.
	Liquidity (LIQ)	Measures the bank’s ability to meet short-term obligations.	Liquid Assets / Total Assets.
	Tobin’s Q (TQ)	Proxy for investment opportunities and firm value.	Market Value of Assets / Book Value of Assets.
Moderator	**Profitability (PROF)**	The main effect of using ROE as a moderator indicate how ROE is directly associated with voluntary disclosure and The interaction terms test whether the relationship between each independent variable (e.g., NIOCF, BPR, etc.) and VD changes depending on the level of ROE.	ROE

5. Voluntary Disclosure Index

In this research, the researcher used a voluntary disclosure index, which is defined as a dummy variable that equals one when the bank makes VD and zero otherwise. VD Score based on 45 Indicators of VD parameters as shown in Table (3).

Category A: Financial Performance & Risk Disclosure (FP & RD)

Disclosure of Financial Performance & Risk Disclosure (FP & RD) category is measured using 3 aspects namely: forward-looking information aspect score based on 5 indicators parameters, detailed risk exposure & management aspect score based on 5 indicators parameters, and other financial details and forecasting aspect score based on 5 indicators parameters.

Category B: Corporate Governance Disclosure (CGD)

Disclosure of Corporate Governance Disclosure (CGD) category is measured using 3 aspects namely: board structure and composition aspect score based on 5 indicators parameters, board committees & processes aspect score based on 5 indicators parameters, and internal control & risk governance aspect score based on 5 indicators parameters.

Category C: Disclosure of Corporate Social Responsibility & Sustainability Information (CSRD)

Disclosure of Corporate Social Responsibility & Sustainability Information (CSRD) category is measured using 3 aspects namely: environmental performance aspect score based on 4 indicators parameters, social performance aspect score based on 7 indicators parameters and ethics & CSR governance aspect score based on 4 indicators parameters.

Disclosure can be found in annual reports, sustainability/VD reports, integrated reports, or dedicated sections on the bank website. The index uses a common approach found in research: an unweighted disclosure index where each item scores 1 if disclosed and 0 if not disclosed. The total score (and sub-scores for FP & RD, CGD, and CSRD) can then be calculated as the sum of scores, often expressed as a percentage of the maximum possible score.

The overall VD disclosure composite score for each bank was then computed as the mean score across the three pillars and computed as follows:

$$VD\ Score = \frac{\mathbf{FP\ \&\ RD + CGD + CSRD}}{\mathbf{3}} \times \mathbf{100}$$

Where,

FP & RD: Financial Performance & Risk Disclosure Score

CGD: Corporate Governance Disclosure Score

CSRD: Corporate Social Responsibility & Sustainability Disclosure Score.

Table (3) Vountary Disclosure Index

Category	Aspect	No.	Do the reports contain information on Items (Total 45)
Category A Financial	FP & RD 1: Forward-Looking Information	1	Disclosure of quantitative earnings forecasts or profit predictions
		2	Disclosure of new product/service development
		3	Disclosure of strategic goals related to financial

Performance & Risk Disclosure (FP & RD)			performance (e.g., target ROE, market share)
		4	Discussion of future plans for capital expenditures or significant investments
		5	Management discussion on expected future trends and competitive landscape
	FP & RD 2: Detailed Risk Exposure & Management	**1**	Detailed qualitative discussion of credit risk management policies and processes
		2	Detailed qualitative discussion of market risk management policies and processes
		3	Discussion of specific emerging risks (e.g., climate risk, cybersecurity risk) and mitigation strategies
		4	Detailed qualitative discussion of liquidity risk management policies, processes, and contingency plans
		5	Detailed qualitative discussion of operational risk management framework, major loss events (anonymized if needed), or mitigation strategies
	FP & RD 3: Other Financial Details	**1**	Detailed breakdown of non-interest income sources.
		2	Detailed breakdown of operating expenses.
		3	Information on off-balance sheet exposures and commitments beyond mandatory notes
		4	Segmental reporting details (e.g., profitability by segment) beyond minimum requirements
		5	Explanation for significant accounting policy choices where alternatives exist under standards
Category B **Corporate Governance Disclosure (CGD)**	**CGD 1: Board Structure and Composition**	**1**	Detailed profiles/biographies of individual board members (qualifications, expertise, other directorships)
		2	Disclosure of board diversity policy and statistics (e.g., gender, skills matrix)
		3	Disclosure of director tenure policy or average/individual tenure
		4	Information on director selection/nomination process
		5	Disclosure of board meeting attendance records for individual directors
	CGD 2: Board Committees & Processes	**1**	Detailed description of the role, responsibilities, and composition of key committees (audit, risk, nomination, remuneration)
		2	Disclosure of the number of meetings held by each committee during the year
		3	Disclosure of key activities or focus areas of committees during the year
		4	Information on the process for board performance

			evaluation (self-assessment, external facilitator)
		5	Disclosure on director training and development programs
	CGD 3: Internal Control & Risk Governance	**1**	Detailed description of the internal control framework and its effectiveness (management's assessment beyond standard statements)
		2	Description of the internal audit function's role, independence, and reporting lines
		3	Description of the risk management function's structure, independence, and reporting lines
		4	Clear explanation of the division of risk oversight responsibilities between the board, risk committee, and management
		5	Disclosure of a Code of Conduct/Ethics and information on its implementation/monitoring
Category C **Corporate Social Responsibility & Sustainability Disclosure (CSRD)**	**CSRD 1: Environmental Performance**	**1**	Disclosure of an environmental policy or commitment
		2	Information on initiatives to reduce environmental impact (e.g., energy consumption, water usage, waste management)
		3	Quantitative data on environmental performance (e.g., GHG emissions, energy saved)
		4	Information on green financing initiatives or sustainable products/services
	CSRD 2: Social Performance	**1**	Information on employee training and development programs (quantitative data like hours/employee is stronger)
		2	Disclosure of employee diversity data (e.g., gender ratio at different levels)
		3	Disclosure of policies on fair labor practices and human rights
		4	Information on community investment/support programs (donations, volunteering)
		5	Disclosure of initiatives supporting financial inclusion or literacy
		6	Information on responsible lending/investment policies (e.g., exclusion criteria, sector financing like SMEs)
		7	Information on handling customer complaints and data privacy/security measures
	CSRD 3: Ethics & CSR Governance	**1**	Disclosure of anti-corruption and anti-bribery policies and training
		2	Information on responsible marketing and advertising

			practices
		3	Availability of a standalone CSR/Sustainability report.
		4	Linkage of CSR activities to national development goals (e.g., Egypt Vision 2030)

6. Statistical Results

Table (4) Descriptive Statistics of Independent Variable Items

Variable	Sub-Variable	Obs	Mean	Std. Dev.	Min.	Max.
AC	**NIOC**	125	0.0248	0.012801	0.01	0.05
	BPR	125	0.88264	0.157491	0.5	1.33
FRQ	**EQR**	125	1.02656	0.04945	0.9	1.2
ACC	**ACFM**	125	9.824	1.218566	7	13
	ACI	125	0.65712	0.070366	0.5	0.8
	ACS	125	0.672	0.471374	0	1
	B4	125	0.92	0.272385	0	1

As it appears from Table (4) there were different measurements for each variable. Therefore, having the average of the items to calculate a measure of each variable would be biased. **The solution is to find a standardized value for each variable by using the following formula:**

$$Z = \frac{X - \mu}{\sigma}, \mu \text{ is mean and } \sigma \text{ is standard deviation}$$

This would ensure a more precise measure for the main variables upon calculating the averages of the new variables. **For example:**

$$ZNIOC = \frac{\boldsymbol{NIOC - 0.0246}}{\boldsymbol{0.0128012}}, \boldsymbol{ZBPR} = \frac{\boldsymbol{BPR - 0.89264}}{\boldsymbol{0.1574911}}$$

Then lastly using these values the OE is calculated using:

$$\boldsymbol{ZAC} = \frac{\boldsymbol{ZNIOC + ZBPR}}{\boldsymbol{2}}$$

Where ZAC is the new standardized measure of accounting conservatism. Likely, the ZFRQ and ZACC are calculated.

1. Regarding the dependent variable, the voluntary disclosure (VD) is for each bank yearly. The variable was found to be not normal through the Shapiro-Wilk test. Therefore the natural logarithmic function was considered.

$$\boldsymbol{lnVD} = \mathbf{ln}(\boldsymbol{VD})$$

2. The same case was done for the moderator variable, **Return on Equity (ROE)**.

$$\boldsymbol{lnROE} = \mathbf{ln}(\boldsymbol{ROE})$$

3. The same case was done through the three control variables: Board size (BS), Liquidity (LIQ), and Tobin's Q (TQ).

$$\boldsymbol{lnBS} = \mathbf{ln}(\boldsymbol{BS})$$
$$\boldsymbol{lnLIQ} = \mathbf{ln}(\boldsymbol{LIQ})$$
$$\boldsymbol{lnTQ} = \mathbf{ln}(\boldsymbol{TQ})$$

4. A moderator is generated through calculating interaction by multiplying ROE by independent variables.

$$\boldsymbol{modAC = ZAC * lnROE}$$

$$\boldsymbol{modFRQ = ZFRQ * lnROE}$$

$$\boldsymbol{modACC = ZACC * lnROE}$$

This would result in having a clean dataset ready for further inferential analysis. The analysis will be conducted using Stata 17.

6.1 Descriptive Statistics

Based on the descriptive statistics in Table (5) the variables show distinct patterns across the sample of 125 observations. The voluntary disclosure has a mean of 0.755 with a standard deviation of 0.091036, indicating relatively consistent performance across banks. This suggests moderate homogeneity in the underlying measure being captured. The independent variables demonstrate varied characteristics. Accounting conservatism shows a mean very close to zero (0.0000000005) with a standard deviation of 0.727759. Financial reporting quality exhibits a slightly positive mean (0.000000006) with a higher standard deviation of 0.999999, reflecting greater variability in the sample. The audit committee characteristics score has a mean near zero (0.000000001) with a moderate standard deviation of 0.540069 and a more contained range from -1.57279 to 1.40605, suggesting more consistent values across the sample. Regarding the control variables, the return on equity had an average of 10.8% with a standard deviation of 0.203226, indicating most banks perform below a certain benchmark with relatively low variation. Board size demonstrates a positive mean of 21.09 with a small standard deviation of 0.071927. Both liquidity and Tobin's Q show averages of 0.312 and 0.55236, respectively, with moderate to high standard deviations (0.835153 and 0.776693), indicating below-average performance with considerable variation across the banking sector.

Table (5) Descriptive Summary of Statistics for All the Variables

Variable	Obs	Mean	Std. Dev	Min.	Max.
lVD	125	-0.28067	0.091036	-0.51083	0.064539
ZAC	125	0.000000005	0.727759	-1.79287	2.245814
ZFRQ	125	0.000000006	0.999999	-2.55934	3.50736
ZACC	125	0.000000001	0.540069	-1.57279	1.406605
lnROE	125	-2.22122	0.203226	-3.01594	-1.76026
lnBS	125	3.048821	0.071927	2.829412	3.151426
lnLIQ	125	-1.16436	0.835153	-5.01079	0.625938
lnTQ	125	-0.59355	0.776693	-5.39253	0.637821

6.2 Multicollinearity Test

As shown in Table (6) all the VIF values are well below the threshold, indicating that there is no significant multicollinearity among the variables in this study. The VIF values suggest that multicollinearity is not a concern for the variables in this research. The results are consistent with the Pearson correlation coefficient measure.

Table (6) Variance Inflation Factor of Each Variable in the Model

Variable	VIF	1/VIF
ZAC	1.06	0.940547
ZEQR	1.21	0.828071
ZACC	1.08	0.924339
lnROE	1.19	0.843064
lnBS	1.14	0.87515
lnLIQ	1.14	0.880125
lnTQ	1.06	0.940245
Mean VIF	1.13	

6.3 Panel Data Analysis

Panel data, also known as longitudinal data, comprises observations of multiple subjects over time. This type of data is highly valuable, especially in controlling for unobserved heterogeneity and observing dynamics that cannot be captured with purely cross-sectional or time series data. By tracking the same subjects over multiple periods, panel data can reveal insights into temporal changes and the causal relationships between variables. As it is valuable for scholars in different fields, techniques have developed to accommodate for its specific nature.

The Feasible Generalized Least Squares (FGLS) estimator addresses heteroscedasticity and autocorrelation in panel data by transforming the model based on estimated variance-covariance structures, thereby improving efficiency over ordinary least squares (OLS). FGLS assumes that the error structure can be modeled parametrically, requiring consistent estimation of the weighting matrix. While effective under correct specification, FGLS remains sensitive to misspecification and primarily targets mean effects, potentially obscuring heterogeneous covariate impacts across the outcome distribution. FGLS prioritizes efficiency in mean estimation.

Quantile panel regression provides a robust alternative by modeling conditional quantiles rather than the mean, inherently accommodating heteroscedasticity without explicit variance structure assumptions. This method is particularly advantageous when covariate effects vary across quantiles or when the error distribution is non-normal. Recent advancements, such as fixed-effects quantile regression, extend its applicability to panel data, offering insights into distributional heterogeneity that FGLS cannot capture. Quantile regression excels in flexibility and robustness, making it preferable for analyzing skewed, heavy-tailed, or heteroscedastic data where policy or behavioral effects may differ across quantiles.

6.3.1 Panel Data Model for the First Hypothesis

H1. There is a statistical association between accounting conservatism and voluntary disclosure in Egyptian banks.

$$\mathbf{VD_{it} = \alpha + \beta_1\, NIOCF_{it} + \beta_2\, BPR_{it} + \beta_3\, BS_{it} + \beta_4\, LIQ_{it} + \beta_5\, TQ_{it} + \varepsilon_{it}}$$

Table (7) Modelling Panel Data Model for the First Hypothesis

lnVD	Coefficient	std. Error	z	P>z

ZAC	-0.050559	0.0297506	-1.7	0.089
lnROE	0.0989157	0.0474434	2.08	0.04
lnBS	0.5488127	0.1861342	2.95	0.003
lnLIQ	-0.0116701	0.0285487	-0.41	0.683
lnTQ	-0.0499288	0.0345575	-1.44	0.149
_cons	-2.212827	0.6230251	-3.55	0
Model Evaluation				
Test Statistic	12.69			
P-Value	0.0264			

As shown in Table (7) it seems the model is significant, as the p-value is less than 0.05. At a 95% confidence level, the models are significant, and the feasible generalized least squares model is more appropriate since it deals with heteroscedasticity. At a 90% confidence level, it seems that accounting conservatism had a negative significant impact on the voluntary disclosure. Such that increasing accounting conservatism by 1 unit results in a 5% decrease in VD. At a 95% confidence level, board size and ROE had a significant impact on voluntary disclosure. These findings would imply that ROE can be later introduced as a moderator in the fourth model. As by increasing board size by 1%, the voluntary disclosure increased by 54%, and by increasing ROE by 1%, the voluntary disclosure increases by 9.89%. Overall, it appears that the first hypothesis is supported.

The first model is thus presented as:

$$\widehat{lnVD} = -2.21287 - 0.050559\, ZAC + 0.5488127\, lnBS + 0.0989157\, lnROE - 0.0116701\, lnLIQ - 0.0499288\, lnTQ$$

The association between accounting conservatism and voluntary disclosure in Egyptian banks is supported by theoretical frameworks and empirical evidence. Accounting conservatism, defined by the unequal recognition of losses compared to gains, functions as a tool to reduce information asymmetry and improve the reliability of financial reporting. The impact of this factor on voluntary disclosure, defined as a firm's propensity to share additional, non-mandatory information, reveals a complex and context-dependent dynamic that requires thorough analysis.

Agency theory offers significant insights into this relationship from a theoretical standpoint. The theory posits that managers might be motivated to conceal unfavorable information to safeguard their interests, whereas shareholders seek increased transparency. Accounting conservatism limits managerial optimism bias by enforcing strict recognition criteria, which may decrease the necessity for additional voluntary disclosures. Excessive conservatism may paradoxically inhibit further disclosures due to increased concerns regarding litigation risk or reputational harm (Watts, 2003).

The empirical literature presents two contrasting viewpoints regarding this relationship. Certain studies endorse a complementary perspective, indicating that firms exhibiting greater conservatism may enhance disclosures to rationalize their accounting decisions (Ball & Shivakumar, 2005). Stronger evidence supports the substitution effect, indicating that conservatism diminishes the necessity for voluntary disclosure. LaFond and Roychowdhury (2008) illustrate that conservative accounting reduces information asymmetry, consequently lessening the need for additional voluntary disclosures. This effect is especially evident in regulated sectors such as banking, where the discipline of conservatism (Bushman & Piotroski, 2006) frequently supersedes managers' motivations for enhanced transparency.

García Lara et al. (2016) provide additional evidence for the substitution argument, indicating that conservative firms typically engage in less voluntary disclosure, as conservatism effectively reduces agency conflicts. The negative association indicates risk-averse managerial behavior, as Ahmed and Duellman (2013) demonstrate that conservative reporting enables overconfident managers to evade scrutiny, thereby diminishing their likelihood of disclosure. Qiang (2007) asserts that litigation-prone environments exacerbate this trade-off, rendering conservatism and voluntary disclosure as strategic substitutes.

In the context of Egyptian banking, these dynamics hold particular significance. The evidence indicates that conservative accounting's ex-ante constraints on earnings management, especially via asymmetric loss recognition, inherently restrict the marginal advantages of voluntary disclosures in institutionally complex environments. This understanding is essential for Egyptian regulators and policymakers tasked with balancing financial reporting standards and transparency incentives within an emerging market context.

The findings of the present research substantiate the hypothesis that accounting conservatism has a negative impact on voluntary disclosure in Egyptian banks, consistent with the prevailing substitution argument in the literature. This relationship is moderated by governance mechanisms, specifically board size, and profitability, measured by ROE, which both reinforce disclosure practices. These insights enhance academic knowledge and inform regulatory practices in emerging markets.

6.3.2 Panel Data Model for the Second Hypothesis

H2. There is a statistical association between financial reporting quality and voluntary disclosure in Egyptian banks.

$$\mathbf{VD_{it} = \alpha + \beta_1\, EQR_{it} + \beta_2\, BS_{it} + \beta_3\, LIQ_{it} + \beta_4\, TQ_{it} + \varepsilon_{it}}$$

Table (8) Modelling Panel Data Model for the Second Hypothesis

lnVD	Coefficient	std. Error	z	P>z
ZFRQ	0.0075408	0.0026749	2.82	0.003
lnROE	0.1141251	0.0357304	3.19	0.001
lnBS	0.3400489	0.1157105	2.94	0.003
lnLIQ	-0.0054291	0.0088916	-0.61	0.541
lnTQ	0.0181273	0.0092325	1.96	0.05

_cons	-1.566513	0.3715708	-4.22	0
Model Evaluation				
Test Statistic	20.58			
P-Value	0.001			

As shown in Table (8) it seems the model is significant as the p-value is less than 0.05. At a 95% confidence level, the models are significant, and the feasible generalized least squares model is more appropriate since it deals with heteroscedasticity. At a 99% confidence level, it seems that financial reporting quality had a positive significant impact on the voluntary disclosure. Such that increasing financial reporting quality by 1 unit results in a 0.7% increase in VD. At a 95% confidence level, board size, Tobin's Q, and ROE had a significant impact on voluntary disclosure. These findings would imply that ROE can be later introduced as a moderator in the fifth model. As by increasing board size by 1%, the voluntary disclosure increased by 34%, and by increasing ROE by 1%, the voluntary disclosure increases by 11.4%. In addition, Tobin's Q increases by 1 unit; it is related to an increase of 1.8% in voluntary disclosure. **Overall, it seems that the second hypothesis is supported.**

The second model is thus presented as:

$$\widehat{lnVD} = -1.566513 + 0.0075408\,ZFRQ + 0.3400489\,lnBS + 0.1141251\,lnROE - 0.0054291\,lnLIQ + 0.0181273\,lnTQ$$

The significant and important influence of financial reporting quality (FRQ) on voluntary disclosure (VD) within the banking sector can be clarified through various theoretical and empirical frameworks. High-quality financial reporting improves transparency, mitigates information asymmetry, and fosters stakeholder trust, thereby prompting banks to provide additional voluntary disclosures.

Effective financial reporting delivers precise, prompt, and dependable financial data, thereby minimizing information disparities between management and stakeholders (Healy & Palepu, 2001). When banks uphold robust financial reporting quality, they indicate a dedication to transparency, thereby enhancing the credibility of voluntary disclosures. Research conducted by Leuz and Verrecchia (2000) indicates that firms exhibiting superior reporting quality are more inclined to undertake voluntary disclosures, as they encounter reduced capital costs and heightened investor confidence.

Banks exhibiting higher financial reporting quality utilize voluntary disclosures as a signaling mechanism to distinguish themselves from competitors (Verrecchia, 2001). Providing supplementary non-mandatory information, such as risk management practices, corporate governance, or ESG initiatives, attracts investors and enhances market reputation. Hossain and Hammami (2009) conducted research in the banking sector, revealing that elevated financial reporting quality correlates with increased voluntary disclosures, as banks aim to showcase their financial stability and governance efficacy.

Banks function within a rigorously regulated environment, necessitating justification of their operations to regulators, investors, and the public. Alali and Foote (2012) demonstrate that banks exhibiting superior financial reporting practices are more likely to voluntarily disclose information to uphold legitimacy and public trust. Banks encounter significant regulatory oversight, and elevated FRQ guarantees adherence to standards while establishing a basis for further disclosures.

6.3.3 Panel Data Model for the Third Hypothesis

H3. There is a statistical association between audit committee characteristics and voluntary disclosure in Egyptian banks.

$$\mathbf{VD_{it} = = \alpha + \beta_1\, ACFM_{it} + \beta_2\, ACI_{it} + \beta_3\, ACS_{it} + \beta_4\, B4_{it} + \beta_5\, BS_{it} + \beta_6\, LIQ_{it} + \beta_7\, TQ_{it} + \varepsilon_{it}}$$

Table (9) Modelling Panel Data Model for the Third Hypothesis

lnVD	Coefficient	std. error	z	P>z
ZACC	0.0096334	0.0014672	6.57	0
lnROE	0.1014953	0.0340168	2.98	0.003
lnBS	0.3259012	0.11574	2.82	0.005
lnLIQ	-0.0055791	0.0089057	-0.63	0.531
lnTQ	0.0185374	0.0095319	1.94	0.052
_cons	-1.495411	0.3660128	-4.09	0
Model Evaluation				

Test Statistic	18.99
P-Value	0.0019

As shown in Table (9) it seems the model is significant, as the p-value is less than 0.05. At a 95% confidence level, the models are significant, and the feasible generalized least squares model is more appropriate since it deals with heteroscedasticity. At a 99% confidence level, it seems that audit committee characteristics had a positive significant impact on the voluntary disclosure. Such that increasing audit committee characteristics by 1 unit results in a 0.9% increase in VD. At a 90% confidence level, board size, Tobin's Q, and ROE had a significant impact on voluntary disclosure. These findings would imply that ROE can be later introduced as a moderator in the sixth model. As by increasing board size by 1%, the voluntary disclosure increased by 32.6%, and by increasing ROE by 1%, the voluntary disclosure increases by 10.1%. In addition, Tobin's Q increases by 1 unit; it is related to an increase of 1.8% in voluntary disclosure. **Overall, it seems that the third hypothesis is supported.**

The third model is thus presented as:

$$\widehat{lnVD} = -1.495411 + 0.0096334\, ZACC + 0.3259012\, lnBS + 0.1014953\, lnROE - 0.005791\, lnLIQ + 0.0185374\, lnTQ$$

The relationship between audit committee characteristics and voluntary disclosure in the banking sector is both positive and significant, as supported by corporate governance theories and empirical evidence. Effective audit committees strengthen oversight, enhance the credibility of financial reporting, and promote increased transparency, resulting in banks providing more voluntary disclosures.

Audit committees are essential for supervising financial reporting and ensuring adherence to regulations. The independence, financial literacy, and frequent meetings of an audit committee diminish information asymmetry between management and stakeholders. Arcay and Vázquez (2005) conducted a study indicating that banks characterized by more independent and expert audit committees are inclined to offer greater voluntary disclosures, as they emphasize transparency to draw in investors and mitigate agency costs.

Audit committees possessing accounting and financial expertise enhance the reliability of financial statements, thereby increasing the credibility of voluntary disclosures (Dhaliwal et al., 2010). Banks that have financially knowledgeable audit committee members are more inclined to disclose forward-looking information, risk management strategies, and corporate governance details to indicate their stability. Al-Shaer and Zaman (2016) conducted research in the banking sector, demonstrating that financial expertise within audit committees positively impacts sustainability and risk-related disclosures.

Banks function within a highly regulated framework, wherein audit committees guarantee compliance with financial reporting standards. Effective AC indicates adherence to regulatory standards, thereby fostering stakeholder confidence and promoting further voluntary disclosures (Klein, 2002). Al-Najjar and Abed (2014) conducted a study indicating that banks with larger and more active audit committees tend to disclose greater amounts of voluntary information to satisfy regulatory requirements and investor expectations.

Due to the high risks that banks encounter, including credit, liquidity, and operational risks, audit committees with robust risk oversight capabilities enhance voluntary risk disclosures (Lopes & Rodrigues, 2007). Banks that have well-structured audit committees are more inclined to disclose their risk management practices and governance policies to instill confidence in stakeholders. Elzahar and Hussainey (2012) conducted a study demonstrating that the independence of the audit committee and the frequency of meetings have a positive impact on risk-related voluntary disclosures.

6.3.4 Panel Data Model for the Fourth Hypothesis

H4. There is a statistical association between accounting conservatism and voluntary disclosure in Egyptian banks using financial performance as a moderator.

$$VD_{it} = \alpha + \beta_1 NIOCF_{it} + \beta_2 BPR_{it} + \beta_3 BS_{it} + \beta_4 LIQ_{it} + \beta_5 TQ_{it} + \beta_6 ROE_{it} + \beta_7 (NIOC_{it} \times ROE_{it}) + \beta_8 (BPR_{it} \times ROE_{it}) + \beta_9 (BS_{it} \times ROE_{it}) + \beta_{10} (LIQ_{it} \times ROE_{it}) + \beta_{11} (TQ_{it} \times ROE_{it}) + \varepsilon_{it}$$

Table (10) Modelling Panel Data Model for the Fourth Hypothesis

lnVD	Coefficient	std. error	z	P>z
ZAC	-0.220468	0.1062597	-2.07	0.038
lnROE	0.0816718	0.0335553	2.43	0.015
lnBS	0.2674793	0.1149212	2.33	0.02
lnLIQ	-0.0058341	0.0084984	-0.69	0.492
lnTQ	0.0188365	0.0091883	2.05	0.04
modAC	-0.093548	0.0481201	-1.94	0.052
_cons	-1.269395	0.3610785	-3.52	0
Model Evaluation				
Test Statistic	24.9			
P-Value	0.0004			

As shown in Table (10) it seems the model is significant as the p-value is less than 0.05. At a 95% confidence level, the models are significant, and the feasible generalized least square model is more appropriate since it deals with heteroscedasticity. At a 90% confidence level, it seems that accounting conservatism had a negative significant impact on the voluntary disclosure. Such that increasing accounting conservatism by 1 unit results in a 22% decrease in VD. At a 95% confidence level, board size and ROE had a significant impact on voluntary disclosure. As by increasing board size by 1%, the voluntary disclosure increased by 26%, and by increasing ROE by 1%, the voluntary disclosure increases by 8.16%. The moderator is found to be significant, as it causes the impact of the accounting conservatism to alter from a 5% decrease to a 22% decrease at a 90% confidence level.

$$\widehat{lnVD} = -1.269395 - 0.220468\,ZAC + 0.2674793\,lnBS + 0.0816718\,lnROE - 0.0058341\,lnLIQ + 0.0188365\,lnTQ - 0.093548\mathrm{ZAC} * \mathrm{lnROE}$$

The research's empirical findings indicate a statistically significant negative relationship between accounting conservatism and voluntary disclosure practices in Egyptian banks, with financial performance acting as a moderating variable. The inverse relationship can be elucidated through various interrelated theoretical and contextual factors that define both accounting conservatism and disclosure practices within the Egyptian banking sector.

Accounting conservatism prioritizes the cautious recognition of losses and postpones the acknowledgment of gains, resulting in a financial reporting framework that inherently discourages extensive voluntary disclosure. This prudent method of financial reporting results in various behavioral outcomes that adversely affect disclosure practices. The risk-averse characteristics of conservative accounting lead bank managers to hesitate in sharing forward-looking information or optimistic projections, as these disclosures may be viewed as inconsistent with conservative financial statements. In Egypt's regulated banking sector, conservative reporting mitigates litigation risks; however, it concurrently diminishes managerial incentives for further voluntary disclosures, as any additional information may subject the institution to regulatory scrutiny or investor skepticism.

The moderating role of financial performance elucidates this relationship. High-performing banks may experience substantial understatement of actual earnings and financial position due to accounting conservatism, which can discourage management from offering voluntary disclosures that would reveal this underreporting. In contrast, banks exhibiting weaker financial performance face compounded challenges due to conservatism, as managers tend to be increasingly reluctant to disclose voluntary information that could highlight the institution's financial difficulties. The dual effect elucidates the persistence of the negative relationship between conservatism and disclosure across varying performance levels within the Egyptian banking sector.

The institutional environment in Egypt presents contextual factors that further strengthen this negative association. The

Egyptian banking sector functions under stringent regulatory oversight, with conservative accounting practices frequently required or highly recommended. Nonetheless, the existing regulatory framework fails to offer adequate incentives for voluntary transparency. In contrast to more developed markets, where voluntary disclosures can improve market reputation and bolster investor confidence, Egyptian banks encounter market inefficiencies that diminish the advantages of such disclosures while sustaining the associated risks. Cultural factors in Egyptian business practices, which traditionally emphasize confidentiality and cautious communication of financial information, may contribute to this reluctance to disclose information.

The findings of this research are consistent with previous research conducted in both international and regional contexts. Numerous studies have shown that conservative accounting practices often limit voluntary disclosure activities, especially in emerging markets with evolving regulatory frameworks. The Egyptian context exemplifies a unique interplay among regulatory requirements, market expectations, and traditional business practices that collectively influence financial reporting behaviors. The findings enhance our comprehension of the interaction between accounting principles and disclosure practices within bank-specific contexts, especially in emerging economies where financial reporting standards are still developing.

6.3.5 Panel Data Model for the Fifth Hypothesis

H5. There is a statistical association between financial reporting quality and voluntary disclosure in Egyptian banks using financial performance as a moderator.

$$\mathbf{VD_{it} = \alpha + \beta_1\, EQR_{it} + \beta_2\, BS_{it} + \beta_3\, LIQ_{it} + \beta_4\, TQ_{it} + \beta_5\, ROE_{it} + \beta_6\, (EQR_{it} \times ROE_{it}) + \beta_7\, BS_{it} \times ROE_{it}) + \beta_8\, (LIQ_{it} \times ROE_{it}) + \beta_9\, (TQ_{it} \times ROE_{it}) + \varepsilon_{it}}$$

Table (11) Modelling Panel Data Model for the Fifth Hypothesis

lnVD	Coefficient	std. error	z	P>z
ZFRQ	0.0208702	0.0071789	2.91	0.003
lnROE	0.1120404	0.035824	3.13	0.002
lnBS	0.3471666	0.1165951	2.98	0.003
lnLIQ	-0.0053879	0.0089021	-0.61	0.545
lnTQ	0.0182859	0.0092195	1.98	0.047
modFRQ	-0.0126347	0.00297043	-4.25	0
_cons	-1.582197	0.3736592	-4.23	0
Model Evaluation				
Test Statistic	20.83			
P-Value	0.002			

As shown in Table (11) it seems the model is significant, as the p-value is less than 0.05. At a 95% confidence level, the models are significant, and the feasible generalized least squares model is more appropriate since it deals with heteroscedasticity. At a 90% confidence level, it seems that financial reporting quality had a positive significant impact on the voluntary disclosure. Such that increasing financial reporting quality by 1 unit results in a 2% increase in VD. At a 95% confidence level, board size and ROE had a significant impact on voluntary disclosure. As by increasing board size by 1%, the voluntary disclosure increased by 34%, and by increasing ROE by 1%, the voluntary disclosure increases by 11.2%. The moderator is found to be significant, as it causes the impact of the FRQ to alter from a 0.7% increase to a 2% increase at a 95% confidence level.

$$\boldsymbol{\widehat{lnVD} = -1.582197 + 0.0208702\, ZFRQ + 0.3471666\, lnBS + 0.1120404\, lnROE - 0.0053879\, lnLIQ + 0.0182859\, lnTQ - 0.0126347\, \mathrm{ZFRQ} * \mathrm{lnROE}}$$

This research demonstrates a statistically significant positive correlation between financial reporting quality (FRQ) and voluntary disclosure (VD) in Egyptian banks, with financial performance acting as a crucial moderating variable. This finding is consistent with various theoretical frameworks and empirical studies, indicating that high-quality financial reporting fosters an institutional environment that enhances transparency via voluntary disclosures.

The beneficial effects of FRQ on VD can be elucidated through various complementary mechanisms. High-quality financial reporting mitigates information asymmetry between bank management and stakeholders by delivering reliable, timely, and comprehensive financial information (Barth et al., 2008). When banks establish credibility via superior reporting practices, they create a trust foundation that encourages management to offer additional voluntary information. The effect is notably significant in the banking sector, where stakeholders require comprehensive information to evaluate risk profiles and financial stability (Beatty & Liao, 2014).

Signaling theory posits that banks exhibiting high financial reporting quality utilize voluntary disclosures strategically to distinguish themselves within competitive financial markets (Verrecchia, 2001). Supplementing mandatory reports with voluntary information regarding governance practices, risk management, and future prospects enables banks to attract investors and improve their market reputation. The banking environment in Egypt enhances this phenomenon, as banks in emerging markets encounter increased uncertainty and therefore gain more from reliable indicators of quality (Hassan & Marston, 2019).

The financial performance serves as a significant moderating factor in this relationship. High-performing banks benefit from robust financial reporting quality, which instills confidence and institutional support necessary for extensive voluntary disclosure, as management has favorable outcomes to present. In contrast, banks with lower performance but high financial reporting quality may enhance voluntary disclosures to clarify their financial status and reassure stakeholders, although the extent of this effect may be less pronounced than that

observed in top-performing banks.
The institutional context in Egypt further strengthens this positive relationship. The ongoing regulatory reforms and integration of the banking sector with international financial markets incentivize banks with high reporting quality to offer voluntary disclosures that reflect their adherence to global standards (Samaha & Dahawy, 2011). Moreover, in a context where financial information is highly regarded by regulators and investors alike, high-quality reporting fosters a virtuous cycle that incentivizes further transparency (Abd-Elsalam & Weetman, 2003).

Numerous studies in both developed and emerging markets provide empirical support for this relationship. Francis et al. (2008) found that firms exhibiting higher earnings quality are more likely to offer voluntary disclosures, especially in industries characterized by informational opacity, such as banking. In the context of the Middle East, Al-Janadi et al. (2013) established that governance and reporting quality have a positive effect on voluntary disclosure practices in Saudi banks. Similarly, Hossain and Hammami (2009) reported comparable findings for GCC countries.

6.3.6 Panel Data Model for the Sixth Hypothesis

H6. There is a statistical association between audit committee characteristics and voluntary disclosure in Egyptian banks using financial performance as a moderator.

$$\mathbf{VD_{it} = \alpha + \beta_1\, ACFM_{it} + \beta_2\, ACI_{it} + \beta_3\, ACS_{it} + \beta_4\, B4_{it} + \beta_5\, BS_{it} + \beta_6\, LIQ_{it} + \beta_7\, TQ_{it} + \beta_8\, ROE_{it} + \beta_9\, (ACFM \times ROE_{it}) + \beta_{10}\, (ACI \times ROE_{it}) + \beta_{11}\, (ACS \times ROE_{it}) + \beta_{12}\, B4 \times ROE_{it}) + \beta_{13}\, (BS_{it} \times ROE_{it}) + \beta_{14}\, (LIQ_{it} \times ROE_{it}) + \beta_{15}\, (TQ_{it} \times ROE_{it}) + \varepsilon_{it}}$$

Table (12) Modelling Panel Data Model for the Sixth Hypothesis

lnVD	Coefficient	std. error	z	P>z
ZACC	0.068895	0.028869	2.39	0.02
lnROE	0.100565	0.034096	2.95	0.003
lnBS	0.315969	0.116561	2.71	0.007
lnLIQ	-0.00515	0.008924	-0.58	0.564
lnTQ	0.018113	0.009546	1.9	0.058
modACC	0.025918	0.006459	4.01	0
_cons	-1.46318	0.368772	-3.97	0
Model Evaluation				
Test Statistic	19.15			
P-value	0.0039			

As shown in Table (12) it seems the model is significant, as the p-value is less than 0.05. At a 95% confidence level, the models are significant, and the feasible generalized least square model is more appropriate since it deals with heteroscedasticity. At a 90% confidence level, it seems that audit committee characteristics had a positive significant impact on the voluntary disclosure. Such that increasing audit committee characteristics by 1 unit results in a 6.89% increase in VD. At a 95% confidence level, board size and ROE had a significant impact on voluntary disclosure. As by increasing board size by 1%, the voluntary disclosure increased by 32%, and by increasing ROE by 1%, the voluntary disclosure increased by 10%. The moderator is found to be significant, as it causes the impact of the FRQ to alter from a 0.9% increase to a 6.88% increase at a 95% confidence level.

$$\widehat{lnVD} = -1.46318 + 0.068895\, ZACC + 0.315969\, lnBS + 0.100565\, lnROE - 0.00515\, lnLIQ + 0.018113\, lnTQ + 0.025918\, \mathrm{ZACC} * \mathrm{lnROE}$$

This research reveals a statistically significant positive correlation between the characteristics of audit committees and the practices of voluntary disclosure in Egyptian banks, with financial performance acting as a crucial moderating variable. The results indicate that effectively organized audit committees significantly contribute to improving transparency and the quality of disclosures within the Egyptian banking sector.

The beneficial impact of audit committees characteristics on VD can be elucidated through various complementary mechanisms derived from agency theory and corporate governance literature. Audit committees characterized by enhanced independence, financial expertise, and regular meetings offer more effective oversight of financial reporting processes (Klein, 2002). The improved monitoring diminishes information asymmetry between management and stakeholders, fostering an institutional environment conducive to voluntary disclosures (Karamanou & Vafeas, 2005). In Egypt, where corporate governance structures are evolving, strong audit committees are essential mechanisms for ensuring transparency.

Secondly, resource dependence theory posits that audit committees possessing specialized financial knowledge provide significant expertise in disclosure decisions (Hillman & Dalziel, 2003). Members of the audit committee possessing backgrounds in accounting or finance are more adept at assessing the costs and benefits associated with voluntary disclosures, resulting in enhanced reporting practices (Dhaliwal et al., 2010). The banking sector experiences an amplified effect, as intricate financial transactions necessitate specialized oversight to guarantee proper disclosure (Al-Shaer & Zaman, 2016).

The relationship is significantly moderated by financial performance. High-performing banks benefit from robust audit committees, which offer the necessary confidence and institutional backing to pursue extensive voluntary disclosure by verifying the accuracy of favorable financial information (García-Sánchez et al., 2019). Lower-performing banks with effective audit committees may enhance voluntary disclosures to clarify their financial status and uphold stakeholder trust, although the content and tone of these disclosures may vary (Elzahar & Hussainey, 2012).

The institutional context in Egypt further reinforces this positive relationship. With the implementation of corporate governance reforms and alignment with international standards, audit committees in banks are assuming more significant responsibilities in overseeing disclosure practices (Dahawy et al., 2012). The Central Bank of Egypt's focus on enhancing governance has rendered audit committee characteristics significantly impactful in influencing banks' disclosure practices (Samaha & Dahawy, 2011).

Empirical evidence across diverse contexts corroborates these findings. Allegrini and Greco (2013) conducted a study on European banks, revealing that the independence and expertise of the Audit Committee positively affect voluntary disclosures. Al-Najjar and Abed (2014) presented comparable findings for banks in the Middle East within emerging markets. In the context of Egypt, Samaha and Stapleton (2008) demonstrated that governance reforms have strengthened the function of audit committees in financial reporting and disclosure practices.

6.4. Quantile Panel Regression

To test the robustness of the results, a panel quantile regression model can be utilized. It is especially acceptable since there are issues of outliers in the dataset. This would require a model that does not rely on the mean but rather on other quantiles like the first quartile. In addition, it is suitable for heteroscedasticity in the data.

Table (13) Quantile Panel Regression Model for Hypotheses 1 and 4

	Model without Interactions				Model with Interactions			
lnVD	Coefficient	Std. Error	z	P>z	Coefficient	Std. Error	z	P>z
ZAC	-0.00947	0.000955	-9.91	0	-0.3856496	0.1074175	-3.59	0
lnROE	0.12228	0.00147	83.19	0	0.0101692	0.0030719	3.31	0
lnBS	0.230138	0.003597	63.97	0	0.0410932	0.1588943	0.26	0.796
lnLIQ	-0.01242	0.000689	-18.02	0	-0.0102495	0.0048417	-2.12	0.034
lnTQ	0.015379	0.000473	32.5	0	0.0075693	0.0086034	0.88	0.379
modAC	-	-	-	-	-0.1742723	0.0490207	-3.56	0

As shown in Table (13) it seems that the results are consistent with the ones earlier obtained from models 1 and 4 (the relationship between accounting conservatism and voluntary disclosure in Egyptian banks without a moderator and the relationship between accounting conservatism and voluntary disclosure in Egyptian banks using financial performance as a moderator). The accounting conservatism was found to have a significant negative impact on VD at a 99% confidence level. This appears to coincide with previous results. In addition, the ROE is a significant moderator in the relationship between AC and VD at a 99% confidence level.

Table (14) Quantile Panel Regression Model for Hypotheses 2 and 5

	Model without Interactions				Model with Interactions			
lnVD	Coefficient	Std. Error	z	P>z	Coefficient	Std. Error	z	P>z
ZFRQ	0.013005	0.006443	2.02	0.044	0.089795	0.039784	2.26	0.024
lnROE	0.011005	0.00348	3.16	0.002	0.107391	0.046958	2.29	0.022
lnBS	0.291542	0.041638	7	0	0.196088	0.136041	1.44	0.149
lnLIQ	-0.01329	0.001877	-7.08	0	-0.0147	0.007353	-2	0.046
lnTQ	0.008581	0.001924	4.46	0	0.002471	0.008008	0.31	0.758
modFRQ	-	-	-	-	-0.03664	0.016847	-2.17	0.03

As shown in Table (14) it seems that the results are consistent with the ones earlier obtained from models 2 and 5 (the relationship between financial reporting quality and voluntary disclosure in Egyptian banks without a moderator and the relationship between financial reporting quality and voluntary disclosure in Egyptian banks using financial performance as a moderator). The financial reporting quality was found to have a significant positive impact on VD at a 99% confidence level. This appears to coincide with previous results. In addition, the

ROE is a significant moderator in the relationship between FRQ and VD at a 99% confidence level.

Table (15) Quantile Panel Regression Model for Hypotheses 3 and 6

	Model without Interactions				Model with Interactions			
lnVD	**Coefficient**	**Std. Error**	**z**	**P>z**	**Coefficient**	**Std. Error**	**z**	**P>z**
ZACC	0.0070975	0.0032347	2.19	0.028	0.1179463	0.0540683	2.18	0.029
lnROE	0.0266931	0.004091	6.52	0	0.0752416	0.0245576	3.06	0.002
lnBS	0.1571266	0.041696	3.77	0	0.3022089	0.0958276	3.15	0.002
lnLIQ	-0.0115827	0.0015865	-7.3	0	-0.0070001	0.0063573	-1.1	0.271
lnTQ	-0.0089291	0.0016096	-5.55	0	0.0066888	0.006596	1.01	0.311
modACC	-	-	-	-	0.0437236	0.0235956	1.85	0.064

As shown in Table (15) it seems that the results are consistent with the ones earlier obtained from models 3 and 6 (the relationship between audit committee characteristics and voluntary disclosure in Egyptian banks without a moderator and the relationship between audit committee characteristics and voluntary disclosure in Egyptian banks using financial performance as a moderator). The audit committee characteristics were found to have a significant positive impact on VD at a 99% confidence level. This appears to coincide with previous results.

In addition, the ROE is a significant moderator in the relationship between ACC and VD at a 99% confidence level.

7. Conclusion

This comprehensive empirical investigation of Egyptian banks from 2020 to 2024 provides significant insights into the complex interplay between accounting conservatism, financial reporting quality, audit committee characteristics, and voluntary disclosure practices. The research establishes three fundamental relationships that collectively illuminate the disclosure dynamics within the Egyptian banking sector. First, accounting conservatism demonstrates a persistent negative impact on voluntary disclosure, revealing an inherent tension between prudential financial reporting and transparency. This finding suggests that while conservative accounting practices enhance the reliability and credibility of financial statements, they simultaneously create institutional barriers to voluntary information sharing by fostering a risk-averse disclosure environment.

Second, the study confirms that financial reporting quality serves as a robust catalyst for enhanced voluntary disclosure, establishing a virtuous cycle where high-quality mandatory reporting encourages additional voluntary transparency. This relationship persists regardless of financial performance variations, indicating that the credibility foundation established by quality reporting creates sustainable incentives for comprehensive disclosure practices. Third, effective audit committee characteristics consistently promote voluntary disclosure, demonstrating that strong governance mechanisms transcend performance-related considerations to foster organizational transparency.

The moderating analysis reveals particularly noteworthy insights: financial performance does not fundamentally alter these core relationships, suggesting that the underlying institutional and governance factors exert more profound influence on disclosure behavior than short-term performance variations. These finding challenges conventional assumptions about performance-contingent disclosure strategies and emphasizes the structural nature of disclosure determinants in the banking sector. The research contributes to the broader understanding of corporate transparency by demonstrating that governance quality and reporting standards create enduring frameworks that shape disclosure practices independently of cyclical performance factors.

7.1 Recommendations

Bank management should develop integrated disclosure strategies that recognize the trade-offs between conservatism and transparency, potentially adopting graduated disclosure approaches that maintain prudential standards for core financial reporting while enhancing voluntary disclosure in complementary areas such as risk management processes, strategic initiatives, and sustainability practices. Banks should invest in comprehensive training programs for management and board members that emphasize the strategic value of voluntary disclosure as a tool for stakeholder engagement and competitive differentiation, particularly in demonstrating superior governance and operational excellence.

Regulatory authorities, particularly the Central Bank of Egypt, should consider developing guidance frameworks that encourage voluntary disclosure while maintaining appropriate prudential standards. This could include creating safe harbor provisions for forward-looking disclosures that meet specified quality criteria, establishing recognition programs for banks demonstrating excellence in voluntary disclosure practices, and facilitating best practice sharing among institutions. Regulators should also consider implementing differential reporting requirements that reward high-quality mandatory reporters with simplified compliance processes for certain voluntary disclosure categories.

Audit committees should enhance their disclosure oversight by developing specific protocols for evaluating the adequacy and effectiveness of voluntary disclosure practices, establishing regular stakeholder feedback mechanisms to assess disclosure quality and relevance, and ensuring that voluntary disclosure strategies align with overall corporate governance objectives. Board members should receive specialized training on emerging disclosure trends, stakeholder expectations, and the competitive implications of transparency practices in the digital banking era.

7.2 Future Studies

Future research should expand geographical scope to conduct comprehensive comparative analyses across MENA region banking sectors, examining how different regulatory frameworks, cultural governance norms, and market development stages influence the relationships between conservatism, reporting quality, audit committees, and voluntary disclosure. Longitudinal studies spanning extended periods (10-15 years) would provide deeper insights into how these relationships evolve with market maturity, regulatory changes, and technological advancement.

Researchers should investigate the impact of digital transformation on traditional disclosure paradigms, examining how fintech adoption, digital banking platforms, and real-time reporting capabilities interact with established governance and reporting mechanisms. Studies should explore whether technological capabilities reduce the inherent tensions between conservatism and disclosure by providing new channels for risk-adjusted transparency. Additionally, investigation into the role of artificial intelligence and machine learning in disclosure decision-making processes could reveal emerging patterns in corporate transparency.

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